County of Santa Clara

Department of Planning and Development
Planning Office

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STAFF REPORT
Zoning Administration
February 6, 2020
Item # 2

Staff Contact: Lara Tran, Associate Planner
(408) 299-5797, lara.tran@pln.sccgov.org

File: PLN19-0079
Building Site Approval on slope greater than 30% (BA) and Grading Approval for a new single-family residence

Summary: Building Site Approval on a slope greater than 30% (BA) and Grading Approval for a new 9,608 square foot single-family residence with a 2,626 square foot detached garage. the average slope of the proposed developed area is approximately 39.18%. Associated site improvements include an access driveway with retaining walls and a bridge located off from the subject property. Estimated grading quantities are approximately 5,535 cubic yards of cut and 680 cubic yards of fill.

Owner: Robert Waterman and Ramsay Waterman
Applicant: Charles Zaffaroni
Lot Size: 7.1 acres
APN: 182-36-043
Supervisorial District: #5
HCP: Not a covered HCP project

Gen. Plan Designation: Hillsides
Zoning: HS
Address: Alpine Road, Portola Valley
Present Land Use: Vacant
Approved Building Site: No

RECOMMENDED ACTIONS

A. Accept a Categorical Exemption, under Section 15303(a) of the CEQA Guidelines, Attachment A

B. Grant Building Site Approval and Grading Approval, subject to Conditions outlined in Attachment B.

ATTACHMENTS INCLUDED

Attachment A – Proposed CEQA Determination
Attachment B – Proposed Conditions of Approval
Attachment C – Location & Vicinity Map

Attachment D – Proposed Plans
Attachment E – Feasibility Analysis Plan
Attachment F – Arborist Report Prepared by Matthew Fried (Dated November 2, 2019).
Attachment G – Supplemental Geology Feasibility Evaluation for "Bench" Building Site (Dated July 11, 2019).
Attachment H – Email from the Town of Portola Valley (Dated December 10, 2019)

PROJECT DESCRIPTION

The proposed project is a request to construct a new 9,608 square foot, three-story, 25 feet tall, single-family residence with a basement, a pool, and a 2,626 square foot detached garage. The new residence is proposed to be constructed where the slope of the developed area is approximately 39.18%. The location of the detached garage/accessory structure is proposed more than 75 feet from the existing property line.

The proposed grading is associated with the construction of the building pads for the residence and detached garage, geo-technical site stabilization, along with grading necessary for ancillary site improvements, including retaining walls, driveway access, and a fire truck turnaround area. A total of 6,215 cubic yards is proposed, with 5,535 cubic yards of cut and 680 cubic yards of fill necessary to complete the project. A total of forty-one (41) trees, including thirty-one (31) oak trees, are proposed for removal, as the majority of the trees are dead or diseased, are located within the areas of improvement for driveway access, or are within the proposed building foot-print of the residence and detached accessory structure. The applicant is proposing trees replacement with a total of fifty-three (53) oak trees and tree preservation for existing trees in proximity to the development and improvement areas.

Setting/Location Information

The subject parcel is approximately 7.1 acre in size, with Los Trancos Creek located to the northeast of the property. Access to subject property is via a private road, Alpine Road, that is within the County of San Mateo. The property is north of Santa Clara County, adjacent to the City of Palo Alto, but outside of the City of Palo Alto's urban service area. The property is also adjacent to the County of San Mateo and the Town of Portola Valley to the west and north. The neighborhood character consists of similarly sized lots, developed with large estate homes built between the 1980's to 2000, and a country club to the northwest.

The subject property is covered with dense trees (of which most are oak trees) and shrub vegetation to the north, with a clearing in the southeast and additional dense trees in the center and west. The property is steep, with an average slope of 37.37% (entire property), and slopes upward from west to east. There is an existing dirt road that provides access to the northwest portion of the lot. The proposed site location (referred to as Area No. 3, "the Bench" on the plans) is the most feasible area on the property that allows for a stable foundation with minimal amounts of grading required, and with the least amount of disturbance to the existing landscape. Staff did require a feasibility analysis to be conducted to determine the highest and best alternative for development on the subject property. Additional analysis for alternative site feasibility can be found in Attachments E and G.

REASONS FOR RECOMMENDATIONS

A. Environmental Review and Determination (CEQA)

The proposed project qualifies for a Categorical Exemption, Section 15303 (Class 3a) for one single-family residence in a residential zone.

B. Project/Proposal

1. **General Plan**: The project is a single-family residence within the HS zoning district, located outside of the City of Palo Alto Urban Service Area. The General Plan land use designation for the subject parcel is Hillsides and allows for single-family residential use.

2. **Zoning Standards**. The proposed project satisfies the required development standards for a single-family residence in the HS (Hillsides) zoning district as summarized below:

Front Setback:	30 feet
Side Setbacks:	30 feet
Rear Setback:	30 feet
Height:	35 feet
Stories:	3 stories

3. **Building Site Approval**: The County discourages development on slopes of 30 percent or more due to additional site constraints and challenges typically occurs in such hillside environments, including but not limited to, steep terrain, geologic and seismic hazards, difficulties in designing and constructing safe and sustainable onsite wastewater systems, meeting access standards for regular emergency vehicles, potentially significant tree removal, and the need for significant grading. Consequently, building site approval on slopes 30 percent or more shall only be granted where the parcel has no feasible alternative location for development on slopes less than 30 percent, all necessary health and safety issues are adequately addressed, and the resulting visual impacts of such development are addressed with appropriate conditions of approval.

   Per Section Sec. C12-350.5 of the County Ordinance Code, the Zoning Administration Hearing Officer may grant Building Site Approval for development on slopes of 30 percent or greater if all required findings are made. The required findings are listed below in **bold**, and an explanation of how the project complies with each finding follows in plain text.

   A. The project meets or exceeds the requirements of any applicable County agency or other affected public agency and conforms to all applicable development standards.

   The proposed project has been reviewed by all applicable County agencies, including Land Development Engineering, Department of Environmental Health, Fire Marshal's Office, Geology, Planning Division, and applicable public agencies, including San Mateo County and the Town of Portola Valley. All

agencies and County Divisions have determined that the proposed project conforms to all applicable development standards. Those agencies have also, where necessary and appropriate, provided conditions of approval to ensure that the proposed residence and the infrastructure needed to support the residence meet all applicable development standards. Additionally, all agencies have conditioned the project conform to the County General Plan and Ordinance Code, demonstrating the maximum health and safety protection, and ensuring that the project would not result in unsafe or unsustainable conditions. As such, this finding can be made.

B. The project integrates design solutions to all site or development constraints satisfying the requirements and standards for all reviewing and responsible agencies.

Much of the property is steeply sloped with significant topographic and geologic constraints that create challenges to site design. The project was analyzed for a total of four (4) potential building site locations (Attachment E) on the property prior to determining the current location (Area No. 3, "the Bench") as the most feasible location area for development. Given the developmental constraints of the property, the project is designed to minimize the amount of earth movement as much as possible, while conforming to the standards and regulations by various agencies within the County of Santa Clara. The proposed driveway, for example, follows the existing on-site dirt road to minimize disturbance of the natural hillside as much as possible. The length of the driveway utilized a 15% slope for most of the driveway with segments sloped at 20% to reduce the retaining wall heights, grading volumes, and necessary amount of tree removals. Retaining walls are utilized to minimize the horizontal land disturbance and keep the development area in its existing natural condition. The residence is proposed to be located on the most feasible area of the property (Area No. 3, "the Bench", Attachment E). Although the location of the residence is not closest to the access road, the proposed area location is the most suitable as the site was previously graded as part of an old farm road system and storage area many decades ago. Area No. 3 is suitable for a building site as it utilizes the least amount of earth work required (compare to other alternative development areas – see Site Comparison Table) where the grading is concentrated in a previously disturbed area with man-made slopes, rather than in areas that are natural. The total grading quantities have been minimized to 5,535 cubic yards of cut and 680 cubic yards of fill to achieve a shorter driveway and the overall design of the residence is tiered and stepped into the hillside to reduce bulk and massing that is consistent with the County's adopted *"Guidelines for Grading and Hillsides Development,"* and the County's General Plan (R-GD27 and R-GD32). As stated above, the proposed project has been reviewed by all applicable public agencies, and those agencies have determined that the project satisfies all required standards. As such, this finding can be made.

C. The project cannot be located on portions of the lot with less than 30% slope.

The project was analyzed for a total of four (4) potential building site locations (Attachment E) on the property prior to determining the current location (Area No. 3, "the Bench") as the most feasible location area for development. Although Area No. 3 has the highest average slope for the development site at 39%, the slope that exists in Area No. 3 is man-made and resulting from on-site grading from years prior. Compared to all the other alternative sites, Area No.3 shows the most potential for development, as the grading quantities are significantly lower for the development area, and as it would not require as much geotechnical remediation as the other locations. Furthermore, and disturbance to the natural landscape is significantly reduced due to a shorter driveway and tiered design of the residence (see Site Comparison Table).

Table 1: Site Comparison of Grading Quantities, Average Slope of Development Area, and Tree Removal for Four (4) Alternative Building Site Analyses (Feasibility Analysis)

Area Name on Site Plan	Area 1 "Clearing"		Area 2 "Bowl"		**Area 3 "Bench"**		Area 4 "Garden"	
Cut/Fill	Cut	Fill	Cut	Fill	**Cut**	**Fill**	Cut	Fill
Grading Quantities (cubic yards)	5,500	8,800	14,000	12,000	**5,535**	**680**	8,875	11,100
Total Grading Quantities (cubic yards)	14,300		26,000		**6,215**		19,975	
Avg. Slope of Development Area (%)	36		38		**39**		25	
No. of Trees Removed	34		25		**41**		36	

As seen in Table 1 above, Area No. 2 (the "Bowl") requires the largest quantity of grading due to significant geotechnical remediation required for the site from underlain debris flow deposits. The long driveway to Area No. 2 would create a visual scar on the overall landscape of the property and would not be a better alternative site compared to Area No. 3. Although Area No. 1 (the "Clearing") does not require as much geotechnical remediation to stabilize the foundation, the excessively long driveway to access the development area would create a significant and visual scar on the existing natural landscape, and would not be the minimum amount of grading necessary to establish the primary use (residence). In addition, the overall siting of Area No. 1 and Area No. 2 are not consistent with the County's *"Guidelines for Grading and Hillsides Development,"* and the County's General Plan (R-GD24) of discouraging unnecessary long driveways into the hillsides. Although Area No. 4 (the "Garden") has a lower slope (25%), due to significant geological constraints, approximately 20,000 cubic yards of grading would be required to stabilize the foundation as well as site improvements

such as driveways and retaining wall that are required for the development area, as Area No. 4 has significant deep debris flow identified from the Geotechnical Report by C2Earth with deep debris flow (dated April 17, 2019). As such, Area No. 4 would result in significantly more grading due to geotechnical remediation for the development site and could potentially cause man-made landslide due to large amount of soil movement in an area that was identified from the Geotechnical Report by C2Earth with deep debris flow (dated April 17, 2019). Aside from the significant grading that would incur on Area No. 4, the proposed residence would not meet the minimum 30- foot residential setbacks (front, side, and rear) for the HS zoning district, as the area would be too small for the location of the primary residence. In addition, the proposed residence in Area No. 4 would be located much closer to the Los Trancos Creek, which traverses near the northwest portion of the property and is not desirable due to creek and creek bank disturbance.

For the reasons stated above, and as identified in the record, by factoring the significant topographical and geological constraints on the property, Area No. 3 is the most feasible development. Area No. 3 requires the least amount of grading (see Table 1), minimizes the necessity for a long driveway, and the overall site allows for a tiered and stepped design of the residence into the hillside to reduce massing and bulk, and create a conformity to the natural landscape. Additionally, siting the residence at Area No. 3 minimizes disturbance to the natural landscape, as the site was previously graded as part of an old farm road system and storage area many decades ago, and therefore, reduces the need for additional grading. The proposed development at Area No. 3 would include grading for the driveway on a previously graded area, rather than on sites that are still natural.

For the reasons stated above, the proposed project cannot be sited on property in areas less than 30%, and the proposed site location, Area No. 3 – the "Bench" – is the best location to issue Building Site Approval. As such, this finding can be made.

D. The overall site design, including but not limited to access roads and driveways, retaining walls, architectural quality, landscaping, tree preservation, grading and erosion control, and landscaping, is in harmony with the natural landscape and environment and topography, demonstrates efficiency in terms of the extent and nature of proposed access or other improvements, minimizes overall grading and terrain alteration, and reasonably mitigates the visual impacts of development.

Summary
Locating the proposed residence at Area No. 3 reduces the need for a long driveway and significantly minimizes grading as compared to other site alternatives. The grading proposed would be necessary for the establishment of the residence and does not create a visual scar on the property. The proposed driveway, for example, follows the existing on-site dirt roads to minimize any

disturbance of the natural hillside. The length of the driveway utilized a 15% slope for most of the driveway, with segments sloped at 20% to reduce the retaining wall heights, grading volumes, and necessary amount of tree removals. Retaining walls are utilized to minimize the horizontal land disturbance and keep the development area in its existing natural condition. The residence is tiered and stepped into the hillside to balance the amounts of cut and fill as well as to reduce massing and visual bulk. The design of the residence includes steps in the building foundations and varied roof heights and planes to break the overall massing of the building.

Oak Woodland
A total of forty-one (41) trees (with thirty-one (31) oak trees) are proposed for removal. According to the arborist report prepared by Matthew Fried, Heartwood Consulting Arborists (dated November 9, 2019), the proposed amount trees removed is necessary, as many of the trees recommended for removal are dead or diseased, or are located within the areas of improvement for driveway access and proposed building footprint of the residence and detached accessory structure. The arborist report also concluded there would not be an impact on oak woodland as the project is below the threshold of ½ an acre of impact. The applicant is proposing replacement with a 2:1 ratio of oak trees and tree preservation of the existing trees in proximity to the development and improvement areas.

Nesting Raptures
According to County records for California Natural Diversity Database (CNDDB), there are no special status plants or animals found on the property, or within proximity to the property. As such, the federal Migratory Bird Treaty Act (MBTA) would not apply for the site the site.

As mentioned in Findings A, B, and C above, locating the residence at Area No. 3 minimizes the grading quantities to 5,535 cubic yards of cut and 680 cubic yards of fill to achieve a shorter driveway and the overall design that is consistent with the County's *"Guidelines for Grading and Hillsides Development,"* and the County's General Plan (R-GD24, R-GD27, and R-GD32). As such, this finding can be made.

6. Grading Approval: Pursuant to Section C12-433, all Grading Approvals are subject to specific findings. In the following discussion, the scope of review findings are listed in **bold**, and an explanation of how the project meets the required standard is in plain text below.

A. The amount, design, location, and the nature of any proposed grading is necessary to establish or maintain a use presently permitted by law on the property.

The project's grading quantities are 5,535 cubic yards of cut and 680 cubic yards of fill. The proposed grading would be necessary to stabilize the existing foundation, establish the building pads, and make improvements to the driveway,

which are allowable uses for the underlying zoning district. Consequently, the amount, design, location and the nature of the proposed grading is necessary and appropriate to establish the single-family residential use, which is a permissible use in the HS zoning district. As such, this finding can be made. The breakdown of grading is quanitified below.

Type	Cut (CY)	Fill (CY)
Building Pads	2,500	0
Driveway	1,915	260
Site	1,100	340
Bridge (off-site)	20	80
Total	**5,535**	**680**

B. The grading will not endanger public and/or private property, endanger public health and safety, will not result in excessive deposition of debris or soil sediments on any public right-of-way, or impair any spring or existing watercourse.

The proposed grading will not endanger public or private property. As evaluated and proposed within the Supplemental Geology Feasibility Evaluation for "Bench" Building Site (Dated July 11, 2019) by C2Earth, Area No. 3 will require landslide hazard mitigation that consists of double row of stitch piers, with a minimum diameter of 2 ½ feet and a depth of about 80 feet for the downhill side of the development area. The grading is kept to the minimum necessary to establish a single-family residential use on the property that will provide a safe and stable foundation. All export will be deposited at an approved site. The Conditions of Approval of final grading plans will ensure that grading around the building pads and driveway will not result in slope instability or erosion. Land Development Engineering has specific erosion control standards to be implemented as part of the driveway and grading design. As such, this finding can be made.

C. Grading will minimize impacts to the natural landscape, scenic, biological and aquatic resources, and minimize erosion impacts.

The proposed grading has been designed to contour to the natural topography to the maximum extent possible and the overall design the residence is tiered and stepped into the hillside to minimize disturbance to the natural landscape. Retaining walls for the driveway are proposed to limit the grading and disturbance to the native hillside as much as possible. Although a total of forty one (41) trees are proposed for removal as part of the project, the applicant will replace with a 2:1 ratio of oak trees as part of their tree replacement/preservation plan and landscaping plan. All new grading will utilize temporary erosion control masures during contruction that will be repalce with long-term permanent erosion control measures in the form of natural landscaping. As such, this finding can be made.

D. For grading associated with a new building or development site, the subject site shall be one that minimizes grading in comparison with other available development sites, taking into consideration other development constraints and regulations applicable to the project.

As noted in the Buidling Site Approval Findings section of this report, the project was analyzed for a total of four (4) potential building site locations (Attachment E) on the property prior to determining the current location (Area No. 3) as the most feasible location area for development. The proposed location (Area No. 3) is suitable for a building site, as it utilizes the least amount of grading required. The total grading quantities have been minimized to 5,535 cubic yards of cut and 680 cubic yards of fill to achieve a shorter driveway and the overall design of the residence is tiered and stepped into the hillside to reduce bulk and massing, also reduces grading, which is consistent with the County's *"Guidelines for Grading and Hillsides Development,"* and the County's General Plan (R-GD27 and R-GD32). In addition, the grading is designed to follow the natural contours to the maximum extent possible. The proposed building site is the most suitable, as it minimizes the grading necessary for establishment of the single-family residence. As such, this finding can be made.

E. Grading and associated improvements will conform with the natural terrain and existing topography of the site as much as possible, and should not create a significant visual scar.

As previously mentioned, the access driveway for the proposed residence uses the existing on-site dirt roads to minimize any disturbance of the natural hillside and will not create any visual scar. Additionally, the residence and detached accessory structure are tiered and stepped into the hillside to blend in with the natural terrain. Although the property is not visible from the valley floor, the development area is screened with proposed landscaping which consists of mature oak trees and native and drought tolerant plans. As such, this finding can be made.

F. Grading conforms with any applicable general plan or specific plan; and

The proposed grading is in conformance with specific findings and policies identified in the County General Plan. For example, the total grading quantities have been minimized to achieve a shorter driveway and the overall design of the residence is tiered and stepped into the hillside to reduce bulk and massing that is consistent with the County's General Plan R-GD27 and R-GD32. As such, this finding can be made.

G. Grading substantially conforms with the adopted *"Guidelines for Grading and Hillside Development"* and other applicable guidelines adopted by the County.

The proposed grading is in conformance with the adopted *"Guidelines for Grading and Hillside Development,"* in particular, the specific guidelines for siting, road design, building form, and design. The access driveway for the proposed residence uses the existing on-site dirt roads to minimize any disturbance of the natural hillside and will not create any visual scar. Additionally, the residence and detached accessory structure is tiered and stepped into the hillside to blend in with the natural terrain. Although the property is not visible from the valley floor, the development area is screened with proposed landscaping which consists of mature oak trees and native and drought tolerant plans. Erosion control is conditioned with the County requirements of Land Development Engineering with final erosion control plans to be implemented with the final grading permit. As such, this finding can be made.

ADDITIONAL INFORMATION

Off-Site Bridge for Access

There is an existing bridge located off from Creek Park Drive within the jurisdiction of the Town of Portola Valley. The bridge will need to be improved in order meet Fire vehicle standards and for structural stability. The Town of Portola Valley confirmed (Attachment I) that the proposed improvement to the bridge would require ministerial building permit by the Town of Portola Valley and is not aware of any issues with improvement of the bridge.

BACKGROUND

On November 21, 2018, a pre-application for Building Site Approval on slopes more than 30% slope (BA) was applied by Mr. Charles Zaffaroni and his consultant, Ms. Sylvia Wise-Ornelas of Wise Consultants Group, LLC. A pre-application meeting with Planning Staff and other county agencies was held on December 21, 2018 and a formal letter was provided to the applicant summarizing staff's comments on January 25, 2019. At the pre-application meeting, and as outlined in a follow-up letter, staff relayed concerns with the applicant regarding

On April 17, 2019, the applicant applied for Building Site Approval on slopes more 30%. (BA) and Grading Approval. The application was deemed incomplete on May 16, 2019, as information necessary to deem the application complete for processing were missing. In the letter, Staff also relayed "issues of concern," as the proposed location, grading, and overall design of the project, at that time, were inconsistent with the County's Grading Ordinance, *Guidelines for Grading and Hillsides Development*, and General Plan. Staff and the Zoning Administrator met with the owner on several occasions to discuss comments and County policies that are applicable to the project following the issuance of the incomplete letter. In response to Staff's concerns, the applicant revised the project based on staff's initial feedback and met with Planning Staff a few additional times to discuss subsequent conceptual revisions to the project. The applicant resubmitted on July 18, 2019, and the application was deemed incomplete by the Fire Marshal's

Office, Land Development Engineering (LDE), and Planning. As a courtesy, staff requested subsequent meetings between Planning Staff and the applicant to further clarify design guidelines, grading ordinance, and conformance to the County's General Plan and development on hillsides and emphasize staff's inabilities to recommend approval of the project as it was originally proposed. At that time, the applicant wished to further redesign the project.

On November 12, 2019, the applicant submitted final, revised plans and project design, and the application with a revised project design was deemed complete on December 11, 2019. On January 27, 2020, a public notice was mailed to all property owners within a 300-foot radius and published in the Post Record on January 27, 2020.

STAFF REPORT REVIEW

Prepared by: Lara Tran, Associate Planner
Reviewed by: Leza Mikhail, Principal Planner/Zoning Administrator

ATTACHMENT A

STATEMENT OF EXEMPTION

from the California Environmental Quality Act (CEQA)

FILE NUMBER	APN(S)	DATE
PLN19-0079	182-36-043	01/21/2020
PROJECT NAME	**APPLICATION TYPE**	
Single-family Residence with Detached Garage; Alpine Road, Portola Valley	Building Site Approval (BA) and Grading Approval.	
OWNER	**APPLICANT**	
Robert Waterman and Ramsay Waterman	Charles Zaffaroni	
PROJECT LOCATION		
Alpine Road, Portola Valley		
PROJECT DESCRIPTION		
Building Site Approval and Grading Approval for a 9,608 square foot single-family residence (three-story) with a 2,626 square foot detached garage, where the slope of the developed area is approximately 39.18%. Associated improvements include access driveway with retaining walls and a bridge off-site. Estimated grading quantities are approximately 5,535 cubic yards of cut and 680 cubic yards of fill.		
All discretionary development permits processed by the County Planning Office must be evaluated for compliance with the California Environmental Quality Act (CEQA) of 1970 (as amended). Projects which meet criteria listed under CEQA may be deemed exempt from environmental review. The project described above has been evaluated by Planning Staff under the provisions of CEQA and has been deemed to be exempt from further environmental review per the provision(s) listed below.		
CEQA (GUIDELINES) EXEMPTION SECTION		
Section 15303(a) - for one single-family residence in a residential zone.		
COMMENTS		
Property is currently a vacant lot. As part of the project, the applicant is proposing to remove a total of forty-one (41) trees of which thirty (31) are oak trees. Tree replacement will be at a 2:1 ratio of oak trees. Proposed trees removal will not have an impact on oak woodland as it is less than ½ acre per County Guide to Evaluating Oak Woodland Impacts as indicated in arborist report by Heartwood Consulting Arborist (dated November 7, 2019).		
APPROVED BY:		
Lara Tran, Associate Planner _____ Signature		_____01/24/2020_____ Date

Date: 01/24/2020 Signature:
Name/Title: Lara Tran/Associate Planner

Approved by: Leza Mikhail/ Principal Planner and Zoning Administrator

ATTACHMENT B

BUILDING SITE APPROVAL ON GREATER THAN 30% SLOPE & GRADING APPOVAL
Preliminary Conditions of Approval

Owner/Applicant: Robert and Ramsay Waterman/ Charles Zaffaroni

File Number: PLN19-0079

Location: Alpine Road, Portola Valley, CA (APN: 182-36-043)

Project Description: Building Site Approval on slope greater than 30% (BA) and Grading Approval for a three-story, 9,608 square foot single-family residence with a 2,626 square foot detached garage, where the slope of the developed area is approximately 39.18%. Associated improvements include access driveway with retaining walls and a bridge off-site. Estimated grading quantities are approximately 5,535 cubic yards of cut and 680 cubic yards of fill.

The project is not within the Santa Clara Valley Habitat Plan.

If you have any question regarding the following preliminary conditions of approval, call the person whose name is listed as the contact for that agency. He or she represents a specialty or office and can provide details about the conditions of approval.

Agency	Name	Phone	E-mail
Planning	Lara Tran	(408) 299- 5759	lara.tran@pln.sccgov.org
Land Development Engineering	Eric Gonzales	(408) 299-5731	eric.gonzales@pln.sccgov.org
Fire Marshal	Alex Goff	(408) 299-5763	alex.goff@sccfd.org
Environmental Health	Darrin Lee	(408) 299-5748	darrin.lee@cep.sccgov.org
Geology	Jim Baker	(408) 299-5774	jim.baker@pln.sccgov.org
Building Inspection		(408) 299-5700	

STANDARD CONDITIONS OF APPROVAL

Building Inspection

1. For detailed information about the requirements for a Building Permit, obtain a Building Permit Application Instruction handout from the Building Inspection Office or visit the website at www.sccbuilding.org.

Planning

2. Development must take place in substantial conformance with the approved plans, submitted on November 12, 2019, and the Final Conditions of Approval (COA). Any changes to the proposed project may result in additional environmental review, pursuant to the California Environmental Quality Act, or additional Planning review and a public hearing. Approved architectural plans shall be consistent with the civil plans and vice versa.

3. Existing zoning is HS (Hillsides) zoning district. The following minimum dwelling setbacks shall be maintained for the residence and secondary dwelling unit:
   Front: 30 ft. Sides: 30 ft. Rear: 30 ft.

4. Maximum height a of single-family residence in the HS zoning district is 35 feet and not more than 3 stories.

5. Grading Approval is for 5,535 cubic yards of cut and 680 cubic yards of fill (6,215 cubic yards combined). Grading plans submitted for Grading Permit shall be in substantial conformance with the approved plans submitted on November 12, 2019 by Lea & Braze Engineering. Any increase in grading quantities, or modification to the grading design, is subject to further review.

6. All excess fill shall be taken off-site to an approved disposal location. A note of this requirement shall be incorporated into the grading plan.

7. A minimum of two (2) off-street parking spaces shall be provided to accommodate the residence and at least one (1) space must be covered. In addition to the two (2) required spaces for the primary residence, one (1) additional parking space shall be provided for a secondary unit. Off-street parking shall be identified on plans submitted for a building permit.

8. All accessory structures shall be in the rear half of the lot, or at least 75 ft. from the front property line or edge of right-of-way, per Sections 4.20.020(D). Rear yard coverage of cumulative detached accessory structures shall not be more than 30%.

9. Driveways and parking areas shall not be wider than 40% of the width of the lot's frontage along the street, measured where the driveway(s) crosses the edge of the right-of-way. Driveways and parking areas shall not cumulatively cover more than 40% of the land area of the front yard (as defined in Santa Clara County Zoning Ordinance Section 1.30.030). These limitations shall not apply to flag lots or any lot whose street frontage is 25 feet or less.

10. If archaeological resources or human skeletal remains are discovered during construction, work shall immediately stop, and the County Coroner's Office notified. Upon determination that the remains are Native American, no further disturbance of the site may be made except as authorized by the County Coordinator of Indian Affairs, in accordance with state law and Chapter B6-18 of the County Ordinance Code.

11. Building and Grading Permits shall be submitted to the Building Inspection Office concurrently. All building and grading plans submitted into Plan Check shall be in substantial conformance with the plans approved by Planning as part of the land-use entitlement.

12. Development must take place in substantial conformance with the approved plans, prepared by Lea & Braze Engineering, CJW Architecture, and Cleaver Design Associates (Landscape Architecture) submitted on November 12, 2019.

13. Accessory structure(s) on lot 2.5 acre or larger shall have a maximum 35 feet in height, pursuant to Zoning Ordinance Section 4.20.020(E)(1)(b).

14. Accessory structure(s) on lots 2.5 acres or larger are subject to a minimum of 30 feet of side and rear yard setbacks, pursuant to Zoning Ordinance Section 4.20.020(E)(3).

15. A minimum of 6 feet of separation between the detached accessory and a dwelling shall be maintained (exterior wall to exterior wall), per Zoning Ordinance Section 4.20.020(D)(4).

16. Subject detached garage may not be used for dwelling purposes or overnight accommodations.

17. A separate building permit for the single-family residence shall be issued before or concurrently with the building permit for the detached garage. The detached garage is not permitted to be constructed before the single-family residence.

18. Subject detached garage will not be eligible for conversion to a secondary dwelling or accessory dwelling unit (ADU), as the structure will be constructed and inspected after January 1, 2017, per Zoning Ordinance Section 4.10.340(E)(1), unless County Ordinances are amended in the future to allow conversion.

Land Development Engineering

19. Property owner is responsible for the adequacy of any drainage facilities and for the continued maintenance thereof in a manner that will preclude any hazard to life, health or damage to adjoining property.

Fire Marshal:

20. Property is located within the Santa Clara County Fire Department response area.

21. The property is in the Wildland/Urban Interface (WUI) Fire Area. All the following conditions shall apply:

    A. Class "A" roof assembly is required. Detail shall be included in plans submitted for building permit.

    B. Provide a ½ inch spark arrester for the chimney.

C. Remove significant combustible vegetation within 30 feet of the structure to minimize risk of wildfire casualty. Maintain appropriate separation of vegetative fuels in areas between 30 and 100 feet from the structure.

22. Fire protection water systems and equipment shall always be accessible and maintained in operable condition and shall be replaced or repaired where defective. Fire protection water shall be always be made available to the fire department.

23. Fire department access roads, driveways, turnouts, and turnarounds shall always be maintained free, clear, and accessible for fire department use. Gates shall be maintained in good working order and shall always remain in compliance with Fire Marshal Standard CFMO-A3.

Environmental Health

24. All construction activities shall be in conformance with the Santa Clara County Noise Ordinance Section B11-154 and prohibited between the hours of 7:00 p.m. and 7:00 a.m. on weekdays and Saturdays, or at any time on Sundays for the duration of construction.

CONDITIONS OF APPROVAL TO BE COMPLETED PRIOR TO GRADING PERMIT AND/OR BUILDING PERMIT ISSUANCE

Planning

25. **Prior to application of any permits from the County of Santa Clara,** the owner shall have building and/or grading permit issuance from the Town of Portola Valley/San Mateo County to improve the off-site bridge for access.

26. **Prior to building permit issuance**, record a Notice of Permit and Conditions with the County Office of Clerk-Recorder, to ensure that successor property owners are made aware that certain conditions of approval shall have enduring obligation. Evidence of such recordation shall be provided pursuant to Section 5.20.125.

27. **Prior to issuance of any permits**, the applicant shall pay all reasonable costs associated with the work by the Department of Planning and Development.

28. **Prior to issuance of a grading permit**, the applicant shall submit evidence of a contract with a qualified ornithologist to conduct the preconstruction surveys prior to issuance of final grading permits and the ornithologist must submit a report indicating the result of the survey and any designated buffer zones to the satisfaction of the Planning Office prior to the issuance of final occupancy.

Protection of Existing Trees

29. All tree protection measures shall be adhered to as stipulated in the arborist report (Attachment F) dated November 7, 2019, under "Tree Protection During Construction & Tree Protection Zone" and "Appendix C: Tree Protection Guidelines" by Matthew Fried, ASCA Registered Consulting Arborist, I.S.A. Certified Arborist, including:

A. The project arborist shall meet with the General Contractor prior to any tree removal, demolition, or construction activities to discuss a construction management plan and designate the location of any material storage, wash out, office modules, portable sanitation, and areas of vehicle.

B. Heavy equipment access and egress shall be clearly posted on site throughout the duration of the development project.

C. The contractor shall immediately notify the project arborist if roots are damaged, exposed, or trunk or branches are wounded.

D. All tree removals shall be performed by hand using light equipment without any damage to remaining trees. All stumps shall be removed by hand or using hand operated stump grinding machinery when within the Root Intrusion Zone (RIZ) of remaining trees and to a depth of no less than twelve (12) inches.

E. Following fencing installation, the project arborist shall inspect and confirm that the tree protected fencing has been installed adequately and provide a written report (with photographs) to the project planner with the County of Santa Clara.

F. The Arborist shall monitor construction activity to ensure that the tree protection measures are implemented and submit a Construction Observation Letter to the Planning Office for approval, prior to final inspection, summarizing the results of the monitoring activity and resulting health of trees designated for preservation onsite.

G. All tree protection measures as recommended by a certified Arborist shall be shown on the final grading/ construction or landscape plans and adhered to during construction. Any disturbance to the canopies and/or declines in health of protected trees shall require notification to the project Arborist and County Planning Office.

Tree Removal/Replacement

30. **Final grading construction plans** shall clearly identify the size and species of all trees proposed for removal, consistent with the arborist report, "Appendix B: Tree Assessment Table" submitted by Matthew Fried, Heartwood Consulting Arborists, I.S.A. Certified Arborist, on November 9, 2019. For each tree designated for removal, replacement shall occur at the replacement ratios stated below:

    A. *Tree Removal:* Project proposes the total removal of forty-one (41) trees which includes thirty-one (31) oak trees and ten (10) non-native trees. Tree removal shall be consistent to the "Appendix B: Tree Assessment Table" submitted by Matthew Fried, Heartwood Consulting Arborists, I.S.A. Certified Arborist, on November 9, 2019 and the "Tree Removal Summary Table" on the landscape plan (Sheet L-101) submitted on November 9, 2019 by Robert Cleaver of Cleaver

Design Architects (Landscape Architects).

B. *Tree Replacement:* As specified by the Santa Clara County Guidelines for Tree Protection and Preservation for Land Use Applications, the removal requires the replacement of all oak trees. The replacement shall be 2:1, as summarized within the "Tree Removal Summary Table" on the landscape plan (Sheet L-101) submitted on November 9, 2019 by Robert Cleaver of Cleaver Design Architects (Landscape Architects).

   Note: Tree replacement can be dependent on amount of room available on a parcel in which trees can be planted. On properties where there is limited room to plant replacement trees, fewer replacement trees may be authorized per County of Santa Clara Guidelines for Tree Protection and Preservation. An (I.S.A.) certified arborist shall provide written justification if there are fewer tree replacements on the property.

C. All proposed landscape plant materials shall be drought-tolerant and /or native species and will match existing vegetation.

D. All trees to remain shall be protected with five-foot chainlink fencing on steel posts driven into the ground to the extent possible at the dripline of the trees.

E. Arrangement of trees and other plant materials shall provide for defensible space for fire protection around proposed buildings.

Tree Fencing

31. Fenced enclosures for trees to be protected shall be erected at the dripline of trees or as established by the Arborist to establish the Tree Protective Zone (TPZ) in which no soil disturbance is allowed, and activities are restricted.

32. All trees to be preserved shall be protected with minimum 5-foot high fences. Fences are to be mounted on 2-inch diameter galvanized iron posts, driven into the ground to a depth of at least 2 feet, at no more than 10-foot spacing (See detail, available at www.sccplanning.org). This detail shall appear on grading and building permit plans.

33. In areas where soil properties are less than conducive to hearty vegetation growth, soil augmentation shall be required, particularly in those areas surrounding tree installation pits. The extent of soil augmentation shall be based on the anticipated drip line at maturity, with a depth adequate to promote root development for structural stability and vigor.

34. All proposed trees on the property are subject (without time limitation) to the provisions of Division C16: Tree Preservation and Removal, of the County Ordinance Code and the conditions of approval for the project.

Nesting Raptures

35. If possible, tree removal and construction should be scheduled between September 1 and December 31 to avoid the raptor nesting season**.** If this is not possible, pre-construction surveys for nesting raptors shall be conducted by a qualified ornithologist to identify active raptor nests that may be disturbed during project implementation. Pre-construction surveys shall take place no more than 24 hours prior to the initiation of construction activities and tree removal.

36. If an active raptor nest is found in or close enough to the construction area to be disturbed by these activities, the ornithologist, shall contact the Planning Office and in consultation with the California Department of Fish & Game, designate a construction free buffer zone (typically 250 feet or more - varies) around the nest.

Environmental Health

37. The site is in a sewered area, and therefore, a sanitary sewer connection will be required. Submit a sewer connection permit from the West Bay Sanitary District at (650) 321-0384. For sewer clearance, return/ upload requested sewer document to 70 W. Hedding, Permit Center, for sign-off.

38. Provide a water connection letter from the water purveyor. Return/ upload requested water document to County of Santa Clara Permit Center (70 W. Hedding Street, 7th Floor) for sign-off.

Geology

39. **Prior to building and grading permit issuance**, submit a Plan Review Letter that confirms the plans conform with the recommendations presented in the Geologic and Geotechnical Study Report by Upp Geotechnology dated April 9, 2019, and the "Feasibility Evaluation Alternate Bench Building Site" supplemental Upp Geotechnology dated July 11, 2019.

Land Development Engineering

40. **Prior to building and grading permit application**, the applicant shall provide written approval from the Town of Portola Valley and/or San Mateo County approving the bridge construction prior to the County of Santa Clara acceptance of the entire project.

41. Obtain a Grading Permit from Land Development Engineering (LDE) **prior to beginning any construction activities**. Issuance of the grading permit is required **prior to LDE clearance of the building permit** (building and grading permits may be applied for concurrently). The process for obtaining a grading permit and the forms that are required can be found at the following web page:

    www.sccgov.org > I Want to... > Apply for a Permit > Grading Permit.

    Please contact LDE at (408) 299-5734 for additional information and timelines.

42. Final plans shall include a single sheet which contains the County standard notes and certificates as shown on County Standard Cover Sheet. Plans shall be neatly and accurately drawn, at an appropriate scale that will enable ready identification and recognition of submitted information.

43. Final improvement plans shall be prepared by a licensed civil engineer for review and approval by LDE and the scope of work shall be in substantial conformance with the conditionally approved preliminary plans on file with the Planning Office. Include plan, profile, typical sections, contour grading for all street, road, driveway, structures and other improvements as appropriate for construction. The final design shall be in conformance with all currently adopted standards and ordinances. The following standards are available on-line:

    - Standard Details Manual, September 1997, County of Santa Clara, Roads and Airports Department available at: www.sccgov.org/sites/rda > Published Standards, Specifications, Documents and Forms

    - March 1981 Standards and Policies Manual, Volume 1 (Land Development) www.sccplanning.org > Plans & Ordinances > Land Development Standards and Policies
    - 2007 Santa Clara County Drainage Manual www.sccplanning.org > Plans & Ordinances > Grading and Drainage Ordinance

44. Survey monuments shall be shown on the improvement plan to provide sufficient information to locate the proposed improvements and the property lines. Existing monuments must be exposed, verified and noted on the grading plans. Where existing monuments are below grade, they shall be field verified by the surveyor and the grade shall be restored and a temporary stake shall be placed identifying the location of the found monument. If existing survey monuments are not found, temporary staking delineating the property line may be placed **prior to construction** and new monuments shall be set **prior to final acceptance of the improvements**. The permanent survey monuments shall be set pursuant to the State Land Surveyor's Act. The Land Surveyor / Engineer in charge of the boundary survey shall file appropriate records pursuant to Business and Professions Code Section 8762 or 8771 of the Land Surveyors Act with the County Surveyor.

45. The improvement plans shall include an Erosion and Sediment Control Plan that outlines seasonally appropriate erosion and sediment controls during the construction period). Include the County's Standard Best Management Practice Plan Sheets BMP-1 and BMP-2 with the Plan Set.

46. All applicable easements affecting the parcel(s) with benefactors and recording information shall be shown on the improvement plans.

Floodplain

47. A portion of the project is in a Special Flood Hazard Area (Zone A). All project improvements shall be in accordance with the County's Floodplain Management Ordinance (SCC Code C12-800 to C12-826).

48. Submit a No Adverse Impact Certificate and corresponding documentation and calculations demonstrating no impact to the floodplain prepared by a licensed civil engineer. This is for the portion of bridge construction and any other work within the SFHA area only.

Drainage

49. Provide a drainage analysis prepared by a licensed civil engineer in accordance with criteria as designated in the 2007 County Drainage Manual (see Section 6.3.3 and Appendix L for design requirements). The on-site drainage will be controlled in such a manner as to not increase the downstream peak flow for the 10-year and 100-year storm event or cause a hazard or public nuisance. The mean annual precipitation is available on the on-line property profile.

50. All new on-site utilities, mains and services shall be placed underground and extended to serve the proposed development. All extensions shall be included in the improvement plans. Off-site work should be coordinated with any other undergrounding to serve other properties in the immediate area.

Stormwater Treatment – SF Bay

51. Include one of the following site design measures in the project design: (a) direct hardscape and/or roof runoff onto vegetated areas, (b) collect roof runoff in cisterns or rain barrels for reuse, or (c) construct hardscape (driveway, walkways, patios, etc.) with permeable surfaces. Though only one site design measure is required, it is encouraged to include multiple site design measures in the project design. For additional information, please refer to the C.3 Stormwater Handbook (June 2016) available at the following website: www.scvurppp.org > Resources > reports and work products > New Development and Redevelopment >C.3 Stormwater Handbook (June 2016)

Soils and Geology

52. Submit one copy of the signed and stamped of the geotechnical report for the project.

53. Submit a plan review letter by the Project Geotechnical Engineer certifying that the geotechnical recommendation in the above geotechnical report have been incorporated into the improvement plan.

Notice of Intent

54. Indicate on the improvement plans the land area that will be disturbed. If one acre or more of land area will be disturbed, file a Notice of Intent (NOI) with the State Water Resources Control Board (SWRCB) for coverage under the State General Construction Permit. The SWRCB will issue a Waste Discharge Identification number (WDID). The

WDID number shall be shown on the on the final improvement plans. The SWRCB web site is at: www.waterboards.ca.gov > Water Issues > Programs > Stormwater

55. Submit evidence of legal access to the site from the nearest publicly maintained road compiled and/or verified by a Licensed Land Surveyor or Registered Civil Engineer who is authorized to practice land surveying. Should access not exist, submit a signed, notarized, and recorded agreements to grant rights-of-ingress and egress. Applicant shall ensure that if other owners utilize the bridge to access Alpine Road, then the applicant shall provide necessary easements on their property to allow these access rights within their property. **This condition will need to be verified during the plan check review prior to grading permit issuance.** There is no exclusivity of designated legal access for each of the property owners along the private access road so it is assumed that the owners can also utilize the bridge as their legal access.

Agreements

56. Enter into a land development improvement agreement with the County. Submit an Engineer's Estimate of Probable Construction Cost prepared by a registered civil engineer with the all stages of work clearly identified for all improvements and grading as proposed in this application. Post financial assurances based upon the estimate, sign the development agreement and pay necessary inspection and plan check fees, and provide County with a Certificate of Worker's Compensation Insurance. (C12-206).

Fire Marshal

57. Fire protection water system shall be installed, functioning and inspected **prior to approval of the foundation**. System shall be maintained in good working order and accessible throughout construction. A stop work order may be placed on the project if the required hydrant systems are not installed, accessible, and/or functioning.

58. The minimum fire-flow shall be 500 gpm at 20 psi., a reduced gpm has been applied due to the installation of fire sprinklers. Fire flow to be taken from a standard fire hydrant located between 40-600 ft. of sprinkled structure measured by path of travel. NOTE: The fire-flow may be adjusted depending upon the final size of the structure shown on the building permit set of drawings.

    A. At the time of plan submittal for building permit, provide written verification from the water company that this condition can be satisfied.

    B. If an existing approved water system is within 300 ft. of the property line, extension to site is required, provided it is feasible to do so (contact the local water purveyor as soon as possible). If the water company will not grant a water connection, submit official documentation from the water company to that effect.

    C. If fire protection water cannot be supplied from a recognized water purveyor, fire protection water supply shall be provided by on-site aboveground storage tank(s) and wharf hydrant.

59. Construction of access roads and driveways shall use good engineering practice.

60. All required access roads, driveways, turnarounds, and turnouts shall be installed, and serviceable prior to approval of the foundation, and shall be maintained throughout construction. A stop work order may be placed on the project if required driving surfaces are not installed, accessible, and/or always maintained.

61. Access Roads (roads serving two lots or more) shall comply with the following:

    A. Width: Clear drivable width of 18 ft. plus a 3 ft. shoulder on each side.

    B. Vertical Clearance: Minimum vertical clearance of 15 ft. shall be maintained to building site (trim or remove tree limbs, electrical wires, structures, and similar improvements).

    C. Curve Radius: Inside turn radius for curves shall be a minimum of 42 feet.

    D. Grade: Maximum grade shall not exceed 15%. The Fire Marshal may permit grades up to a maximum of 20% if no other method is practicable and if consistent with good engineering practices, provided an approved automatic fire sprinkler system is installed throughout the all structures. In no case shall the portion exceeding 15% gradient be longer than 300 feet in length, unless there is at least 100 feet at 15% or less gradient between each 300-foot section. Grades exceeding 15% shall be paved in compliance with County Standards.

    E. Surface: All driving surfaces shall be all-weather and capable of sustaining 75,000-pound gross vehicle weight.

    F. Bridges (off-site): All bridges shall be capable of sustaining 75,000-pound gross vehicle weight and meet the latest edition of the CalTrans Standard Bridge Design Specifications. Appropriate signage, including but not limited to weight or vertical clearance limitations, or any special conditions shall be provided.

    G. Gates and/or Traffic-Calming Devices: Any obstruction to emergency access such as gates, speed bumps/humps, traffic circles, etc. shall require prior approval from the County.

62. Driveways (roads serving only one lot) shall comply with the following when the distance between the centerline of the access road and any portion of the structure exceeds 150 ft. (measured along the path of travel).

    A. Width: (Los Altos Hills) Clear width of drivable surface of 14 ft. drivable surface.

B. Vertical Clearance: Minimum vertical clearance of 13 ft. 6 in. shall be maintained between the access road and the building site (trim or remove tree limbs, electrical wires, structures, and similar improvements).

C. Curve Radius: Inside turn radius for curves shall be a minimum of 42 feet.

D. Grade: Maximum grade shall not exceed 15%. The Fire Marshal may permit grades up to a maximum of 20% if no other method is practicable and if consistent with good engineering practices, provided an approved automatic fire sprinkler system is installed throughout all structures. In no case shall the portion exceeding 15% gradient be longer than 300 feet in length, unless there is at least 100 feet at 15% or less gradient between each 300-foot section. Grades exceeding 15% shall be paved in compliance with County Standard SD5.

E. Surface: All driving surfaces shall be all-weather and capable of sustaining 75,000-pound gross vehicle weight.

F. Turnout: Passing turnouts in compliance with SD-16 shall be provided at every 400 ft. and wherever hydrants are placed adjacent to a driveway.

G. Turnaround: Turnaround shall be provided for driveways in excess of 150 ft. as measured along the path of travel from the centerline of the access road to the structure. Acceptable turnarounds shall be 40 ft. by 48 ft. pad, hammerhead, or bulb of 40 ft. radius complying with County Standard SD-16. All turnarounds shall have a slope of not more than 5% in any direction.

H. Gates: Gates shall not obstruct the required width or vertical clearance of the driveway and may require a Fire Department Lock Box/Gate Switch to allow for fire department access. Installation shall comply with CFMO-A3.

CONDITIONS OF APPROVAL TO BE COMPLETED PRIOR TO OCCUPANCY OR ONE YEAR FROM THE DATE OF THE LAND DEVELOPMENT AGREEMENT, WHICHEVER COMES FIRST

Planning

63. Contact Lara Tran at least one (1) week prior to verify all the landscaping and trees replacement as proposed within the final landscaping plan are installed.

Land Development Engineering

64. Existing and set permanent survey monuments shall be verified by inspectors prior to final acceptance of the improvements by the County. Any permanent survey monuments damaged or missing shall be reset by a licensed land surveyor or registered civil engineer authorized to practice land surveying and they shall file appropriate records pursuant to Business and Professions Code Section 8762 or 8771 of the Land Surveyors Act with the County Surveyor.

65. Construct the improvements. Construction staking is required and shall be the responsibility of the developer.

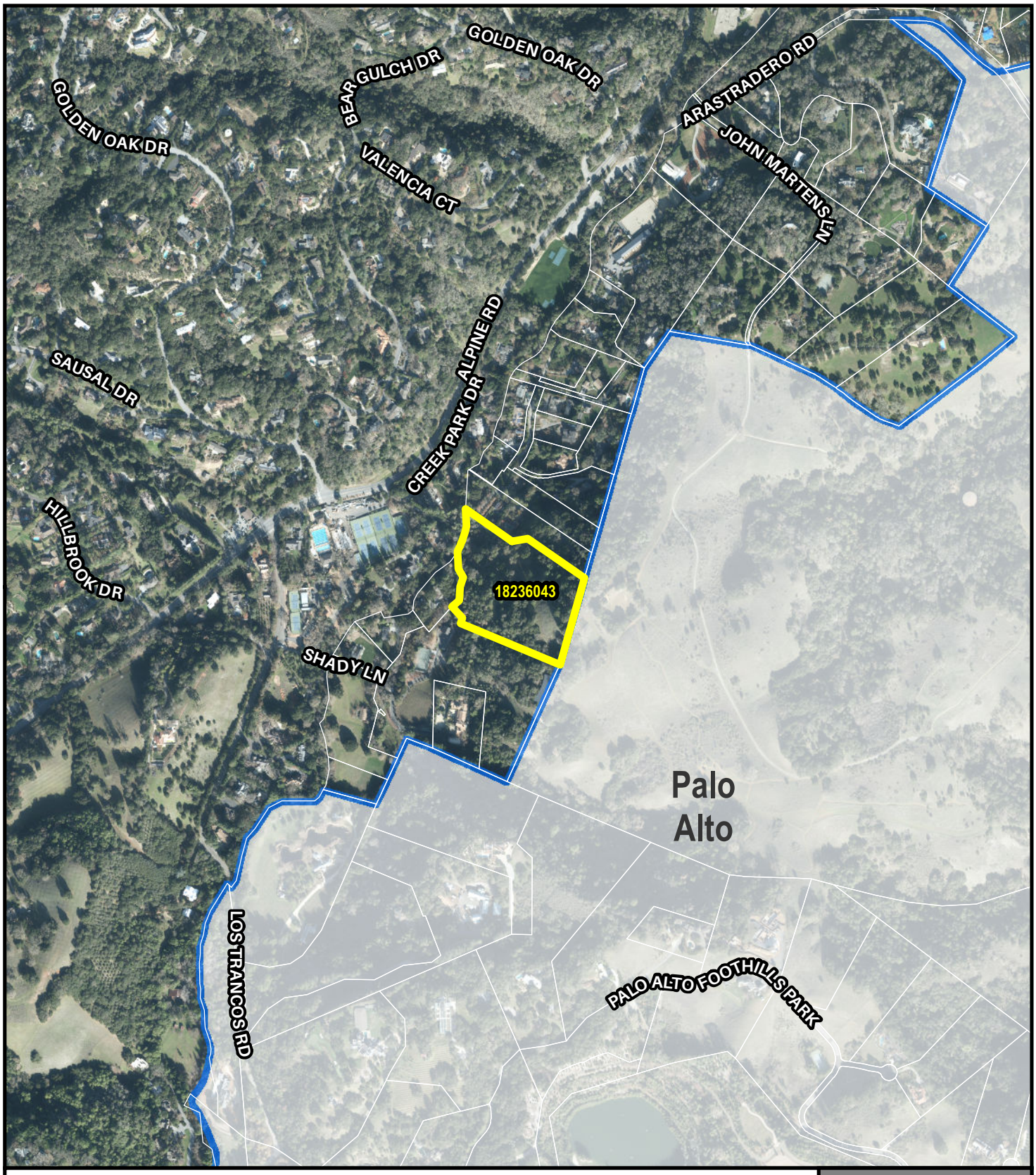
66. Applicant shall provide written approval from the Town of Portola Valley and/or San Mateo County approving the bridge construction prior to the County of Santa Clara acceptance of the entire project.

Environmental Health

67. Provide proof of garbage service at the time of final occupancy sign-off. Garbage service in the unincorporated areas of Santa Clara County is mandatory.

Geology

68. Submit a **Construction Observations Letter** that verifies the work was completed in accordance with the approved plans.



Project Location Map

File No. PLN19-079

APN 182-36-043
Alpine Rd., Portola Valley

0 125 250 500
Feet

This map created by the Santa Clara County Planning Office. The GIS data was compiled from various sources. While deemed reliable, the Planning Office assumes no liability.
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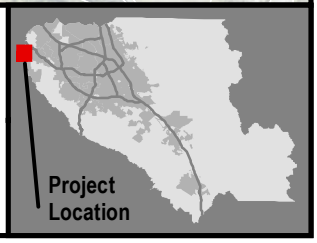

Zaffaroni Residence

Attachment D

ABBREVIATIONS

ACCESS DOOR	AD.	EXPANSION	EXP.	PAINTED	PTD.
ACCESS PANEL	AP.	EXPANSION JOINT	EXP JT.	PANIC BAR	PB.
ACOUSTICAL	ACOUST.	EXTENSION	EX.	PARTITION	PTN.
ADHESIVE	ADH.	EXTERIOR	EXT.	PERFORATED	PERF.
ADJUSTABLE	ADJ.			PLASTER	PLAS.
AGGREGATE	AGGR.	FACE OF	FO.	PLASTIC	PLSTC.
AIR CONDITIONER	A/C	FIBER BOARD	FB.	PLYWOOD	PLY. WD.
ALUMINUM	AL.	FINISH	FIN.	POINT	PT.
ANCHOR BOLT	AB.	FIRE ALARM	FA.	POLISHED PLATE GLASS	PPGL.
AREA DRAIN	AD.	FIRE EXTINGUISHER	F.E.	POLYVINYL CHLORIDE	PVC.
ASBESTOS	ASB.	FIRE EXTINGUISHER CABINET	F.E.C.	POUNDS PER SQUARE FOOT	PSF.
ASBESTOS CEMENT PIPE	ACP.	FIRE TREATED	F.T.	POUNDS PER SQUARE INCH	PSI.
ASPHALT	ASPH.	FLASHING	FL.	PRE CAST CONCRETE	PC.
ASPHALTIC CONCRETE	AC.	FLAT BAR	FB.	PROPERTY	PROP.
		FLAT HEADED WOOD SCREW	FHWS.	PROPERTY LINE	PL.
BEGINNING OF VERTICAL CURVE	BVC.	FLOOR	FLR.		
BENCH MARK	BM.	FLOOR DRAIN	FD.	RADIUS	R.
BLOCKING	BLKG.	FLOORING	FLG.	REDWOOD	RWD.
BOARD	BD.	FLOW LINE	FL.	REFRIGERATOR	REF.
BOTTOM	BTM.	FLUORESCENT	FLUOR.	REINFORCED CONCRETE PIPE	RCP.
BUILDING	BLDG.	FOOTING	FTG.	REINFORCING	REINF.
		FOUNDATION	FDN.	REQUIRED	REQD.
CABINET	CAB.			RESILIENT	RESIL.
CARRIAGE BOLT	CB.	GAGE OR GAUGE	GA.	RESISTANT	RES.
CAST-IN-PLACE	CIP.	GALVANIZED	GALV.	ROOF DRAIN	RD.
CAST-IRON	CI.	GALVANIZED IRON	GI.	ROOM	RM.
CAST IRON PIPE	CIP.	GLASS	GL.	ROUND HEADED WOOD SCREW	RHWS.
CATCH BASIN	CB.	GLUE-LAM BEAM	GLB.	RIGHT OF WAY	R.O.W.
CEILING	CLG.	GRADE	GR.		
CEMENT	CEM.	GROUND	GRND.	SCHEDULE	SCHED.
CENTER	CTR.	GYPSUM	GYP.	SECTION	SECT.
CENTER TO CENTER	C TO C.			SELECT	SEL.
CERAMIC	CER.	HANGER	HGR.	SHEATHING	SHTHG.
CLEAN OUT TO FLOOR	CTF.	HARDBOARD	HDBD.	SIDING	SDG.
CLEAN OUT TO GRADE	CTG.	HARDWARE	HDW.	SIMILAR	SIM.
CLEAR	CLR.	HARDWOOD	HDWD.	SINGLE ACTING	SA.
CLOSET	CLO.	HEADER	HDR.	SLOPE	S.
COLUMN	COL.	HEATER	HTR.	SOLID CORE	SC.
CONCRETE	CONC.	HEIGHT	HT.	SPACE	SP.
CONCRETE PIPE, UN-REINFORCED	CP.	HIGH STRENGTH BOLT	HSB.	SQUARE	SQ.
CONSTRUCTION	CONST.	HOLLOW CORE	HC.	STAINLESS STEEL	S.S.
CONSTRUCTION JOINT	CJ.	HORIZONTAL	HOR.	STANDARD	STD.
CONTINUOUS	CONT.	HOSE BIB	HB.	STEEL	STL.
CORRUGATED METAL PIPE	CMP.	HOUR	HR.	STORAGE	STG.
COUNTER	CTR.			STRUCTURAL	STR.
COUNTERSINK	CSK.	INSIDE DIAMETER	ID.	SUSPENDED	SUSP.
CUBIC YARD	CY.	INSULATION	INS.	SYMBOL	SYMB.
CURB INLET	CI.	INTERIOR	INT.	SYMMETRICAL	SYMM.
		INVERT	INV.		
DETAIL	DET.	INVERT ELEVATION	IE.	TELEPHONE	TEL.
DIAMETER	DIA.			TEMPERED	TEMP'D.
DIMENSION	DIM.	JOINT	JT.	TERRAZZO	TER.
DISPENSER	DISP.			TIE DOWN	TD.
DOOR	DR.	LAMINATE(D)	LAM.	TONGUE AND GROOVE	T&G.
DOUBLE	DBL.	LAVATORY	LAV.	TOP OF CURB	TC.
DOUBLE-ACTING	DA.			TOP OF RAIL	TR.
DOUGLAS FIR	DF.	MACHINE	MACH.	TYPICAL	TYP.
DOWN	DN.	MACHINE BOLT	MB.		
DOWN SPOUT	DS.	MAN HOLE	MH.	UNDERGROUND	UG.
DRAIN	DR.	MANUFACTURER(R)	MFR.	UNLESS OTHERWISE NOTED	U.O.N.
DRINKING FOUNTAIN	DF.	MANUFACTURING	MFG.	URINAL	UR.
DRAWING	DWG.	MAXIMUM	MAX.		
DUCTILE IRON PIPE	DIP.	MECHANICAL	MECH.	VENT THROUGH ROOF	VTR.
		METAL	MTL.	VERTICAL	VERT.
EACH	EA.	MINIMUM	MIN.	VERTICAL CURVE	VC.
EACH FACE	EF.	MOUNTING	MTG.	VERTICAL GRAIN	VG.
EACH WAY	EW.			VINYL ASBESTOS TILE	VAT.
EDGE OF PAVEMENT	EP.	NEW	(N)	VITREOUS CLAY PIPE	VCP.
ELECTRIC	ELEC.	NOMINAL	NOM.		
ELECTRIC WATER COOLER	EWC.	NOT IN CONTRACT	N.I.C.	WAREHOUSE	WHSE.
ELEVATION	EL			WATER CLOSET	WC.
ELEVATOR	ELEV.	OBSCURE	OB.	WATER HEATER	WH.
EQUAL	EQ.	ON CENTER	OC.	WATERPROOF	W.P.
EQUIPMENT	EQUIP.	OPENING	OPNG.	WEAKENED PLANE JOINT	WPJ.
EXISTING	(E)	OPPOSITE	OPP.	WINDOW	WDW.
		OUTSIDE DIAMETER	OD.	WITH	W/
		OUTSIDE FACE OF STUD	OFS.	WITHOUT	W/O.
		OVAL HEADED WOOD SCREW	OHWS.	WOOD	WD.

SYMBOLS LEGEND

- SECTION NO. / DWG. NO. (1 / A5.0)
- ELEVATION NO. / DWG. NO. (1 / A4.0)
- DETAIL NO. / DWG. NO. (1 / A5.0)
- DOOR TYPE / HARDWARE GROUP (D1 / 2)
- WINDOW TYPE (W)
- DIMENSIONS TO FACE OF STUD OR WALL (3'-2 1/8")
- DIMENSION TO CENTERLINE (3'-2 1/8" ℄)
- REVISION (R)
- ELEVATION
- LEVEL LINE CONTROL POINT ON DATUM
- MATCH LINE
- KEYNOTES

MATERIALS LEGEND

- EARTH/ COMPACTED FILL
- ROCK FILL
- CONCRETE
- MASONRY
- STONE
- METAL
- ROUGH STRUCTURAL WOOD
- BLOCKING
- FINISH WOOD
- PLYWOOD
- GYPSUM WALL BOARD
- CERAMIC TILE

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Phone: (650) 542-8733
Email: matthew@heartwoodarborists.com

LANDSCAPE ARCHITECT:
Cleaver Design Associates
Lafayette, CA 94549
ATT.: BOB CLEAVER
Phone: (925) 934-8044
Fax: (925) 934-6055
Email: bob@cleaverdesign.com

LAND USE CONSULTANT:
Wise Consultant Group
5655 Silver Creek Valley Road
San Jose, CA 95138
ATT.: SYLVIA ORNELAS-WISE
Phone: (408) 425-2076
Email: sylviaornelaswise@wiseconsultantgroup.com

DRAWING INDEX

ARCHITECTURAL

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LANDSCAPE

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CIVIL

County Construction Specs

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C-2.0	Driveway Plan & Profile	SU2	Topographic Survey
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ER-1	Erosion Control Plan	SU9	Topographic Survey
BMP-1	Erosion Control Details	SU10	Topographic Survey
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EXH-1.0	Average Slope Area	SU12	Topographic Survey

GENERAL NOTES

1. CODE COMPLIANCE:
1a. Contract and Construction Documents include: AIA Document A201 (2007), the General Conditions of the contract for Construction.

1b. All work is to be performed in accordance with all governing codes, ordinances, and regulations.

2. UTILITIES AND SITE WORK:
2a. General Contractor shall verify all underground utility locations prior to excavation, trenching, or grading of any kind. General Contractor shall coordinate with applicable utility companies when routing electrical, telephone, cable TV, gas, water, sanitary sewer services, or any other utility.

2b. Construction Documents include the Geotechnical Investigation Report By:

2c. Geotechnical Engineer and Civil Engineer shall coordinate drainage system and approved before backfilling. Drainage and positive flow of entire system shall be tested prior to backfill.

2d. General Contractor shall include Soils Engineer in the inspection of foundations, foundation waterproofing and drainage systems, and all related facets of the job. The Architect requires a signed letter stating that the work is in compliance with the Soils Engineer's recommendations.

3. DIMENSIONS:
3a. No dimensions shall be taken by scaling from the drawings. Contact architect for dimension clarifications or additional dimensions as required. Refer to this Cover Sheet for dimensioning standards. Details and the dimensions provided therein take precedence over general floor plans, elevations, and sections.

3b. Verify all dimensions on the job site prior to ordering or manufacturing.

3c. Dimensions noted "clear" must be accurately maintained, and shall not vary more than +- 1/8" without written instruction from the Architect. Dimension marked +- mean a tolerance not greater nor smaller than 2" from indicated dimension, u.o.n. verify field dimensions exceeding tolerance with the Architect, and secure Architect's approval.

4. DISCREPANCIES:
4a. In case of any descrepancy in the contract documents, consult the Architect before proceeding.

5. GENERAL CONTRACTOR RESPONSIBILITIES:
5a. General Contractor shall be responsible for coordination and execution of the work shown or implied in the construction documents. General Contractor is responsible for all construction means, methods, and procedures.

5b. General Contractor shall coordinate all facets of work and all trades involved to avoid conflict in the location, installation, and construction of all items of work as indicated on the construction documents. If any work is to be installed by the Owner directly, allowances for such work must be made. Coordinate with Architect.

5c. General Contractor shall review all Contract and Construction Documents; Architectural Drawings include reflected ceiling, finish, electrical, lighting, and mechanical plans; and all schedules prior to pouring concrete and prior to framing. Coordinate locations of shafts, electrical wiring/conduit, HVAC ductwork, and light fixtures with locations of foundations and framing. It is imperative that locations of framing members do not conflict with locations of recessed light fixtures.

5d. General Contractor shall install all appliances specified and all equipment specified according to the respective manufacturer's instructions. All instruction booklets, warrantees, and other information regarding appliances and equipment shall be handed directly to the Owner in a manila envelope at the time of substantial completion. Contractor shall verify that every appliance and every piece of equipment is in perfect working order and that information about all warranties and guarantees is made known to the Owner.

5e. The installer of each major unit of work is required to inspect the substrate and conditions to receive work and shall report all unsatisfactory conditions to the General Contractor and shall not proceed until satisfactory conditions are attained.

5f. No work shall commence with unapproved materials. Any work done with un-approved materials and equipment is at the contractor's risk. See specifications for submittal and substitution requirements.

5g. Construction materials stored on the site shall be properly stacked and protected so as to prevent damage or deterioration until used. Failure in this regard may be cause for rejection of material and/or work.

5h. New/existing finishes and construction shall be protected by the contractor from potential damage caused by construction activity. Damage to finishes or construction caused in this manner shall be repaired or replaced (owner's decision) by the contractor with identical material and/or finishes. Contractor shall make and maintain a photographic record notebook with dated/indexed photographs.

5i. In addition to those shown on drawings, provide and locate access doors or panels in ceiling and wall construction as required by mechanical, plumbing, and electrical work.

5j. General Contractor shall leave the job site "broom clean" at the end of each working day. All materials shall be stored in a neat and safe place to avoid accidents.

6. EQUIPMENT BACKING:
6a. For mounting heights not clearly outlined in the plans or schedules, coordinate with the Architect. Architect shall confirm all electrical device and light fixture locations before contractor pulls wire.

6b. Provide solid backing as necessary for wall mounted shelves, fixtures, and fittings, even when work is to be done by Owner directly. Coordinate work and locations with Owner and Architect.

6c. All fastening devices to be concealed, unless otherwise shown.

7. WEATHER PROOFING:
7a. Weather-strip all exterior doors and windows.

7b. Caulk or otherwise seal around all openings to limit infiltration, including but not limited to: Exterior joints around windows and door frames, between sole plates and floors, at exterior wall intersections and corners, and between exterior wall panels.

7c. General Contractor shall verify that all work on the exterior of the project is watertight. All joints exposed to the elements shall be tested for water tightness prior to substantial completion.

PROJECT DATA

CJW Job No. 2018 - 2500
PROJECT ADDRESS: 0 Alpine Road, Portola Valley, CA 94028
ASSESSOR'S PARCEL No. 182-36-043

PROJECT SCOPE:
NEW RESIDENCE AND GARAGE

PROPOSED FLOOR AREA
SEE SHEET A-2.1

BUILDING OCCUPANCY GROUPS

TYPE OF CONSTRUCTION:	V-B
NUMBER OF STORIES:	3 + BASEMENT
OCCUPANCY GROUP:	R-3/U

PROJECT DATA

ZONING:	H5
LOT SIZE:	9.11 ACRES

ALL STRUCTURES ARE TO HAVE RESIDENTIAL FIRE SPRINKLERS (RESIDENCE & GARAGE)

RESIDENTIAL FIRE SPRNKLERS WILL BE A DEFERRED SUBMITTAL

APPLICABLE CODES

ALL CONSTRUCTION SHALL CONFORM TO THE:

2016 CALIFORNIA BUILDING CODE (2012 IBC)
2016 CALIFORNIA RESIDENTIAL CODE
2016 CALIFORNIA PLUMBING CODE (2012 UPC)
2016 CALIFORNIA MECHANICAL CODE (2012 UMC)
2016 CALIFORNIA FIRE CODE (2012 IFC)
2016 CALIFORNIA ELECTRICAL CODE (2011 NEC)
2016 CALIFORNIA ENERGY CODE
2016 CALIFORNIA GREEN BUILDING STANDARDS

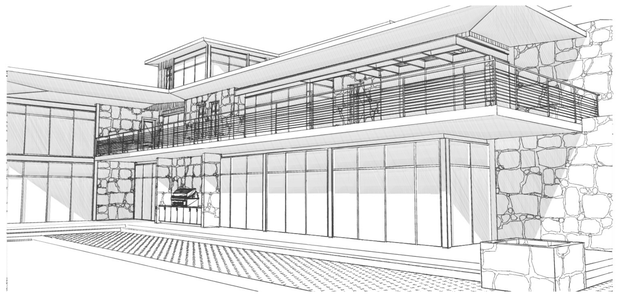
SITE LOCATION MAP



PROJECT SITE

VICINITY MAP

N.T.S.



CJ W ARCHITECTURE
130 Portola Road, suite A
Portola Valley, CA 94028
(650) 851-9335 / (Fax) 851-9337

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LICENSED ARCHITECT
CARTER JENSEN WARE
No. C-19397
REN. 6-30-21
STATE OF CALIFORNIA

• PROJECT •

Zaffaroni Residence
0 Alpine Road
APN 182-36-043
Portola Valley, CA 94028

PLN19-0079

• SHEET TITLE •

Cover Sheet

• REVISIONS •

No.	Date	Notes

• JOB: 2018-2500

• DATE: 11/7/2019

• SHEET: T-0.1

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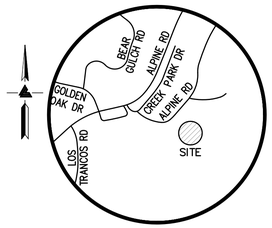


VICINITY MAP
NO SCALE

NOTES
ALL DISTANCES AND DIMENSIONS ARE IN FEET AND DECIMALS.

UNDERGROUND UTILITY LOCATION IS BASED ON SURFACE EVIDENCE.

ALL RETAINING WALLS ARE ROCK EXCEPT WHERE NOTED.

EASEMENT NOTE
APN 182-36-043
EASEMENTS ARE SHOWN PER TITLE REPORT PREPARED BY CHICAGO TITLE COMPANY, TITLE NO. FWPS-2999181327, DATED AUGUST 9, 2018.
EXCEPTION # 8 – RIGHTS AND EASEMENTS FOR NAVIGATION AND FISHERY WHICH MAY EXIST OVER THAT PORTION OF SAID LAND LYING BENEATH THE WATERS OF LOS TRANCOS CREEK. (NOT PLOTABLE)

APN 182-36-044
A CURRENT TITLE REPORT FOR THE SUBJECT PROPERTY HAS NOT BEEN EXAMINED BY LEA & BRAZE ENGINEERING, INC. EASEMENTS OF RECORD MAY EXIST THAT ARE NOT SHOWN ON THIS MAP.



0 20 40 80
SCALE: 1" = 40'

LEGEND AND NOTES
- BOUNDARY LINE
- EASEMENT
- FENCE LINE
- FLOW LINE
- SD — STORM DRAIN LINE
- AD — AREA DRAIN
- BENCHMARK
- BW — BOTTOM RETAINING WALL
- CB — CATCH BASIN
- CMP — CORRUGATED METAL PIPE
- CPP — CORRUGATED PLASTIC PIPE
- FIRE HYDRANT
- FL — FLOW LINE
- GUY ANCHOR
- INV — INVERT
- ICV — IRRIGATION CONTROL VALVE
- JMAP — JAPANESE MAPLE
- JOINT POLE
- M— — MULTI-TRUNK TREE
- PVC — POLYVINYL CHLORIDE PIPE
- RWD — REDWOOD
- RCP — REINFORCED CONCRETE PIPE
- SS — SANITARY SEWER BOX
- B# — SOIL BORE LOCATION
- SYC — SYCAMORE
- TW — TOP OF RETAINING WALL
- XXX.XX — SPOTGRADE
- ASPHALT
- CONCRETE
- GRAVEL
- RIVER ROCK
- STONE
- WOOD

BENCHMARK
TOWN OF PORTOLA VALLEY BENCHMARK PV-15
33'± SE OF STREET MON, 33'± SW OF STOP SIGN POLE, 39'± NE OF POWER POLE, AT THE INTERSECTION OF ALPINE RD AND LOS TRANCOS RD.
ELEVATION = 476.30'
(ADJUSTED TO NAVD 88 DATUM)

SITE BENCHMARK
SURVEY CONTROL POINT
CUT CROSS IN CONCRETE
ELEVATION = 418.91'
(ADJUSTED TO NAVD 88 DATUM)

LICENSED LAND SURVEYOR
GREGORY F. BRAZE
No. 7823
Exp. 12-31-18
STATE OF CALIFORNIA

LEA & BRAZE ENGINEERING, INC.
CIVIL ENGINEERS · LAND SURVEYORS
BAY AREA REGION
2495 INDUSTRIAL PKWY WEST
HAYWARD, CALIFORNIA 94545
(P) (510) 887-4086
(F) (510) 887-3019

SACRAMENTO REGION
3017 DOUGLAS BLVD, # 300
ROSEVILLE, CA 95661
(P) (916)966-1338
(F) (916)797-7363
WWW.LEABRAZE.COM

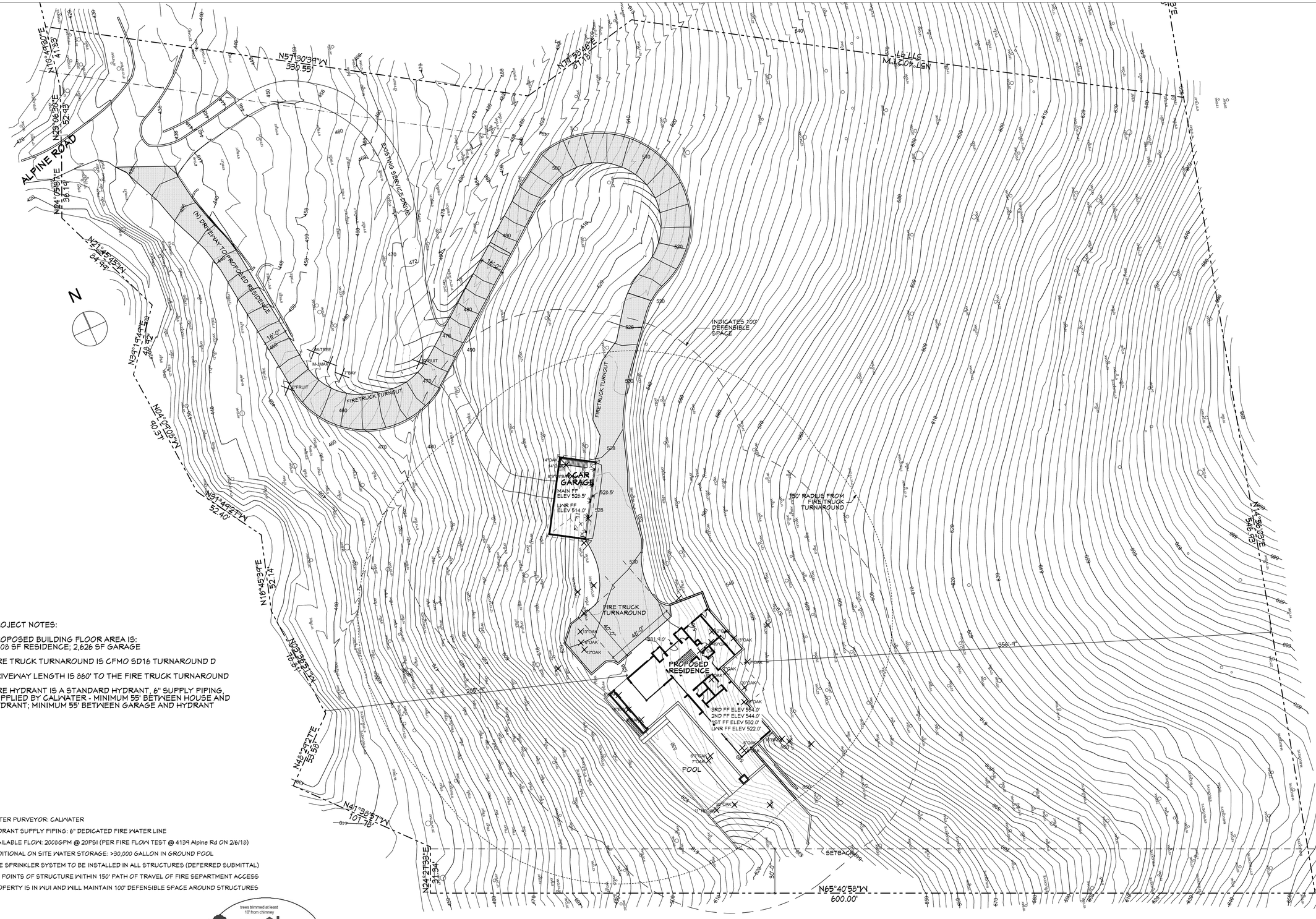
ALPINE ROAD
PORTOLA VALLEY
CALIFORNIA

UNINCORPORATED SANTA CLARA COUNTY APN: 182-36-043 & 044

TOPOGRAPHIC SURVEY

–	–
–	–
–	–
–	–
REVISIONS	BY
JOB NO:	2180884
DATE:	9-14-18
SCALE:	
FIELD BY:	ES
DRAWN BY:	DB
SHEET NO:	EX

1 OF 1 SHEETS



PROJECT NOTES:

PROPOSED BUILDING FLOOR AREA IS:
9,608 SF RESIDENCE; 2,626 SF GARAGE

FIRE TRUCK TURNAROUND IS CFMO SD16 TURNAROUND D

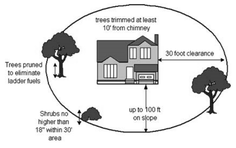
DRIVEWAY LENGTH IS 860' TO THE FIRE TRUCK TURNAROUND

FIRE HYDRANT IS A STANDARD HYDRANT, 6" SUPPLY PIPING, SUPPLIED BY CALWATER - MINIMUM 55' BETWEEN HOUSE AND HYDRANT; MINIMUM 55' BETWEEN GARAGE AND HYDRANT

WATER PURVEYOR: CALWATER
HYDRANT SUPPLY PIPING: 6" DEDICATED FIRE WATER LINE
AVAILABLE FLOW: 2008GPM @ 20PSI (PER FIRE FLOW TEST @ 4139 Alpine Rd ON 2/6/18)
ADDITIONAL ON SITE WATER STORAGE: >30,000 GALLON IN GROUND POOL
FIRE SPRINKLER SYSTEM TO BE INSTALLED IN ALL STRUCTURES (DEFERRED SUBMITTAL)
ALL POINTS OF STRUCTURE WITHIN 150' PATH OF TRAVEL OF FIRE SEPARTMENT ACCESS
PROPERTY IS IN WUI AND WILL MAINTAIN 100' DEFENSIBLE SPACE AROUND STRUCTURES

FIRE PROTECTION MAINTENANCE PLAN

LANDSCAPE CONTRACTOR SHALL COMPLETE ALL WORK TO EFFECT THE PLAN SHOWN BELOW PRIOR TO FINAL INSPECTION.OWNER TO MAINTAIN FIRE PROTECTION PLAN EACH SUMMER.



1 Property Site Plan 1" = 30'

CJ W ARCHITECTURE
130 Portola Road, suite A
Portola Valley, CA 94028
(650) 851-9335 / (Fax) 851-9337

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LICENSED ARCHITECT
CARTER JENSEN WARE
No. C-19397
REN. 6-30-21
STATE OF CALIFORNIA

• PROJECT •

Zaffaroni Residence
0 Alpine Road
APN 182-36-043
Portola Valley, CA 94028

PLN19-0079

• SHEET TITLE •

Property Site Plan

• REVISIONS •

No.	Date	Notes

• JOB: 2018-2500

• DATE: 11/7/2019

• SHEET: A-1.1

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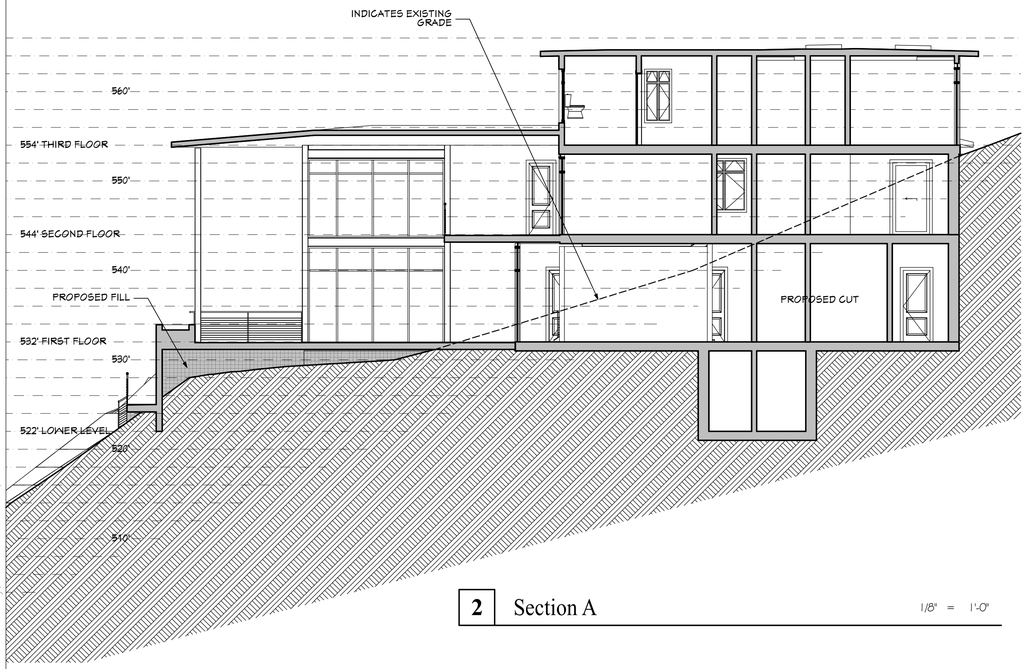
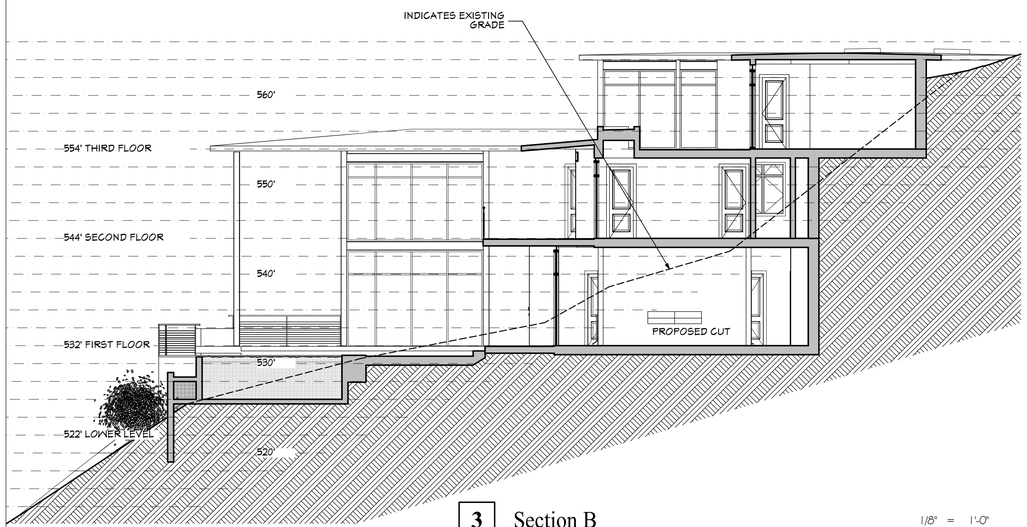


2 Section A — 1/8" = 1'-0"



3 Section B — 1/8" = 1'-0"



1 Bench Site Plan — 1" = 20'

NOTE: SEE 3/A-3.1, BUILDING HEIGHT DIAGRAM, WHICH CALCULATES MAXIMUM HOUSE HEIGHT TO BE 25.54' WHICH IS LESS THAN 35' MAXIMUM

PROJECT NOTES:

PROPOSED BUILDING FLOOR AREA IS:
9,608 SF RESIDENCE; 2,626 SF GARAGE

FIRE TRUCK TURNAROUND IS CFMO SD16 TURNAROUND D

DRIVEWAY LENGTH IS 860' TO THE FIRE TRUCK TURNAROUND

FIRE HYDRANT IS A STANDARD HYDRANT, 6" SUPPLY PIPING, SUPPLIED BY CALWATER - MINIMUM 55' BETWEEN HOUSE AND HYDRANT; MINIMUM 55' BETWEEN GARAGE AND HYDRANT

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Zaffaroni Residence
0 Alpine Road
APN 182-36-043
Portola Valley, CA 94028

PLN19-0079

• SHEET TITLE •

Site Plan - Bench Location

• REVISIONS •

No.	Date	Notes

• JOB: 2018-2500

• DATE: 11/7/2019

• SHEET: A-1.2

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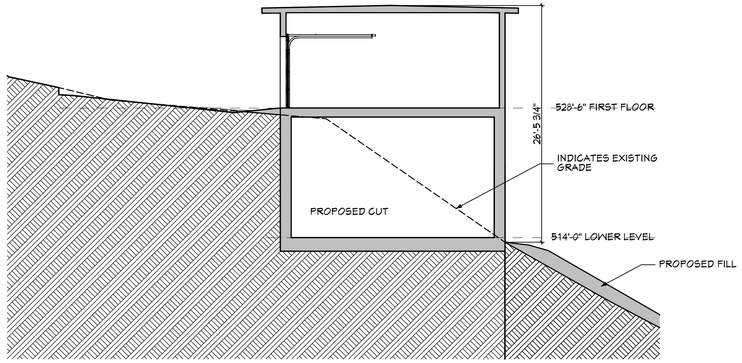
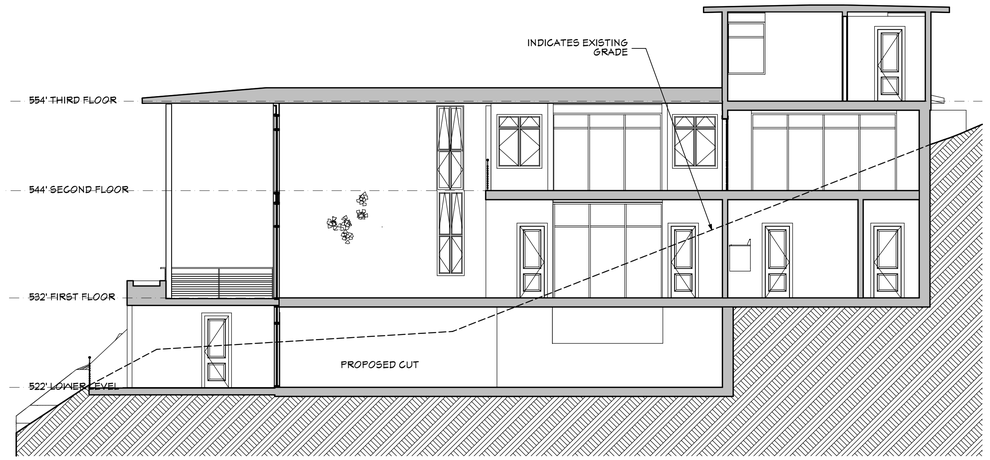


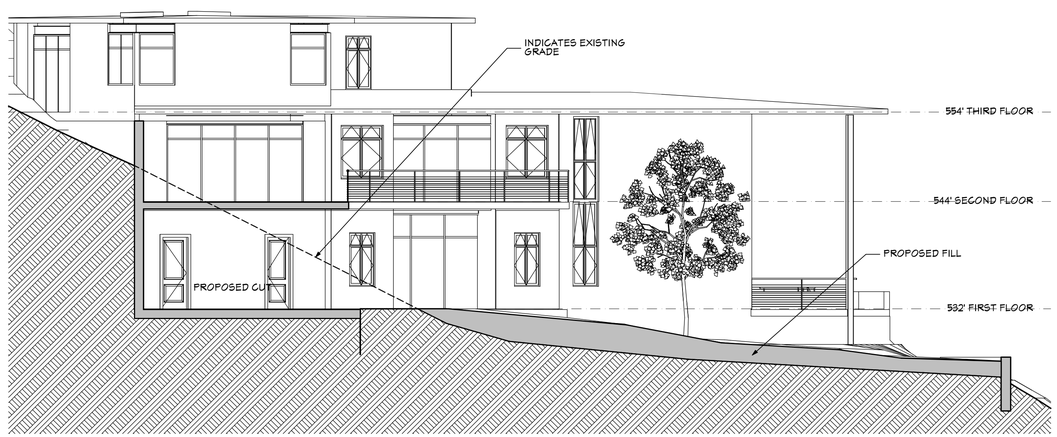
3 Section E 1/8" = 1'-0"

DETACHED GARAGE W/ BASEMENT



1 Section C 1/8" = 1'-0"

NOTE: SEE 3/A-3.1, BUILDING HEIGHT DIAGRAM, WHICH CALCULATES MAXIMUM HOUSE HEIGHT TO BE 25.54' WHICH IS LESS THAN 35' MAXIMUM.



2 Section D 1/8" = 1'-0"

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No. C-19397
REN. 6-30-21
STATE OF CALIFORNIA

◦ PROJECT ◦

Zaffaroni Residence
0 Alpine Road
APN 182-36-043
Portola Valley, CA 94028

PLN19-0079

◦ SHEET TITLE ◦

Site Sections

· REVISIONS ·

No.	Date	Notes

◦ JOB: 2018-2500

◦ DATE: 11/7/2019

◦ SHEET: A-1.2A

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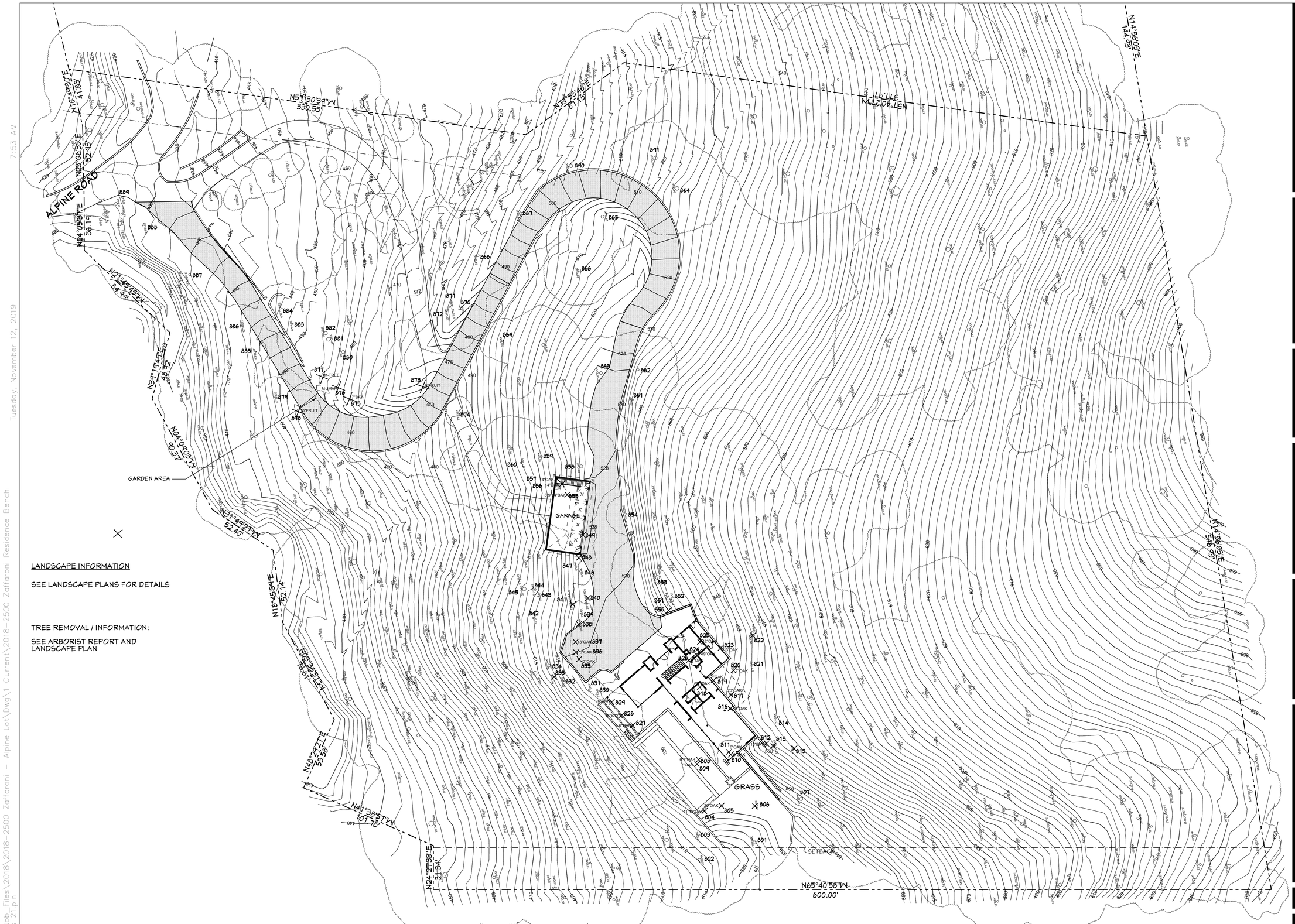

LANDSCAPE INFORMATION

SEE LANDSCAPE PLANS FOR DETAILS

TREE REMOVAL / INFORMATION:

SEE ARBORIST REPORT AND LANDSCAPE PLAN

1 Site Tree Plan

1" = 30'

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REN. 6-30-21
STATE OF CALIFORNIA

PROJECT

Zaffaroni Residence
0 Alpine Road
APN 182-36-043
Portola Valley, CA 94028

PLN19-0079

SHEET TITLE

Site Tree Plan

REVISIONS

No.	Date	Notes

JOB: 2018-2500

DATE: 11/7/2019

SHEET: A-1.3

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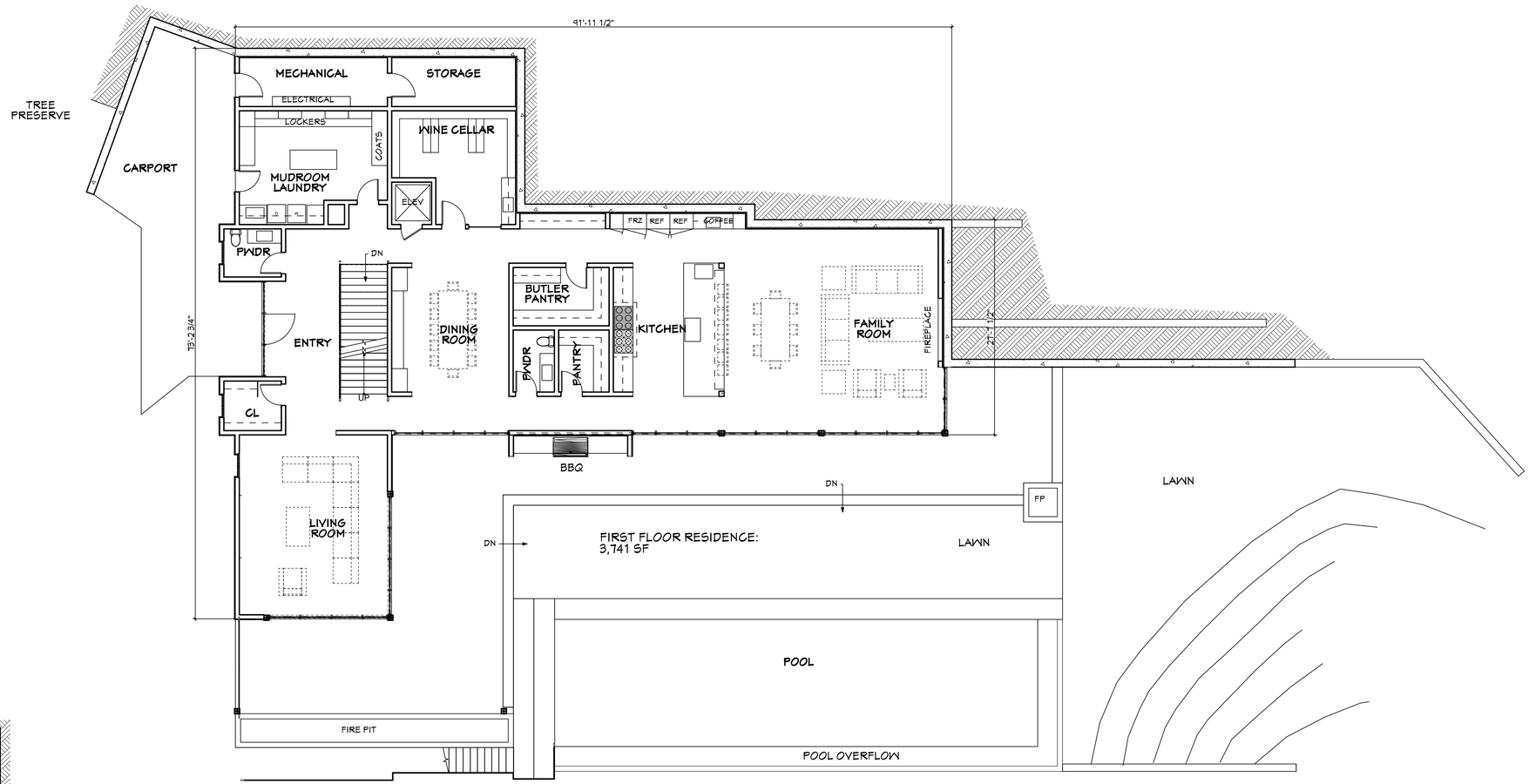
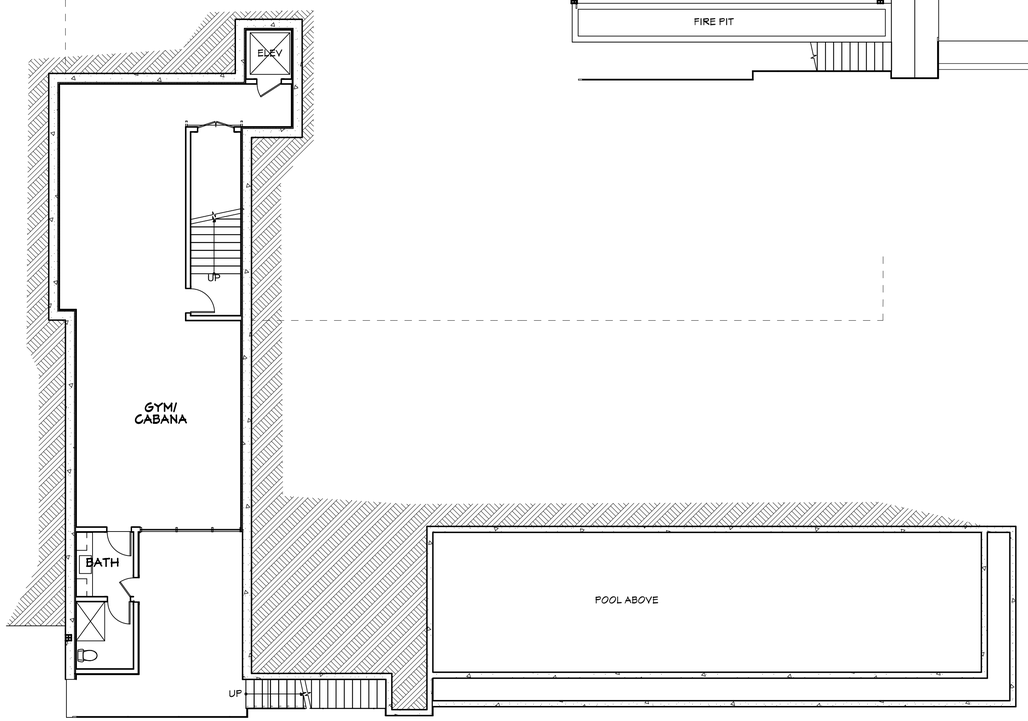


1 Bench - Main Floor Plan 1/8" = 1'-0"



LOWER FLOOR OF MAIN HOUSE:
1,136 SF

2 Bench - Lower Floor Plan 1/8" = 1'-0"

FLOOR AREA CALCULATIONS:

PROPOSED RESIDENCE:

COUNTED FLOOR AREA

FIRST FLOOR -	3,741 SF
SECOND FLOOR -	2,907 SF
THIRD FLOOR -	1,824 SF
BASEMENT -	1,136 SF
TOTAL:	9,608 SF

PROPOSED GARAGE:

FIRST FLOOR -	1,313SF	PARKING FOR 4 CARS
BASEMENT STORAGE -	1,313 SF	
TOTAL:	2,626 SF	

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STATE OF CALIFORNIA

◦ PROJECT ◦

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Portola Valley, CA 94028

PLN19-0079

◦ SHEET TITLE ◦

Main & Lower Floor Plans

• REVISIONS •

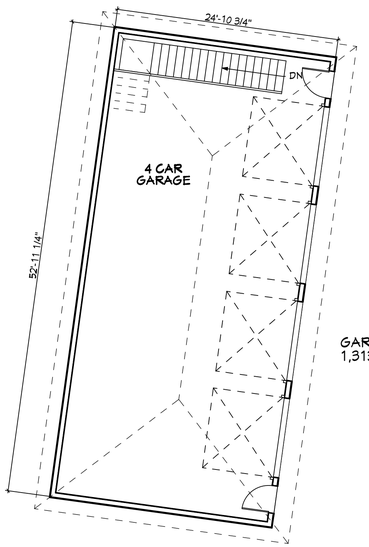
No.	Date	Notes

◦ JOB: 2018-2500

◦ DATE: 11/7/2019

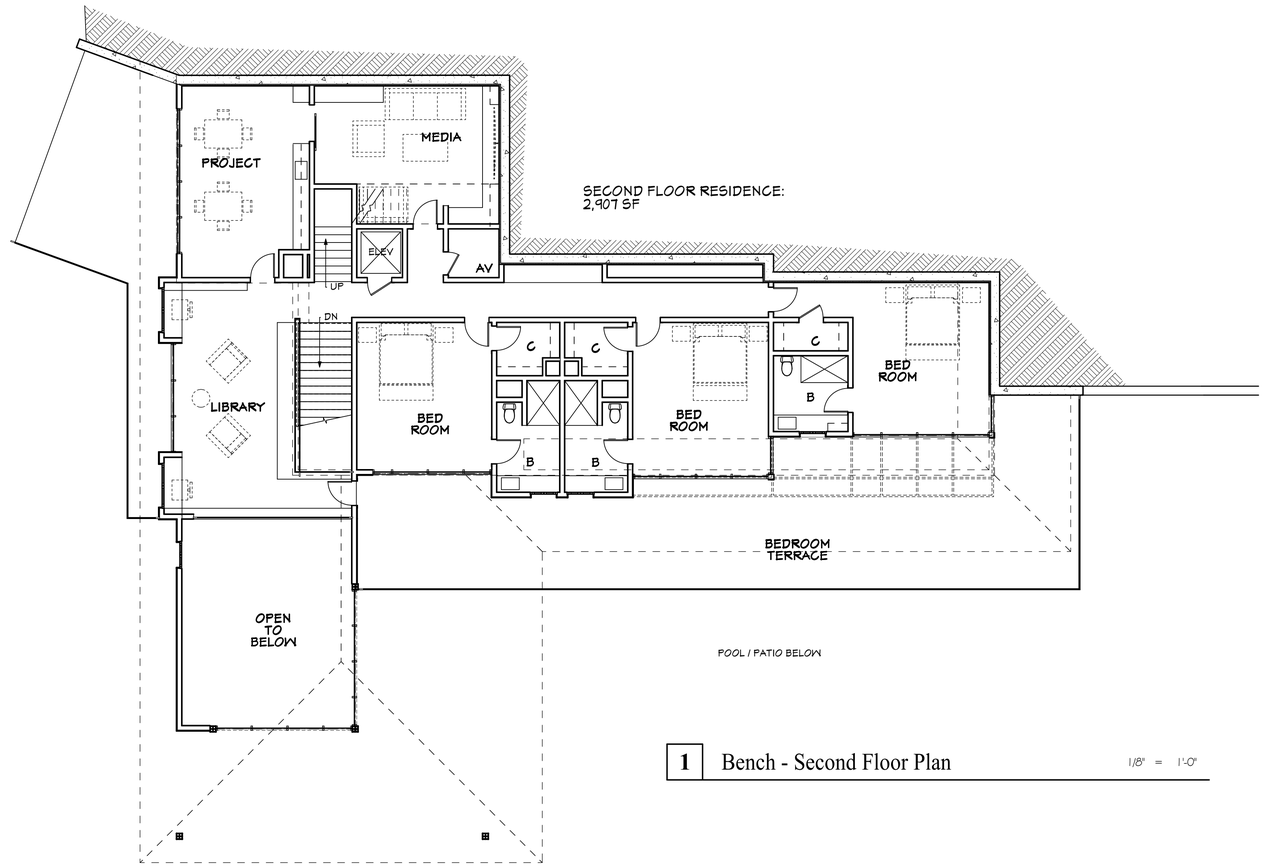
◦ SHEET: A-2.1

Tuesday, November 12, 2019 7:56 AM
M:\CJW_Job_Files\2018\2018-2500 Zaffaroni - Alpine Lot\Dwg\1 Current\2018-2500 Zaffaroni Residence Bench REV2 Vers 21.pln

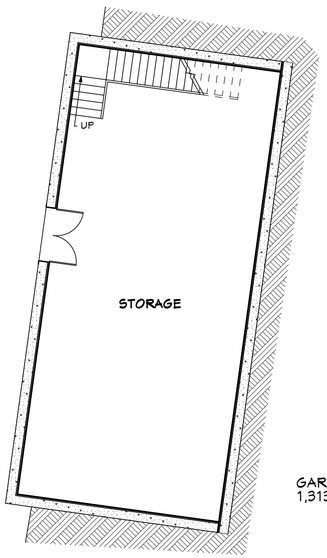


GARAGE UPPER LEVEL:
1,313 SF

3 Garage Upper Plan 1/8" = 1'-0"

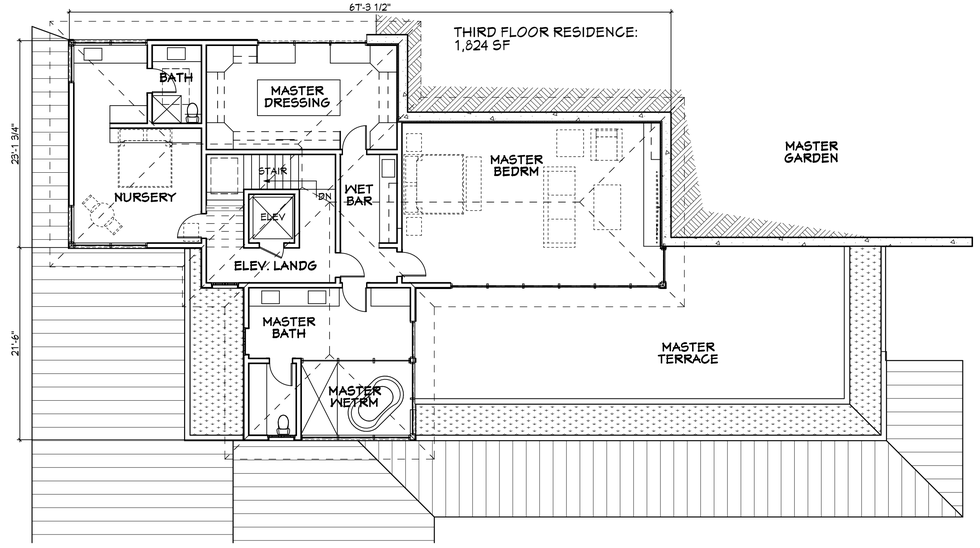


1 Bench - Second Floor Plan 1/8" = 1'-0"



GARAGE LOWER LEVEL:
1,313 SF

4 Garage Lower Plan 1/8" = 1'-0"



2 Bench - Third Floor Plan 1/8" = 1'-0"

CJ W ARCHITECTURE
130 Portola Road, suite A
Portola Valley, CA 94028
(650) 851-9335 / (Fax) 851-9337

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LICENSED ARCHITECT
CARTER JENSEN WARR
No. C-19397
REN. 6-30-21
STATE OF CALIFORNIA

◦ PROJECT ◦

Zaffaroni Residence
0 Alpine Road
APN 182-36-043
Portola Valley, CA 94028

PLN19-0079

◦ SHEET TITLE ◦

2nd & 3rd Floor Plans

• REVISIONS •

No.	Date	Notes

◦ JOB: 2018-2500

◦ DATE: 11/7/2019

◦ SHEET: A-2.2

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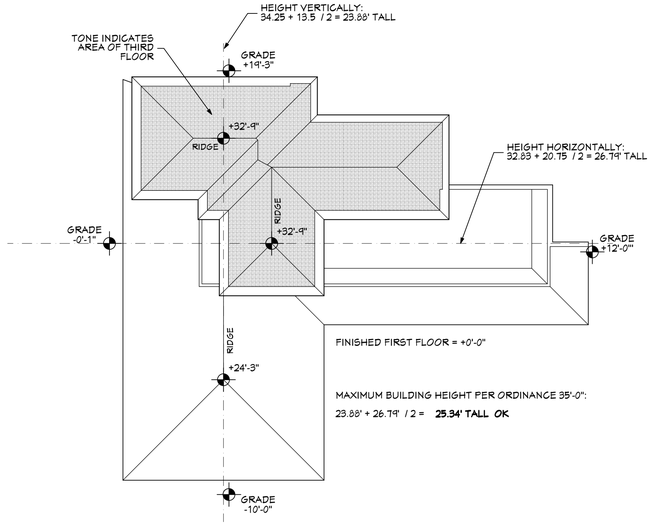
Tuesday, November 12, 2019 7:57 AM



1 Southwest Elevation 1/8" = 1'-0"



3 Building Height Diagram 1/16" = 1'-0"



2 Northwest Elevation 1/8" = 1'-0"

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STATE OF CALIFORNIA

◦ PROJECT ◦

Zaffaroni Residence
0 Alpine Road
APN 182-36-043
Portola Valley, CA 94028

PLN19-0079

◦ SHEET TITLE ◦

Exterior Elevations

• REVISIONS •

No.	Date	Notes

◦ JOB: 2018-2500

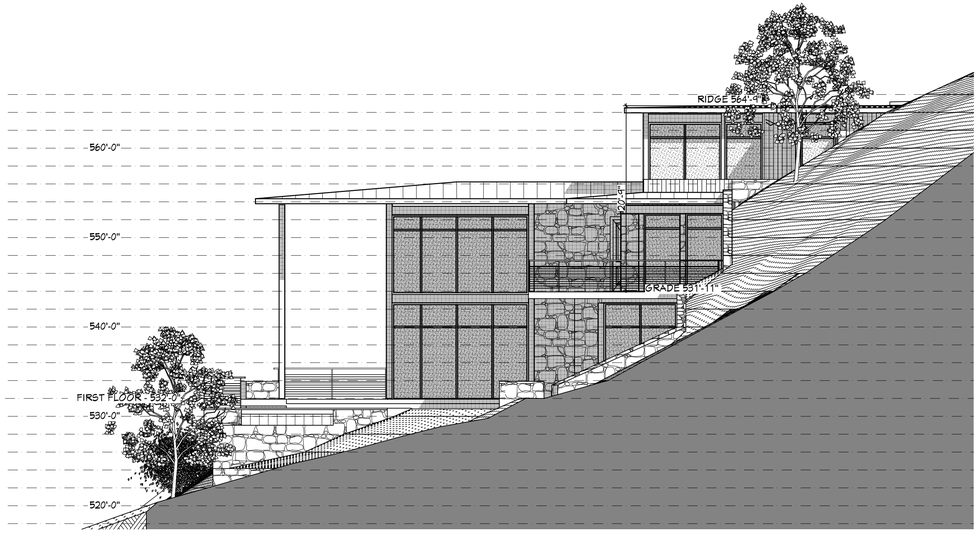
◦ DATE: 11/7/2019

◦ SHEET: A-3.1

M:\CJW_Job_Files\2018\2018-2500 Zaffaroni - Alpine Lo\Dwg\1 Current\2018-2500 Zaffaroni Residence Bench REV2 Vers 21.pln
Tuesday, November 12, 2019 7:58 AM



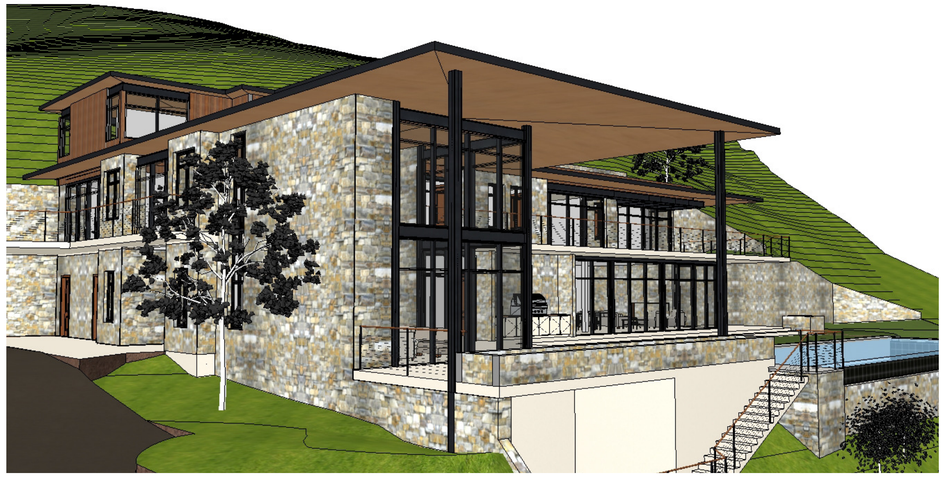
ENTRY PERSPECTIVE



1 Southeast Elevation 1/8" = 1'-0"



SOUTHWEST PERSPECTIVE



NORTHWEST PERSPECTIVE

CJ W ARCHITECTURE
130 Portola Road, suite A
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(650) 851-9335 / (Fax) 851-9337

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CARTER JENSEN WARR
No. C-19397
REN. 6-30-21
STATE OF CALIFORNIA

PROJECT

Zaffaroni Residence
0 Alpine Road
APN 182-36-043
Portola Valley, CA 94028

PLN19-0079

SHEET TITLE

Exterior Elevations & Perspectives

REVISIONS

No.	Date	Notes

JOB: 2018-2500

DATE: 11/7/2019

SHEET: A-3.2

M:\CJW_Job_Files\2018\2018-2500 Zaffaroni - Alpine Lot\Dwg\1 Current\2018-2500 Zaffaroni Residence Bench REV2 Vers 21.pln
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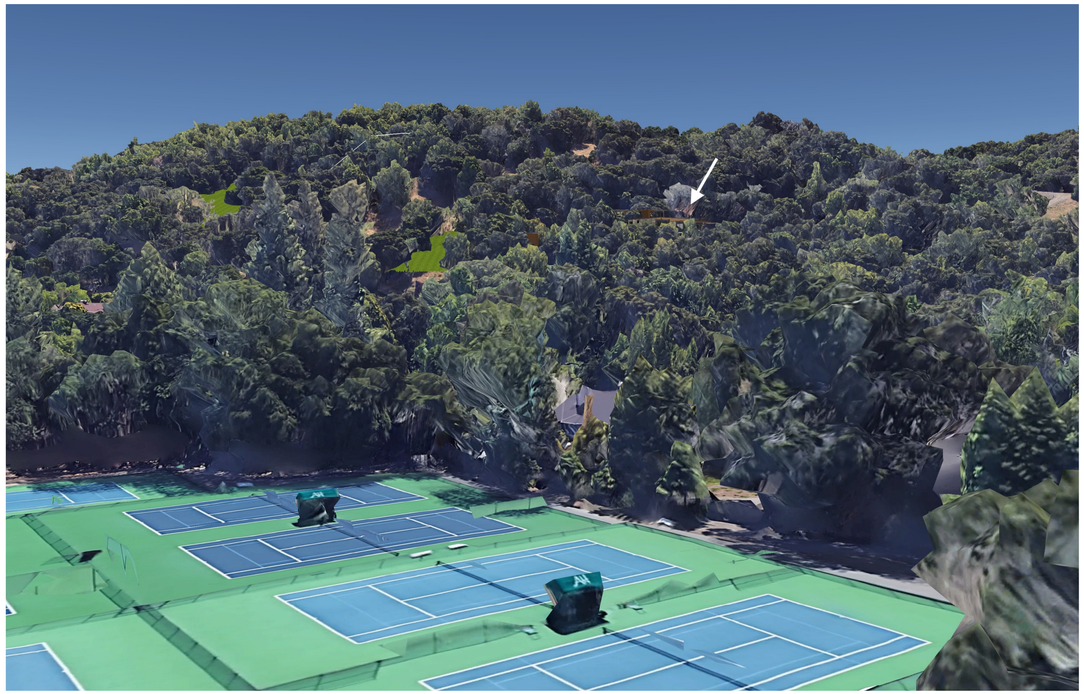
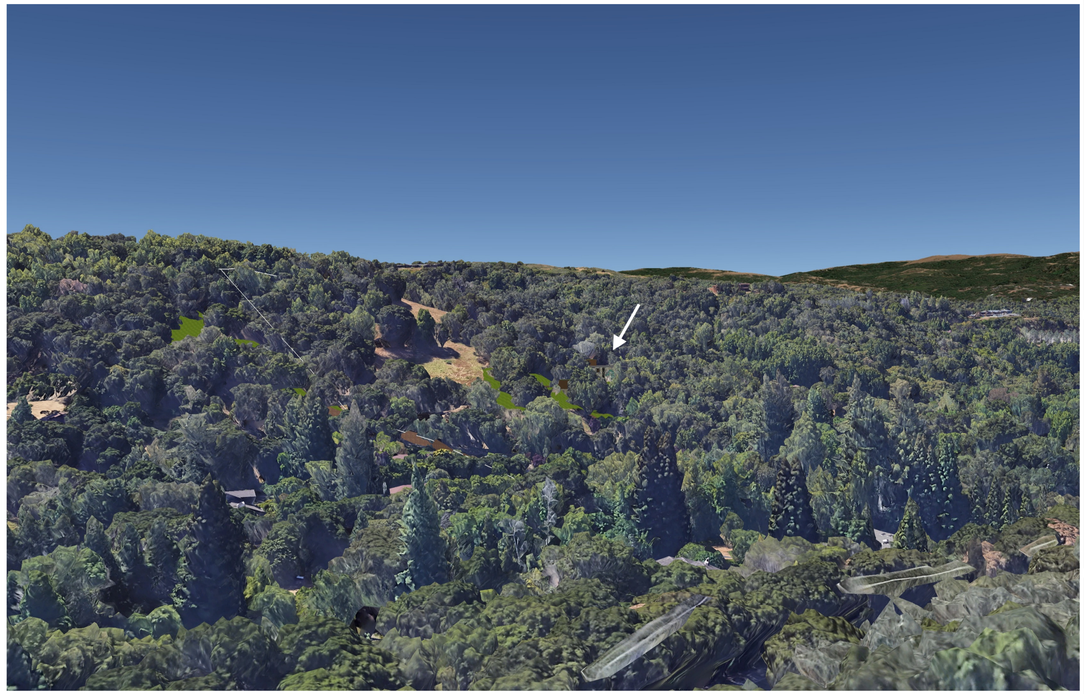


View from Alpine Hills Club @ 4139 Alpine Rd.



View from Bear Gulch @ 60 Bear Gulch Rd.



View from Los Trancos @ 50 Los Trancos Rd.



View from Los Trancos @ 830 Los Trancos Rd.

NOTE: SITE IS WELL SCREENED FROM ALL LOCATIONS BY EXISTING MATURE TREES. DUE TO SITE TOPOGRAPHY, PROPOSED STRUCTURES ARE NOT VISIBLE FROM SANTA CLARA VALLEY, ARASTRADERO PRESERVE, OR OTHER LOCATIONS TO THE NORTH OR WEST OF THE PROPERTY.

CJ W ARCHITECTURE

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• PROJECT •

Zaffaroni Residence

0 Alpine Road
APN 182-36-043
Portola Valley, CA 94028

PLN19-0079

• SHEET TITLE •

Perspective Views from Off Site

• REVISIONS •

No.	Date	Notes

• JOB: 2018-2500

• DATE: 11/7/2019

• SHEET: A-3.3

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Tuesday, November 12, 2019 8:01 AM

General Notes

1. The contractor shall perform all clearing, demolition, removal and site preparation necessary for the proper execution of all work shown on these drawings and/or described in the specifications. Removal of any existing facilities shall include all subbase and base rock. In the case of plant material, the contractor shall completely remove the main trunk and significant roots to 18" depth below grade. The landscape architect shall review the site with the contractor prior to commencing clearing so as to instruct the contractor of additional plant material and existing conditions to be protected/ preserved.
2. The contractor shall remove from the site all debris and unsuitable material generated by his operations.
3. The contractor shall verify all dimensions, distances and grades in the field and bring any discrepancies to the attention of the landscape architect for a decision prior to commencing with work. The contractor is responsible for all applicable permits and for performing all work per applicable codes.
4. The contractor shall verify location of all utilities on site before commencing with any work. Any disruption or damage to utilities caused by work under this contract shall be corrected by this contractor at no additional cost to owner.
5. These drawings are based on information supplied by CJW Architecture and Lea & Braze Engineering, Inc.

Soil Management Report (adapted from § 492 of MWELO)

1. In order to reduce runoff and encourage healthy plant growth, a soil management report shall be completed by the owner or his/her designee. The soil management report shall be completed as follows:
   (A) Submit soil samples to a laboratory for analysis and recommendations.
   i. Soil sampling shall be conducted in accordance with laboratory protocol, including protocols regarding adequate sampling depth for the intended plants.
   ii. The soil analysis shall include:
   - soil texture;
   - infiltration rate determined by laboratory test or soil texture infiltration rate table;
   - pH;
   - total soluble salts;
   - sodium;
   - percent organic matter; and
   - recommendations

   (B) The owner or his/her designee, shall submit the soil analysis report to the local agency as part of the Certificate of Completion.
   (C) The soil analysis report shall be made available, in a timely manner, to the landscape architect preparing the landscape design plans and irrigation design plans to make any necessary adjustments to the design plans.
   (D) The owner, or his/her designee, shall submit documentation verifying implementation of soil analysis report recommendations to the local agency with Certificate of Completion.

Planting Notes

1. The contractor shall verify location of all utilities on site before commencing with any work. Any disruption or damage to utilities caused by work under this contract shall be corrected by this contractor at no additional cost to owner.
2. Prior to the planting of any materials, compacted soils shall be transformed to a friable condition. On engineered slopes, only amended planting holes need meet this requirement.
3. All work shall be performed by personnel familiar with this type of work and under the supervison of a qualified planting foreman.
4. Do not perform any soil preparation work in areas where soil is contaminated with cement, plaster, paint or other construction debris. Bring such areas to the attention of the landscape architect and do not proceed until the contaminated soil is removed and replaced.
5. Soil amendments shall be incorporated according to recommendations of the soil report and what is appropriate for the plants selected.
6. For landscape installations, incorporate compost into the soil to a minimum of 8" at a minimum rate of 6 cubic yards per 1000 square feet. Soils with greater than 6% organic matter in the top 6 inches of soil are exempt from adding compost and tilling.
7. A minimum three inch (3") layer of mulch shall be applied on all exposed soil surfaces of planting areas except in turf areas, creeping or rooting groundcovers, or direct seeding applications where mulch is contraindicated.
8. Stabilizing mulching products shall be used on slopes that meet current engineering standards.
9. The mulching portion of the seed/mulch slurry in hydro-seeded applications shall meet the mulching requirement.
10. Organic mulch materials made from recycled or post-consumer shall take precedence over inorganic materials or virgin forest products unless the recycled post-consumer organic products are not locally available. Organic mulches are not required where prohibited by local Fuel Modification Plan Guidelines or other applicable local ordinances.
11. All planting area finished grades with a slope of 3:1 or greater shall receive a layer of jute mesh placed under the mulch, secured with metal staples.
12. All existing trees shown shall be protected unless noted otherwise on drawings. Any damage caused by the contractor's operations shall be repaired or replanted by the contractor at no additional expense to the owner.
13. All plant material shall be approved by the landscape architect prior to installation and will be rejected if not in accordance with industry standards. Plants shall be inspected for size, variety, condition, defects, injury and infestation. Plants will not be pruned prior to inspection.
14. All plants are to be delivered to site. Prior to planting final location to be determined in the field by landscape architect. Contractor shall give three (3) day notice prior to plant placement.
15. At completion of the installation, the landscape contractor shall provide the owner with a binder with manufacturer's specifications for all equipment installed. The landscape contractor shall also provide an as-built plan (DWG and PDF files) of the irrigation improvements including piping, heads, valves, controller, quick couplers, and sleeves to the owner.
16. The contractor shall guarantee all new plantings for six months. The guarantee period begins after the final inspection and the planting has been approved.
17. The landscape contractor shall maintain the planting and irrigation improvements for a period of six months. Services shall include mowing the lawn, fertilizing and weeding all new planting.
18. The landscape contractor shall make no changes to the planting plan without the consent of the landscape architect and approval by the City of Redwood City.
19. The landscape contractor shall provide the size-specifications for the proposed plant material for approval prior to delivery to the site. The landscape architect and owner's rep shall verify/select all plant material prior to delivery. The landscape architect and owner's rep shall direct all plant locations in the field.

Hydroseed Maintenance Notes

1. It is not the intent to maintain the planting covered with the irrigation system in hydroseed areas with a 'green' appearance throughout the year. The planting in hydroseed areas shall have a natural seasonal appearance. The planting in this area shall be actively growing from 15 October until 15 April. From 15 April to 15 October, the planting in hydroseed areas shall receive irrigation no more than twice a week, allowing the planting to have a seasonal appearance.
2. It is not the intent of the landscape design to extend the hydroseed areas growing season beyond its natural cycle with supplemental water. The Estimated Total Water Use Budget on sheet L-103 shall not be exceeded.
3. Mowing the hydroseed areas is allowed on a semi annual basis. Mowing shall not occur during or 1 month after active flowering has occurred in order to allow for seeds to disperse on site and allow for natural succession of the planting.

Water Efficient Landscaping and Irrigation Notes (adapted from § 492 of MWELO)

1. Irrigation system shall be installed in conformance with all applicable state and local codes and ordinances, by licensed contractors and experienced workers. The contractor shall coordinate with related contractors to complete the entire irrigation system, including the electrical hook-up for automatic controller. The contractor shall obtain and pay for all required permits and fees relating to the work.
2. The contractor shall verify all existing conditions and water pressure. The contractor shall verify the location of existing underground utilities and structures prior to the excavation of trenches or holes. Contractor is to repair any damage caused by or during the performance of this work at no additional cost to the owner.
3. The contractor shall make a point of connection as directed by the owner.
4. The contractor shall install complete and coordinated equipment. No partial substitutions or incomplete components shall be installed.
5. The contractor shall install a "design build" underground automatic irrigation system. Areas noted are valving guides only and are to illustrate different water requirements of microclimates. The system shall have 100% coverage for planting areas on the site. An as-built drawing is to be provided to the landscape architect upon completion and acceptance of the irrigation system. Locate spray heads 24" from buildings and 12" from paving. Use MPR series nozzles by Hunter on spray bodies to match existing standards.
6. Trenching is to be of sufficient depth to provide 24" of cover over main lines and 18" of cover over PVC lateral lines.
7. Pressure regulation and/or booster pumps shall be provided so that all components of the irrigation system operate at the manufacturer's recommended optimal pressure.
8. Controller location shall be per the drawings. Control wires shall be single wire (no wire looms allowed). Provide extra wires to all terminus of the main line to allow expansion of the system, see plan.
9. All wire splices are to be made within a valve box. No in-line splices will be accepted. Splices are to be made with a copper crimp-type connector, and an approved epoxy splice pack.
10. All pipes shall be schedule 40 pvc or upgraded.
11. All excavations are to be backfilled to 90% compaction, minimum. The contractor to repair all settled trenches promptly for a period of one year after completion of the work. Additionally, contractor shall warrant that the irrigation system will be free from defects in materials and workmanship for a period of one year after final acceptance of the work.
12. All irrigation emission devices must meet the requirements set in the American National Standards Institute (ANSI) standard, American Society of Agricultural and Biological Engineers'/International Code Council's (ASABE/ICC) 802-2014 "Landscape Irrigation Sprinkler and Emitter Standard". All sprinkler heads installed in the landscape must document a distribution uniformity low quarter of 0.65 or higher using the protocol defined in ASABE/ICC 802-2014.
13. Areas less than ten (10) feet in width in any direction shall be irrigated with subsurface irrigation or other means that produces no runoff or overspray.
14. Automatic irrigation controllers utilizing either evapotranspiration or soil moisture sensor data utilizing non-volatile memory shall be required for irrigation scheduling in all irrigation systems.
15. Backflow prevention devices shall be required to protect the water supply from contamination by the irrigation system. A project applicant shall refer to the applicable local agency code (i.e., public health) for additional backflow prevention requirements.
16. Check valves or anti-drain valves are required on all sprinkler heads where low point drainage could occur.
17. Flow sensors that detect high flow conditions created by system damage or malfunction are required.
18. Head to head coverage is recommended. However, sprinkler spacing shall be designed to achieve the highest possible distribution uniformity using the manufacturer's recommendations.
19. If the water pressure is below or exceeds the recommended pressure of the specified irrigation devices, the installation of a pressure regulating device is required to ensure that the dynamic pressure at each emission device is within the manufacturer's recommended pressure range for optimal performance.
    (A) If the static pressure is above or below the required dynamic pressure of the irrigation system, pressure-regulating devices such as inline pressure regulators, booster pumps, or other devices shall be installed to meet the required dynamic pressure of the irrigation system.
    (B) Static water pressure, dynamic or operating pressure, and flow reading of the water supply shall be measured at the point of connection. These pressure and flow measurements shall be conducted at the design stage. If the measurements are not available at the design stage, the measurements shall be conducted at installation.
20. In mulched planting areas, the use of low volume irrigation is required to maximize water infiltration into the root zone.
21. Landscape water meters, defined as either a dedicated water service meter or private submeter, shall be installed for all non-residential irrigated landscapes of 1,000 sq. ft. but not more than 5,000 sq.ft. (the level at which Water Code 535 applies) and residential irrigated landscapes of 5,000 sq. ft. or greater. A landscape water meter may be either:
    (A) a customer service meter dedicated to landscape use provided by the local water purveyor; or
    (B) a privately owned meter or submeter.
22. Manual shut-off valves (such as a gate valve, ball valve, or butterfly valve) shall be required, as close as possible to the point of connection of the water supply and before each valve or manifold, to minimize water loss in case of an emergency (such as a main line break) or routine repair.
23. Master shut-off valves are required.
24. Overhead irrigation shall not be permitted within 24 inches of any nonpermeable surface. Allowable irrigation within the setback from nonpermeable surfaces may include drip, drip line, or other low flow nonspray technology. The setback area may be planted or unplanted. The surfacing of the setback may be mulch, gravel, or other porous material. These restrictions may be modified if:
    (A) the landscape area is adjacent to permeable surfacing and no runoff occurs; or
    (B) the adjacent non-permeable surfaces are designed and constructed to drain entirely to landscaping.
25. Relevant information from the soil management plan, such as soil type and infiltration rate, shall be utilized when installing the irrigation system.
26. Sensors (rain, freeze, wind, etc.), either integral or auxiliary, that suspend or alter irrigation operation during unfavorable weather conditions shall be required on all irrigation systems, as appropriate for local climatic conditions. Irrigation should be avoided during windy or freezing weather or during rain. The required weather sensor shall be mounted where it will be exposed to unobstructed sun and rainfall.
27. Slopes greater than 25% shall not be irrigated with an irrigation system with a application rate exceeding 0.75 inches per hour.
28. Sprinkler heads and other emission devices shall have matched precipitation rates, unless otherwise directed by the manufacturer's recommendations.
29. Swing joints or other riser-protection components are required on all risers subject to damage that are adjacent to hardscapes or in high traffic areas of turfgrass.
30. The installation of the irrigation system shall conform to the hydrozones of the landscape design plan.
31. The irrigation system must be designed and installed to meet, at a minimum, the irrigation efficiency criteria as described in the Water Efficient Landscape Ordinance.
32. The irrigation system shall be installed to prevent runoff, low head drainage, overspray, or other similar conditions where irrigation water flows onto non-targeted areas, such as adjacent property, nonirrigated areas, hardscapes, roadways, or structures.
33. Where feasible, trees shall be placed on separate valves from shrubs, groundcovers, and turf to facilitate the appropriate irrigation of trees. The mature size and extent of the root zone shall be considered when installing the irrigation for the tree.
34. An Audit of the Project is required to be performed by a qualified professional and submitted along with the "Certificate of Completion" as contained in Appendix C of the Department of Water Resources regulations. The audit will be submitted to the Building Department for a final inspection.
35. A final City inspection shall be performed. The installation contractor shall attend this inspection and make all required repairs and adjustments to achieve approval and completion from the city. Talk with your building inspector prior to final inspection about getting the WELO signed off at that time.

Irrigation Scheduling (MWELO § 492.10)

1. Irrigation scheduling shall be regulated by automatic irrigation controllers.
2. Overhead irrigation shall be scheduled between 8:00 p.m. and 10:00 a.m. unless weather conditions prevent it. If allowable hours of irrigation differ from the local water purveyor, the stricter of the two shall apply. Operation of the irrigation system outside the normal watering window is allowed for auditing and system maintenance.
3. For implementation of the irrigation schedule, particular attention must be paid to irrigation run times, emission device, flow rate, and current reference evapotranspiration, so that applied water meets the Estimated Total Water Use. Total annual applied water shall be less than or equal to Maximum Applied Water Allowance (MAWA) shown on sheet LP105. Actual irrigation schedules shall be regulated by automatic irrigation controllers using current reference evapotranspiration data (e.g., CIMIS) or soil moisture sensor data.
4. Parameters used to set the automatic controller shall be developed and submitted for each of the following:
   (A) The plant establishment period;
   (B) The established landscape; and
   (C) Temporarily irrigated areas
5. Each irrigation schedule shall consider for each station all of the following that apply:
   (A) irrigation interval (days between irrigation);
   (B) irrigation run times (hours or minutes per irrigation event to avoid runoff);
   (C) number of cycle starts required for each irrigation event to avoid runoff;
   (D) amount of applied water scheduled to be applied on a monthly basis;
   (E) application rate setting;
   (F) root depth setting;
   (G) plant type setting;
   (H) soil type;
   (I) slope factor setting;
   (J) shade factor setting; and
   (K) irrigation uniformity or efficiency setting.

WELO (Water Efficiency Landscape Ordinance) Compliance:
I agree to comply with the requirements of the water efficient landscape ordinance and submit a complete Landscape Documentation Package

07NOV2019
signature of applicant — date

Landscape Documentation Package Checklist (§ 492.3)

[X] (1) project information: ETo= 46.3

(A) date: as noted **as noted**
(B) project applicant: **Charles Zaffaroni**
(C) project address: **APN: 182-36-043**
(D) total landscape area (square feet): **7,810**
(E) project type (e.g., new, rehabilitated, public, private, cemetery, homeowner-installed): **new private**
F) water supply type (e.g., potable, recycled, well) and identify the local retail water purveyor if the applicant is not served by a private well: **potable**
(G) checklist of all documents in Landscape Documentation Package: **as noted**
(H) project contacts to include contact information for the project applicant and property owner: **Email loretta@cleaverdesign.com for questions regarding MWELO and Landscape Documentation Package**
(I) applicant signature and date with statement, "I agree to comply with the requirements of the water efficient landscape ordinance and submit a complete Landscape Documentation Package": **as noted**

[X] (2) Water Efficient Landscape Worksheet:

(A) hydrozone information table: **as noted**
(B) water budget calculations: **as noted**
1. Maximum Applied Water Allowance (MAWA): **136,405 gal/yr**
2. Estimated Total Water Use (ETWU): **115,147 gal/yr**

[ ] (3) soil management report: **deferred**
[X] (4) landscape design plan: **see drawings**
[X] (5) irrigation design plan: **see drawings**
[X] (6) grading design plan: **see civil drawings**

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

Sheet Schedule

Number	Title
L-001	Cover Sheet
L-101	Hardscape Plan
L-102	Landscape Plan / MWELO
L-501	Landscape Details

CLEAVER DESIGN ASSOCIATES
landscape architects
1210 Vacation Drive
Lafayette, CA 94549
P 925.934.6044
www.cleaverdesign.com
CA reg # 4145

LICENSED LANDSCAPE ARCHITECT
Robert Cleaver
No. 4145
Signature 30NOV2019
Renewal Date 07NOV2019
Date
STATE OF CALIFORNIA

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Sheet Schedule

L-001	Cover Sheet
L-101	Hardscape Plan
L-102	Landscape Plan / MWELO
L-501	Landscape Details

Zaffaroni Residence

0 Alpine Road
Portola Valley, CA 94028

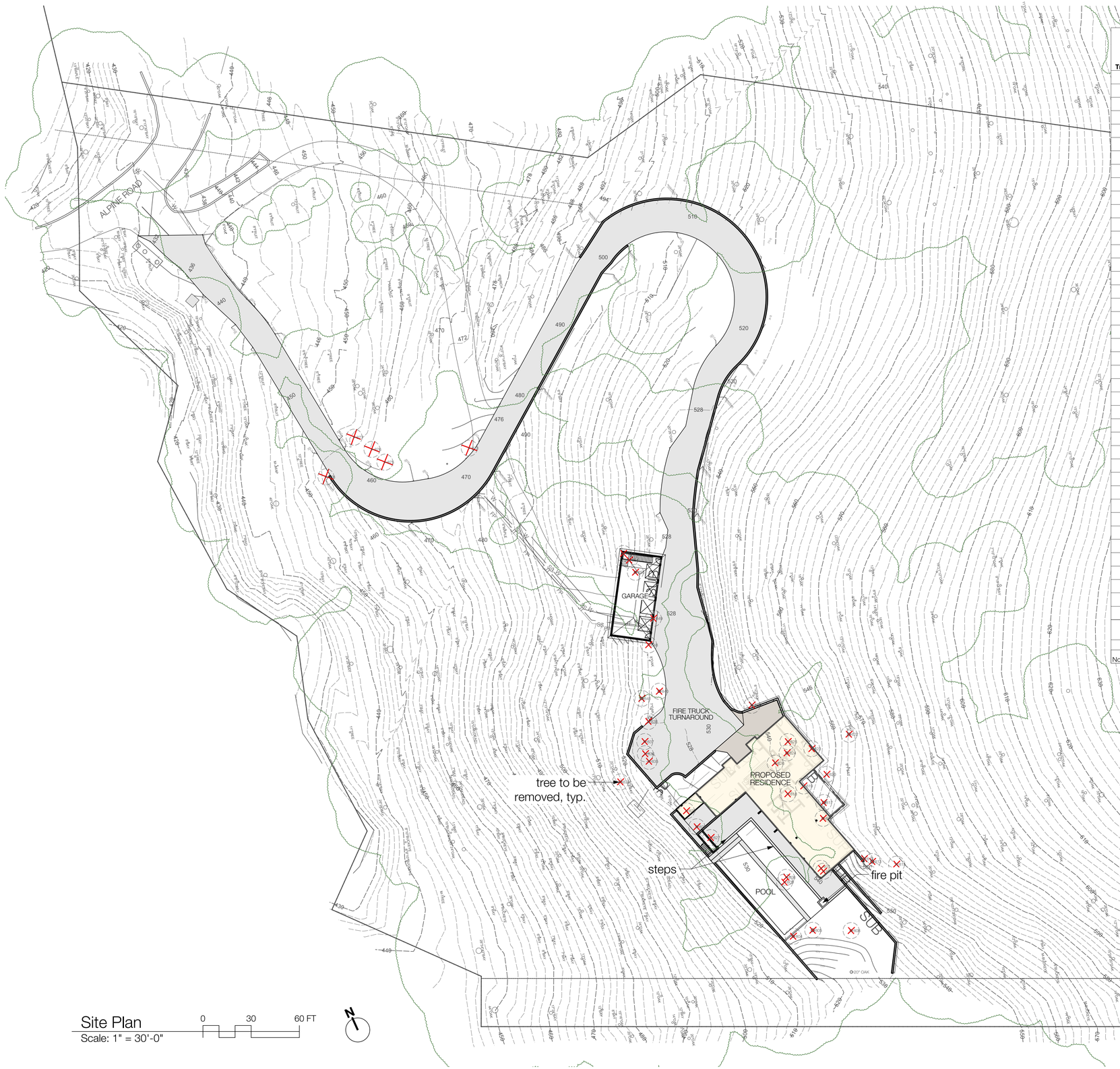
APN: 182-36-043

Issue:	Date:
Issued for Review	07NOV2019

Project ID	Zaffaroni
CAD File Name	cjw zaffaroni.vwx
Plot Date	
Drawn By	LD / BC
Scale	As Noted

Cover Sheet

L-001



Tree Removal Summary

Tree No	Trunk Diameter	Species	Justification Statement	Proposed Replacement
804	11, 15"	Quercus agrifolia	Conflicts with pool construction	(2) 24" box - Quercus agrifolia
805	20"	Quercus agrifolia	Conflicts with pool construction	(3) 24" box - Quercus agrifolia
808	16"	Quercus agrifolia	Will not survive planned grade change	(3) 24" box - Quercus agrifolia
808	6, 7"	Quercus agrifolia	Inside building footprint	(3) 24" box - Quercus agrifolia
809	7"	Quercus agrifolia	Inside building footprint	(3) 24" box - Quercus agrifolia
810	6"	Quercus agrifolia	Inside building footprint	(2) 24" box - Quercus agrifolia
811	6"	Quercus agrifolia	Inside building footprint	(2) 24" box - Quercus agrifolia
812	14"	Umbellularia sp.	Too close to construction	(0) N/A
813	15, 20"	Quercus agrifolia	Diseased and leaning over residence	(0) N/A
815	7"	Quercus agrifolia	Dead	(0) N/A
816	15"	Quercus agrifolia	Inside building footprint	(3) 24" box - Quercus agrifolia
817	19"	Quercus agrifolia	Dead	(0) N/A
818	6"	Quercus agrifolia	Inside building footprint	(2) 24" box - Quercus agrifolia
819	6"	Quercus agrifolia	Inside building footprint	(2) 24" box - Quercus agrifolia
820	7"	Quercus agrifolia	Too close to construction	(2) 24" box - Quercus agrifolia
822	26"	Quercus agrifolia	Mostly dead	(0) N/A
823	13"	Quercus agrifolia	Inside building footprint	(2) 24" box - Quercus agrifolia
824	19"	Quercus agrifolia	Inside building footprint	(2) 24" box - Quercus agrifolia
825	12"	Quercus agrifolia	Inside building footprint	(2) 24" box - Quercus agrifolia
826	8"	Quercus agrifolia	Inside building footprint	(2) 24" box - Quercus agrifolia
827	6"	Quercus agrifolia	Inside building footprint	(2) 24" box - Quercus agrifolia
828	14"	Umbellularia sp.	Inside building footprint	(0) N/A
829	6"	Quercus agrifolia	Inside building footprint	(2) 24" box - Quercus agrifolia
833	15"	Quercus agrifolia	Dead	(0) N/A
835	12"	Quercus agrifolia	Inside footprint of fire truck turnaround	(2) 24" box - Quercus agrifolia
836	6"	Quercus agrifolia	Inside footprint of fire truck turnaround	(2) 24" box - Quercus agrifolia
837	12"	Quercus agrifolia	Inside footprint of fire truck turnaround	(2) 24" box - Quercus agrifolia
838	9"	Cedrus deodara	Inside footprint of fire truck turnaround	(0) N/A
840	7"	Quercus agrifolia	Dead	(0) N/A
841	7"	Quercus agrifolia	Dead	(0) N/A
848	13"	Quercus agrifolia	Inside building footprint	(2) 24" box - Quercus agrifolia
849	12"	Quercus agrifolia	Inside building footprint	(2) 24" box - Quercus agrifolia
850	6, 6"	Umbellularia sp.	Too close to construction	(0) N/A
855	8, 9, 14"	Umbellularia sp.	Inside building footprint	(0) N/A
856	14"	Quercus agrifolia	Inside building footprint	(2) 24" box - Quercus agrifolia
857	14"	Quercus agrifolia	Inside building footprint	(2) 24" box - Quercus agrifolia
873	9"	Prunus cerasifera	Too close to construction	(0) N/A
875	7"	Umbellularia sp.	Too close to construction	(0) N/A
876	Multistem	Acer palmatum	Too close to construction	(0) N/A
877	Multistem	Lagerstroemia indica	Too close to construction	(0) N/A
878	10"	Prunus cerasifera	Too close to construction	(0) N/A
	Total			**53 Trees**

Note: See Arborist Report for additional notes about health status of existing trees and proposed replacements

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LICENSED LANDSCAPE ARCHITECT
Robert Cleaver
No. 4145
Signature
30NOV2019
Renewal Date
07NOV2019
Date
STATE OF CALIFORNIA

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Zaffaroni Residence

0 Alpine Road
Portola Valley, CA 94028

APN: 182-36-043

Issue:	Date:
Issued for Review	07NOV2019

Project ID	Zaffaroni
CAD File Name	cjw zaffaroni.vwx
Plot Date	
Drawn By	LD / BC
Scale	As Noted

Hardscape Plan

L-101



Site Plan
Scale: 1" = 30'-0"

0 30 60 FT

N

I have complied with the criteria of the Water Efficient Landscape Ordinance and applied them accordingly for the efficient use of water in the Planting Plan

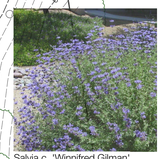
signature of landscape architect

Plant List

Category	ID	Latin Name	Common Name	Size	Quantity	Native	Evergreen	WUCOLS
trees	ID							
	QUE AGR	Quercus agrifolia	Coast Live Oak	24" box	55	Y	Y	VL
shrubs								
	MUH RIG	Muhlenbergia rigens	Deer Grass	1 gallon	41	Y	Y	L
	SAL API	Salvia apiana	CA White Sage	1 gallon	11	Y	Y	VL
	LOM BRE	Lomandra longifolia 'Breeze'	Dwarf Mat Rush	1 gallon	130		Y	L
	COR MOO	Coreopsis verticillata 'Moonbeam'	Moonbeam Threadleaf Tickseed	1 gallon	53		Y	L
	TAG LEM	Tagetes lemmonii	Mexican Marigold	5 gallon	19		Y	L
	SAL WG	Salvia clevelandii 'Winnifred Gilman'	CA Blue Sage	5 gallon	11	Y	Y	L
	CEA AB	Ceanothus gloriosus 'Anchor Bay'	Anchor Bay Ceanothus	5 gallon	117	Y	Y	L
	PAR TRI	Parthenocissus tricuspidata	Boston Ivy	5 gallon	7			L
	ARC DRH	Arctostaphylos 'Dr. Hurd'	Dr. Hurd Manzanita	15 gallon	10	Y	Y	L
lawn								
		90% Tall Fescue, 10% Kentucky Bluegrass by Delta Bluegrass	Lawn		1,709 sf		Y	H
hydroseed								
		Bromus carinatus 'Cucamonga', Festuca microstachys, and Trifolium ciliolatum	Basic Native Erosion Control Mix		4,801 sf	Y		VL


Quercus agrifolia


Coreopsis 'Moonbeam'


Salvia c. 'Winnifred Gilman'


Muhlenbergia rigens


Tagetes lemmonii


Arctostaphylos 'Emerald Carpet'

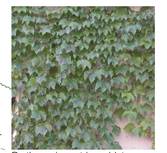

Salvia apiana


Basic Native Erosion Control Mix


Ceanothus g. 'Anchor Bay'


Arctostaphylos 'Dr. Hurd'


Lomandra 'Breeze'


Parthenocissus tricuspidata

California MWELO Water Budget

Reference Evapotranspiration (ETo)*: 46.3

Zone Name / Number	Plant / Feature Type	Plant Factor (PF)	Irrigation Method	Irrigation Efficiency (IE)	ETAF (PF/IE)	Landscape Area (sq ft)	ETAF x Area	Estimated Total Water Usage (ETWU)
Regular Landscape Areas								
	Shrubs	0.4	Drip	0.81	0.494	219	108	3,105
	Turf Grass	0.8	Overhead Spray	0.75	1.067	1,709	1,823	52,329
	Shrubs	0.2	Drip	0.81	0.247	3,768	930	26,707
	Trees	0.1	Drip	0.81	0.123	1,100	136	3,898
					Totals:	6,796	2,997	86,039
Special Landscape Areas*								
	Pool or Water Feature	1	Unspecified	1	1	1,014	1,014	29,108
					Totals:	1,014	1,014	29,108

* = Includes public recreational areas, water features using recycled water, areas dedicated to edible plants, and areas irrigated with recycled water.

ETWU Total:	115,147 gal/yr
Maximum Applied Water Allowance (MAWA):	136,405 gal/yr

ETAF Calculations

Regular Landscape Areas	
Total ETAF x Area:	2,997
Total Area:	6,796
Average ETAF*:	0.44
All Landscape Areas	
Total ETAF x Area:	4,011
Total Area:	7,810
Sitewide ETAF:	0.51

* = Average ETAF for Regular Landscape Areas must be 0.55 or below for residential areas, and 0.45 or below for non-residential areas.

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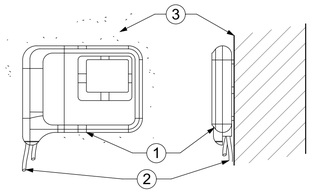
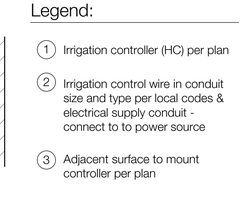
Scale	As Noted

Landscape Plan / MWELO

L-102



front elevation



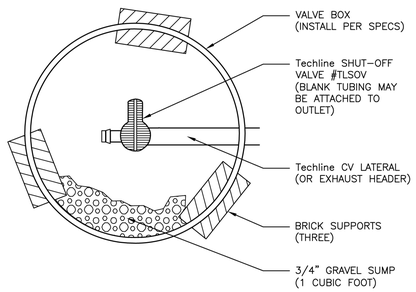
right elevation

Legend:

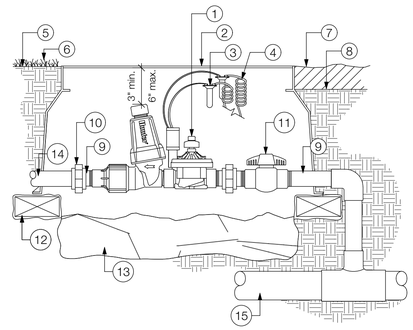
1. Irrigation controller (HC) per plan
2. Irrigation control wire in conduit size and type per local codes & electrical supply conduit - connect to to power source
3. Adjacent surface to mount controller per plan

NOTE
Mount controller LCD screen at eye level, controller shall be hard-wired to grounded 110 VAC power source

Hunter Hydrawise Irrigation Controller (HC)
Not to Scale



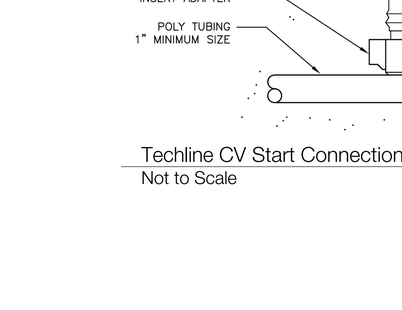
Techline CV Manual Line Flush Valve
Not to Scale



Legend

1. Hunter remote control valve per plan
2. Standard valve box with 'RCV' heat stamp in 2" letters
3. Waterproof connectors
4. 18"-24" coiled wire to controller
5. Finished grade in turf
6. Adjacent turf
7. Adjacent mulch
8. Finished grade in planter bed
9. Schedule 80 t.o.e. nipple - match size to valve and union - length as needed
10. PVC slip union
11. Ball valve - line sized
12. Brick supports (4)
13. 3/4" washed gravel - 4" min.
14. Irrigation lateral
15. Mainline lateral and fittings

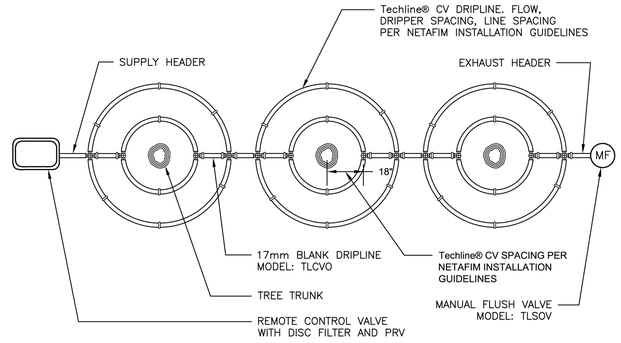
Hunter ICZ-LF Drip Zone Kit with Isolation Valve
Not to Scale



Legend

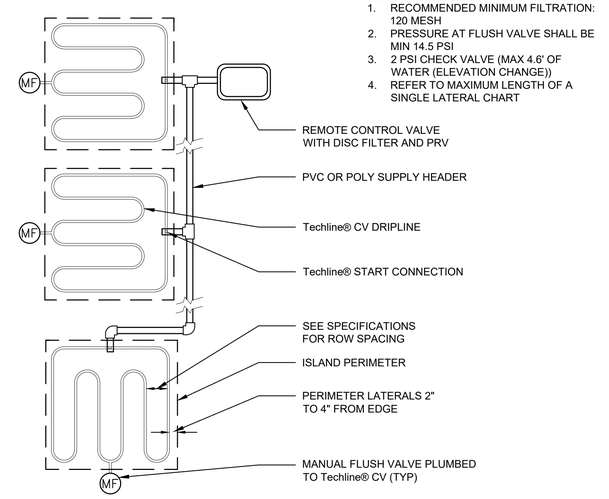
1. Standard valve box
2. Finish grade
3. Model PGV-101G with ACCU-SYNC
4. Waterproof connectors (2)
5. 18-24" coiled wire
6. Schedule 80 t.o.e. nipple
7. Main line pipe & fittings
8. brick supports (4)
9. 3/4" washed gravel - 4" min.
10. PVC slip unions

Hunter PGV Globe Control Valve
Not to Scale

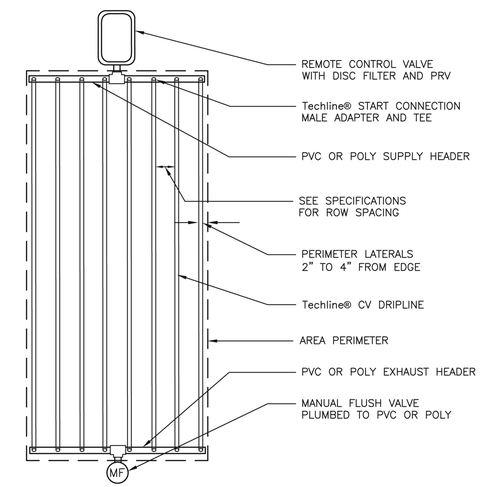


For total system flow less than 5 gpm use TLCVO blank to connect tree rings, remote control, valve, and manual flush valve.

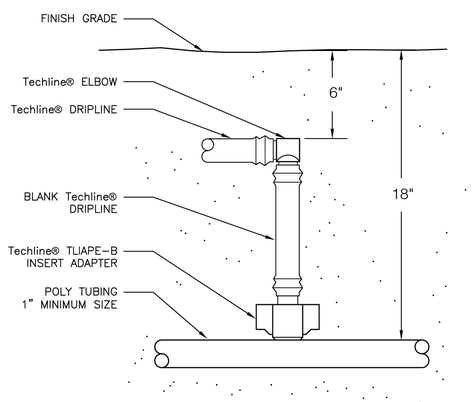
Techline CV Multiple drip ring layout
Not to Scale



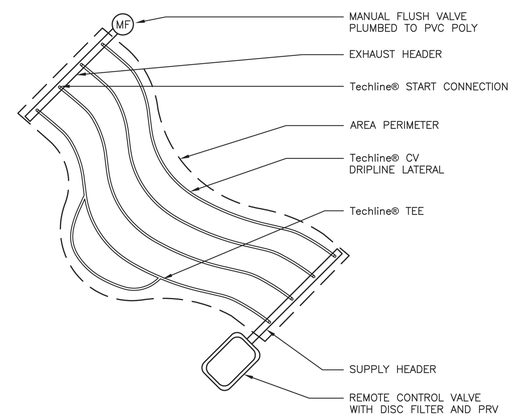
Techline CV LITE layout for Planter Islands
Not to Scale



Techline CV End Feed layout
Not to Scale



Techline CV Start Connection
Not to Scale



Techline CV Irregular Areas: Odd curves
Not to Scale

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LICENSED LANDSCAPE ARCHITECT
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Zaffaroni Residence

0 Alpine Road
Portola Valley, CA 94028

APN: 182-36-043

Issue:	Date:
Issued for Review	07NOV2019

Project ID	Zaffaroni
CAD File Name	cjw zaffaroni.vwx
Plot Date	
Drawn By	LD / BC
Scale	As Noted

Landscape Details

L-501

COUNTY OF SANTA CLARA
General Construction Specifications

GENERAL CONDITIONS

1. ALL CONSTRUCTION WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE SOILS AND/OR GEOTECHNICAL REPORT PREPARED BY C2EARTH, DATED APRIL 9, 2019. THIS REPORT IS SUPPLEMENTED BY: 1) THESE PLANS AND SPECIFICATIONS, 2) THE COUNTY OF SANTA CLARA STANDARD DETAILS. 3) THE COUNTY OF SANTA CLARA STANDARD SPECS, 4) STATE OF CALIFORNIA STANDARD DETAILS, 5) STATE OF CALIFORNIA STANDARD SPECIFICATIONS. IN THE EVENT OF CONFLICT THE FORMER SHALL TAKE PRECEDENCE OVER THE LATTER. THE PERFORMANCE AND COMPLETION OF ALL WORK MUST BE TO THE SATISFACTION OF THE COUNTY.
2. DEVELOPER IS RESPONSIBLE FOR INSTALLATION OF THE IMPROVEMENTS SHOWN ON THESE PLANS AND HE OR HIS SUCCESSOR PROPERTY OWNERS ARE RESPONSIBLE FOR THEIR CONTINUED MAINTENANCE.
3. DEVELOPER SHALL BE RESPONSIBLE FOR CORRECTION OF ANY ERRORS OR OMISSIONS IN THESE PLANS. THE COUNTY SHALL BE AUTHORIZED TO REQUIRE DISCONTINUANCE OF ANY WORK AND SUCH CORRECTION AND MODIFICATION OF PLANS AS MAY BE NECESSARY TO COMPLY WITH COUNTY STANDARDS OR CONDITIONS OF DEVELOPMENT APPROVAL.
4. DEVELOPER SHALL OBTAIN ENCROACHMENT PERMITS FROM THE SANTA CLARA VALLEY WATER DISTRICT AND CALIFORNIA DEPARTMENT OF TRANSPORTATION WHERE NEEDED. COPIES OF THESE PERMITS SHALL BE KEPT AT THE JOB SITE FOR REVIEW BY THE COUNTY'S INSPECTOR.
5. DEVELOPER SHALL REMOVE OR TRIM ALL TREES TO PROVIDE AN UNOBSTRUCTED FIFTEEN (15) FOOT VERTICAL CLEARANCE FOR ROADWAY AREA.
6. THIS PLAN AUTHORIZES THE REMOVAL OF ONLY THOSE TREES WITH TRUNK DIAMETERS GREATER THAN 12 INCHES MEASURED 4.5 FEET ABOVE THE GROUND THAT ARE SHOWN TO BE REMOVED UNLESS AN AMENDED PLAN IS APPROVED OR A SEPARATE TREE REMOVAL PERMIT IS OBTAINED FROM THE PLANNING OFFICE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT REMOVAL OF ADDITIONAL TREES HAS BEEN PERMITTED.
7. DEVELOPER SHALL PROVIDE ADEQUATE DUST CONTROL AS REQUIRED BY THE COUNTY INSPECTOR.
8. ALL PERSONS MUST COMPLY WITH SECTION 4442 OF THE PUBLIC RESOURCES CODE AND SECTION 13005 OF THE HEALTH AND SAFETY CODE RELATING TO THE USE OF SPARK ARRESTERS.
9. UPON DISCOVERING OR UNEARTHING ANY BURIAL SITE AS EVIDENCED BY HUMAN SKELETAL REMAINS OR ARTIFACTS, THE PERSON MAKING SUCH DISCOVERY SHALL IMMEDIATELY NOTIFY THE COUNTY CORONER AT (4008) 454-2520 AND LAND DEVELOPMENT ENGINEERING OFFICE AT (408) 299-5730. NO FURTHER DISTURBANCE OF THE SITE MAY BE MADE EXCEPT AS AUTHORIZED BY THE LAND DEVELOPMENT OFFICE IN ACCORD WITH PROVISIONS OF THIS ORDINANCE (COUNTY ORDINANCE CODE SECTION B6-18).
10. THESE PLANS ARE FOR THE WORK DESCRIBED IN THE SCOPE OF WORK ONLY. A SEPARATE PERMIT WILL BE REQUIRED FOR THE SEPTIC LINE CONSTRUCTION.
11. ANY DEVIATION FROM THESE APPROVED PLANS SHALL BE RE-APPROVED IN WRITING BY THE COUNTY ENGINEER PRIOR TO CONSTRUCTION.

CONSTRUCTION STAKING

1. THE DEVELOPER'S ENGINEER IS RESPONSIBLE FOR THE INITIAL PLACEMENT AND REPLACEMENT OF CONSTRUCTION GRADE STAKES. THE STAKES ARE TO BE ADEQUATELY IDENTIFIED, LOCATED, STABILIZED, ETC. FOR THE CONVENIENCE OF CONTRACTORS. LATERAL OFFSET OF STAKES SET FOR CURBS AND GUTTERS SHALL NOT EXCEED 2 1/2 FEET FROM BACK OF CURB.
2. ANY PROPERTY LINE STAKES OR ROAD MONUMENTS DISTURBED DURING CONSTRUCTION SHALL BE REPLACED BY DEVELOPER'S ENGINEER AND LICENSED LAND SURVEYOR.
3. PROPERTY LINE STAKING MUST BE PERFORMED BY THE PROJECT ENGINEER OR LAND SURVEYOR TO ESTABLISH OR RE-ESTABLISH THE PROJECT BOUNDARY AND SHALL BE INSPECTED BY THE COUNTY INSPECTOR PRIOR TO THE BEGINNING OF THE WORK.
4. PROPER CONSTRUCTION STAKES SHALL BE SET IN THE FIELD BY THE PROJECT ENGINEER OR LAND SURVEYOR AND VERIFIED BY THE COUNTY INSPECTOR PRIOR TO THE COMMENCEMENT OF GRADING.

CONSTRUCTION INSPECTION

1. CONTRACTOR SHALL NOTIFY PERMIT INSPECTION UNIT, SANTA CLARA COUNTY PRIOR TO COMMENCING WORK AND FOR FINAL INSPECTION OF WORK AND SITE.
2. THE COUNTY REQUIRES A MINIMUM OF 24 HOURS ADVANCE NOTICE FOR GENERAL INSPECTION, 48 HOURS FOR ASPHALT CONCRETE INSPECTION.
3. INSPECTION BY SANTA CLARA COUNTY SHALL BE LIMITED TO INSPECTION OF MATERIALS AND PROCESSES OF CONSTRUCTION TO OBSERVE THEIR COMPLIANCE WITH PLANS & SPECIFICATIONS BUT DOES NOT INCLUDE RESPONSIBILITY FOR THE SUPERINTENDENT OF CONSTRUCTION, SITE CONDITIONS, EQUIPMENT OR PERSONNEL. CONTRACTOR SHALL NOTIFY THE COUNTY LAND DEVELOPMENT ENGINEER AT PHONE (408) 299-5868 AT LEAST 24 HOURS PRIOR TO COMMENCING WORK AND FOR FINAL INSPECTION OF WORK AND SITE.
4. DEVELOPER AND/OR HIS AUTHORIZED REPRESENTATIVE MUST SUBMIT WRITTEN REQUEST FOR FINAL INSPECTION AND ACCEPTANCE. SAID REQUEST SHALL BE DIRECTED TO THE INSPECTION OFFICE NOTED ON THE PERMIT FORM.
5. THE CONTRACTOR SHALL PROVIDE TO THE COUNTY CONSTRUCTION INSPECTOR WITH PAD ELEVATION AND LOCATION CERTIFICATES, PREPARED BY THE PROJECT ENGINEER OR LAND SURVEYOR, PRIOR TO COMMENCEMENT OF THE BUILDING FOUNDATION.

SITE PREPARATION (CLEARING AND GRUBBING)

1. EXISTING TREES AUTHORIZED FOR REMOVAL, ROOTS, AND FOREIGN MATERIAL IN AREAS TO BE IMPROVED WILL BE REMOVED TO AN AUTHORIZED DISPOSAL SITE AS FOLLOWS:
   A) TO A MINIMUM DEPTH OF TWO FEET BELOW THE FINISHED GRADE OF PROPOSED ROADWAYS (EITHER PRIVATE OR TO BE DEDICATED TO PUBLIC USE)
   B) FROM AREAS AFFECTED BY THE PROPOSED GRADING EXCEPT WHERE NOTED ON THE PLANS.
2. IT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER TO MOVE OR RELOCATE UTILITY POLES AND OTHER OBSTRUCTIONS IN THE WAY OF CONSTRUCTION.

UTILITY LOCATION, TRENCHING & BACKFILL

1. CONTRACTOR SHALL NOTIFY USA (UNDERGROUND SERVICE ALERT) AT 1-800-277-2600 A MINIMUM OF 24 HOURS BEFORE BEGINNING UNDERGROUND WORK FOR VERIFICATION OF THE LOCATION OF UNDERGROUND UTILITIES.
2. ACCURATE VERIFICATION AS TO SIZE, LOCATION, AND DEPTH OF EXISTING UNDERGROUND CONDUITS OR FACILITIES SHALL BE THE INDIVIDUAL CONTRACTORS RESPONSIBILITY. PLAN LOCATIONS ARE APPROXIMATE AND FOR GENERAL INFORMATION ONLY.
3. ALL UNDERGROUND INSTALLATIONS SHALL BE IN PLACE AND THE TRENCH BACKFILLED AND COMPACTED BEFORE PLACING AGGREGATE BASE MATERIAL OR SURFACE STRUCTURES. SURFACING MAY BE DONE IF THE UTILITY COMPANY CONCERNED INDICATES BY LETTER THAT IT WILL BORE. UNLESS SPECIFICALLY AUTHORIZED BY THE COUNTY, GAS AND WATER MAINS SHALL BE INSTALLED OUTSIDE THE PAVED AREAS.
4. TRENCH BACKFILL IN EXISTING PAVEMENT AREAS SHALL BE SAND MATERIAL IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF THE STATE SPECIFICATIONS. THE STRUCTURAL SECTION FOR TRENCH REPLACEMENT SHALL CONSIST OF NOT LESS THAN 12 INCHES OF APPROVED AGGREGATE BASE MATERIAL COMPACTED TO A RELATIVE COMPACTION OF AT LEAST 95% AND 4 INCHES OF HOT ASPHALT CONCRETE PLACED IN TWO LIFTS. TRENCH RESTORATION FOR HIGHER TYPE PAVEMENTS SHALL BE MADE IN KIND OR AS DIRECTED BY THE COUNTY.
5. TRENCH BACKFILL IN NEW CONSTRUCTION AREAS SHALL BE SAND MATERIAL COMPACTED TO A RELATIVE COMPACTION OF AT LEAST 90%. THE REQUIREMENT FOR SELECT MATERIAL MAY BE WAIVED BY COUNTY IF THE NATIVE SOIL IS SUITABLE FOR USE AS TRENCH BACKFILL BUT THE COMPACTION REQUIREMENTS WILL NOT BE THEREBY WAIVED.
6. BACKFILL AND TRENCH RESTORATION REQUIREMENTS SHALL APPLY AS MINIMUM STANDARDS TO ALL UNDERGROUND FACILITIES INSTALLED BY OTHER FIRMS OR PUBLIC AGENCIES.

RETAINING WALLS

1. REINFORCED CONCRETE AND CONCRETE MASONRY UNIT RETAINING WALLS SHALL HAVE FOUNDATION AND REINFORCEMENT INSPECTED BY THE COUNTY ENGINEERING INSPECTOR AND ENGINEER OF RECORD PRIOR TO POURING THE FOUNDATION AND FORMING THE WALL.
2. SEGMENTAL BLOCK RETAINING WALLS SHALL HAVE FOUNDATION AND REINFORCEMENT INSPECTED BY THE COUNTY ENGINEERING INSPECTOR.

GRADING

1. EXCAVATED MATERIAL SHALL BE PLACED IN THE FILL AREAS DESIGNATED OR AS INTERFACES WITH THE LIMITS OF GRADING FOR ALL PROPOSED SITE. WHERE FILL MATERIAL IS TO BE PLACED ON NATURAL GROUND, IS SHALL BE DEVELOPMENT ON SITE, THE TREES SHALL BE PROTECTED BY THE PLACEMENT STRIPPED OF ALL VEGETATION. TO ACHIEVE A PROPER BOND WITH THE OF RIGID TREE PROTECTIVE FENCING, CONSISTENT WITH THE COUNTY FILL MATERIAL, THE SURFACE OF THE GROUND SHALL BE SCARIFIED TO DEPTH INTEGRATED LANDSCAPE GUIDELINES, AND INCLUDE THE FOLLOWING:
   OF 6" BEFORE FILL IS PLACED. WHERE NATURAL GROUND IS STEEPER THAN A. FENCING SHOULD BE PLACED ALONG THE OUTSIDE EDGE OF THE DRIPLINE
   5:1, IT SHALL BE BENCHED AND THE FILL KEYED IN TO ACHIEVE STABILITY. OF THE TREE OR GROVE OF TREES.
   WHERE NEW FILL IS TO BE PLACED ON EXISTING FILL THE EXISTING FILL SHALL B. THE FENCING SHALL BE MAINTAINED THROUGHOUT THE SITE
   BE REMOVED UNTIL MATERIAL COMPACTED TO 90% RELATIVE COMPACTION IS CONSTRUCTION PERIOD AND SHALL BE INSPECTED PERIODICALLY FOR
   EXPOSED. THEN THE NEW FILL MATERIAL SHALL BE PLACED AS PER THESE DAMAGE AND PROPER FUNCTION.
   CONSTRUCTION NOTES. FILL MATERIAL SHALL BE PLACED IN UNIFORM LIFTS C. FENCING SHALL BE REPAIRED, AS NECESSARY, TO PROVIDE A PHYSICAL
   NOT EXCEEDING 6" IN UNCOMPACTED THICKNESS. BEFORE COMPACTION BEGINS, BARRIER FROM CONSTRUCTION ACTIVITIES.
   THE FILL SHALL BE BROUGHT TO A WATER CONTENT THAT WILL PERMIT D. SIGNAGE STATING, "WARNING- THIS FENCING SHALL NOT BE REMOVED
   PROPER COMPACTION BY EITHER 1) AERATING THE FILL IF IT IS TOO WET OR WITHOUT PERMISSION FROM THE SANTA CLARA COUNTY PLANNING
   2) MOISTENING THE FILL WITH WATER IF IT IS TOO DRY. EACH LIFT SHALL BE OFFICE (408) 299-5770. COUNTY OF SANTA CLARA TREE
   THOROUGHLY MIXED BEFORE COMPACTION TO ENSURE A UNIFORM DISTRIBUTION PROTECTION MEASURES MAY BE FOUND AT
   OF MOISTURE. http://www.sccplanning.gov." SHALL BE PLACED ON THE TREE
2. EXCESS CUT MATERIAL SHALL NOT BE SPREAD OR STOCKPILED ON THE SITE. PROTECTIVE FENCING UNTIL FINAL OCCUPANCY.
3. SURPLUS EARTH FILL MATERIAL SHALL BE PLACED IN A SINGLE (8" MAX) 2. PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITY, TREE PROTECTIVE
   THICK LAYER COMPACTED TO WITHSTAND WEATHERING IN THE AREA(S) FENCING SHALL BE SECURELY IN PLACED AND INSPECTED BY THE LAND
   DELINEATED ON THE PLAN. DEVELOPMENT ENGINEERING INSPECTOR.
4. NO ORGANIC MATERIAL SHALL BE PLACED IN ANY FILL. NO TREES SHALL BE 3. SEE EXISTING TREE PROTECTION DETAILS FOR MORE INFORMATION.
   REMOVED OUTSIDE OF CUT, FILL OR ROADWAY AREAS.
5. THE UPPER 6" OF SUBGRADE BELOW DRIVEWAY ACCESS ROAD OR PARKING AREA SHALL BE COMPACTED TO 95% OF MAXIMUM DENSITY.
6. MAXIMUM CUT SLOPE SHALL BE 2 HORIZONTAL TO 1 VERTICAL. MAXIMUM FILL SLOPE SHALL BE 2 HORIZONTAL TO 1 VERTICAL.

LOCATION	CUT (C.Y.)	FILL (C.Y.)	NET (C.Y.)	MAX CUT HT.	MAX FILL HT.
BUILDING PADS	2,500	0	2,500 (C)	29.5'	0
DRIVEWAY	1,915	260	1,655 (C)	13.0'	0
SITE	1,100	340	760 (C)	11.0'	2.0'
BRIDGE	20	80	60 (F)	0.3'	4.4'
TOTAL	5,535	680	4,855 (C)		

NOTE: FILL VOLUMES INCLUDE 10% SHRINKAGE.
EXCESS MATERIAL SHALL BE OFF HAULED TO A COUNTY APPROVED DUMP SITE.

7. NOTIFY SOILS ENGINEER TWO (2) DAYS PRIOR TO COMMENCEMENT OF ANY GRADING WORK TO COORDINATE THE WORK IN THE FIELD.
8. ALL MATERIALS FOR FILL SHOULD BE APPROVED BY THE SOILS ENGINEER BEFORE IT IS BROUGHT TO THE SITE.
9. THE UPPER 6" OF THE SUBGRADE SOIL SHALL BE SCARIFIED, MOISTURE CONDITIONED AND COMPACTED TO A MINIMUM RELATIVE COMPACTION OF 95%
10. ALL AGGREGATE BASE MATERIAL SHALL BE COMPACTED TO A MINIMUM 95% RELATIVE COMPACTION.
11. THE GEOTECHNICAL PLAN REVIEW LETTER MUST BE REVIEWED AND APPROVED BY THE COUNTY GEOLOGIST PRIOR TO FINAL APPROVAL BY THE COUNTY ENGINEER FOR BUILDING OCCUPANCY.
12. THE PROJECT GEOTECHNICAL ENGINEER SHALL PERFORM COMPACTION TESTING AND PRESENT THE RESULTS TO THE COUNTY ENGINEERING INSPECTOR PRIOR TO THE CONSTRUCTION OF ANY PAVED AREA.
13. GRADING WORK BETWEEN OCTOBER 15TH AND APRIL 15TH IS AT THE DISCRETION OF THE SANTA CLARA COUNTY GRADING OFFICIAL.
14. TOTAL DISTURBED AREA FOR THE PROJECT ___38,000 SF (0.872 ACRES)___.
15. WDID NO._____TBD_____
16. THE INSPECTOR MAY VERIFY THAT A VALID NOTICE OF INTENT (NOI) HAS BEEN ISSUED BY THE STATE AND THAT A CURRENT AND UP TO DATE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) IS AVAILABLE ON SITE.

TREE PROTECTION

1. FOR ALL TREES TO BE RETAINED WITH A CANOPY IN THE DEVELOPMENT AREA OR INTERFACES WITH THE LIMITS OF GRADING FOR ALL PROPOSED

ACCESS ROADS AND DRIVEWAYS

1. DRIVEWAY LOCATIONS SHALL BE AS SHOWN ON THE IMPROVEMENT PLANS WITH CENTERLINE STATIONING. THE MINIMUM CONCRETE THICKNESS SHALL BE 4 INCHES THROUGHOUT (WITH A MAXIMUM APPROACH SLOPE OF 1 1/4 INCHES PER FOOT).
2. ALL DRIVEWAY OR COMMON ACCESS ROAD SECTIONS IN EXCESS OF 15 LONGITUDINAL SLOPE MUST BE PAVED WITH A MINIMUM 2-INCH ASPHALT LIFT OR FULL DEPTH CONCRETE LIFT PRIOR TO ANY COMBUSTIBLE FRAMING.
3. THE OWNER AND PRIME CONTRACTOR ARE RESPONSIBLE FOR MAINTAINING PROJECT SITE ACCESS AND NEIGHBORHOOD ACCESS FOR EMERGENCY VEHICLES AND LOCAL RESIDENTS.
4. ROADWAYS DESIGNATED AS NOT COUNTY MAINTAINED ROADS AS SHOWN ON THE PLAN WILL NOT BE ELIGIBLE FOR COUNTY MAINTENANCE UNTIL THE ROADWAYS ARE IMPROVED (AT NO COST TO THE COUNTY) TO THE PUBLIC MAINTENANCE ROAD STANDARDS APPROVED BY THE BOARD OF SUPERVISORS AND IN EFFECT AT SUCH TIME THAT THE ROADWAYS ARE CONSIDERED FOR ACCEPTANCE INTO THE COUNTY'S ROAD SYSTEM.
5. ALL WORK IN THE COUNTY ROAD RIGHT-OF-WAY REQUIRES AN ENCROACHMENT PERMIT FROM THE ROADS AND AIRPORTS DEPARTMENT. EACH INDIVIDUAL ACTIVITY REQUIRES A SEPARATE PERMIT – I.E. CABLE, ELECTRICAL, GAS, SEWER, WATER, RETAINING WALLS, DRIVEWAY APPROACHES, FENCES, LANDSCAPING, TREE REMOVAL, STORM DRAINAGE IMPROVEMENTS, ETC..

STREET LIGHTING

1. PACIFIC GAS & ELECTRIC ELECTROLIER SERVICE FEE SHALL BE PAID BY THE DEVELOPER AND/OR HIS AUTHORIZED REPRESENTATIVE.

SANITARY SEWER

1. THE SANITARY SEWER AND WATER UTILITIES SHOWN ON THESE PLANS ARE NOT PART OF THIS GRADING PERMIT AND ARE SHOWN FOR REFERENCE ONLY.
2. ALL MATERIALS AND METHODS OF CONSTRUCTION OF SANITARY SEWERS SHALL CONFORM TO THE SPECIFICATIONS OF THE JURISDICTION INVOLVED. INSPECTION OF SANITARY SEWER WORK SHALL BE DONE BY SAID JURISDICTION.

PORTLAND CEMENT CONCRETE

1. CONCRETE USED FOR STRUCTURAL PURPOSES SHALL BE CLASS "A" (6 SACK PER CUBIC YARD) AS SPECIFIED IN THE STATE STANDARD SPECIFICATIONS. CONCRETE PLACED MUST DEVELOP A MINIMUM STRENGTH FACTOR OF 2800 PSI IN A SEVEN-DAY PERIOD. THE CONCRETE MIX DESIGN SHALL BE UNDER THE CONTINUAL CONTROL OF THE COUNTY INSPECTOR.

AIR QUALITY, LANDSCAPING AND EROSION CONTROL

1. WATER ALL ACTIVE CONSTRUCTION AREAS AT LEAST TWICE DAILY.
2. COVER ALL TRUCKS HAULING SOIL, SAND, AND OTHER LOOSE MATERIALS OR REQUIRE ALL TRUCKS TO MAINTAIN AT LEAST TWO FEET OF FREEBOARD.
3. PAVE, APPLY WATER THREE TIMES DAILY, OR APPLY (NON-TOXIC) SOIL STABILIZERS ON ALL UNPAVED ACCESS ROADS, PARKING AREAS AND STAGING AREAS AT CONSTRUCTION SITES.
4. SWEEP DAILY (WITH WATER SWEEPERS) ALL PAVED ACCESS ROADS, PARKING AREAS AND STAGING AREAS AT CONSTRUCTION SITES. THE USE OF DRY POWDER SWEEPING IS PROHIBITED.
5. SWEEP STREETS DAILY (WITH WATER SWEEPERS) IF VISIBLE SOIL MATERIAL IS CARRIED ONTO ADJACENT PUBLIC STREETS. THE USE OF DRY POWDER SWEEPING IS PROHIBITED.
6. ALL CONSTRUCTION VEHICLES, EQUIPMENT AND DELIVERY TRUCKS SHALL HAVE A MAXIMUM IDLING TIME OF 5 MINUTES (AS REQUIRED BY THE CALIFORNIA AIRBORNE TOXIC CONTROL MEASURE TITLE 13, SECTION 2485 OF CALIFORNIA CODE OF REGULATIONS (CCR)). ENGINES SHALL BE SHUT OFF IF CONSTRUCTION REQUIRES LONGER IDLING TIME UNLESS NECESSARY FOR PROPER OPERATION OF THE VEHICLE.
7. ALL VEHICLE SPEEDS ON UNPAVED ROADS SHALL BE LIMITED TO 15 MILES PER HOUR.
8. ALL CONSTRUCTION EQUIPMENT SHALL BE MAINTAINED AND PROPERLY TUNED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS. ALL EQUIPMENT SHALL BE CHECKED BY A CERTIFIED MECHANIC AND DETERMINED TO BE RUNNING IN PROPER CONDITION PRIOR TO OPERATION.
9. POST A SIGN THAT IS AT LEAST 32 SQUARE FEET MINIMUM 2 INCHES LETTER HEIGHT VISIBLE NEAR THE ENTRANCE OF CONSTRUCTION SITE THAT IDENTIFIES THE FOLLOWING REQUIREMENTS. OBTAIN ENCROACHMENT PERMIT FOR SIGN FROM ROADS DEPARTMENT OR OTHER APPLICABLE AGENCY IF REQUIRED.
   A. 15 MILES PER HOUR (MPH) SPEED LIMIT
   B. 5 MINUTES MAXIMUM IDLING TIME OF VEHICLES
   C. TELEPHONE NUMBER TO CONTACT THE BAY AREA AIR QUALITY MANAGEMENT DISTRICT REGARDING DUST COMPLAINTS. NOTE PHONE NUMBER OF THE BAY AREA AIR QUALITY MANAGEMENT DISTRICT AIR POLLUTION COMPLAIN HOTLINE OF 1-800-334-6367.
10. ALL FILL SHALL BE COMPACTED AND LEFT IN A SMOOTH AND FIRM CONDITION CAPABLE OF WITHSTANDING WEATHERING.
11. ALL EXPOSED DISTURBED AREAS SHALL BE SEEDED WITH BROME SEED SPREAD AT THE RATE OF 5 LB. PER 1000 SQUARE FEET (OR APPROVED EQUAL). SEEDING AND WATERING SHALL BE MAINTAINED AS REQUIRED TO ENSURE GROWTH.
12. ALL DITCHES SHALL BE LINED PER COUNTY STANDARD SD8.
13. ALL STORM DRAINAGE STRUCTURES SHALL BE INSTALLED WITH EFFECTIVE ENTRANCE & OUTFALL EROSION CONTROLS E.G. SACKED CONCRETE RIP-RAP. ENERGY DISSIPATERS SHALL BE INSTALLED AT ALL DITCH OUTFALLS. WHERE OUTFALLS ARE NOT INTO AN EXISTING CREEK OR WATER COURSE, RUNOFF SHALL BE RELEASED TO SHEET FLOW.
14. PRIOR TO GRADING COMPLETION AND RELEASE OF THE BOND, ALL GRADED AREAS SHALL BE RESEEDED IN CONFORMANCE WITH THE COUNTY GRADING ORDINANCE TO MINIMIZE THE VISUAL IMPACTS OF THE GRADE SLOPES AND REDUCE THE POTENTIAL FOR EROSION OF THE SUBJECT SITE.
15. PERMANENT LANDSCAPING SHOWN ON THE ATTACHED LANDSCAPE PLAN MUST BE INSTALLED AND FIELD APPROVED BY THE COUNTY PLANNING OFFICE PRIOR TO FINAL APPROVAL BY THE COUNTY ENGINEER, AND FINAL OCCUPANCY RELEASE BY THE BUILDING INSPECTION OFFICE.
16. THE OWNER SHALL PREPARE AND PRESENT A WINTERIZATION REPORT TO THE COUNTY INSPECTOR FOR REVIEW PRIOR TO OCTOBER 15TH OF EVERY YEAR.
17. THE OWNER, CONTRACTOR, AND ANY PERSON PERFORMING CONSTRUCTION ACTIVITIES SHALL INSTALL AND MAINTAIN CONSTRUCTION BEST MANAGEMENT PRACTICES (BMPS) ON THE PROJECT SITE AND WITHIN THE SANTA CLARA COUNTY ROAD RIGHT-OF-WAY THROUGHOUT THE DURATION OF THE CONSTRUCTION AND UNTIL THE ESTABLISHMENT OF PERMANENT STABILIZATION AND SEDIMENT CONTROL TO PREVENT THE DISCHARGE OF POLLUTANTS INCLUDING SEDIMENT, CONSTRUCTION MATERIALS, EXCAVATED MATERIALS, AND WASTE INTO THE SANTA CLARA COUNTY RIGHT-OF-WAY, STORM SEWER WATERWAYS, ROADWAY INFRASTRUCTURE. BMPS SHALL INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING;
   A. PREVENTION OF POLLUTANTS IN STORM WATER DISCHARGES FROM THE CONSTRUCTION SITE AND THE CONTRACTOR'S MATERIAL AND EQUIPMENT LAYDOWN / STAGING AREAS.
   B. PREVENTION OF TRACKING OF MUD, DIRT, AND CONSTRUCTION MATERIALS ONTO THE PUBLIC ROAD RIGHT-OF-WAY.
   C. PREVENTION OF DISCHARGE OF WATER RUN-OFF DURING DRY AND WET WEATHER CONDITIONS ONTO THE PUBLIC ROAD RIGHT-OF-WAY.
18. THE OWNER, CONTRACTOR, AND ANY PERSON PERFORMING CONSTRUCTION ACTIVITIES SHALL ENSURE THAT ALL TEMPORARY CONSTRUCTION FACILITIES, INCLUDING BUT NOT LIMITED TO CONSTRUCTION MATERIALS, DELIVERIES, HAZARDOUS AND NON-HAZARDOUS MATERIAL STORAGE, EQUIPMENT, TOOLS, PORTABLE TOILETS, CONCRETE WASHOUT, GARBAGE CONTAINERS, LAYDOWN YARDS, SECONDARY CONTAINMENT AREAS, ETC. ARE LOCATED OUTSIDE THE SANTA CLARA COUNTY ROAD RIGHT-OF-WAY.
19. EROSION CONTROL PLAN IS A GUIDE AND SHALL BE AMENDED AS NECESSARY TO PREVENT EROSION AND ILLICIT DISCHARGES ON A YEAR AROUND BASIS, DEPENDING ON THE SEASON, WEATHER, AND FIELD CONDITIONS. EROSION CONTROL MEASURES IN ADDITION TO THOSE NOTED IN THE PERMITTED PLANS MAY BE NECESSARY. FAILURE TO INSTALL SITE SITE AND SITUATIONALY APPROPRIATE EROSION CONTROL MEASURES MAY RESULT IN VIOLATIONS, FINES, AND A STOPPAGE OF WORK.

STORM DRAINAGE AND STORMWATER MANAGEMENT

1. DEVELOPER IS RESPONSIBLE FOR ALL NECESSARY DRAINAGE FACILITIES WHETHER SHOWN ON THE PLANS OR NOT AND HE OR HIS SUCCESSOR PROPERTY OWNERS ARE RESPONSIBLE FOR THE ADEQUACY AND CONTINUED MAINTENANCE OF THESE FACILITIES IN A MANNER WHICH WILL PRECLUDE ANY HAZARD TO LIFE, HEALTH, OR DAMAGE TO ADJOINING PROPERTY, CONSISTENT WITH NPDES PERMIT CAS612008 / ORDER NO. R2-2009-0047 AND NPDES PERMIT CAS000004/ ORDER NO. 2013-0001-DWQ.
2. DROP INLETS SHALL BE COUNTY STANDARD TYPE S UNLESS OTHERWISE NOTED ON THE PLANS. THE DEVELOPER'S ENGINEER SHALL BE RESPONSIBLE FOR THE PROPER LOCATION OF DROP INLETS. WHERE STREET PROFILE GRADE EXCEEDS 6% DROP INLETS SHALL BE SET AT 500 ANGLE CURB LINE TO ACCEPT WATER OR AS SHOWN ON THE PLANS.
3. WHERE CULVERTS ARE INSTALLED THE DEVELOPER SHALL BE RESPONSIBLE FOR GRADING THE OUTLET DITCH TO DRAIN TO AN EXISTING SWALE OR TO AN OPEN AREA FOR SHEET FLOW.
4. UPON INSTALLATION OF DRIVEWAY CONNECTIONS, PROPERTY OWNERS SHALL PROVIDE FOR THE UNINTERRUPTED FLOW OF WATER IN ROADSIDE DITCHES.
5. THE COUNTY SHALL INSPECT UNDERGROUND DRAINAGE IMPROVEMENTS AND STORMWATER MANAGEMENT FEATURES PRIOR TO BACKFILL.

AS-BUILT PLANS STATEMENT

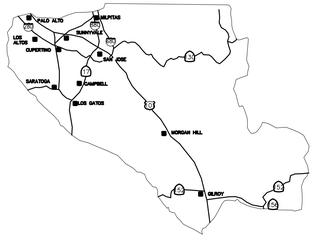
THIS IS A TRUE COPY OF THE AS-BUILT PLANS. THERE (___ WERE) (___ WERE NOT) MINOR FIELD CHANGES – MARKED WITH THE SYMBOL (^). THERE (___WERE) (___ WERE NOT) PLAN REVISIONS INDICATING SIGNIFICANT CHANGES REVIEWED BY THE COUNTY ENGINEER AND MARKED WITH THE SYMBOL Δ.

_____ _____
DATE SIGNATURE

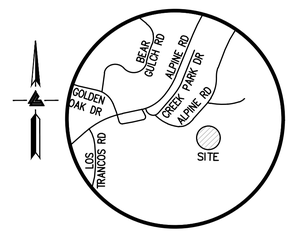
NOTE: THIS STATEMENT IS TO BE SIGNED BY THE PERSON AUTHORIZED BY THE COUNTY ENGINEER TO PERFORM THE INSPECTION WORK. A REPRODUCIBLE COPYOF THE AS-BUILT PLANS MUST BE FURNISHED TO THE COUNTY ENGINEER AFTERCONSTRUCTION.

GEOTECHNICAL ENGINEER OBSERVATION

1. A CONSTRUCTION OBSERVATION LETTER FROM THE RESPONSIBLE GEOTECHNICAL ENGINEER AND ENGINEERING GEOLOGIST DETAILING CONSTRUCTION OBSERVATIONS AND CERTIFYING THAT THE WORK WAS DONE IN ACCORDANCE WITH THE RECOMMENDATIONS IN THE GEOTECHNICAL AND GEOLOGIC REPORTS SHALL BE SUBMITTED PRIOR TO THE GRADING COMPLETION AND RELEASE OF THE BOND.



COUNTY LOCATION MAP



VICINITY MAP
NTS

SURVEY MONUMENT PRESERVATION

1. THE LANDOWNER / CONTRACTOR MUST PROTECT AND ENSURE THE PERPETUATION OF SURVEY MONUMENTS AFFECTED BY CONSTRUCTION ACTIVITIES.
2. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL LOCATE, STAKE, AND FLAG OR OTHERWISE IDENTIFY WITH PAINT OR OTHER MARKINGS ALL PERMANENT SURVEY MONUMENTS OF RECORD AND ANY UNRECORDED MONUMENTS THAT ARE DISCOVERED THAT ARE WITHIN 50 FEET OF THE CONSTRUCTION ACTIVITY.
3. THE LANDOWNER, CONTRACTOR AND/OR ANY PERSON PERFORMING CONSTRUCTION ACTIVITIES THAT WILL OR MAY DISTURB AN EXISTING MONUMENT, CORNER STAKE, OR ANY OTHER PERMANENT SURVEYED MONUMENT SHALL CAUSE TO HAVE A LICENSED LAND SURVEYOR OR CIVIL ENGINEER, AUTHORIZED TO PRACTICE SURVEYING, ENSURE THAT A CORNER RECORD AND/OR RECORD OF SURVEY ARE FILED WITH THE COUNTY SURVEYOR'S OFFICE PRIOR TO DISTURBING SAID MONUMENTS AND RESET PERMANENT MONUMENT(S) IN THE SURFACE OF THE NEW CONSTRUCTION OR SET A WITNESS MONUMENT(S) TO PERPETUATE THE LOCATION IF ANY PERMANENT MONUMENT COULD BE DESTROYED, DAMAGED, COVERED, DISTURBED, OR OTHERWISE OBLITERATED. THE LICENSED LAND SURVEYOR OR CIVIL ENGINEER SHALL FILE A CORNER RECORD OR RECORD OF SURVEY WITH COUNTY SURVEYOR PRIOR TO FINAL ACCEPTANCE OF THE PROJECT BY THE LAND DEVELOPMENT ENGINEERING INSPECTOR.

BENCHMARK

TOWN OF PORTOLA VALLEY BENCHMARK PV-15
33'± SE OF STREET MON, 33'± SW OF STOP SIGN POLE, 30'± NE OF POWER POLE AT THE INTERSECTION OF ALPINE RD AND LOS TRANCOS RD.
ELEVATION = 478.36'
(ADJUSTED TO NAVD 88 DATUM)

SITE BENCHMARK

SURVEY CONTROL POINT
CUT CROSS IN CONCRETE
ELEVATION = 418.91'
(ADJUSTED TO NAVD 88 DATUM)

NOTES

ALL DISTANCES AND DIMENSIONS ARE IN FEET AND DECIMALS.

UNDERGROUND UTILITY LOCATION IS BASED ON SURFACE EVIDENCE.

ALL RETAINING WALLS ARE ROCK EXCEPT WHERE NOTED.

EASEMENT NOTE

APN 182-36-043
EASEMENTS ARE SHOWN PER TITLE REPORT PREPARED BY CHICAGO TITLE COMPANY, TITLE NO. FWPS-3589181327, DATED AUGUST 8, 2018 AND DOCUMENT NO. 21228717, SANTA CLARA COUNTY RECORDS. EXCEPTION # 8 – RIGHTS AND EASEMENTS FOR NAVIGATION AND FISHERY WHICH MAY EXIST OVER THAT PORTION OF SAID LAND LYING BENEATH THE WATERS OF LOS TRANCOS CREEK. (NOT PLOTABLE)

APN 182-36-044

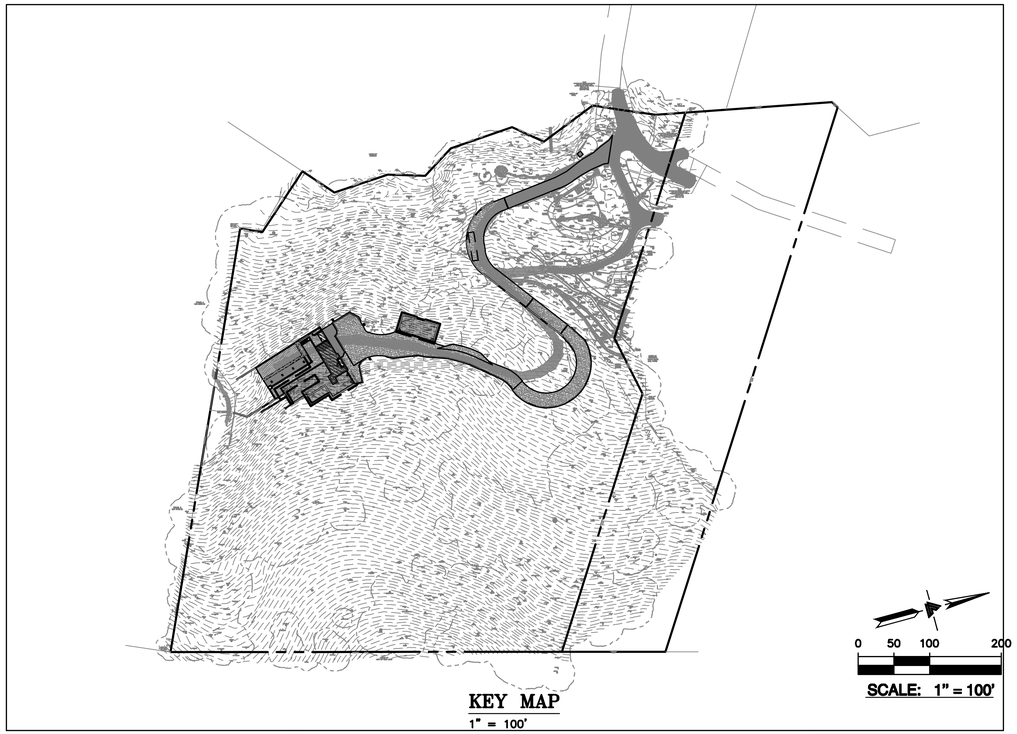
ZAFFARONI RESIDENCE
0 ALPINE ROAD
PORTOLA VALLEY, CALIFORNIA

LEGEND

EXISTING	PROPOSED	DESCRIPTION
		BOUNDARY
		PROPERTY LINE
		RETAINING WALL
		LANDSCAPE RETAINING WALL
	RW RW	RAINWATER TIGHTLINE
	SUB	SUBDRAIN LINE
	TL	TIGHTLINE
SD	SD	STORM DRAIN LINE
SS	SS	SANITARY SEWER LINE
W	W	WATER LINE
G	G	GAS LINE
P	P	PRESSURE LINE
JT	JT	JOINT TRENCH
		SET BACK LINE
		CONCRETE VALLEY GUTTER
		EARTHEN SWALE
CB	CB	CATCH BASIN
JB	JB	JUNCTION BOX
AD	AD	AREA DRAIN
SDMH	SDMH	CURB INLET
		STORM DRAIN MANHOLE
		FIRE HYDRANT
SSMH	SSMH	SANITARY SEWER MANHOLE
222.57 INV	222.57 INV	STREET SIGN
		SPOT ELEVATION
		FLOW DIRECTION
	D	DEMOLISH/REMOVE
		BENCHMARK
200	200	CONTOURS
XX" TREE	XX" TREE	TREE TO BE REMOVED

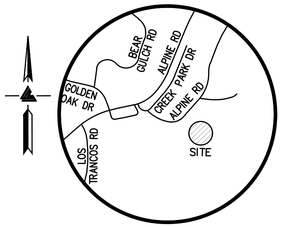
ABBREVIATIONS

AB	AGGREGATE BASE	LF	LINEAR FEET
AC	ASPHALT CONCRETE	MAX	MAXIMUM
ACC	ACCESSIBLE	MH	MANHOLE
AD	AREA DRAIN	MIN	MINIMUM
BC	BEGINNING OF CURVE	MON.	MONUMENT
B & D	BEARING & DISTANCE	MRO	METERED RELEASE OUTLET
BM	BENCHMARK	(N)	NEW
BUB	BUBBLER BOX	NO.	NUMBER
BW/FG	BOTTOM OF WALL/FINISH GRADE	NTS	NOT TO SCALE
		O.C.	ON CENTER
CB	CATCH BASIN	O/	OVER
C & G	CURB AND GUTTER	(PA)	PLANTING AREA
℄	CENTER LINE	PED	PEDESTRIAN
CPP	CORRUGATED PLASTIC PIPE (SMOOTH INTERIOR)	PIV	POST INDICATOR VALVE
		PSS	PUBLIC SERVICES EASEMENT
CO	CLEANOUT	P℄	PROPERTY LINE
COTG	CLEANOUT TO GRADE	PP	POWER POLE
CONC	CONCRETE	PUE	PUBLIC UTILITY EASEMENT
CONST	CONSTRUCT or –TION	PVC	POLYVINYL CHLORIDE
CONC COR	CONCRETE CORNER	R	RADIUS
CY	CUBIC YARD	RCP	REINFORCED CONCRETE PIPE
D	DIAMETER	RIM	RIM ELEVATION
DI	DROP INLET	RW	RAINWATER
DIP	DUCTILE IRON PIPE	R/W	RIGHT OF WAY
EA	EACH	S	SLOPE
EC	END OF CURVE	S.A.D.	SEE ARCHITECTURAL DRAWINGS
EG	EXISTING GRADE	SAN	SANITARY
EL	ELEVATIONS	SD	STORM DRAIN
EP	EDGE OF PAVEMENT	SDMH	STORM DRAIN MANHOLE
EQ	EQUIPMENT	SHT	SHEET
EW	EACH WAY	S.L.D.	SEE LANDSCAPE DRAWINGS
(E)	EXISTING	SPEC	SPECIFICATION
FC	FACE OF CURB	SS	SANITARY SEWER
FF	FINISHED FLOOR	SSCO	SANITARY SEWER CLEANOUT
FG	FINISHED GRADE	SSMH	SANITARY SEWER MANHOLE
FH	FIRE HYDRANT	ST.	STREET
FL	FLOW LINE	STA	STATION
FS	FINISHED SURFACE	STD	STANDARD
G	GAS	STRUCT	STRUCTURAL
GA	GAGE OR GAUGE	T	TELEPHONE
GB	GRADE BREAK	TC	TOP OF CURB
HDPE	HIGH DENSITY CORRUGATED POLYETHYLENE PIPE	TOW	TOP OF WALL
		TEMP	TEMPORARY
HORIZ	HORIZONTAL	TP	TOP OF PAVEMENT
HI PT	HIGH POINT	TW/FG	TOP OF WALL/FINISH GRADE
H&T	HUB & TACK	TYP	TYPICAL
ID	INSIDE DIAMETER	VC	VERTICAL CURVE
INV	INVERT ELEVATION	VCP	VITRIFIED CLAY PIPE
JB	JUNCTION BOX	VERT	VERTICAL
JT	JOINT TRENCH	W/	WITH
JP	JOINT UTILITY POLE	W, WL	WATER LINE
L	LENGTH	WM	WATER METER
LNDG	LANDING	WWF	WELDED WIRE FABRIC



KEY MAP
1" = 100'

0 50 100 200
SCALE: 1" = 100'



VICINITY MAP
NTS

FIRE NOTE:
RESIDENTIAL FIRE SPRINKLERS WILL BE A DEFERRED SUBMITTAL. SPRINKLERS WILL BE REQUIRED IN ALL STRUCTURES COVERED BY A ROOF DUE TO THE ACCESS SLOPE BEING OVER 15%.

NOTE:
PROPERTY IS IN THE WILDLAND URBAN INTERFACE (WUI) AND ALWAYS REQUIRES A 100 FT. OF DEFENSIBLE SPACE.

TREE NOTE:
TREE REMOVAL AND PROTECTION SHOWN IN THE CIVIL PLANS ARE PER THE RECOMMENDATIONS IN THE ARBORIST REPORT TITLED TREE ASSESSMENT AND PROTECTION PREPARED BY HEARTWOOD CONSULTING ARBORISTS DATED NOVEMBER 3, 2019.

TREE REMOVAL

	DRIVEWAY	SITE	TOTAL REMOVED	TOTAL TREES ON PROPERTY	PERCENT REMOVED
ALL TREES (LIVE)	5	31	36	605	5.95
OAKS (LIVE)	0	26	26	373	6.97
OTHER (LIVE)	5	5	10	232	4.31
DEAD TREES		5	5		
TOTAL TREES			41		

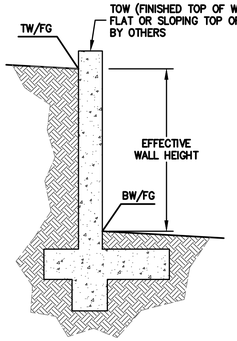
ACCESS ROAD NOTE:
ACCESS ROADS WILL BE A MINIMUM OF 18' WIDTH WITH 3' SHOULDER, WITH 15' VERTICAL CLEARANCE.

DRIVEWAY NOTE:
DRIVEWAYS WILL BE A MINIMUM OF 12' CLEAR WIDTH, WITH A 13' 6" VERTICAL CLEARANCE.

DRIVEWAY IS TO BE MADE OF AN ALL WEATHER MATERIAL CAPABLE OF HOLDING 75,000 POUNDS. 4 INCHES OF PCC CONCRETE ROUGH–SURFACED ON 4 INCHES AGGREGATE BASE OVER ENTIRE DRIVEWAY.

RETAINING WALL NOTES

1. TW/FG REPRESENTS FINISHED EARTHEN GRADE OR PAVEMENT ELEVATION AT TOP OF WALL, NOT ACTUAL TOP OF WALL MATERIAL. BW/FG REPRESENTS FINISH EARTHEN GRADE OR PAVEMENT ELEVATION AT BOTTOM OF WALL NOT INCLUDING FILL FOUNDATION. GRADES INDICATED ON THESE PLANS REFER TO THE FINISHED GRADES ADJACENT TO THE RETAINING WALL, NOT INCLUDING FOOTING, FREEBOARD, ETC.
2. DIMENSIONS SHOWN IN BRACKETS SHOWN AS [X.X'] DENOTE THE EFFECTIVE WALL HEIGHT ONLY. THE ACTUAL WALL HEIGHT AND DEPTH MAY DIFFER DUE TO CONSTRUCTION REQUIREMENTS.
3. REFER TO SPECIFIC WALL CONSTRUCTION DETAIL FOR STRUCTURAL ELEMENTS, FREEBOARD, AND EMBEDMENT.
4. REFER TO ARCHITECTURAL, LANDSCAPE ARCHITECTURE, AND/OR STRUCTURAL PLANS FOR DETAILS, WALL ELEVATIONS, SUBDRAINAGE, WATERPROOFING, FINISHES, COLORS, STEEL REINFORCING, MATERIALS, ETC. PROVIDE CLIPS OR OTHER MEANS OF SECURING FINISH MATERIALS AS NECESSARY (WET SET INTO THE WALL).
5. ALL RETAINING WALLS SHOULD HAVE A BACK–OF–WALL SUB–SURFACE DRAINAGE SYSTEM. SEE GEOTECHNICAL REPORT FOR RECOMMENDATIONS.
6. SEE STRUCTURAL PLANS FOR MORE DETAILED INFORMATION.
7. PROVIDE GUARDRAIL (WHERE APPLICABLE AND DESIGNED BY OTHERS) AS REQUIRED FOR GRADE SEPARATION OF 30 INCHES OR MORE MEASURED 5' HORIZONTALLY FROM FACE OF WALL, PER CBC.



DEVELOPMENT INFORMATION

Gross Study Area	397,971 SF (9.136 ACRE)				
Total Disturbed Area	38,000 SF (0.872 ACRE)				
Development Areas	Existing Impervious Surface (SF)	Existing Imervious Surface to be retained (SF)	Existing Impervious Surface to be replaced (SF)	New Impervious Surface (SF)	Post-Project Impervious Surface (SF)
Residence	0	0	0	6,183	6,183
Detached Garage	0	0	0	1,608	1,608
Driveway & Parking	9,175	6,160	3,015	15,715	24,890
Patios, Walkways & Pads	2,146	2,096	50	957	3,103
Concrete Drainage Swale	567	460	0	0	460
Pool & Spa	0	0	0	1,438	1,438
On-Site Wooden Bridge	166	166	0	0	166
Total Developed Area	12054	8882	3,065	25901	37848
Area replaced and created	28,966 SF				
Net Change in Developed Area	+ 25794 SF (Net Increase)				
Floor Area	Refer to the architectural plans for proposed floor area calculations				

1-800-227-2600 CALL BEFORE YOU DIG USA UNDERGROUND SERVICE ALERT

*** BUILDING PAD NOTE:**
ADJUST PAD LEVEL AS REQUIRED. REFER TO STRUCTURAL PLANS FOR SLAB SECTION OR CRAWL SPACE DEPTH TO ESTABLISH PAD LEVEL.

NOTE:
FOR CONSTRUCTION STAKING SCHEDULING OR QUOTATIONS PLEASE CONTACT ALEX ABAYA AT LEA & BRAZE ENGINEERING (510)887-4086 EXT 116. aabaya@leabraze.com

OWNER'S INFORMATION

OWNER:
CHARLES ZAFFARONI
1 LA SANDRA WAY
PORTOLA VALLEY, CA 94028

REFERENCES

THIS BUILDING SITE APPROVAL PLAN IS SUPPLEMENTAL TO:

1. TOPOGRAPHIC SURVEY BY LEA & BRAZE ENGINEERING, INC., ENTITLED;
"TOPOGRAPHIC SURVEY"
0 ALPINE ROAD
PORTOLA VALLEY, CALIFORNIA
DATED: 09–14–18
JOB#: 2180884

2. SITE PLAN BY CJW ARCHITECTURE ENTITLED:
"ZAFFARONI RESIDENCE"
0 ALPINE ROAD
PORTOLA VALLEY, CALIFORNIA
DATED: 11–07–19
JOB#: 2018–2500

3. LANDSCAPE PLANS BY CLEAVER DESIGN ENTITLED:
"ZAFFARONI RESIDENCE"
0 ALPINE ROAD
PORTOLA VALLEY, CALIFORNIA
DATED: 11–07–19

4. BRIDGE PLANS BY LEA & BRAZE ENGINEERING, INC., THE BRIDGE PLANS WERE PREVIOUSLY SUBMITTED AND REVIEWED AND IS ATTACHED IN THIS BUILDING SITE APPROVAL SET FOR REFERENCE

5. SOIL REPORT BY C2EARTH ENTITLED:
"GEOLOGIC AND GEOTECHNICAL STUDY"
ALPINE ROAD, CALIFORNIA
DATED: 04–04–19
JOB#: 18062C–01R1

6. ALTERNATIVE SITE ANALYSIS REPORT PREPARED BY WISE CONSULTANT GROUP LLC

7. ARBORIST REPORT PREPARED BY HEARTWOOD CONSULTING ARBORISTS ENTITLED:
"TREE ASSESSMENT AND PROTECTION"
0 ALPINE ROAD, CALIFORNIA
DATED: 11–07–19

THE CONTRACTOR SHALL REFER TO THE ABOVE NOTED SURVEY AND PLAN, AND SHALL VERIFY BOTH EXISTING AND PROPOSED ITEMS ACCORDING TO THEM.

BENCHMARK

TOWN OF PORTOLA VALLEY BENCHMARK PV–15
33'± SE OF STREET MON, 33'± SW OF STOP SIGN POLE, 39'± NE OF POWER POLE, AT THE INTERSECTION OF ALPINE RD AND LOS TRANCOS RD.
ELEVATION = 476.30'
(ADJUSTED TO NAVD 88 DATUM)

SITE BENCHMARK

SURVEY CONTROL POINT
CUT CROSS IN CONCRETE
ELEVATION = 418.91'
(ADJUSTED TO NAVD 88 DATUM)

NOTES

ALL DISTANCES AND DIMENSIONS ARE IN FEET AND DECIMALS.

UNDERGROUND UTILITY LOCATION IS BASED ON SURFACE EVIDENCE.

ALL RETAINING WALLS ARE ROCK EXCEPT WHERE NOTED.

EASEMENT NOTE

APN 182–36–043
EASEMENTS ARE SHOWN PER TITLE REPORT PREPARED BY CHICAGO TITLE COMPANY, TITLE NO. FWPS–2999181327, DATED AUGUST 9, 2018 AND DOCUMENT NO. 21226717, SANTA CLARA COUNTY RECORDS. EXCEPTION # 8 – RIGHTS AND EASEMENTS FOR NAVIGATION AND FISHERY WHICH MAY EXIST OVER THAT PORTION OF SAID LAND LYING BENEATH THE WATERS OF LOS TRANCOS CREEK. (NOT PLOTABLE)

APN 182–36–044
A CURRENT TITLE REPORT FOR THE SUBJECT PROPERTY HAS NOT BEEN EXAMINED BY LEA & BRAZE ENGINEERING, INC. EASEMENTS OF RECORD MAY EXIST THAT ARE NOT SHOWN ON THIS MAP.

REGISTERED PROFESSIONAL ENGINEER CHRISTOPHER CARLTON No. C79555 CIVIL STATE OF CALIFORNIA ORIGINAL SIGNATURES IN BLUE INK

LEA & BRAZE ENGINEERING, INC.
CIVIL ENGINEERS • LAND SURVEYORS
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WWW.LEABRAZE.COM

ZAFFARONI RESIDENCE
0 ALPINE ROAD
PORTOLA VALLEY,
CALIFORNIA

APN: 182–36–043
UNINCORPORATED SANTA CLARA COUNTY

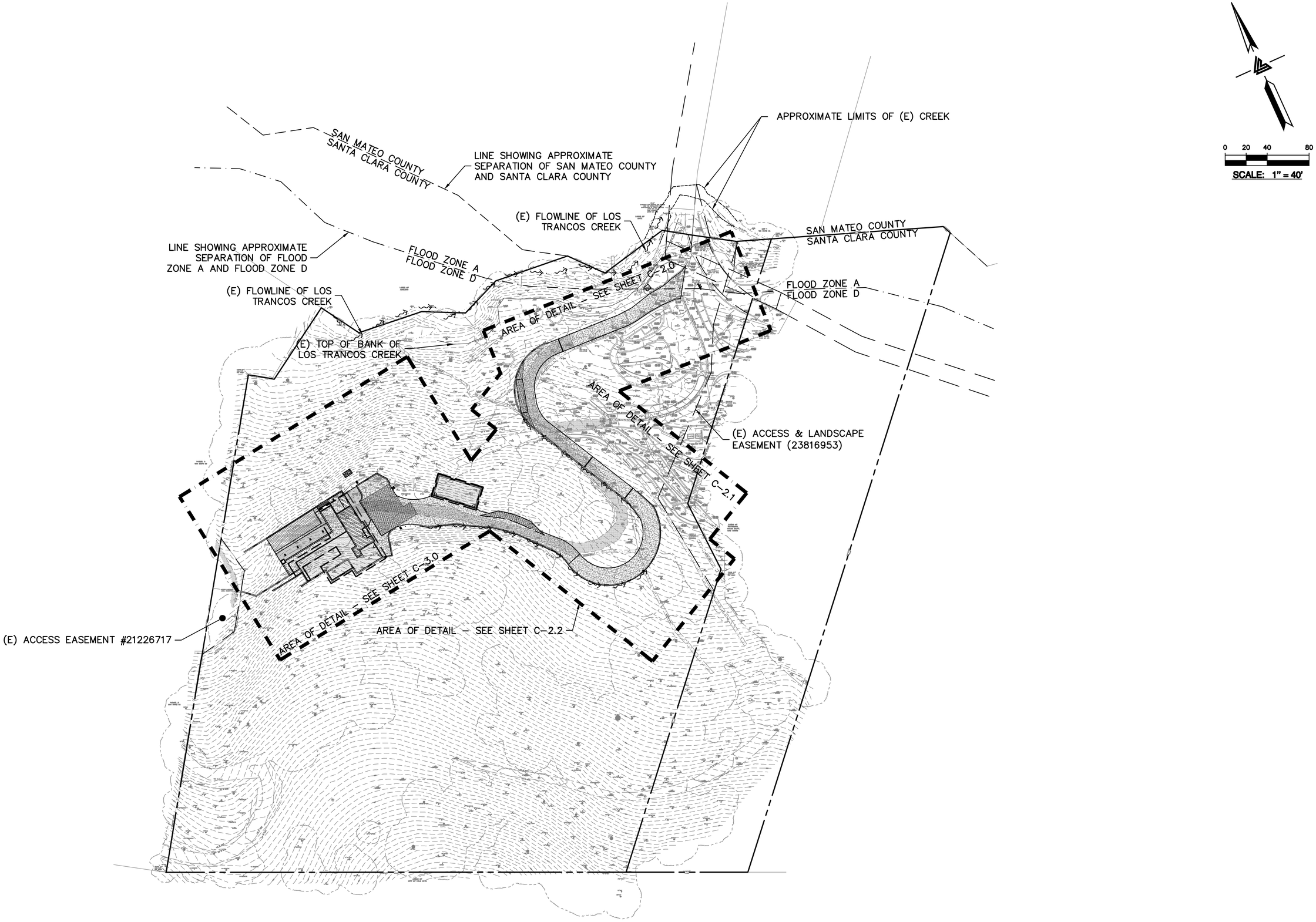
TITLE SHEET

–	–
–	–
3 ARCH. REV. 11–07–19	KZ
2 PLAN CHECK 08–23–19	KZ
1 PLAN CHECK 07–17–19	KZ
REVISIONS	BY
JOB NO:	2180842CI
DATE:	04–11–19
SCALE:	AS NOTED
DESIGN BY:	KZ
DRAWN BY:	MM
SHEET NO:	C-1.1
02 OF 13 SHEETS	

RECORD#: PLN19–0079

PLAN # _____ SHEET _____ OF _____

APPLICANT: CHARLES ZAFFARONI | ROAD NAME: ALPINE ROAD | RECORD#: PLN19–0079 | PERMIT PLANS: BSA SUB #3



PLAN # ____
SHEET ____ OF ____

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(F) (916)797-7363
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REGISTERED PROFESSIONAL ENGINEER
PETER CARLINO
No. C79555
CIVIL
STATE OF CALIFORNIA
ORIGINAL SIGNATURES IN BLUE INK

ZAFFARONI RESIDENCE
0 ALPINE ROAD
PORTOLA VALLEY,
CALIFORNIA
UNINCORPORATED SANTA CLARA COUNTY
APN: 182-36-043

OVERALL SITE PLAN

REVISIONS	BY
–	–
–	–
3 ARCH REV. 11-07-19	KZ
2 PLAN CHECK 08-23-19	KZ
1 PLAN CHECK 07-17-19	KZ

JOB NO:	2180842CI
DATE:	04-11-19
SCALE:	1" = 40'
DESIGN BY:	KZ
DRAWN BY:	MM
SHEET NO:	C-1.2

03 OF 13 SHEETS

RECORD#: PLN19-0079

APPLICANT: CHARLES ZAFFARONI ROAD NAME: ALPINE ROAD RECORD#: PLN19-0079 PERMIT PLANS: BSA SUB #3

(E) TOP OF BANK OF LOS TRANCOS CREEK

(E) TOP OF BANK OF LOS TRANCOS CREEK

FLOOD ZONE A
FLOOD ZONE D

(N) ELECTRICAL TRANSFORMER PAD

(N) UNDERGROUND ELECTRICAL LINE

(E) JOINT POLE TO REMAIN

(N) RETAINING WALL TO MATCH TO (E) RETAINING WALL

(N) SEPTIC TANK SYSTEM WITH SEWER EJECTOR PUMP

(N) SEWER LINE (TYP.)

SAN MATEO COUNTY
SANTA CLARA COUNTY

APPROXIMATE LOCATION OF (E) SEWER FORCE MAIN

APPROXIMATE LOCATION OF (E) WATER MAIN

(E) FIRE HYDRANT TO REMAIN

(N) SEWER PRESSURE LINE

(N) TRENCH DRAIN (TYP.)

(N) SEWER LINE (TYP.)

(N) JOINT TRENCH (TYP.)

(N) CONCRETE DRIVEWAY

(N) CONCRETE DRIVEWAY

(E) CATCH BASIN TO BE RESET

(N) DOMESTIC WATER LINE (TYP.)

(N) TURNOUT #1 PER SANTA CLARA COUNTY SD-16 DETAIL

Δ=12°09'34"
R=92.56' L=19.64'

(N) DOMESTIC WATER LINE (TYP.)

(N) FIRE PROTECTION LINE (TYP.)

(E) CATCH BASIN TO BE RESET

(E) CATCH BASIN TO BE RESET

(E) STEPS TO BE REMOVED

(E) CATCH BASIN TO BE RESET

(N) RETAINING WALL TO MATCH TO (E) RETAINING WALL

(E) DRIVEWAY TO REMAIN

(E) CATCH BASIN TO REMAIN

(N) DOMESTIC WATER LINE (TYP.)

(N) FIRE PROTECTION WATER LINE (TYP.)

(N) BACKFLOW PREVENTION DEVICE

R=50.00' L=105.36'
Δ=120°44'11"

(N) FIRE PROTECTION WATER LINE (TYP.)

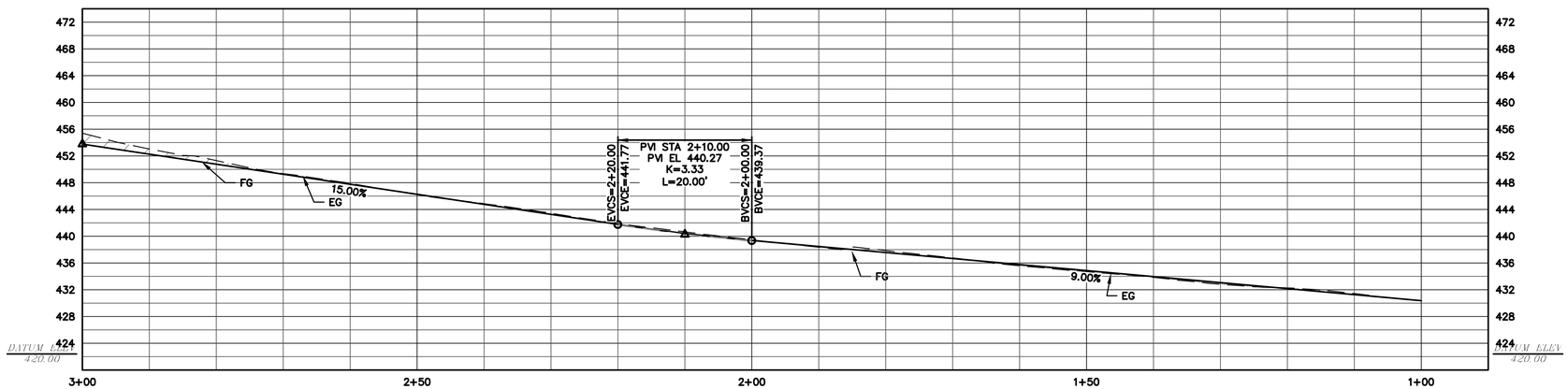
(E) TREE TO BE REMOVED (TYP.)

0 5 10 20

SCALE: 1" = 10'

DRIVEWAY NOTE:
DRIVEWAYS WILL BE A MINIMUM OF 12' CLEAR WIDTH, WITH A 13' 6" VERTICAL CLEARANCE.

DRIVEWAY IS TO BE MADE OF AN ALL WEATHER MATERIAL CAPABLE OF HOLDING 75,000 POUNDS. 4 INCHES OF PCC CONCRETE ROUGH-SURFACED ON 4 INCHES AGGREGATE BASE OVER ENTIRE DRIVEWAY.



(N) DRIVEWAY (2.0) PROFILE 0+90 TO 3+00
SCALE: 1" = 10' HORIZ & VERT

PLAN # ____ OF ____
SHEET

APPLICANT: CHARLES ZAFFARONI

ROAD NAME: ALPINE ROAD

RECORD#: PLN19-0079

PERMIT PLANS: BSA SUB #3

LICENSED PROFESSIONAL ENGINEER
No. C79553
CIVIL
STATE OF CALIFORNIA
ORIGINAL SIGNATURES IN BLUE INK

LEA & BRAZE ENGINEERING, INC.
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WWW.LEABRAZE.COM

ZAFFARONI RESIDENCE
0 ALPINE ROAD
PORTOLA VALLEY, CALIFORNIA

UNINCORPORATED SANTA CLARA COUNTY

APN: 182-36-043

DRIVEWAY PLAN AND PROFILE

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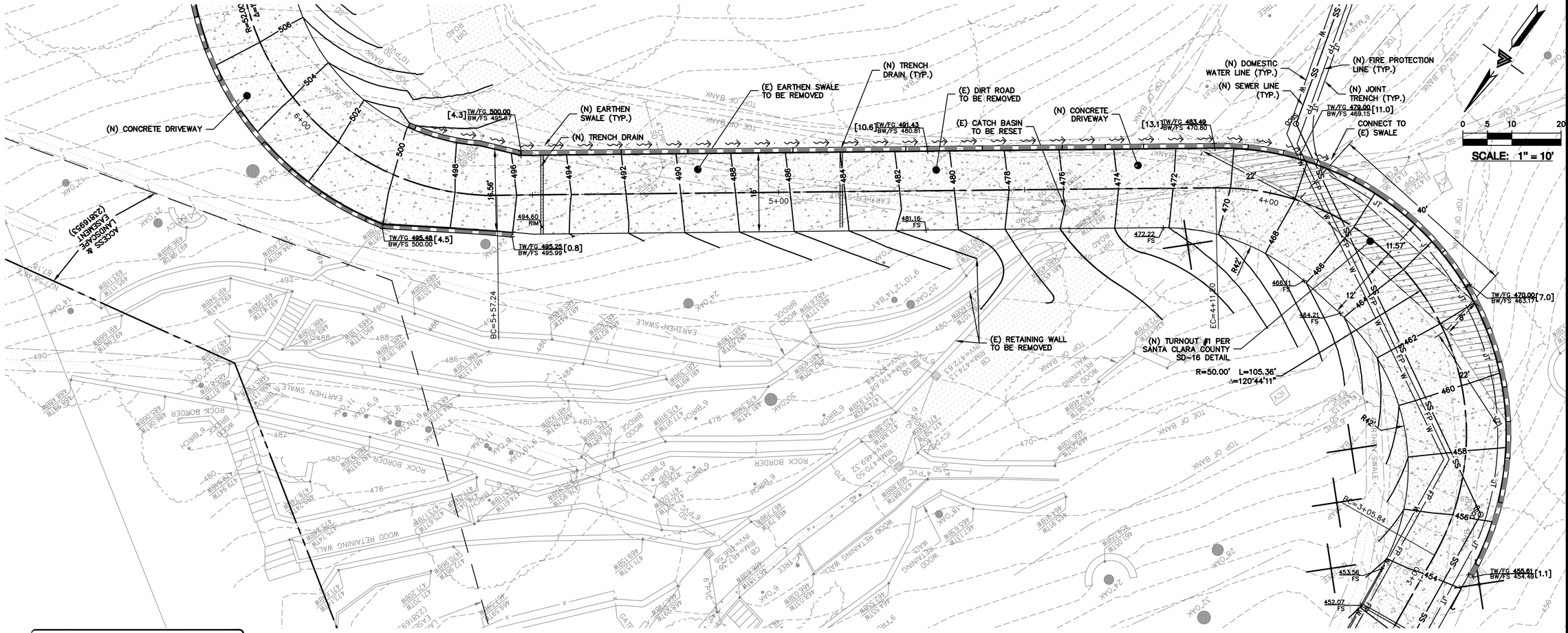
–		–
3	ARCH. REV. 11-07-19	KZ
2	PLAN CHECK 08-23-19	KZ
1	PLAN CHECK 07-17-19	KZ
	REVISIONS	BY

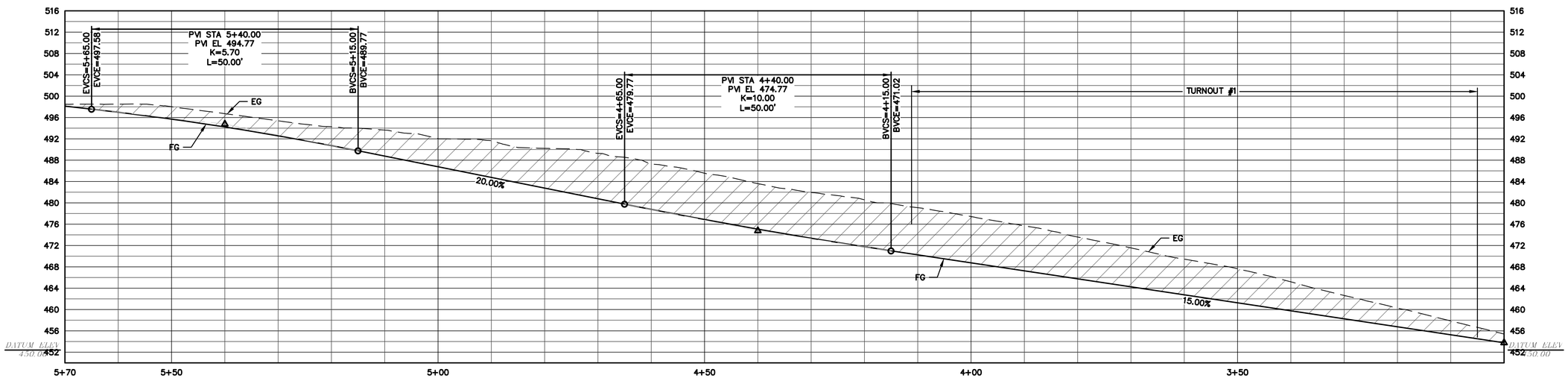
JOB NO:	2180842CI
DATE:	04-11-19
SCALE:	1" = 40'
DESIGN BY:	KZ
DRAWN BY:	MM
SHEET NO:	C-2.0
	04 OF 13 SHEETS

RECORD#: PLN19-0079



DRIVEWAY NOTE:
DRIVEWAYS WILL BE A MINIMUM OF 12' CLEAR WIDTH, WITH A 13' 6" VERTICAL CLEARANCE.

DRIVEWAY IS TO BE MADE OF AN ALL WEATHER MATERIAL CAPABLE OF HOLDING 75,000 POUNDS. 4 INCHES OF PCC CONCRETE ROUGH-SURFACED ON 4 INCHES AGGREGATE BASE OVER ENTIRE DRIVEWAY.



(N) DRIVEWAY (2.1) PROFILE 3+00 TO 5+70

SCALE: 1" = 10' HORIZ & VERT

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REGISTERED PROFESSIONAL ENGINEER — KEVIN CARLTON — No. C79553 — CIVIL — STATE OF CALIFORNIA — ORIGINAL SIGNATURES IN BLUE INK

ZAFFARONI RESIDENCE
0 ALPINE ROAD
PORTOLA VALLEY, CALIFORNIA

UNINCORPORATED SANTA CLARA COUNTY — APN: 182-36-043

DRIVEWAY PLAN AND PROFILE

–	–
–	–
3 ARCH REV. 11-07-19	KZ
2 PLAN CHECK 08-23-19	KZ
1 PLAN CHECK 07-17-19	KZ
REVISIONS	BY

JOB NO:	2180842CI
DATE:	04-11-19
SCALE:	1" = 40'
DESIGN BY:	KZ
DRAWN BY:	MM
SHEET NO:	C-2.1
	05 OF 13 SHEETS

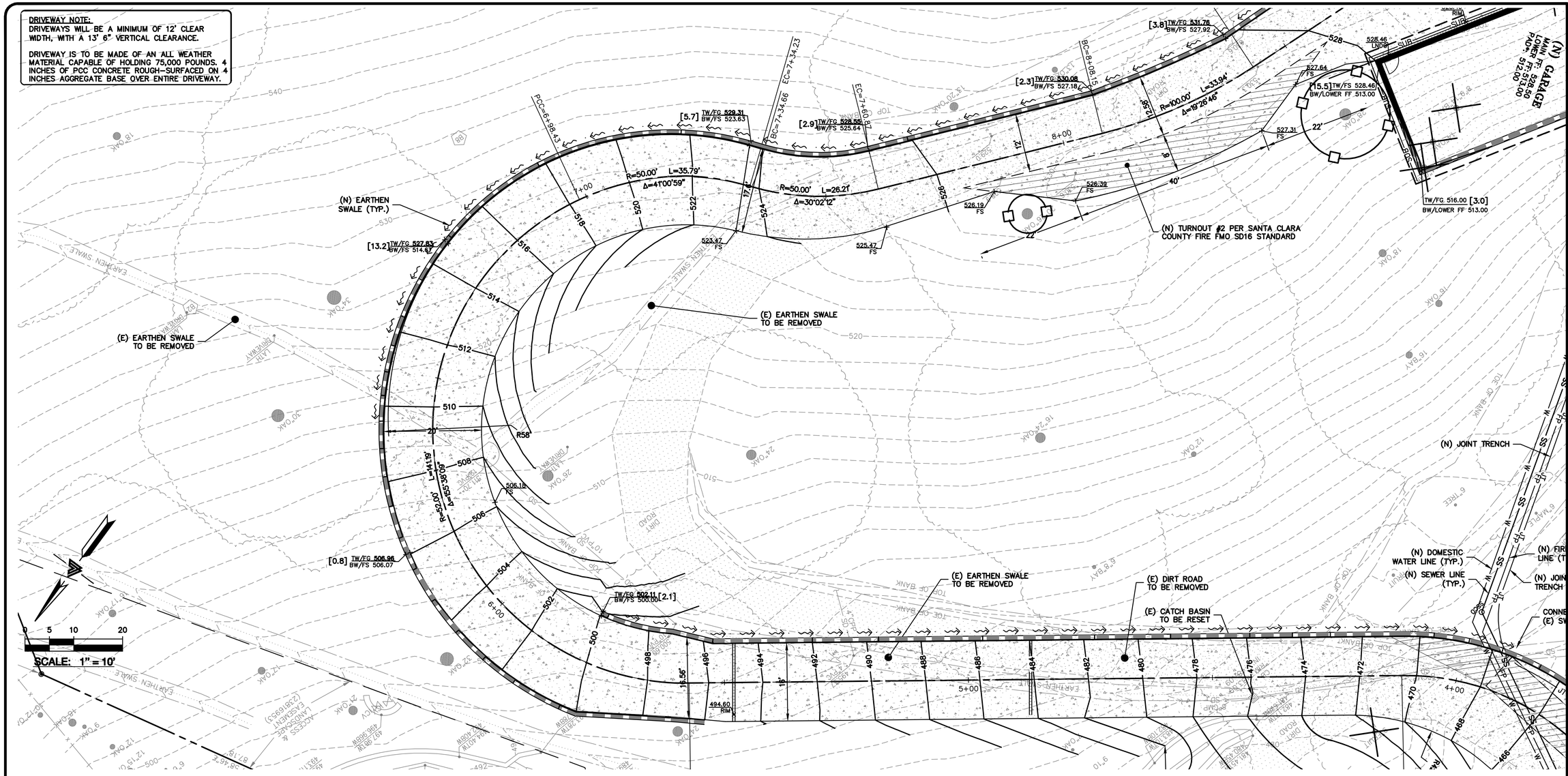
RECORD#: PLN19-0079

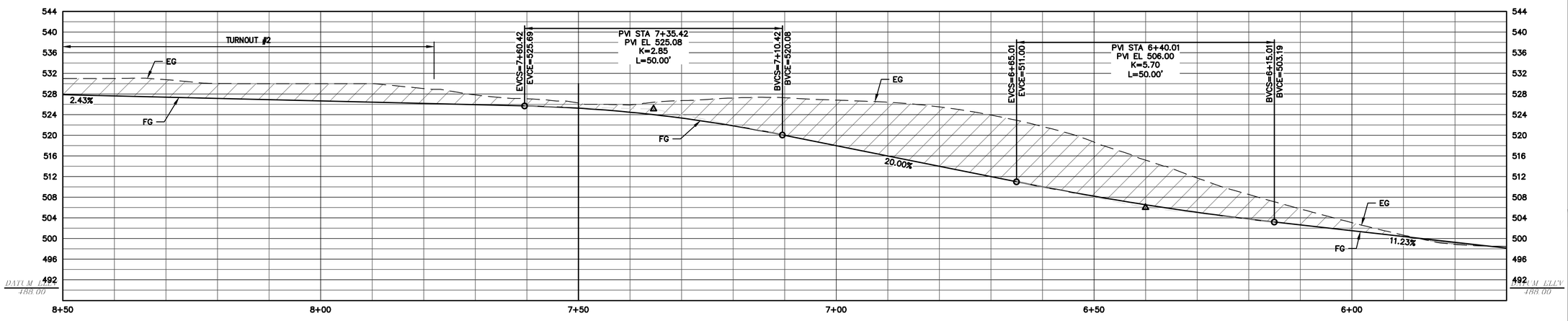
PLAN # _____ SHEET _____ OF _____

APPLICANT: CHARLES ZAFFARONI | ROAD NAME: ALPINE ROAD | RECORD#: PLN19-0079 | PERMIT PLANS: BSA SUB #3

DRIVEWAY NOTE:
DRIVEWAYS WILL BE A MINIMUM OF 12' CLEAR WIDTH, WITH A 13' 6" VERTICAL CLEARANCE.

DRIVEWAY IS TO BE MADE OF AN ALL WEATHER MATERIAL CAPABLE OF HOLDING 75,000 POUNDS. 4 INCHES OF PCC CONCRETE ROUGH-SURFACED ON 4 INCHES AGGREGATE BASE OVER ENTIRE DRIVEWAY.





(N) DRIVEWAY (2.2) PROFILE 5+70 TO 8+50

SCALE: 1" = 10' HORIZ & VERT

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ZAFFARONI RESIDENCE
0 ALPINE ROAD
PORTOLA VALLEY, CALIFORNIA

UNINCORPORATED SANTA CLARA COUNTY

APN: 182-36-043

DRIVEWAY PLAN AND PROFILE

REVISIONS	BY
3 ARCH REV. 11-07-19	KZ
2 PLAN CHECK 08-23-19	KZ
1 PLAN CHECK 07-17-19	KZ

JOB NO:	2180842CI
DATE:	04-11-19
SCALE:	1" = 40'
DESIGN BY:	KZ
DRAWN BY:	MM
SHEET NO:	C-2.2

06 OF 13 SHEETS

RECORD#: PLN19-0079

PLAN # ____ OF ____
SHEET ____

APPLICANT: CHARLES ZAFFARONI ROAD NAME: ALPINE ROAD RECORD#: PLN19-0079 PERMIT PLANS: BSA SUB #3

HATCH LEGEND

- BUILDING
- BASEMENT
- CONCRETE PAD/DRIVEWAY
- LAWN/PLANTING
- WATER
- FIRE TURNAROUND

FLATWORK

FINISHED GRADES AT BUILDING PERIMETER SHALL BE SLOPED AT A MINIMUM OF 5% FOR THE FIRST 10' AWAY FROM THE BUILDING PER CBC 1804.4 OR TO AN APPROVED DRAINAGE SWALE OR STRUCTURE. GRADES SHALL CONTINUE TO SLOPE TOWARDS POSITIVE DRAINAGE AND A POSITIVE OUTFALL. MAINTAIN 8" CLEARANCE BETWEEN FINISH EARTHEN GRADE AND BOTTOM OF MUD SILL AT ALL TIMES PER CBC 2304.12.1.2 UNLESS STRUCTURAL DETAILING ALLOWS LESS. REFER TO STRUCTURAL PLANS FOR FOUNDATION DESIGN AND DETAILS.

SLOPE GARAGE SLAB 1% MINIMUM (1/8" PER FOOT) FROM BACK TO FRONT TO ALLOW FOR ADEQUATE DRAINAGE. MAINTAIN 1/2" TO 1" LIP BETWEEN GARAGE SLAB AND DRIVEWAY. SEE PLANS FOR SPECIFIC DROP

PROVIDE 2% SLOPE ACROSS FLAT WORK AND/OR PAVING PER CBC 1804.4. SLOPE TOWARDS POSITIVE DRAINAGE AS SHOWN ON PLAN.

(N) CONCRETE DRIVEWAY.

(N) CONCRETE PATIOS/WALKWAYS.

(N) CONCRETE PATIO IN POOL AREA.

SCALE: 1" = 10'

STORM DRAIN

INSTALL (N) ON-SITE STORM DRAIN SYSTEM. USE MINIMUM 6" PVC (SDR 35) OR HDPE (ADS N-12 W/ SMOOTH INTERIOR WALLS). MAINTAIN 24" MINIMUM COVER AND SLOPED AT 1% MINIMUM AT ALL TIMES UNLESS OTHERWISE NOTED. PROVIDE CLEAN OUT TO GRADE AT MAJOR CHANGES IN DIRECTION. AVOID USING 90° BENDS AND INSTEAD USE (2) 45° BENDS AND WYE CONNECTIONS.

INSTALL (N) SUBDRAIN. USE PERFORATED 4" PVC (SDR-35) WITH HOLES DOWN AND SLOPED AT 1% MINIMUM SURROUND WITH 3/4" DRAIN ROCK WRAPPED IN FILTER FABRIC (MIRAFI 140N). MIRADRAIN OR OTHER LEA & BRAZE PREAPPROVED DRAINAGE SYSTEM MAY ALSO BE USED. AVOID USING 90° BENDS AND INSTEAD USE (2) 45° BENDS AND WYE CONNECTIONS. PROVIDE CLEANOUT TO GRADE AT MAJOR CHANGES IN DIRECTION AND AT 100' MAXIMUM INTERVALS. SUBDRAIN SHALL REMAIN A DEDICATED SEPARATE SYSTEM UNTIL IT CONNECTS TO STORM DRAIN SYSTEM OR OUTFALL AS SHOWN.

CONSTRUCT (N) EARTHEN SWALE SLOPED AT 1% MINIMUM TOWARDS POSITIVE OUTFALL.

CONNECT RAIN WATER DOWNSPOUTS TO 4" PVC (SDR-35) TIGHTLINE, SLOPED AT 1% MINIMUM. DIRECT TO NEAREST STORM DRAIN LINE. PROVIDE CLEAN OUT TO GRADE AT MAJOR CHANGES IN DIRECTION. AVOID USING 90° BENDS AND INSTEAD USE (2) 45° BENDS. TIGHTLINE MAY BE PLACED IN COMMON TRENCH WITH SUBDRAIN LINES, HOWEVER, NOT CONNECT TO SUBDRAIN LINES. CONNECT TO NEAREST STORM DRAIN LINE AS SHOWN ON PLAN.

DIRECT DOWNSPOUTS TO 24" LONG PRECAST CONCRETE SPLASHBLOCKS OR OTHER HARD SURFACE. DIRECT AWAY FROM ANY STRUCTURE AND TOWARDS POSITIVE DRAINAGE.

INSTALL (N) "CHRISTY F08" AREA DRAINS. CONNECT TO ON-SITE STORM DRAIN SYSTEM.

INSTALL (N) 4" DIAMETER BRASS ATRIUM GRATE IN LANDSCAPE OR PLANTER AREAS (NDS PART 788 OR 908 FOR 6" DIAMETER BRASS ATRIUM GRATE). DO NOT USE PLASTIC GRATES.

INSTALL (N) "CHRISTY V-24" CATCH BASIN W/ CONCRETE BOTTOM FLUSH W/ LOWEST OUTGOING INVERT. PLACE BOX ON 6" CLASS 2 AGGREGATE BASE MATERIAL.

TRENCH DRAINS SHALL BE 6" NDS "DURA-SLOPE" PRESLOPED TRENCH DRAINS W/ TRAFFIC RATED GRATE OR APPROVED EQUAL. CONNECT TO NEAREST STORM DRAIN LINE VIA 6" PVC TIGHTLINE.

INSTALL (N) RETENTION SYSTEM.

INSTALL (N) SUMP PUMP FOR RETENTION SYSTEM.

INSTALL (N) RIP-RAP ENERGY DISSIPATER.

UTILITIES

INSTALL (N) SANITARY SEWER LATERALS. USE 4" PVC (SDR-26) SLOPED AT 2% MINIMUM. CONNECT TO (E) SEWER MAIN AS SHOWN. PROVIDE CLEANOUT TO GRADE AT BUILDING AND BEHIND PROPERTY LINE AND AT MAJOR CHANGES IN DIRECTION AS SHOWN. REUSE (E) LATERAL IF POSSIBLE. CONNECT PER DISTRICT STANDARDS.

CONNECT (N) WATER SERVICE PER WATER DISTRICT STANDARDS. UPGRADE (E) WATER METER PER WATER DISTRICT STANDARDS AS APPLICABLE. INSTALL (N) 2" MINIMUM SERVICE LINE TO (N) RESIDENCE OR AS DIRECTED BY FIRE SPRINKLER DESIGNER.

INSTALL (N) JOINT TRENCH FOR SERVICES INCLUDING GAS, CATV & ELECTRIC FROM NEAREST POINT OF CONNECTION. DESIGN BY OTHERS.

(E) ACCESS EASEMENT DOCUMENT #21226717

(N) FIRE PLACE - S.A.D.

(N) STEPS (18) 6-IN RISERS (17) 11-IN TREADS

(N) ROOF LINE (TYP.)

(N) RIP-RAP ROCK ENERGY DISSIPATER

(E) TREE TO BE REMOVED (TYP.)

(N) SWIMMING POOL
POOL COPING: 531.00

(N) FIRE PIT - S.A.D.

(E) TREE TO BE PROTECTED (TYP.)

(N) STEPS (2) 6-IN RISERS (1) 15-IN TREAD

(N) BASEMENT
MAIN FF: 532.00
LOWER FF: 522.00
PAD*: 521.00

(N) MAIN HOUSE
THIRD FF: 554.00
SECOND FF: 544.00
MAIN FF: 532.00
PAD*: 531.00

THIRD FF: 554.00

(N) ROOF LINE (TYP.)

(N) SUBDRAIN LINE (TYP.)

(N) SUBDRAIN TIGHTLINE (TYP.)

(N) STANDARD FIRE HYDRANT

(N) FIRE TRUCK TURNAROUND PER SANTA CLARA COUNTY FMO SD16 FIRE STANDARD FMO SD16 TURNAROUND "D"

(N) FIRE PROTECTION LINE (TYP.)

(N) JOINT TRENCH (TYP.)

(N) DOMESTIC WATER LINE (TYP.)

(N) SEWER LINE (TYP.)

(N) GARAGE
MAIN FF: 528.50
LOWER FF: 513.00
PAD*: 512.00

(N) TRENCH DRAIN

(N) EARTHEN SWALE (TYP.)

(E) TREE TO BE REMOVED (TYP.)

30' B.S.B.L.

DIRT ROAD

TOP OF BANK

TOE OF BANK

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REGISTERED PROFESSIONAL ENGINEER — LANCE CARLSON — NO. C79655 — CIVIL — STATE OF CALIFORNIA — ORIGINAL SIGNATURES IN BLUE INK

ZAFFARONI RESIDENCE
0 ALPINE ROAD
PORTOLA VALLEY, CALIFORNIA
UNINCORPORATED SANTA CLARA COUNTY
APN: 182-36-043

GRADING AND DRAINAGE PLAN

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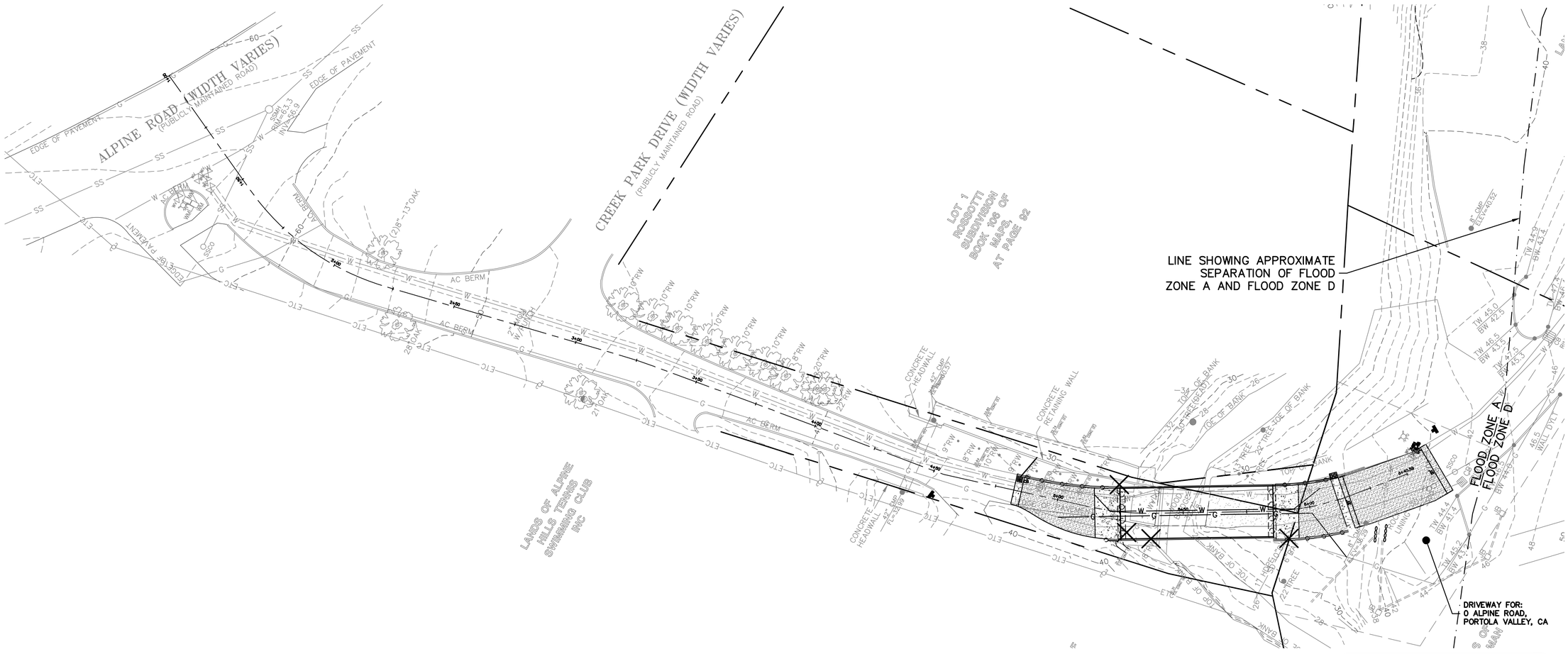
-		-
3	ARCH REV. 11-07-19	KZ
2	PLAN CHECK 08-23-19	KZ
1	PLAN CHECK 07-17-19	KZ
	REVISIONS	BY

JOB NO:	2180842CI
DATE:	04-11-19
SCALE:	1" = 40'
DESIGN BY:	KZ
DRAWN BY:	MM
SHEET NO:	C-3.0
	07 OF 13 SHEETS

RECORD#: PLN19-0079

PLAN # _____
SHEET _____ OF _____

APPLICANT: CHARLES ZAFFARONI | ROAD NAME: ALPINE ROAD | RECORD#: PLN19-0079 | PERMIT PLANS: BSA SUB #3



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SCALE: 1" = 20'

NOTE:
VEGETATION ALONG ACCESS ROAD MUST HAVE 15' VERTICAL CLEARANCE AND A 18' MINIMUM WIDTH WITH A 3' SHOULDER CLEARANCE.

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REGISTERED PROFESSIONAL ENGINEER
PETER CARLSON
No. C79553
CIVIL
STATE OF CALIFORNIA
ORIGINAL SIGNATURES IN BLUE INK

ZAFFARONI RESIDENCE
0 ALPINE ROAD
PORTOLA VALLEY, CALIFORNIA

APN: 182-36-043

UNINCORPORATED SANTA CLARA COUNTY

OVERALL BRIDGE PLAN

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3	ARCH REV. 11-07-19	KZ
2	PLAN CHECK 08-23-19	KZ
1	PLAN CHECK 07-17-19	KZ
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JOB NO:	2180842CI
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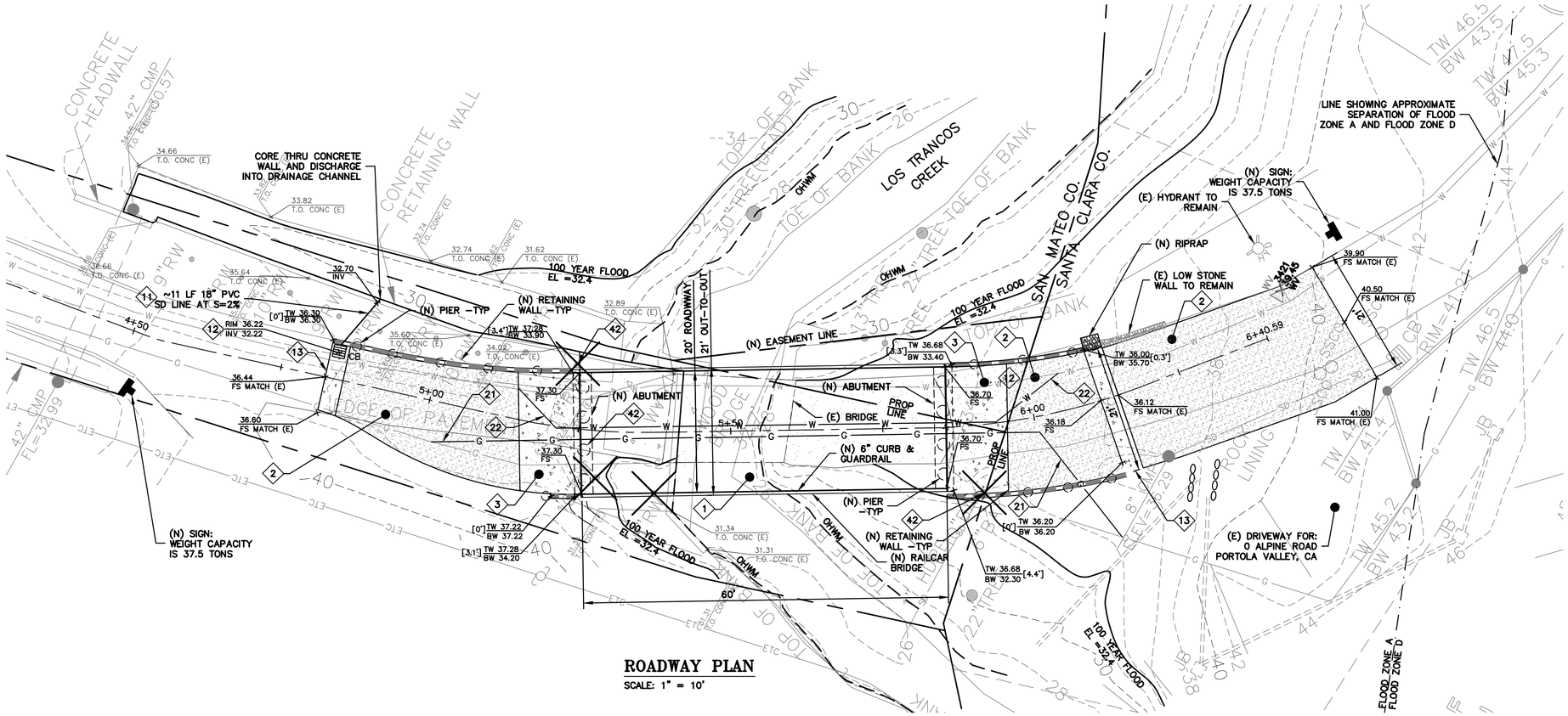
DESIGN BY:	KZ
DRAWN BY:	MM
SHEET NO:	C-4.0
	08 OF 13 SHEETS

RECORD#: PLN19-0079

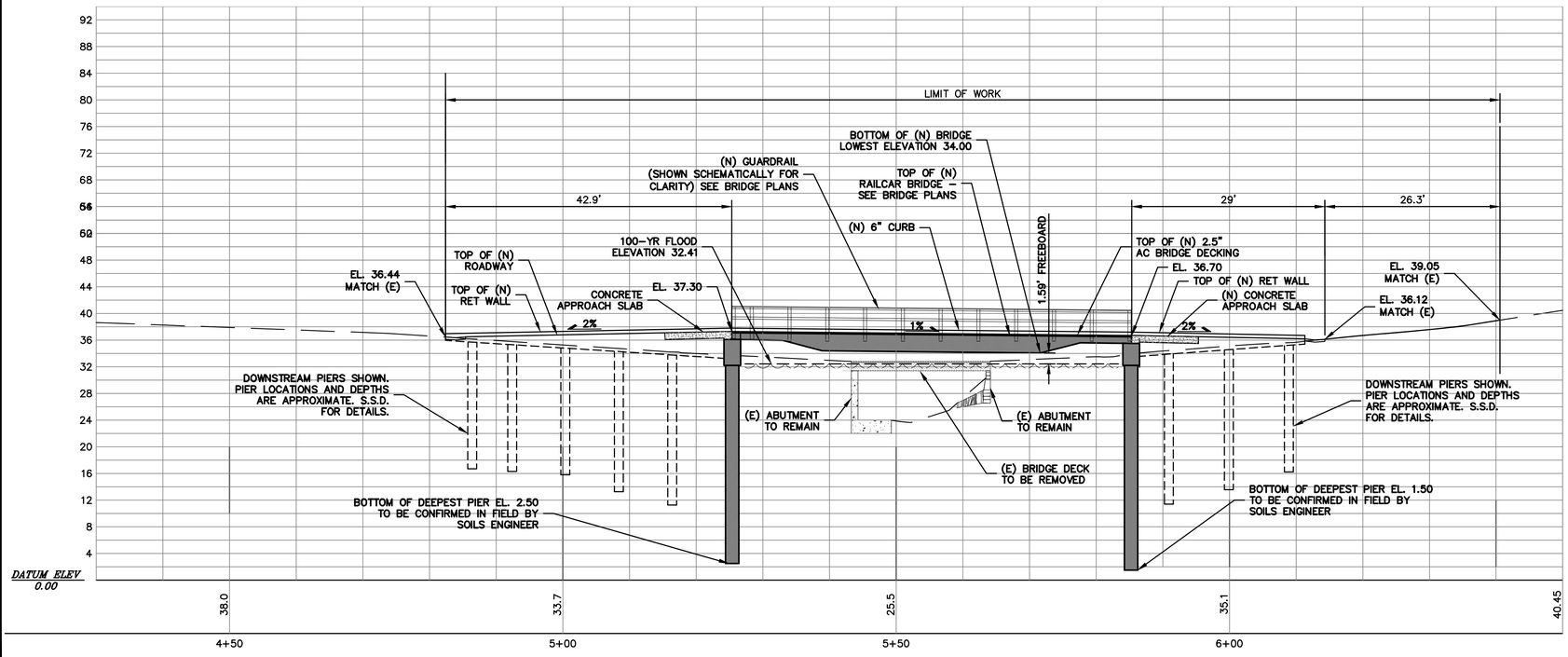
PLAN # _____ OF _____
SHEET

APPLICANT: CHARLES ZAFFARONI | ROAD NAME: ALPINE ROAD | RECORD#: PLN19-0079 | PERMIT PLANS: BSA SUB #3



ROADWAY PLAN

SCALE: 1" = 10'



ROADWAY PROFILE

SCALE: 1" = 10' HORIZ & VERT

NOTE:
LOCATIONS OF RELOCATED UTILITIES ARE TENTATIVE. FINAL LOCATIONS TO BE DECIDED. DESIGN SHALL BE BY OTHERS. NO UTILITIES SHALL EXTEND BELOW SOFFIT OF BRIDGE. ALL LINES SHALL RUN EITHER THROUGH THE BRIDGE SUPERSTRUCTURE OR BE HUNG THE SIDE. SEE BRIDGE PLANS FOR DETAILS.

NOTE:
VEGETATION ALONG ACCESS ROAD MUST HAVE 15' VERTICAL CLEARANCE AND A 18' MINIMUM WIDTH WITH A 3' SHOULDER CLEARANCE.

SURVEY NOTE:
ORIGINAL SURVEY (2040942 SU) IS ON AN ASSUMED DATUM.

FLATWORK KEYNOTES 1 TO 3

1. PROVIDE 1% MIN. LONGITUDINAL SLOPE TOWARDS POSITIVE DRAINAGE AS SHOWN ON PLAN. SSD FOR BRIDGE DECK DETAILS.
2. (N) AC DRIVEWAY.
3. (N) 12" CONCRETE APPROACH SLAB OVER 12' CLASS II AB PER GEOTECHNICAL REPORT. SSD FOR DETAILS.

STORM DRAIN KEYNOTES 11 TO 15

11. INSTALL (N) ON-SITE STORM DRAIN SYSTEM. USE MINIMUM 6" PVC (SDR 35) OR HDPE (ADS N-12 W/ SMOOTH INTERIOR WALLS). MAINTAIN 24" MINIMUM COVER AND SLOPED AT 1% MINIMUM AT ALL TIMES UNLESS OTHERWISE.
12. (N) "CHRISTY V-24 CATCH BASIN WITH TRAFFIC RATED GRATE.
13. INSTALL (N) CONCRETE SWALE.

UTILITIES KEYNOTES 21 TO 22

21. INSTALL (N) GAS LINE. MATCH EXISTING SIZE AND MATERIAL AND CONNECT PER DISTRICT STANDARDS. SEE PLANS BY OTHERS.
22. INSTALL (N) WATER LINE. MATCH EXISTING SIZE AND MATERIAL AND CONNECT PER DISTRICT STANDARDS. SEE PLANS BY OTHERS.

DEMOLITION KEYNOTES 41 TO 43

41. DEMOLISH (E) IMPROVEMENTS AS NECESSARY TO ACCOMMODATE (N) CONSTRUCTION. NO DEMOLITION SHALL COMMENCE WITHOUT REQUIRED DEMOLITION PERMITS.
42. REMOVE (E) TREE. CONTRACTOR SHALL OBTAIN THE PROPER TREE REMOVAL PERMITS AS REQUIRED.
43. PROVIDE TREE PROTECTION AROUND DRIP LINES OF (E) TREES. CAUTION SHALL BE TAKEN WHEN EXCAVATING NEAR TREES AS TO NOT DAMAGE THE TREE ROOT STRUCTURE. HAND DIGGING MAY BE NECESSARY TO PROTECT TREES. TREE PROTECTION FENCING SHALL REMAIN IN PLACE THROUGHOUT CONSTRUCTION.

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ZAFFARONI RESIDENCE
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PORTOLA VALLEY, CALIFORNIA

APN: 182-36-043

UNINCORPORATED SANTA CLARA COUNTY

BRIDGE PLAN & PROFILE

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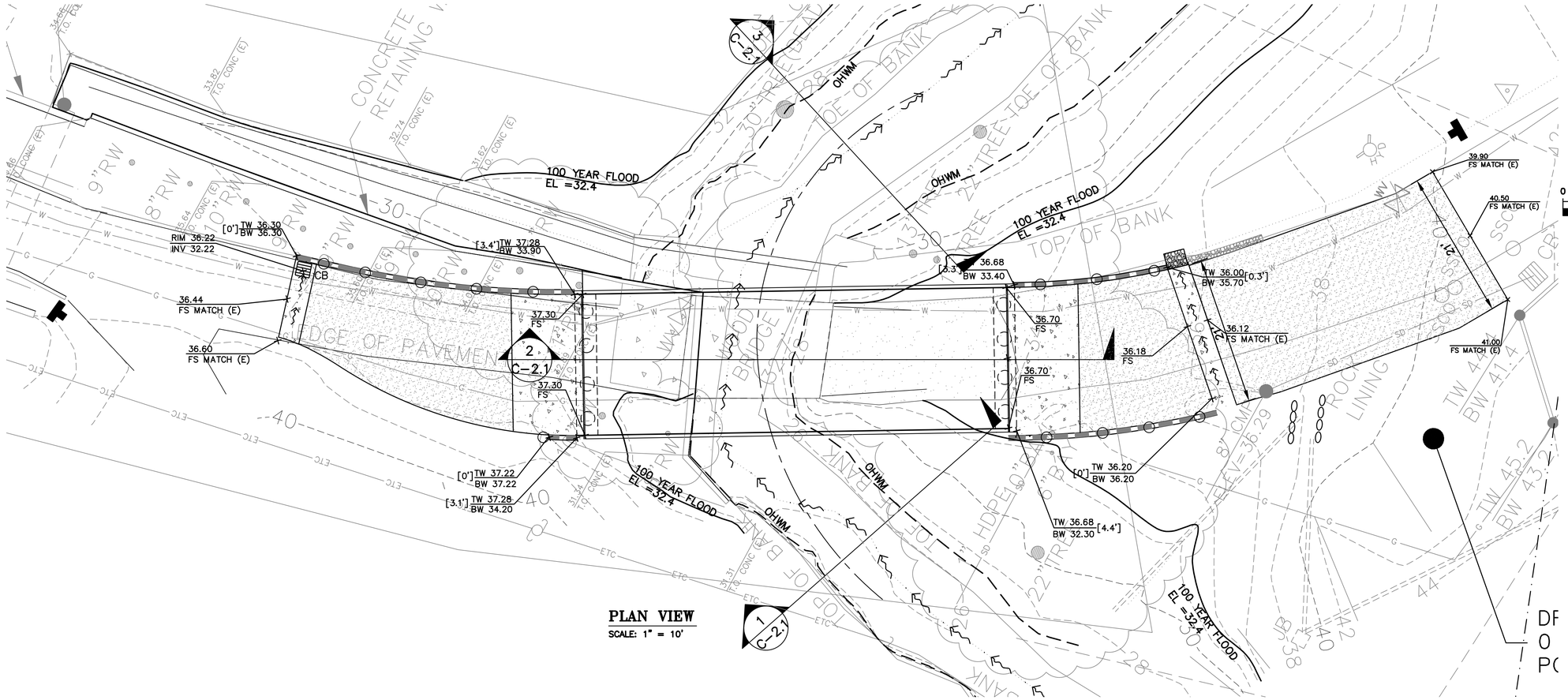
SHEET NO:	C-4.1
	09 OF 13 SHEETS

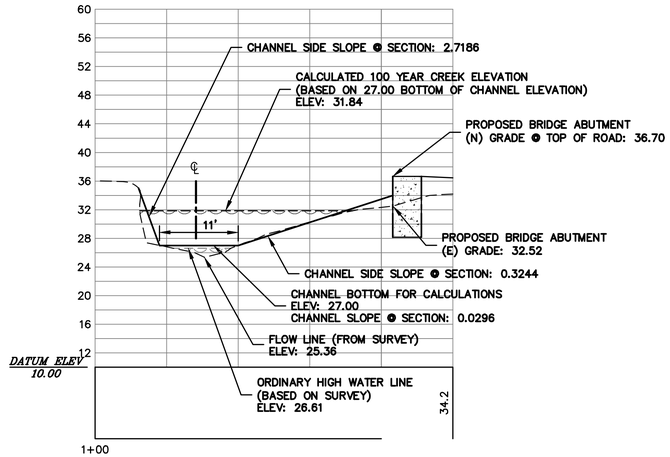
RECORD#: PLN19-0079

PLAN # _____ OF _____ SHEET

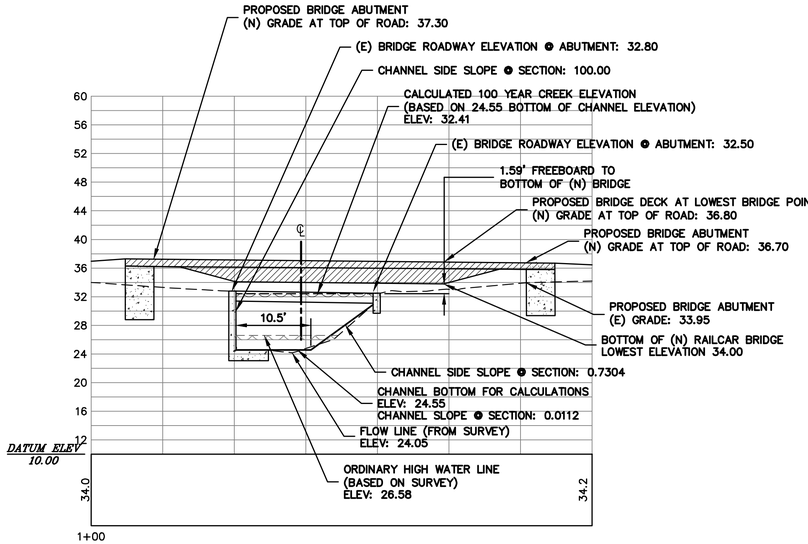
APPLICANT: CHARLES ZAFFARONI — ROAD NAME: ALPINE ROAD — RECORD#: PLN19-0079 — PERMIT PLANS: BSA SUB #3



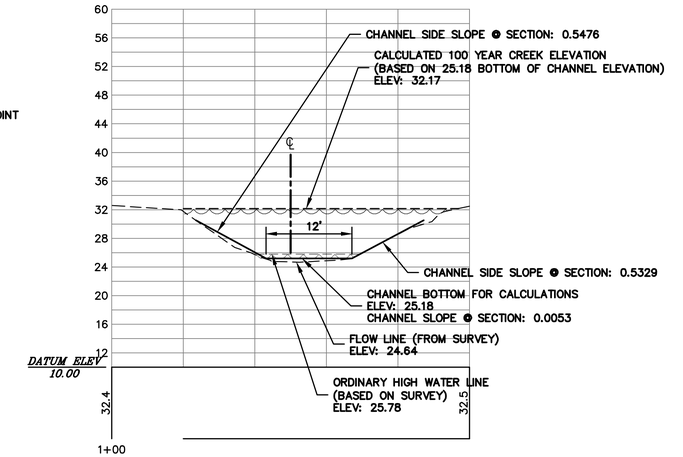
PLAN VIEW
SCALE: 1" = 10'



1 C-2.1 **SECTION 1**
SCALE: 1" = 10' HORIZ & VERT



2 C-2.1 **SECTION 2**
SCALE: 1" = 10' HORIZ & VERT



3 C-2.1 **SECTION 3**
SCALE: 1" = 10' HORIZ & VERT

PLAN # ____ OF ____ SHEET

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ZAFFARONI RESIDENCE
0 ALPINE ROAD
PORTOLA VALLEY, CALIFORNIA

APN: 182-36-043

UNINCORPORATED SANTA CLARA COUNTY

CREEK CROSS SECTIONS

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SHEET NO:	C-4.2
	10 OF 13 SHEETS

RECORD#: PLN19-0079

APPLICANT: CHARLES ZAFFARONI | ROAD NAME: ALPINE ROAD | RECORD#: PLN19-0079 | PERMIT PLANS: BSA SUB #3

PURPOSE:

THE PURPOSE OF THIS PLAN IS TO STABILIZE THE SITE TO PREVENT EROSION OF GRADED AREAS AND TO PREVENT SEDIMENTATION FROM LEAVING THE CONSTRUCTION AREA AND AFFECTING NEIGHBORING SITES, NATURAL AREAS, PUBLIC FACILITIES OR ANY OTHER AREA THAT MIGHT BE AFFECTED BY SEDIMENTATION. ALL MEASURES SHOWN ON THIS PLAN SHOULD BE CONSIDERED THE MINIMUM REQUIREMENTS NECESSARY. SHOULD FIELD CONDITIONS DICTATE ADDITIONAL MEASURES, SUCH MEASURES SHALL BE PER CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD'S FIELD MANUAL FOR EROSION AND SEDIMENTATION CONTROL AND THE CALIFORNIA STORM WATER QUALITY ASSOCIATION BEST MANAGEMENT PRACTICES HANDBOOK FOR CONSTRUCTION. LEA & BRAZE ENGINEERING SHOULD BE NOTIFIED IMMEDIATELY SHOULD CONDITIONS CHANGE.

EROSION CONTROL NOTES:

1. IT SHALL BE THE OWNER'S/CONTRACTOR'S RESPONSIBILITY TO MAINTAIN CONTROL OF THE ENTIRE CONSTRUCTION OPERATION AND TO KEEP THE ENTIRE SITE IN COMPLIANCE WITH THIS EROSION CONTROL PLAN.
2. THE INTENTION OF THIS PLAN IS FOR INTERIM EROSION AND SEDIMENT CONTROL ONLY. ALL EROSION CONTROL MEASURES SHALL CONFORM TO CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD'S FIELD MANUAL FOR EROSION AND SEDIMENTATION CONTROL, THE CALIFORNIA STORM WATER QUALITY ASSOCIATION BEST MANAGEMENT PRACTICES HANDBOOK FOR CONSTRUCTION, AND THE LOCAL GOVERNING AGENCY FOR THIS PROJECT.
3. OWNER/CONTRACTOR SHALL BE RESPONSIBLE FOR MONITORING EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO, DURING, AND AFTER STORM EVENTS. PERSON IN CHARGE OF MAINTAINING EROSION CONTROL MEASURES SHOULD WATCH LOCAL WEATHER REPORTS AND ACT APPROPRIATELY TO MAKE SURE ALL NECESSARY MEASURES ARE IN PLACE.
4. SANITARY FACILITIES SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.
5. DURING THE RAINY SEASON, ALL PAVED AREAS SHALL BE KEPT CLEAR OF EARTH MATERIAL AND DEBRIS. THE SITE SHALL BE MAINTAINED SO AS TO MINIMIZE SEDIMENT–LADEN RUNOFF TO ANY STORM DRAINAGE SYSTEM, INCLUDING EXISTING DRAINAGE SWALES AND WATERCOURSES.
6. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER THAT EROSION AND WATER POLLUTION WILL BE MINIMIZED. COMPLIANCE WITH FEDERAL, STATE AND LOCAL LAWS CONCERNING POLLUTION SHALL BE MAINTAINED AT ALL TIMES.
7. CONTRACTOR SHALL PROVIDE DUST CONTROL AS REQUIRED BY THE APPROPRIATE FEDERAL, STATE AND LOCAL AGENCY REQUIREMENTS.
8. IN THE EVENT OF RAIN, ALL GRADING WORK IS TO CEASE IMMEDIATELY AND THE SITE IS TO BE SEALED IN ACCORDANCE WITH THE APPROVAL EROSION CONTROL MEASURES AND APPROVED EROSION CONTROL PLAN.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING AND REPAIRING EROSION CONTROL SYSTEMS AFTER EACH STORM.
10. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED BY LOCAL JURISDICTION'S ENGINEERING DEPARTMENT OR BUILDING OFFICIALS.
11. MEASURES SHALL BE TAKEN TO COLLECT OR CLEAN ANY ACCUMULATION OR DEPOSIT OF DIRT, MUD, SAND, ROCKS, GRAVEL OR DEBRIS ON THE SURFACE OF ANY STREET, ALLEY OR PUBLIC PLACE OR IN ANY PUBLIC STORM DRAIN SYSTEMS. THE REMOVAL OF AFORESAID SHALL BE DONE BY STREET SWEEPING OR HAND SWEEPING. WATER SHALL NOT BE USED TO WASH SEDIMENTS INTO PUBLIC OR PRIVATE DRAINAGE FACILITIES.
12. ALL EROSION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED THROUGHOUT THE RAINY SEASON OR FROM **OCTOBER 1ST THROUGH APRIL 30TH**, WHICHEVER IS GREATER.
13. PLANS SHALL BE DESIGNED TO MEET C3 REQUIREMENTS OF THE MUNICIPAL STORMWATER REGIONAL PERMIT("MRP") NPDES PERMIT CAS 612008.
14. THE CONTRACTOR TO NPDES (NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM) BEST MANAGEMENT PRACTICES (BMP) FOR SEDIMENTATION PREVENTION AND EROSION CONTROL TO PREVENT DELETERIOUS MATERIALS OR POLLUTANTS FROM ENTERING THE TOWN OR COUNTY STORM DRAIN SYSTEMS.
15. THE CONTRACTOR MUST INSTALL ALL EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO THE INCEPTION OF ANY WORK ONSITE AND MAINTAIN THE MEASURES UNTIL THE COMPLETION OF ALL LANDSCAPING.
16. THE CONTRACTOR SHALL MAINTAIN ADJACENT STREETS IN A NEAT, CLEAN DUST FREE AND SANITARY CONDITION AT ALL TIMES AND TO THE SATISFACTION OF THE TOWN INSPECTOR. THE ADJACENT STREET SHALL AT ALL TIMES BE KEPT CLEAN OF DEBRIS, WITH DUST AND OTHER NUISANCE BEING CONTROLLED AT ALL TIMES. THE CONTRACTOR BE RESPONSIBLE FOR ANY CLEAN UP ON ADJACENT STREETS AFFECTED BY THE BY THEIR CONSTRUCTION, METHOD OF STREET CLEANING SHALL BE BY DRY SWEEPING OF ALL PAVED AREAS. NO STOCKPILING OF BUILDING MATERIALS WITHIN THE TOWN RIGHT–OF–WAY.
17. SEDIMENTS AND OTHER MATERIALS SHALL NOT BE TRACKED FROM THE SITE BY VEHICLE TRAFFIC. THE CONTRACTOR SHALL INSTALL A STABILIZED CONSTRUCTION ENTRANCE PRIOR TO THE INSPECTION OF ANY WORK ONSITE AND MAINTAIN IT FOR THE DURATION OF THE CONSTRUCTION PROCESS SO AS TO NOT INHIBIT SEDIMENTS FROM BEING DEPOSITED INTO THE PUBLIC RIGHT–OF–WAY UNTIL THE COMPLETION OF ALL LANDSCAPING.
18. THE CONTRACTOR SHALL PROTECT DOWN SLOPE DRAINAGE COURSES, STREAMS AND STORM DRAINS WITH ROCK FILLED SAND BAGS, TEMPORARY SWALES, SILT FENCES, AND EARTH PERMS IN CONJUNCTION OF ALL LANDSCAPING.
19. STOCKPILED MATERIALS SHALL BE COVERED WITH VISQUEEN OR A TARPAULIN UNTIL THE MATERIAL IS REMOVED FROM THE SITE. ANY REMAINING BARE SOIL THAT EXISTS AFTER THE STOCKPILE HAS BEEN REMOVED SHALL BE COVERED UNTIL A NATURAL GROUND COVER IS ESTABLISHED OR IT IS SEEDED OR PLANTED TO PROVIDE GROUND COVER PRIOR TO THE FALL RAINY SEASON.
20. EXCESS OR WASTE CONCRETE MUST NOT BE WASHED INTO THE PUBLIC RIGHT–OF–WAYOR ANY OTHER DRAINAGE SYSTEM. PROVISIONS SHALL BE MADE TO RETAIN CONCRETE WASTES ON SITE UNTIL THEY CAN BE DISPOSED OF AS SOLID WASTE.
21. TRASH AND CONSTRUCTION RELATED SOLID WASTES MUST BE DEPOSITED INTO A COVERED RECEPTACLE TO PREVENT CONTAMINATION AND DISPERSAL BY WIND

EROSION CONTROL NOTES CONTINUED:

22. FUELS, OILS, SOLVENTS AND OTHER TOXIC MATERIALS MUST BE STORED IN ACCORDANCE WITH THEIR LISTING AND ARE NOT TO CONTAMINATE THE SOIL AND SURFACE WATERS. ALL APPROVED STORAGE CONTAINERS ARE TO BE PROTECTED FROM THE WEATHER. SPILLS MUST BE CLEANED UP IMMEDIATELY AND DISPOSED OF IN A PROPER MANNER. SPILLS MUST NOT BE WASHED INTO THE DRAINAGE SYSTEM,
23. DUST CONTROL SHALL BE DONE BY WATERING AND AS OFTEN AS REQUIRED BY THE TOWN INSPECTOR.
24. SILT FENCE(S) AND/OR FIBER ROLL(S) SHALL BE INSTALLED PRIOR TO SEPTEMBER 15TH AND SHALL REMAIN IN PLACE UNTIL THE LANDSCAPING GROUND COVER IS INSTALLED. CONTRACTOR SHALL CONTINUOUSLY MONITOR THESE MEASURES, FOLLOWING AND DURING ALL RAIN EVENTS,TO PUBLIC OWNED FACILITIES.

EROSION CONTROL MEASURES:

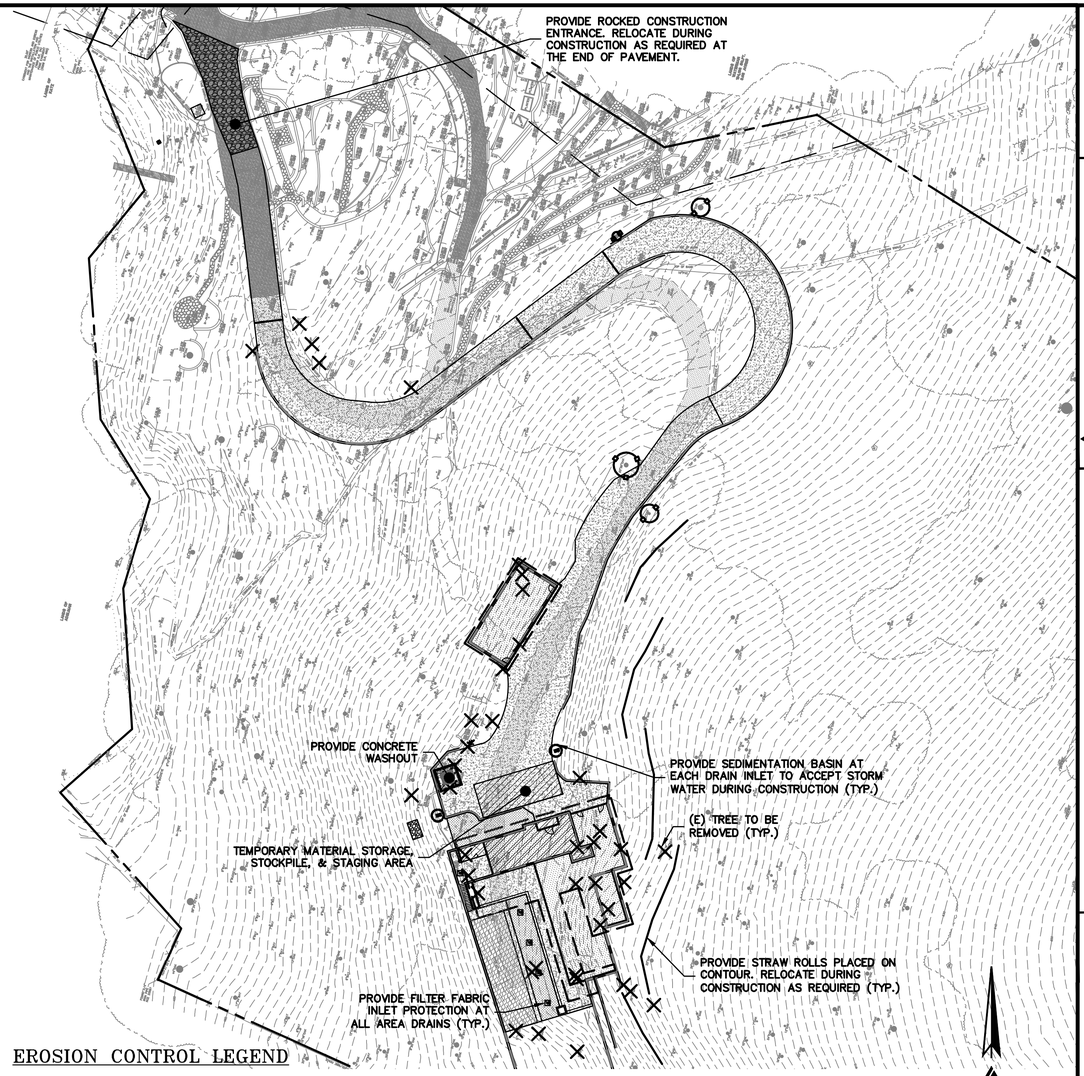
1. THE FACILITIES SHOWN ON THIS PLAN ARE DESIGNED TO CONTROL EROSION AND SEDIMENT DURING THE RAINY SEASON, OCTOBER 15TH TO APRIL 15. EROSION CONTROL FACILITIES SHALL BE IN PLACE PRIOR TO OCTOBER 15TH OF ANY YEAR. GRADING OPERATIONS DURING THE RAINY SEASON WHICH LEAVE DENUDED SLOPES SHALL BE PROTECTED WITH EROSION CONTROL MEASURES IMMEDIATELY FOLLOWNG GRADING ON THE SLOPES.
2. SITE CONDITIONS AT TIME OF PLACEMENT OF EROSION CONTROL MEASURES WILL VARY. APPROPRIATE ACTION INCLUDING TEMPORARY SWALES, INLETS, HYDROSEEDING, STRAW BALES, ROCK SACKS, ETC. SHALL BE TAKEN TO PREVENT EROSION AND SEDIMENTATION FROM LEAVING SITE. EROSION CONTROL MEASURES SHALL BE ADJUSTED AS THE CONDITIONS CHANGE AND THE NEED OF CONSTRUCTION SHIFT.
3. CONSTRUCTION ENTRANCES SHALL BE INSTALLED PRIOR TO COMMENCEMENT OF GRADING. ALL CONSTRUCTION TRAFFIC ENTERING ONTO THE PAVED ROADS MUST CROSS THE STABILIZED CONSTRUCTION ENTRANCES. CONTRACTOR SHALL MAINTAIN STABILIZED ENTRANCE AT EACH VEHICLE ACCESS POINT TO EXISTING PAVED STREETS. ANY MUD OR DEBRIS TRACKED ONTO PUBLIC STREETS SHALL BE REMOVED DAILY AND AS REQUIRED BY THE GOVERNING AGENCY.
4. ALL EXPOSED SLOPES THAT ARE NOT VEGETATED SHALL BE HYDROSEEDED. IF HYDROSEEDING IS NOT USED OR IS NOT EFFECTIVE BY OCTOBER 15, THEN OTHER IMMEDIATE METHODS SHALL BE IMPLEMENTED, SUCH AS EROSION CONTROL BLANKETS, OR A THREE–STEP APPLICATION OF 1) SEED, MULCH, FERTILIZER 2) BLOWN STRAW 3) TACKIFIER AND MULCH. HYDROSEEDING SHALL BE IN ACCORDANCE WITH THE PROVISIONS OF SECTION 20" EROSION CONTROL AND HIGHWAY PLANTING" OF THE STANDARD SPECIFICATION OF THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION, AS LAST REVISED. REFER TO THE EROSION CONTROL SECTION OF THE GRADING SPECIFICATIONS THAT ARE A PART OF THIS PLAN SET FOR FURTHER INFORMATION.
5. INLET PROTECTION SHALL BE INSTALLED AT OPEN INLETS TO PREVENT SEDIMENT FROM ENTERING THE STORM DRAIN SYSTEM. INLETS NOT USED IN CONJUNCTION WITH EROSION CONTROL ARE TO BE BLOCKED TO PREVENT ENTRY OF SEDIMENT. MINIMUM INLET PROTECTION SHALL CONSIST OF A ROCK SACKS OR AS SHOWN ON THIS PLAN
6. THIS EROSION AND SEDIMENT CONTROL PLAN MAY NOT COVER ALL THE SITUATIONS THAT MAY ARISE DURING CONSTRUCTION DUE TO UNANTICIPATED FIELD CONDITIONS. VARIATIONS AND ADDITIONS MAY BE MADE TO THIS PLAN IN THE FIELD. A REPRESENTATIVE OF LEA & BRAZE ENGINEERING SHALL PERFORM A FIELD REVIEW AND MAKE RECOMMENDATIONS AS NEEDED. CONTRACTOR IS RESPONSIBLE TO NOTIFY LEA & BRAZE ENGINEERING AND THE GOVERNING AGENCY OF ANY CHANGES.
7. THE EROSION CONTROL MEASURES SHALL CONFORM TO THE LOCAL JURISDICTION'S STANDARDS AND THE APPROVAL OF THE LOCAL JURISDICTION'S ENGINEERING DEPARTMENT.
8. STRAW ROLLS SHALL BE PLACED AT THE TOE OF SLOPES AND ALONG THE DOWN SLOPE PERIMETER OF THE PROJECT. THEY SHALL BE PLACED AT 25 FOOT INTERVALS ON GRADED SLOPES. PLACEMENT SHALL RUN WITH THE CONTOURS AND ROLLS SHALL BE TIGHTLY END BUTTED. CONTRACTOR SHALL REFER TO MANUFACTURES SPECIFICATIONS FOR PLACEMENT AND INSTALLATION INSTRUCTIONS.

REFERENCES:

1. CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD'S FIELD MANUAL FOR EROSION AND SEDIMENTATION CONTROL
2. CALIFORNIA STORM WATER QUALITY ASSOCIATION BEST MANAGEMENT PRACTICES HANDBOOK FOR CONSTRUCTION

PERIODIC MAINTENANCE:

1. MAINTENANCE IS TO BE PERFORMED AS FOLLOWS:
   - A. DAMAGES CAUSED BY SOIL EROSION OR CONSTRUCTION SHALL BE REPAIRED AT THE END OF EACH WORKING DAY.
   - B. SWALES SHALL BE INSPECTED PERIODICALLY AND MAINTAINED AS NEEDED.
   - C. SEDIMENT TRAPS, BERMS, AND SWALES ARE TO BE INSPECTED AFTER EACH STORM AND REPAIRS MADE AS NEEDED.
   - D. SEDIMENT SHALL BE REMOVED AND SEDIMENT TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO A DEPTH OF 1' FOOT.
   - E. SEDIMENT REMOVED FROM TRAP SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
   - F. RILLS AND GULLIES MUST BE REPAIRED.
2. GRAVEL BAG INLET PROTECTION SHALL BE CLEANED OUT WHENEVER SEDIMENT DEPTH IS ONE HALF THE HEIGHT OF ONE GRAVEL BAG.
3. STRAW ROLLS SHALL BE PERIODICALLY CHECKED TO ASSURE PROPER FUNCTION AND CLEANED OUT WHENEVER THE SEDIMENT DEPTH REACHED HALF THE HEIGHT OF THE ROLL.
4. SILT FENCE SHALL BE PERIODICALLY CHECKED TO ASSURE PROPER FUNCTION AND CLEANED OUT WHENEVER THE SEDIMENT DEPTH REACHES ONE FOOT IN HEIGHT.
5. CONSTRUCTION ENTRANCE SHALL BE REGRAVELED AS NECESSARY FOLLOWING SILT/SOIL BUILDUP.
6. ANY OTHER EROSION CONTROL MEASURES SHOULD BE CHECKED AT REGULAR INTERVALS TO ASSURE PROPER FUNCTION



EROSION CONTROL LEGEND

GRAVEL BAG

SEDIMENTATION BASIN

INLET PROTECTION

STRAW ROLL

SILT FENCE

CONCRETE WASHOUT

CONSTRUCTION ENTRANCE

TREE PROTECTION

EROSION CONTROL BLANKET / MATTING

0 20 40 80

SCALE: 1" = 40'

REGISTERED PROFESSIONAL ENGINEER — CHRISTOPHER CARLSON — No. C79553 — CIVIL — STATE OF CALIFORNIA — ORIGINAL SIGNATURES IN BLUE INK

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PORTOLA VALLEY, CALIFORNIA

UNINCORPORATED SANTA CLARA COUNTY — APN: 182–36–043

EROSION CONTROL PLAN

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	11 OF 13 SHEETS

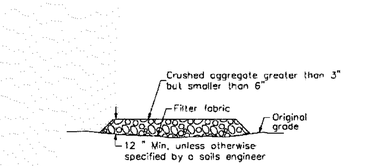
RECORD#: PLN19–0079

PLAN # ____ OF ____ SHEET

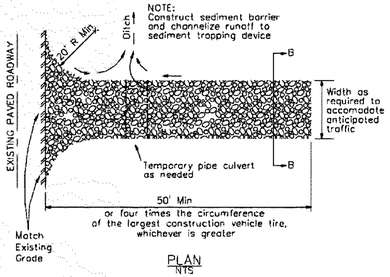
APPLICANT: CHARLES ZAFFARONI — ROAD NAME: ALPINE ROAD — RECORD#: PLN19–0079 — PERMIT PLANS: BSA SUB #3

3 Stabilized Construction Entrance/Exit

CASQA Detail TC-1



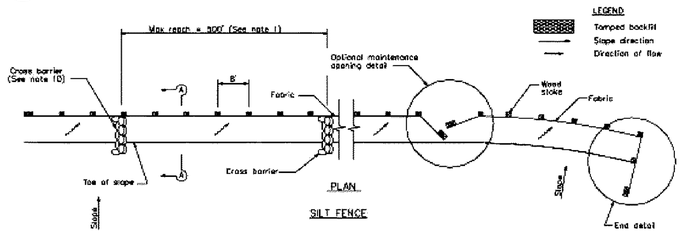
SECTION B–B
NTS



PLAN
NTS

1 Silt Fence

CASQA Detail SE-1

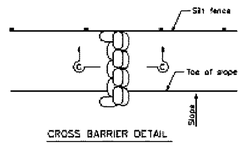


PLAN

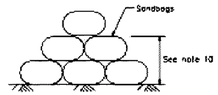
SILT FENCE

NOTES

1. Construct the length of each reach so that the change in base elevation along the reach does not exceed 1/3 the height of the linear barrier, in no case shall the reach length exceed 500'.
2. The last 8'–0" of fence shall be turned up slope.
3. Stake dimensions are nominal.
4. Dimension may vary to fit field condition.
5. Stakes shall be spaced at 8'–0" maximum and shall be positioned on downstream side of fence.
6. Stakes to overlap and fence fabric to fold around each stake one full turn. Secure fabric to stake with 4 staples.
7. Stakes shall be driven tightly together to prevent potential flow-through at segment at joint. The tops of the stakes shall be secured with wire.
8. For end stake, fence fabric shall be folded around two stakes one full turn and secured with 4 staples
9. Minimum 4 staples per stake. Dimensions shown are typical.
10. Cross barriers shall be a minimum of 1/3 and a maximum of 1/2 the height of the linear barrier.
11. Maintenance openings shall be constructed in a manner to ensure sediment remains behind silt fence.
12. Joining sections shall not be placed at sump locations
13. Sandbag rows and layers shall be offset to eliminate gaps.



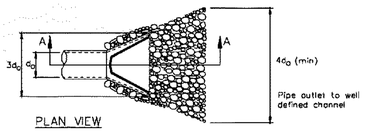
CROSS BARRIER DETAIL



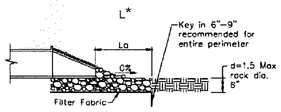
SECTION C–C

4 Velocity Dissipation Devices

CASQA Detail EC-10



PLAN VIEW

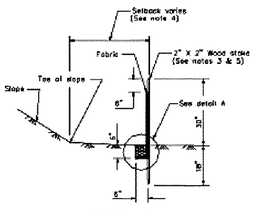


SECTION A–A

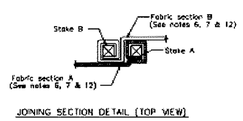
* Length per ABAG Design Standards

2 Silt Fence

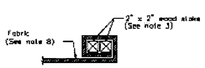
CASQA Detail SE-1



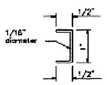
SECTION A–A



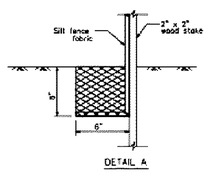
JOINING SECTION DETAIL (TOP VIEW)



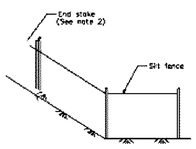
END STAKE DETAIL (TOP VIEW)



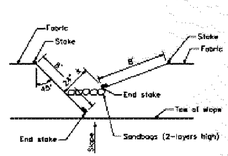
STAPLE DETAIL
(SEE NOTE 9)



DETAIL A



END DETAIL



OPTIONAL MAINTENANCE OPENING DETAIL
(SEE NOTE 11)

Source for Graphics: California Stormwater BMP Handbook, California Stormwater Quality Association, January 2003.
Available from www.cabmphandbooks.com.

STANDARD BEST MANAGEMENT PRACTICE NOTES

1. Solid and Demolition Waste Management: Provide designated waste collection areas and containers on site away from streets, gutters, storm drains, and waterways, and arrange for regular disposal. Waste containers must be watertight and covered at all times except when waste is deposited. Refer to Erosion & Sediment Control Field Manual, 4th Edition (page C3) or latest.
2. Hazardous Waste Management: Provide proper handling and disposal of hazardous wastes by a licensed hazardous waste material hauler. Hazardous wastes shall be stored and properly labeled in sealed containers constructed of suitable materials. Refer to Erosion & Sediment Control Field Manual, 4th Edition (pages C-5 to C-6) or latest.
3. Spill Prevention and Control: Provide proper storage areas for liquid and solid materials, including chemicals and hazardous substances, away from streets, gutters, storm drains, and waterways. Spill control materials must be kept on site where readily accessible. Spills must be cleaned up immediately and contaminated soil disposed properly. Refer to Erosion & Sediment Control Field Manual, 4th Edition (pages C-7 to C-8, C-13 to C-14) or latest.
4. Vehicle and Construction Equipment Service and Storage: An area shall be designated for the maintenance, where on-site maintenance is required, and storage of equipment that is protected from stormwater run-on and runoff. Measures shall be provided to capture any waste oils, lubricants, or other potential pollutants and these wastes shall be properly disposed of off site. Fueling and major maintenance/repair, and washing shall be conducted off-site whenever feasible. Refer to Erosion & Sediment Control Field Manual, 4th Edition (page C9) or latest.
5. Material Delivery, Handling and Storage: In general, materials should not be stockpiled on site. Where temporary stockpiles are necessary and approved by the County, they shall be covered with secured plastic sheeting or tarp and located in designated areas near construction entrances and away from drainage paths and waterways. Barriers shall be provided around storage areas where materials are potentially in contact with runoff. Refer to Erosion & Sediment Control Field Manual, 4th Edition (pages C-11 to C-12) or latest.
6. Handling and Disposal of Concrete and Cement: When concrete trucks and equipment are washed on-site, concrete wastewater shall be contained in designated containers or in a temporary lined and watertight pit where wasted concrete can harden for later removal. If possible have concrete contractor remove concrete wash water from site. In no case shall fresh concrete be washed into the road right-of-way. Refer to Erosion & Sediment Control Field Manual, 4th Edition (pages C-15 to C-16) or latest.
7. Pavement Construction Management: Prevent or reduce the discharge of pollutants from paving operations, using measures to prevent run-on and runoff pollution and properly disposing of wastes. Avoid paving in the wet season and reschedule paving when rain is in the forecast. Residue from saw-cutting shall be vacuumed for proper disposal. Refer to Erosion & Sediment Control Field Manual, 4th Edition (pages C-17 to C-18) or latest.
8. Contaminated Soil and Water Management: Inspections to identify contaminated soils should occur prior to construction and at regular intervals during construction. Remediating contaminated soil should occur promptly after identification and be specific to the contaminant identified, which may include hazardous waste removal. Refer to Erosion & Sediment Control Field Manual, 4th Edition (pages C-19 to C-20) or latest.
9. Sanitary/Septic Water Management: Temporary sanitary facilities should be located away from drainage paths, waterways, and traffic areas. Only licensed sanitary and septic waste haulers should be used. Secondary containment should be provided for all sanitary facilities. Refer to Erosion & Sediment Control Field Manual, 4th Edition (page C-21) or latest.
10. Inspection & Maintenance: Areas of material and equipment storage sites and temporary sanitary facilities must be inspected weekly. Problem areas shall be identified and appropriate additional and/or alternative control measures implemented immediately, within 24 hours of the problem being identified.

STANDARD EROSION CONTROL NOTES

1. Sediment Control Management:

   Tracking Prevention & Clean Up: Activities shall be organized and measures taken as needed to prevent or minimize tracking of soil onto the public street system. A gravel or proprietary device construction entrance/exit is required for all sites. Clean up of tracked material shall be provided by means of a street sweeper prior to an approaching rain event, or at least once at the end of each workday that material is tracked, or, more frequently as determined by the County Inspector. Refer to Erosion & Sediment Control Field Manual, 4th Edition (pages B-31 to B-33) or latest.

   Storm Drain Inlet and Catch Basin Inlet Protection: All inlets within the vicinity of the project and within the project limits shall be protected with gravel bags placed around inlets or other inlet protection. At locations where exposed soils are present, staked fiber rolles or staked silt fences can be used. Inlet filters are not allowed due to clogging and subsequent flooding. Refer to Erosion & Sediment Control Field Manual, 4th Edition (pages B-49 to B-51) or latest.

   Storm Water Runoff: No storm water runoff shall be allowed to drain in to the existing and/or proposed underground storm drain system or other above ground watercourses until appropriate erosion control measures are fully installed.

   Dust Control: The contractor shall provide dust control in graded areas as required by providing wet suppression or chemical stabilization of exposed soils, providing for rapid clean up of sediments deposited on paved roads, furnishing construction road entrances and vehicle wash down areas, and limiting the amount of areas disturbed by clearing and earth moving operations by scheduling these activities in phases.

   Stockpiling: Excavated soils shall not be placed in streets or on paved areas. Borrow and temporary stockpiles shall be protected with appropriate erosion control measures(tarps, straw bales, silt fences, ect.) to ensure sill does not leave the site or enter the storm drain system or neighboring watercourse.
2. Erosion Control: During the rainy season, all disturbed areas must include an effective combination of erosion and sediment control. It is required that temporary erosion control measures are applied to all disturbed soil areas prior to a rain event. During the non-rainy season, erosion control measures must be applied sufficient to control wind erosion at the site.
3. Inspection & Maintenance: Disturbed areas of the Project's site, locations where vehicles enter or exit the site, and all erosion and sediment controls that are identified as part of the Erosion Control Plans must be inspected by the Contractor before, during, and after storm events, and at least weekly during seasonal wet periods. Problem areas shall be identified and appropriate additional and/ or alternative control measures implemented immediately, within 24 hours of the problem being identified.
4. Project Completion: Prior to project completion and signoff by the County Inspector, all disturbed areas shall be reseeded, planted, or landscaped to minimize the potential for erosion on the subject site.
5. It shall be the Owner's/Contractor's responsibility to maintain control of the entire construction operation and to keep the entire site in compliance with the erosion control plan.
6. Erosion and sediment control best management practices shall be operable year round or until vegetation is fully established on landscaped surfaces.

Project Information

Best Management Practices and Erosion Control Details Sheet 1
County of Santa Clara

BMP-1

LEA & BRAZE ENGINEERING, INC.
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REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER CARLSON
No. C79555
CIVIL
STATE OF CALIFORNIA
ORIGINAL SIGNATURES IN BLUE INK

ZAFFARONI RESIDENCE
0 ALPINE ROAD
PORTOLA VALLEY, CALIFORNIA
APN: 182–36–043
UNINCORPORATED SANTA CLARA COUNTY

EROSION CONTROL DETAILS

–		–
–		–
3	ARCH. REV. 11–07–19	KZ
2	PLAN CHECK 08–23–19	KZ
1	PLAN CHECK 07–17–19	KZ
	REVISIONS	BY

JOB NO:	2180842CI
DATE:	04–11–19
SCALE:	NTS
DESIGN BY:	KZ
DRAWN BY:	MM
SHEET NO:	BMP-1
	12 OF 13 SHEETS

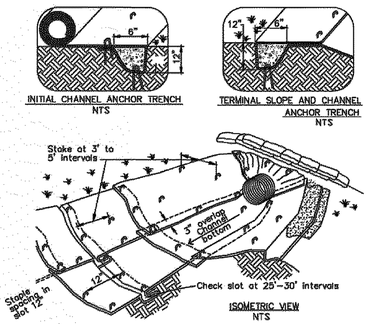
RECORD#: PLN19–0079

PLAN # _____
SHEET _____ OF _____

APPLICANT: CHARLES ZAFFARONI | ROAD NAME: ALPINE ROAD | RECORD#: PLN19–0079 | PERMIT PLANS: BSA SUB #3

7 Geotextiles and Mats

CASQA Detail EC-7

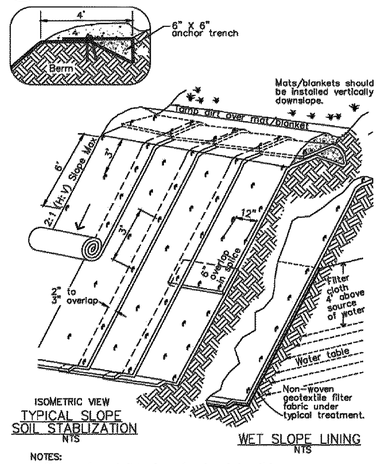


NOTES:
1. Check slots to be constructed per manufacturers specifications.
2. Staking or stapling layout per manufacturers specifications.
3. Install per manufacturer's recommendations

TYPICAL INSTALLATION DETAIL

5 Geotextiles and Mats

CASQA Detail EC-7

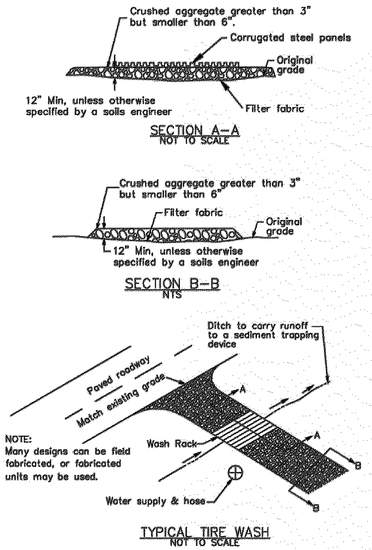


NOTES:
1. Slope surface shall be free of rocks, clods, sticks and grass. Mats/blankets shall have good soil contact.
2. Lay blankets loosely and stake or staple to maintain direct contact with the soil. Do not stretch.
3. Install per manufacturer's recommendations

TYPICAL INSTALLATION DETAIL

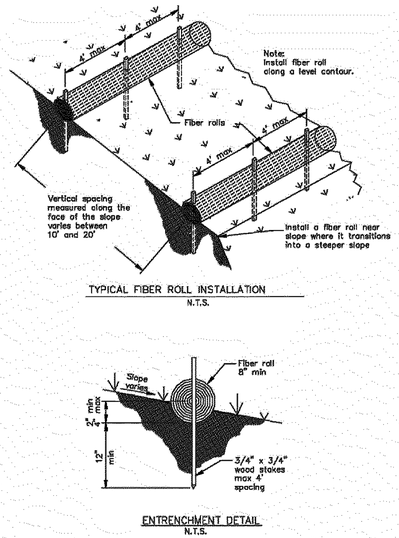
3 Entrance/Outlet Tire Wash

CASQA Detail TC-3



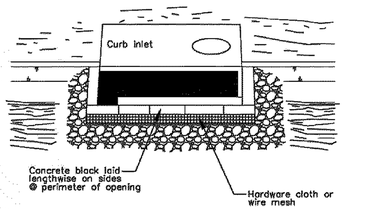
1 Fiber Rolls

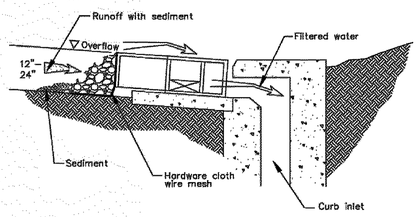
CASQA Detail SE-5



8 Storm Drain Inlet Protection

CASQA Detail SE-10



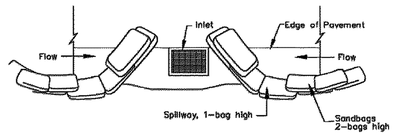


DI PROTECTION – TYPE 4
NOT TO SCALE

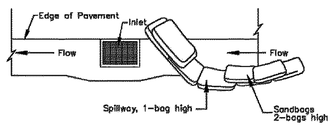
Source for Graphics: California Stormwater BMP Handbook, California Stormwater Quality Association, January 2003.
Available from www.cabmphandbooks.com.

6 Storm Drain Inlet Protection

CASQA Detail SE-10



TYPICAL PROTECTION FOR INLET ON SUMP



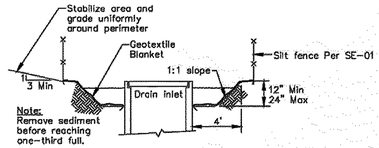
TYPICAL PROTECTION FOR INLET ON GRADE

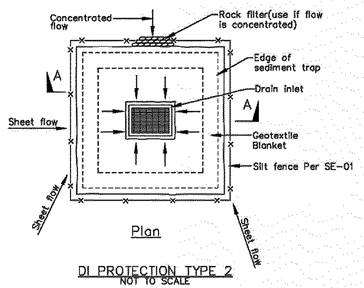
NOTES:
1. Intended for short–term use.
2. Use to inhibit non–storm water flow.
3. Allow for proper maintenance and cleanup.
4. Bags must be removed after adjacent operation is completed
5. Not applicable in areas with high silts and clays without filter fabric.

DI PROTECTION TYPE 3
NOT TO SCALE

4 Storm Drain Inlet Protection

CASQA Detail SE-10



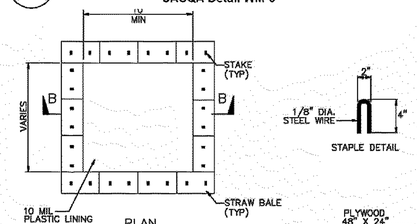


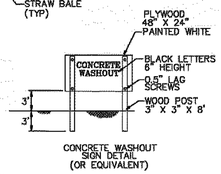
DI PROTECTION TYPE 2
NOT TO SCALE

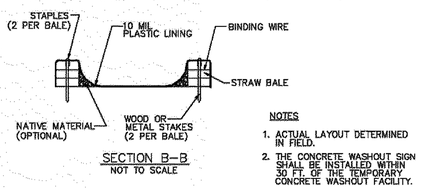
Notes
1. For use in cleared and grubbed and in graded areas.
2. Shape basin so that longest inflow area faces longest length of trap.
3. For concentrated flows, shape basin in 2:1 ratio with length oriented towards direction of flow.

2 Concrete Waste Management

CASQA Detail WM-8







NOTES
1. ACTUAL LAYOUT DETERMINED IN FIELD.
2. THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30 FT. OF THE TEMPORARY CONCRETE WASHOUT FACILITY.

Project Information

Best Management Practices and Erosion Control Details Sheet 2
County of Santa Clara

BMP-2

PLAN # ____ SHEET ____ OF

LEA & BRAZE ENGINEERING, INC.
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ZAFFARONI RESIDENCE
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PORTOLA VALLEY,
CALIFORNIA
APN: 182–36–043
UNINCORPORATED SANTA CLARA COUNTY

EROSION CONTROL DETAILS

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–	–
3 ARCH REV. 11–07–19	KZ
2 PLAN CHECK 08–23–19	KZ
1 PLAN CHECK 07–17–19	KZ
REVISIONS	BY

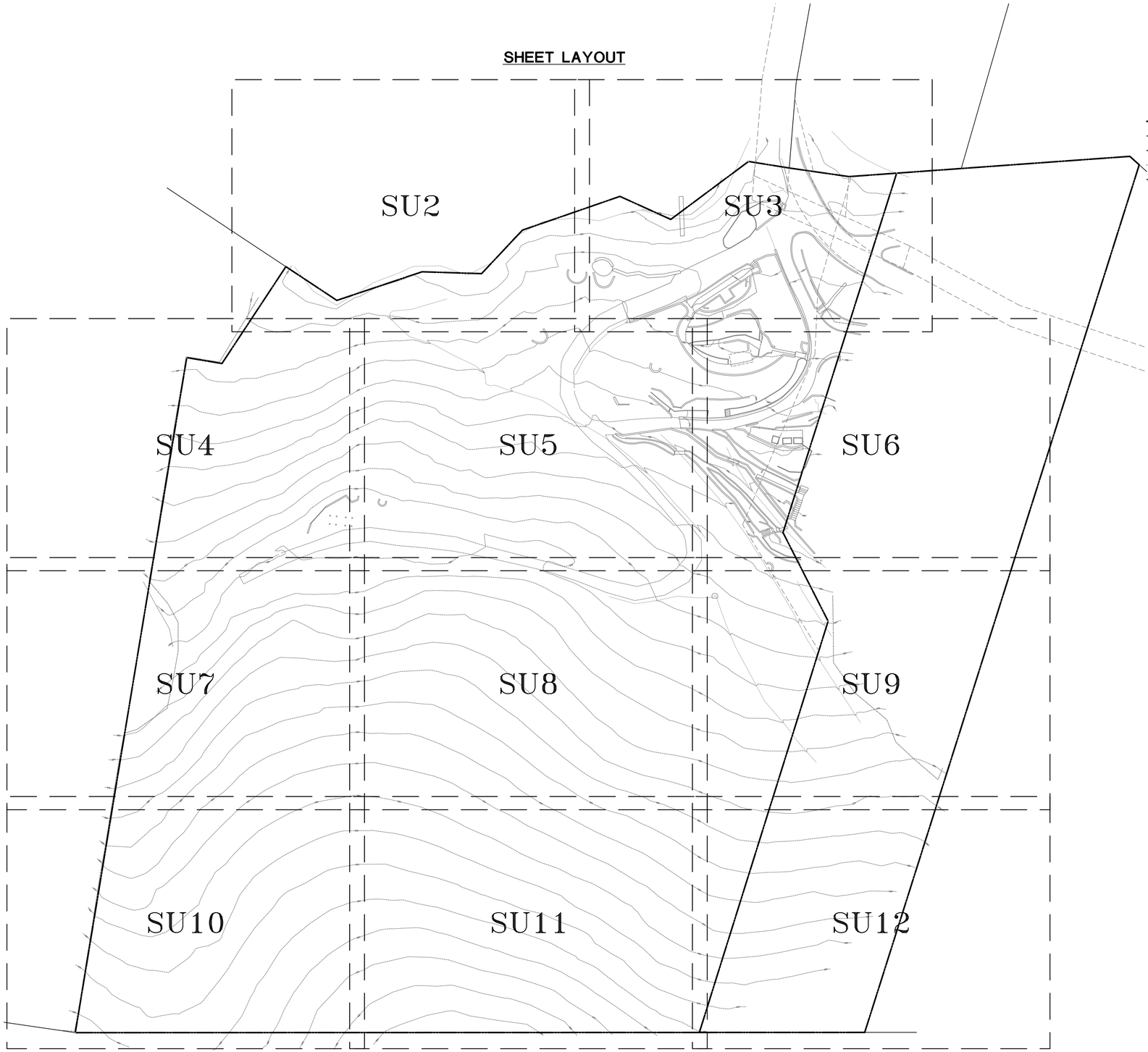
JOB NO:	2180842CI
DATE:	04–11–19
SCALE:	NTS
DESIGN BY:	KZ
DRAWN BY:	MM
SHEET NO:	BMP-2

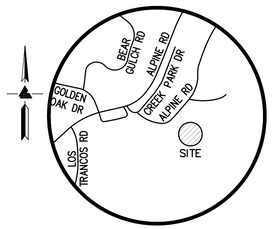
13 OF 13 SHEETS

RECORD#: PLN19–0079

APPLICANT: CHARLES ZAFFARONI | ROAD NAME: ALPINE ROAD | RECORD#: PLN19–0079 | PERMIT PLANS: BSA SUB #3

SHEET LAYOUT





VICINITY MAP
NO SCALE

NOTES

ALL DISTANCES AND DIMENSIONS ARE IN FEET AND DECIMALS.

UNDERGROUND UTILITY LOCATION IS BASED ON SURFACE EVIDENCE.

ALL RETAINING WALLS ARE ROCK EXCEPT WHERE NOTED.

EASEMENT NOTE

APN 182-36-043
EASEMENTS ARE SHOWN PER TITLE REPORT PREPARED BY CHICAGO TITLE COMPANY, TITLE NO. FWPS-2999181327, DATED AUGUST 9, 2018.
EXCEPTION # 8 – RIGHTS AND EASEMENTS FOR NAVIGATION AND FISHERY WHICH MAY EXIST OVER THAT PORTION OF SAID LAND LYING BENEATH THE WATERS OF LOS TRANCOS CREEK. (NOT PLOTABLE)

APN 182-36-044
A CURRENT TITLE REPORT FOR THE SUBJECT PROPERTY HAS NOT BEEN EXAMINED BY LEA & BRAZE ENGINEERING, INC. EASEMENTS OF RECORD MAY EXIST THAT ARE NOT SHOWN ON THIS MAP.

LEGEND AND NOTES

	BOUNDARY LINE
	EASEMENT
x	FENCE LINE
	FLOW LINE
SD	STORM DRAIN LINE
AD	AREA DRAIN
	BENCHMARK
BW	BOTTOM RETAINING WALL
CB	CATCH BASIN
CMP	CORRUGATED METAL PIPE
CPP	CORRUGATED PLASTIC PIPE
	FIRE HYDRANT
FL	FLOW LINE
	GUY ANCHOR
INV	INVERT
ICV	IRRIGATION CONTROL VALVE
JMAP	JAPANESE MAPLE
	JOINT POLE
M–	MULTI–TRUNK TREE
PVC	POLYVINYL CHLORIDE PIPE
RWD	REDWOOD
RCP	REINFORCED CONCRETE PIPE
SS	SANITARY SEWER BOX
B#	SOIL BORE LOCATION
SYC	SYCAMORE
TW	TOP OF RETAINING WALL
XXX.XX	SPOTGRADE
	ASPHALT
	CONCRETE
	GRAVEL
	RIVER ROCK
	STONE
	WOOD

BENCHMARK

TOWN OF PORTOLA VALLEY BENCHMARK PV–15
33'± SE OF STREET MON, 33'± SW OF STOP SIGN POLE, 39'± NE OF POWER POLE, AT THE INTERSECTION OF ALPINE RD AND LOS TRANCOS RD.
ELEVATION = 476.30'
(ADJUSTED TO NAVD 88 DATUM)

SITE BENCHMARK

SURVEY CONTROL POINT
CUT CROSS IN CONCRETE
ELEVATION = 418.91'
(ADJUSTED TO NAVD 88 DATUM)

LICENSED LAND SURVEYOR
GREGORY F. BRAZE
No. 7623
Exp. 12-31-18
STATE OF CALIFORNIA

LEA & BRAZE ENGINEERING, INC.
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ALPINE ROAD
PORTOLA VALLEY
CALIFORNIA

UNINCORPORATED SANTA CLARA COUNTY

APN: 182-36-043 & 044

TOPOGRAPHIC SURVEY

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REVISIONS	BY
JOB NO:	2180884
DATE:	9-18-18
SCALE:	
FIELD BY:	ES
DRAWN BY:	DB
SHEET NO:	SU1

1 OF 12 SHEETS

LEGEND AND NOTES

- BOUNDARY LINE
- EASEMENT
- x FENCE LINE
- FLOW LINE
- SD STORM DRAIN LINE
- AD AREA DRAIN
- BENCHMARK
- BW BOTTOM RETAINING WALL
- CB CATCH BASIN
- CMP CORRUGATED METAL PIPE
- CPP CORRUGATED PLASTIC PIPE
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- SS SANITARY SEWER BOX
- B# SOIL BORE LOCATION
- SYC SYCAMORE
- TW TOP OF RETAINING WALL
- XXX.XX SPOTGRADE
- ASPHALT
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NOTES

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EASEMENT NOTE

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APN 182–36–044
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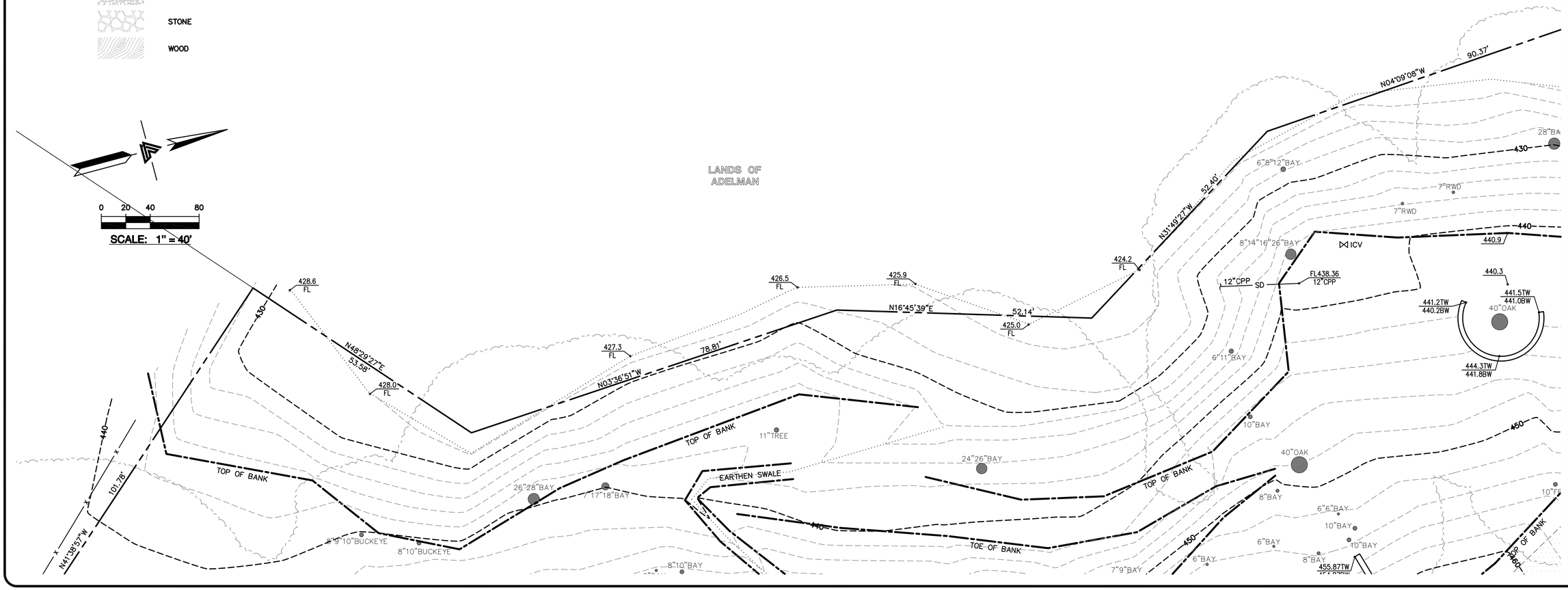
0 20 40 80
SCALE: 1" = 40'



LICENSED LAND SURVEYOR GREGORY F. BRAZE No. 7623 Exp. 12-31-18 STATE OF CALIFORNIA

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ALPINE ROAD
PORTOLA VALLEY
CALIFORNIA

UNINCORPORATED SANTA CLARA COUNTY APN: 182–36–043 & 044

TOPOGRAPHIC SURVEY

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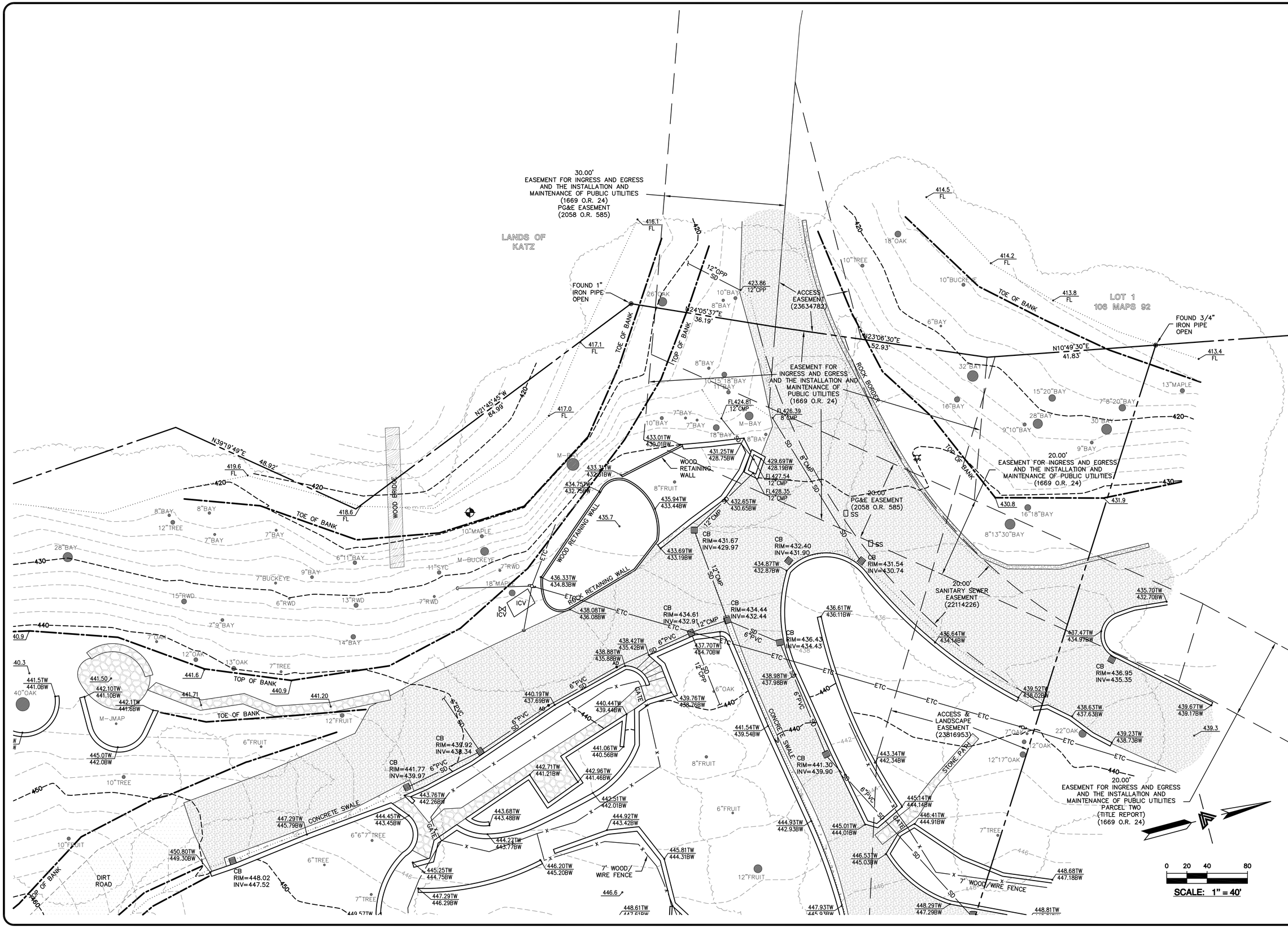
–	–
–	–
REVISIONS	BY
JOB NO:	2180884
DATE:	9–18–18
SCALE:	1" = 10'
FIELD BY:	ES
DRAWN BY:	DB
SHEET NO:	SU2

2 OF 12 SHEETS



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TOPOGRAPHIC SURVEY

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REVISIONS	BY
JOB NO:	2180884
DATE:	9-18-18
SCALE:	1" = 10'
FIELD BY:	ES
DRAWN BY:	DB
SHEET NO:	SU3

3 OF 12 SHEETS

LEGEND AND NOTES

———	BOUNDARY LINE
— — —	EASEMENT
——x——x——	FENCE LINE
.....	FLOW LINE
——SD——	STORM DRAIN LINE
AD	AREA DRAIN
	BENCHMARK
BW	BOTTOM RETAINING WALL
CB	CATCH BASIN
CMP	CORRUGATED METAL PIPE
CPP	CORRUGATED PLASTIC PIPE
	FIRE HYDRANT
FL	FLOW LINE
	GUY ANCHOR
INV	INVERT
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	ASPHALT
	CONCRETE
	GRAVEL
	RIVER ROCK
	STONE
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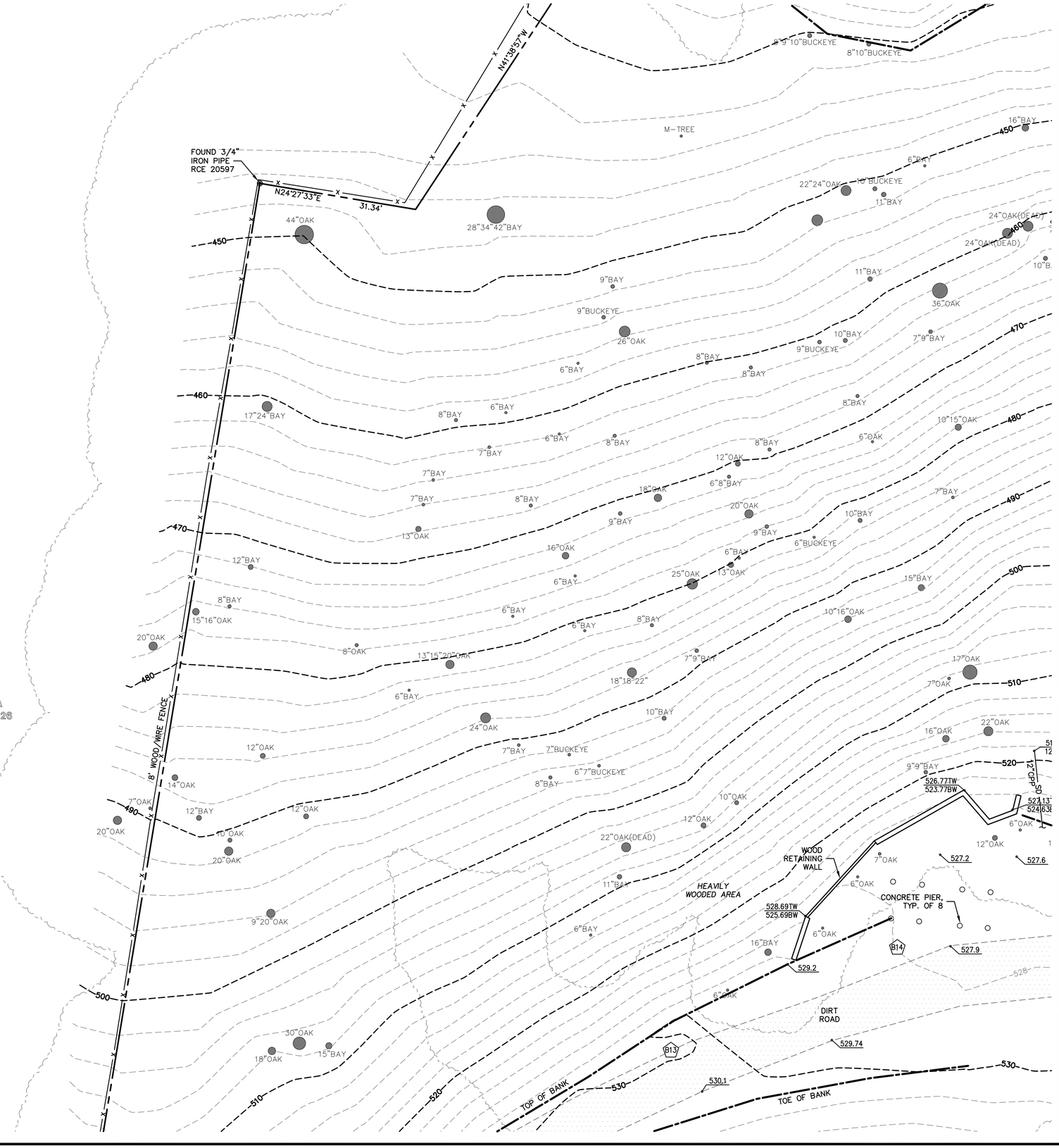
0 20 40 80

SCALE: 1" = 40'



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PORTOLA VALLEY
CALIFORNIA

UNINCORPORATED SANTA CLARA COUNTY APN: 182–36–043 & 044

TOPOGRAPHIC SURVEY

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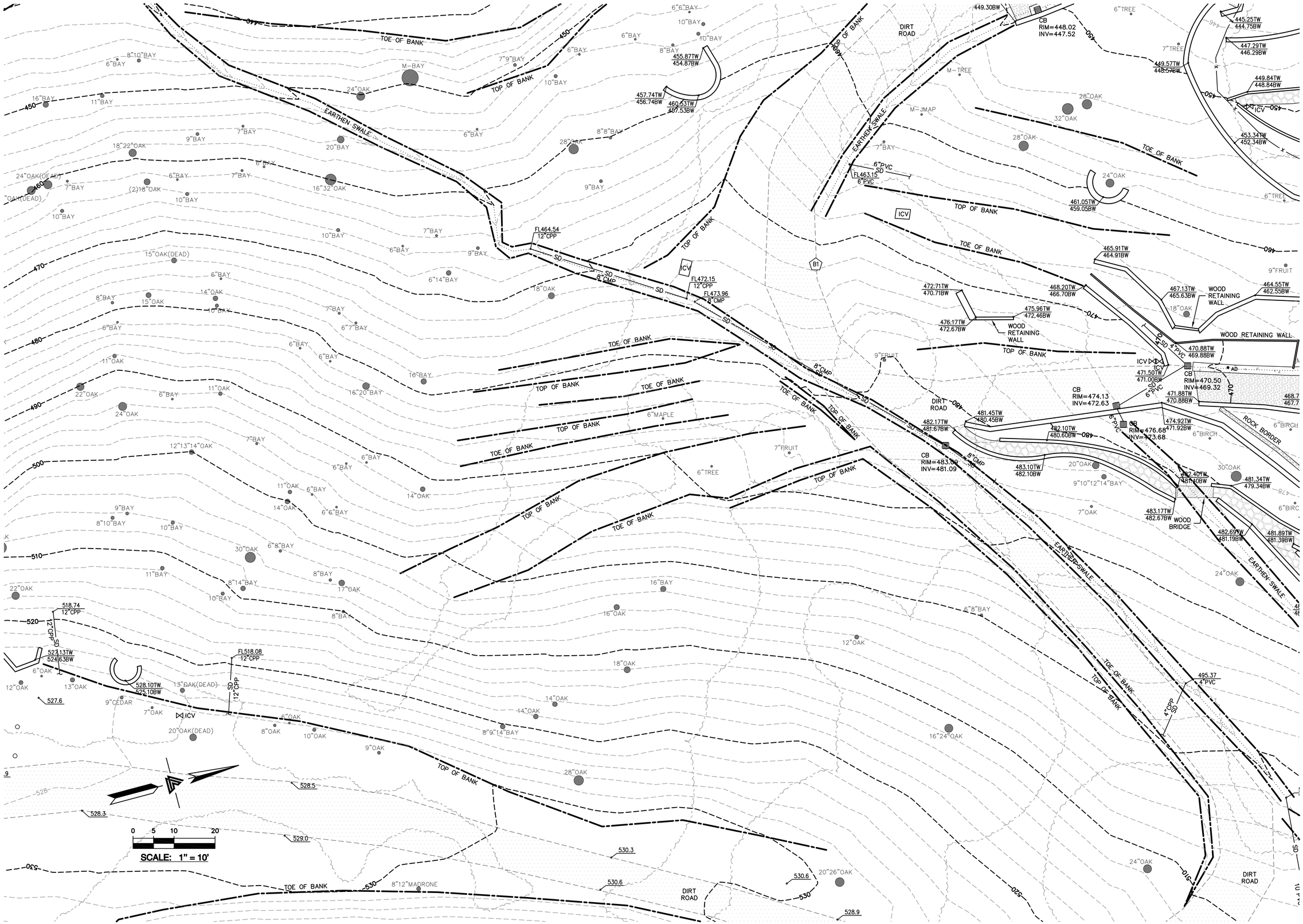
–	–
REVISIONS	BY
JOB NO:	2180884
DATE:	9–18–18
SCALE:	1" = 10'
FIELD BY:	ES
DRAWN BY:	DB
SHEET NO:	SU4



LICENSED LAND SURVEYOR
GREGORY F. BRAZE
No. 7623
Exp. 12-31-18
STATE OF CALIFORNIA

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CALIFORNIA

UNINCORPORATED SANTA CLARA COUNTY

APN: 182-36-043 & 044

TOPOGRAPHIC SURVEY

REVISIONS	BY
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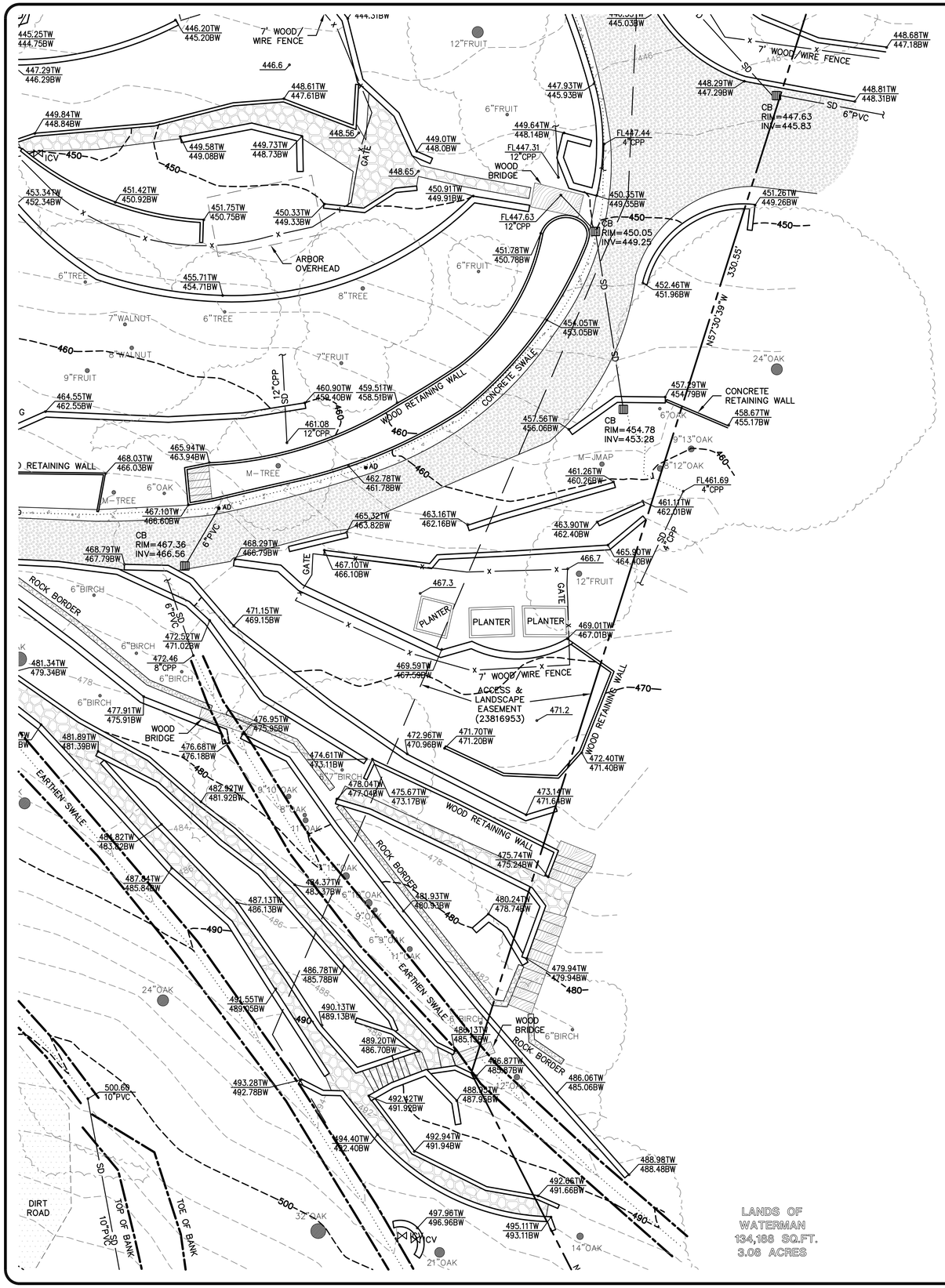
JOB NO:	2180884
DATE:	9-14-18
SCALE:	1" = 10'
FIELD BY:	ES
DRAWN BY:	DB
SHEET NO:	SU5



LEGEND AND NOTES

- BOUNDARY LINE
- EASEMENT
- x FENCE LINE
- FLOW LINE
- SD STORM DRAIN LINE
- AD AREA DRAIN
- BENCHMARK
- BW BOTTOM RETAINING WALL
- CB CATCH BASIN
- CMP CORRUGATED METAL PIPE
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- FL FLOW LINE
- GUY ANCHOR
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- SS SANITARY SEWER BOX
- B# SOIL BORE LOCATION
- SYC SYCAMORE
- TW TOP OF RETAINING WALL
- XXX.XX SPOTGRADE
- ASPHALT
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0 20 40 80

SCALE: 1" = 40'

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ALPINE ROAD
PORTOLA VALLEY
CALIFORNIA

UNINCORPORATED SANTA CLARA COUNTY

APN: 182-36-043 & 044

TOPOGRAPHIC SURVEY

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REVISIONS	BY
JOB NO:	2180884
DATE:	9-18-18
SCALE:	1" = 10'
FIELD BY:	ES
DRAWN BY:	DB
SHEET NO:	SU6

6 OF 12 SHEETS

LEGEND AND NOTES

- BOUNDARY LINE
- EASEMENT
- FENCE LINE
- FLOW LINE
- STORM DRAIN LINE
- AREA DRAIN
- BENCHMARK
- BW — BOTTOM RETAINING WALL
- CB — CATCH BASIN
- CMP — CORRUGATED METAL PIPE
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- TW — TOP OF RETAINING WALL
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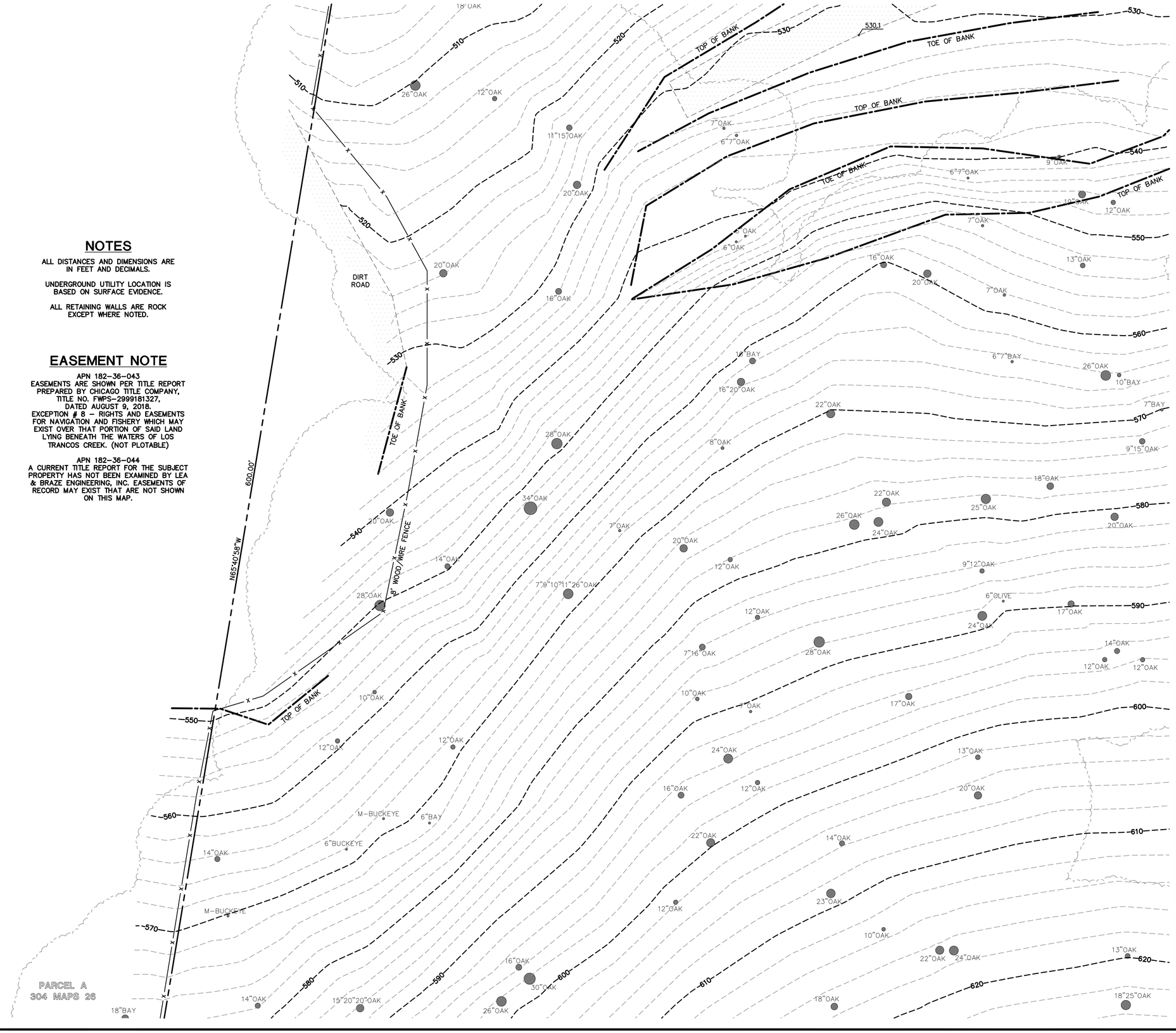

0 20 40 80

SCALE: 1" = 40'

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TOPOGRAPHIC SURVEY

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REVISIONS	BY
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SCALE:	1" = 10'
FIELD BY:	ES
DRAWN BY:	DB
SHEET NO:	SU7

7 OF 12 SHEETS

TOE OF BANK
TOP OF BANK
DIRT ROAD
EARTHEN SWALE
LATH
DRIVEWAY
B8
B7
SCALE: 1" = 40'

LICENSED LAND SURVEYOR
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Exp. 12-31-19
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UNINCORPORATED SANTA CLARA COUNTY

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TOPOGRAPHIC SURVEY

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–	–
REVISIONS	BY
JOB NO:	2180884
DATE:	9-18-18
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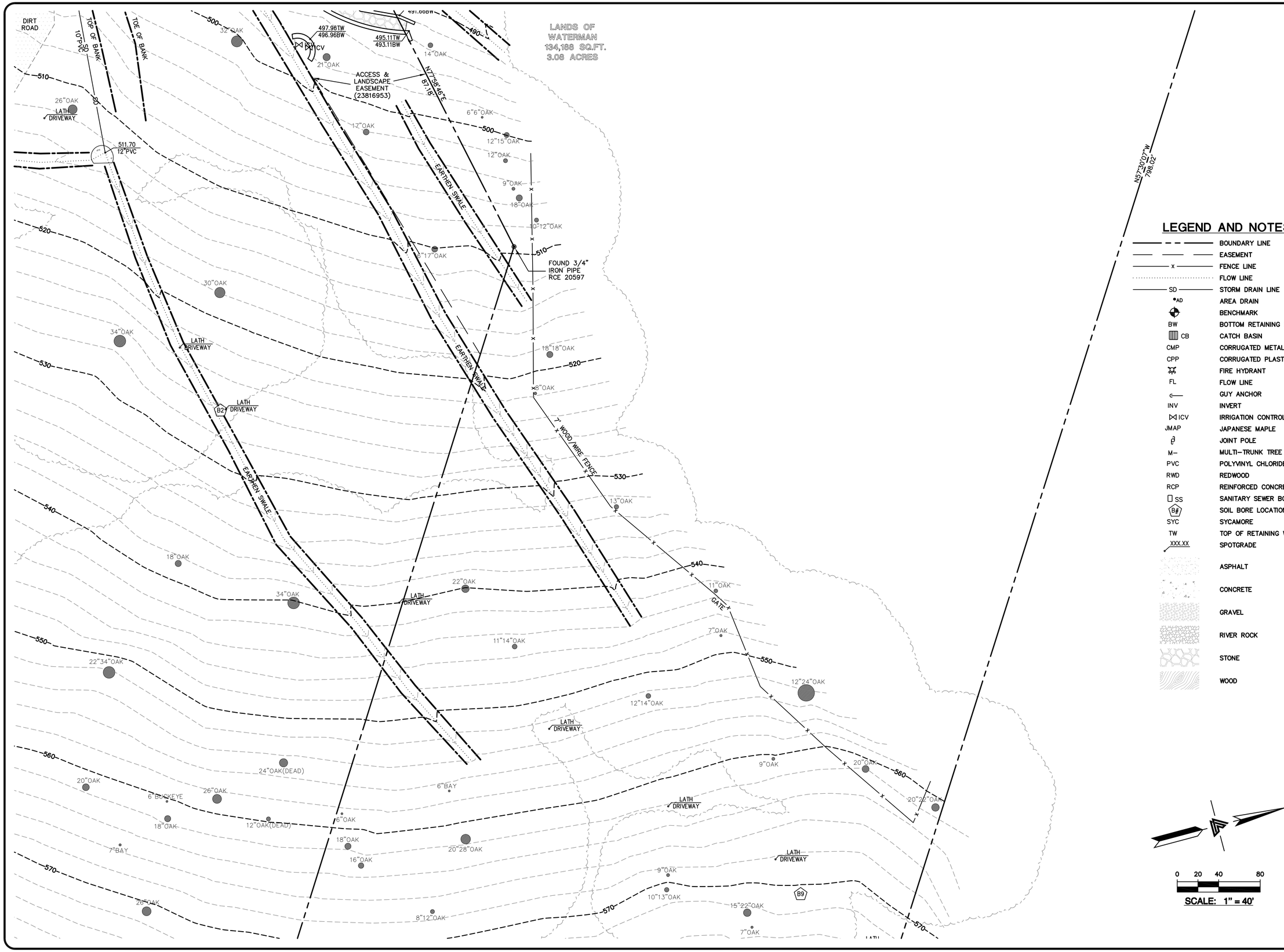
FIELD BY:	ES
DRAWN BY:	DB
SHEET NO:	

SU8



LEGEND AND NOTES

	BOUNDARY LINE
	EASEMENT
x	FENCE LINE
	FLOW LINE
SD	STORM DRAIN LINE
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TW	TOP OF RETAINING WALL
XXX.XX	SPOTGRADE
	ASPHALT
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	RIVER ROCK
	STONE
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0 20 40 80

SCALE: 1" = 40'

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TOPOGRAPHIC SURVEY

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–	–
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REVISIONS	BY
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SCALE:	1" = 10'
FIELD BY:	ES
DRAWN BY:	DB
SHEET NO:	SU9

9 OF 12 SHEETS

LEGEND AND NOTES

- BOUNDARY LINE
- EASEMENT
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- STORM DRAIN LINE
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- CONCRETE
- GRAVEL
- RIVER ROCK
- STONE
- WOOD

PARCEL A
304 MAPS 26

8' WOOD / WIRE FENCE

TOE OF BANK

TOP OF BANK

B5

B4

B3

LATH
DRIVEWAY

FOUND 3/4"
IRON PIPE
RCE 20597

0 20 40 80

SCALE: 1" = 40'

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SHEET NO:	

SU10

10 OF 12 SHEETS

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APN: 182-36-043 & 044

TOPOGRAPHIC SURVEY

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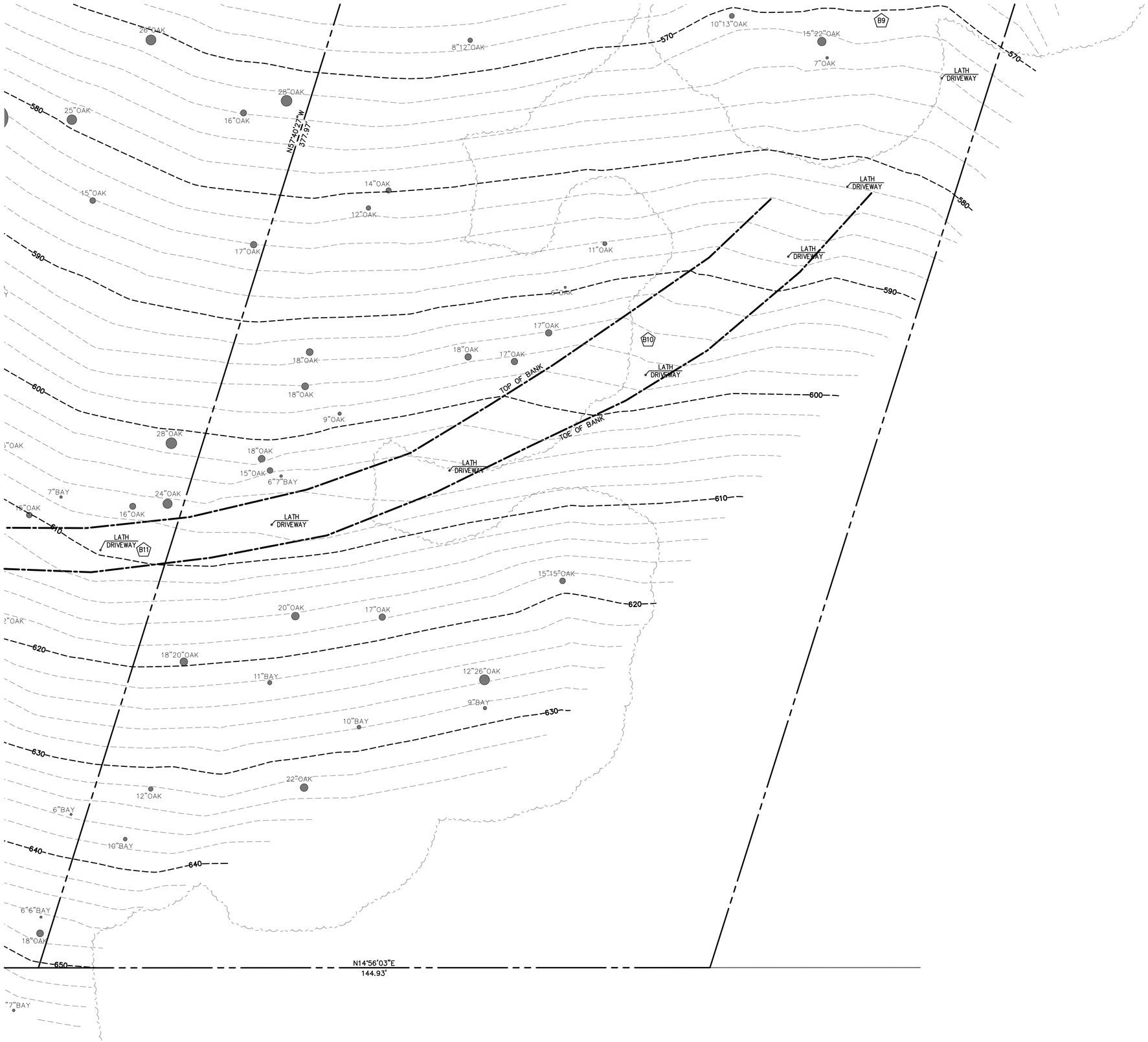
–		–
–		–
–		–
REVISIONS		BY

JOB NO:	2180884
DATE:	9-18-18
SCALE:	1" = 10'
FIELD BY:	ES
DRAWN BY:	DB
SHEET NO:	

SU11

11 OF 12 SHEETS



LEGEND AND NOTES

	BOUNDARY LINE
	EASEMENT
x	FENCE LINE
	FLOW LINE
SD	STORM DRAIN LINE
AD	AREA DRAIN
	BENCHMARK
BW	BOTTOM RETAINING WALL
CB	CATCH BASIN
CMP	CORRUGATED METAL PIPE
CPP	CORRUGATED PLASTIC PIPE
	FIRE HYDRANT
FL	FLOW LINE
	GUY ANCHOR
INV	INVERT
ICV	IRRIGATION CONTROL VALVE
JMAP	JAPANESE MAPLE
	JOINT POLE
M–	MULTI–TRUNK TREE
PVC	POLYVINYL CHLORIDE PIPE
RWD	REDWOOD
RCP	REINFORCED CONCRETE PIPE
SS	SANITARY SEWER BOX
B#	SOIL BORE LOCATION
SYC	SYCAMORE
TW	TOP OF RETAINING WALL
XXX.XX	SPOTGRADE
	ASPHALT
	CONCRETE
	GRAVEL
	RIVER ROCK
	STONE
	WOOD

NOTES

ALL DISTANCES AND DIMENSIONS ARE IN FEET AND DECIMALS.

UNDERGROUND UTILITY LOCATION IS BASED ON SURFACE EVIDENCE.

ALL RETAINING WALLS ARE ROCK EXCEPT WHERE NOTED.

EASEMENT NOTE

APN 182–36–043
EASEMENTS ARE SHOWN PER TITLE REPORT PREPARED BY CHICAGO TITLE COMPANY, TITLE NO. FWPS–2999181327, DATED AUGUST 9, 2018.
EXCEPTION # 8 – RIGHTS AND EASEMENTS FOR NAVIGATION AND FISHERY WHICH MAY EXIST OVER THAT PORTION OF SAID LAND LYING BENEATH THE WATERS OF LOS TRANCOS CREEK. (NOT PLOTABLE)

APN 182–36–044
A CURRENT TITLE REPORT FOR THE SUBJECT PROPERTY HAS NOT BEEN EXAMINED BY LEA & BRAZE ENGINEERING, INC. EASEMENTS OF RECORD MAY EXIST THAT ARE NOT SHOWN ON THIS MAP.

0 20 40 80

SCALE: 1" = 40'

LICENSED LAND SURVEYOR
GREGORY F. BRAZE
No. 7623
Exp. 12-31-18
STATE OF CALIFORNIA

LEA & BRAZE ENGINEERING, INC.
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ALPINE ROAD
PORTOLA VALLEY
CALIFORNIA

UNINCORPORATED SANTA CLARA COUNTY

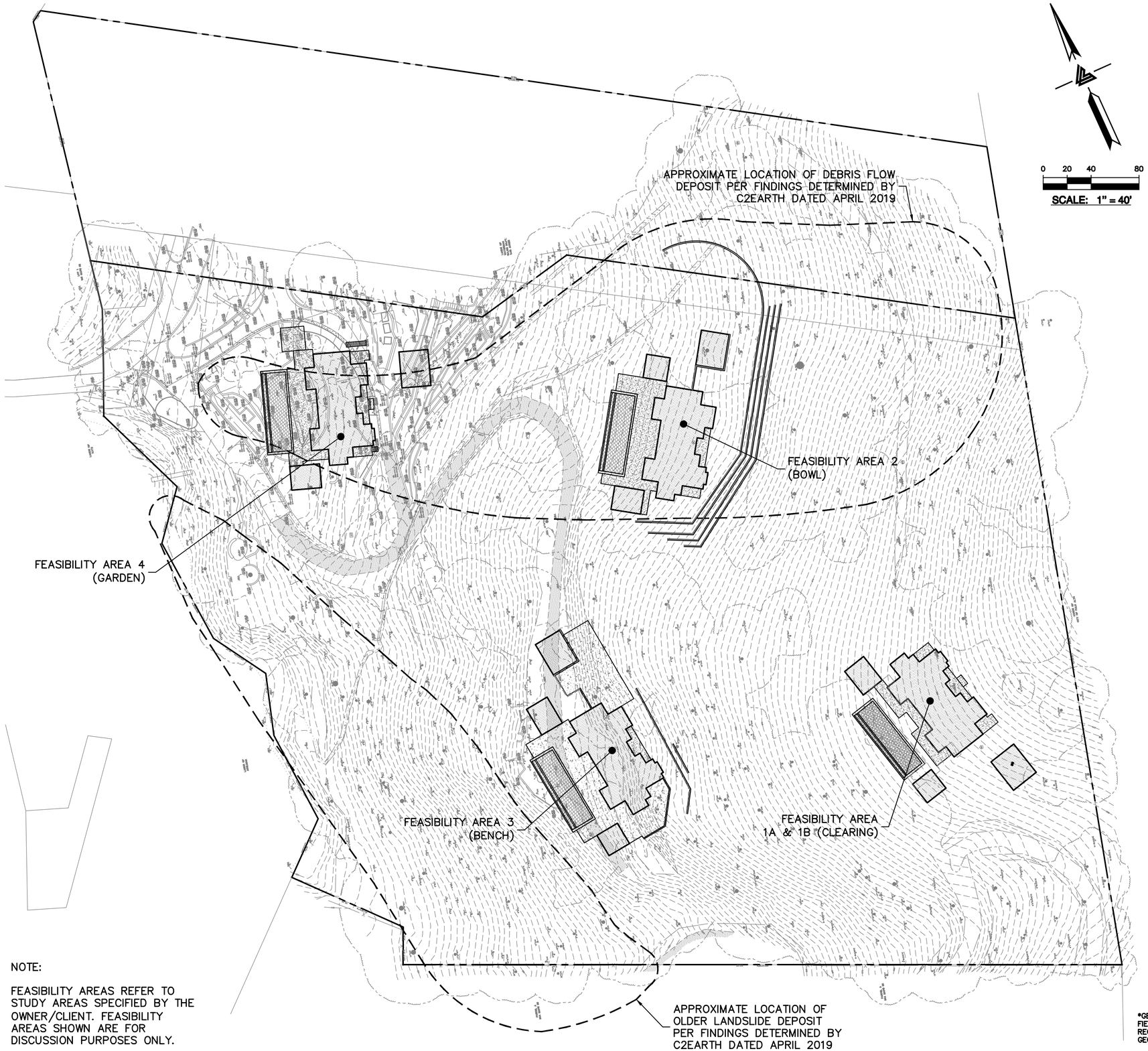
APN: 182–36–043 & 044

TOPOGRAPHIC SURVEY

–	–
–	–
–	–
–	–
REVISIONS	BY
JOB NO:	2180884
DATE:	9–18–18
SCALE:	1" = 10'
FIELD BY:	ES
DRAWN BY:	DB
SHEET NO:	SU12

12 OF 12 SHEETS

Attachment E



NOTE:

FEASIBILITY AREAS REFER TO STUDY AREAS SPECIFIED BY THE OWNER/CLIENT. FEASIBILITY AREAS SHOWN ARE FOR DISCUSSION PURPOSES ONLY.

AREA 1 CLEARING A EARTHWORKS		
AREA 1 – CLEARING A	CUT (YD3)	FILL (YD3)
GEOTECHNICAL REMEDIATION*	0	0
ACCESS DRIVEWAY	2110	3275
SITE	2615	3455
TOTAL	4725	6730

TREE REMOVAL	
AREA 1 – CLEARING	TREES WITHIN PROPOSED SITE IMPROVEMENTS TO BE REMOVED
ALL TREES (LIVE)	30
OAKS	20
OTHERS	10
DEAD TREES	2
TOTAL	32

AREA 1 CLEARING B EARTHWORKS		
AREA 1 – CLEARING B	CUT (YD3)	FILL (YD3)
GEOTECHNICAL REMEDIATION*	0	0
ACCESS DRIVEWAY	4150	6480
SITE	1350	2320
TOTAL	5500	8800

TREE REMOVAL	
AREA 1 – CLEARING	TREES WITHIN PROPOSED SITE IMPROVEMENTS TO BE REMOVED
ALL TREES (LIVE)	32
OAKS	22
OTHERS	10
DEAD TREES	2
TOTAL	34

AREA 2 BOWL EARTHWORKS		
AREA 2 – BOWL	CUT (YD3)	FILL (YD3)
GEOTECHNICAL REMEDIATION*	7800	7800
ACCESS DRIVEWAY	3150	1200
SITE	3050	3000
TOTAL	14000	12000

TREE REMOVAL	
AREA 2 – BOWL	TREES WITHIN PROPOSED SITE IMPROVEMENTS TO BE REMOVED
ALL TREES (LIVE)	23
OAKS	14
OTHERS	9
DEAD TREES	2
TOTAL	25

AREA 3 BENCH EARTHWORKS		
AREA 3 – BENCH	CUT (YD3)	FILL (YD3)
GEOTECHNICAL REMEDIATION**	1200	1200
ACCESS DRIVEWAY	1915	1155
SITE	4500	2100
TOTAL	7615	4455

TREE REMOVAL	
AREA 3 – BENCH	TREES WITHIN PROPOSED SITE IMPROVEMENTS TO BE REMOVED
ALL TREES (LIVE)	42
OAKS	28
OTHERS	14
DEAD TREES	1
TOTAL	43

**GEOTECHNICAL REMEDIATION REFERS TO SLOPE STABILITY RECOMMENDATIONS PER C2EARTH'S ANALYSIS. 1,200 CUBIC YARD OF FILL COMPRISES OF CONCRETE TO CONSTRUCT STITCH PIERS. SEE SUMMARY LETTER PREPARED BY C2EARTH FOR MORE INFORMATION.

AREA 4 GARDEN EARTHWORKS		
AREA 4 – GARDEN	CUT (YD3)	FILL (YD3)
GEOTECHNICAL REMEDIATION*	6750	6750
ACCESS DRIVEWAY	1500	350
SITE	625	4000
TOTAL	8875	11100

TREE REMOVAL	
AREA 4 – GARDEN	TREES WITHIN PROPOSED SITE IMPROVEMENTS TO BE REMOVED
ALL TREES (LIVE)	36
OAKS	11
OTHERS	25
DEAD TREES	0
TOTAL	36

*GEOTECHNICAL REMEDIATION CONSISTS OF DEBRIS FIELD CLEARING AND SLOPE STABILITY RECOMMENDATIONS PER C2EARTH GEOLIGIC AND GEOTECHINCAL STUDY DATED APRIL 2019.

TREE REMOVAL INCLUDES ALL TREES NEEDED TO BE REMOVED FOR NEW ACCESS DRIVEWAY.

REGISTERED PROFESSIONAL ENGINEER — PETER CARLINO — No. C79555 — CIVIL — STATE OF CALIFORNIA — ORIGINAL SIGNATURES IN BLUE INK

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ZAFFARONI RESIDENCE
0 ALPINE ROAD
PORTOLA VALLEY, CALIFORNIA
UNINCORPORATED SANTA CLARA COUNTY — APN: 182-36-043

FEASIBILITY ANALYSIS – OVERALL SITE PLAN

1 PLAN CHECK 07-12-19	KZ
REVISIONS	BY
JOB NO:	2180842CI
DATE:	06-27-19
SCALE:	1" = 40'
DESIGN BY:	PC
DRAWN BY:	MM
SHEET NO:	FA-1.0

01 OF 06 SHEETS

RECORD#: XXXX-XXXXX

PLAN # ____ SHEET ____ OF ____

APPLICANT: CHARLES ZAFFARONI — ROAD NAME: ALPINE ROAD — RECORD#: PLN19-0079 — PERMIT PLANS: BSA SUB #2

Attachment F

Tree Assessment and Protection

0 Alpine Road
APN: 182-36-043
Portola Valley, CA 94027

Prepared for:

Charles Zaffaroni

November 7, 2019

Prepared by:

HEARTWOOD
CONSULTING ARBORISTS

Belmont, CA
650.542.8733

ASCA - Registered Consulting Arborist ® #651
ISA - Certified Arborist® MA-4851A

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SUMMARY

Mr. Charles Zaffaroni plans to construct a new residence at 0 Alpine Road (APN 182-36-043) in Portola Valley, California. In addition to the new home, the plans include a swimming pool, a detached garage, regrading and surfacing of an existing unpaved road, a fire truck turnaround area, and landscaping.

Forty-one (41) trees are prosed for removal, including 26 Coast live oaks that are alive and 5 that are dead. Removals will reduce existing canopy by 0.24 acres, or 2.7% of the existing canopy (6.25 acres.)

This project will not have a 'significant impact' upon oak woodlands as defined by the Santa Clara County Planning Office Guide to Evaluating Oak Woodlands Impacts.

This report includes Tree Protection Guidelines that, if followed, will result in LOW impact to all trees scheduled for preservation.

INTRODUCTION

Assignment

1. Affix numbered aluminum ID tag to each tree (a) to be removed and/or (b) to be impacted by development (canopies overlapping development area).
2. Assess each numbered tree and record species, size (trunk diameter), and condition.
3. Provide a table identifying tree attributes listed in #2 above, whether they are to be removed or retained, and the justification for removal (if applicable).
4. Provide Tree Protection Guidelines for any trees scheduled to be retained.
5. Demonstrate not-to-scale tree protection zones on a Site Plan provided by client, if necessary.
6. Provide an Arborist Report detailing all of the above and including a summary of the project scope.

Limits of the Assignment

This report is limited to the tree and site conditions during my visit on October 26, 2019 and my review of the following documents provided by the client:

- Architectural Plan Set by CJW Architects (rev. 11/7/19)
- Landscape and Hardscape Plan Set by Cleaver Design (rev. 11/7/19)
- Civil Engineering, Grading, and Drainage Plan Set by Lea & Braze Engineering, Inc. (rev. 11/7/19)

Purpose and Use of this Report

This report is intended to identify all trees on the project site that could be impacted by the project. The report is to be used by the property owners, their agents, and the County of Santa Clara as a reference for existing tree conditions and recommended tree preservation measures.

OBSERVATIONS

Tree Observations

Please refer to the Tree Map (Appendix A) and the Tree Assessment Table (Appendix B).

I inventoried 91 trees near the proposed construction. Fifty-nine (59) Coast live oak (five are dead), 13 California bay laurel, 5 Valley oak and 14 trees of various other species.

Species	Count
Coast live oak	59
Bay Laurel	13
Valley oak	5
Other	14

I assigned an overall condition rating to each tree taking into account both health and structure. The condition rating scale is as follows:

0	Dead
1 - 20	Very Poor
21 - 40	Poor
41 - 60	Fair
61 -80	Good
81 - 100	Excellent

Five (5) trees are dead (#815, 817, 833, 840, 841), 18 in poor or very poor condition, 54 in fair condition, and 14 in good or excellent.

Construction, Site, and Plan Observations

The project includes construction of a residence, swimming pool, road, and detached garage. The Planting Plan includes the planting of fifty-five (55) 24-inch boxed native oak trees. A retaining wall (fill) will come within one foot of the trunk of Tree #867.

Removals to Accommodate Construction

The following 41 trees are proposed for removal for one or more of the following reasons:

- Located inside building foot print (23)
- Conflicts with construction activity and is not a good candidate for preservation (11)
- Poor condition (2) / Dead (5)

Tag #	Species	Trunk Diam.	Condition	Justification Statement	Size Class for Mitigation Purposes
804	Coast live oak *Quercus agrifolia*	11, 15	55	Conflicts with pool construction	Small
805	Coast live oak *Quercus agrifolia*	20	55	Conflicts with pool construction	Medium
806	Coast live oak *Quercus agrifolia*	16	50	Will not survive planned grade change	Medium
808	Coast live oak *Quercus agrifolia*	6, 7	55	Inside building footprint	Small
809	Coast live oak *Quercus agrifolia*	7	55	Inside building footprint	Small
810	Coast live oak *Quercus agrifolia*	6	55	Inside building footprint	Small
811	Coast live oak *Quercus agrifolia*	6	55	Inside building footprint	Small
812	Bay Laurel *Umbellularia californica*	14	40	Too close to construction	NA
813	Coast live oak *Quercus agrifolia*	15, 20	21	Diseased and leaning over residence	NA
815	Coast live oak *Quercus agrifolia*	7	0	Dead	NA
816	Coast live oak *Quercus agrifolia*	15	60	Inside building footprint	Medium
817	Coast live oak *Quercus agrifolia*	19	0	Dead	NA

Tag #	Species	Trunk Diam.	Condition	Justification Statement	Size Class for Mitigation Purposes
818	Coast live oak *Quercus agrifolia*	6	60	Inside building footprint	Small
819	Coast live oak *Quercus agrifolia*	6	55	Inside building footprint	Small
820	Coast live oak *Quercus agrifolia*	7	60	Too close to construction	Small
822	Coast live oak *Quercus agrifolia*	26	20	Mostly dead	NA
823	Coast live oak *Quercus agrifolia*	13	55	Inside building footprint	Small
824	Coast live oak *Quercus agrifolia*	19	45	Inside building footprint	Small
825	Coast live oak *Quercus agrifolia*	12	50	Inside building footprint	Small
826	Coast live oak *Quercus agrifolia*	8	45	Inside building footprint	Small
827	Coast live oak *Quercus agrifolia*	6	55	Inside building footprint	Small
828	Bay Laurel *Umbellularia californica*	14	40	Inside building footprint	NA
829	Coast live oak *Quercus agrifolia*	6	50	Inside building footprint	Small
833	Coast live oak *Quercus agrifolia*	15	0	Dead	NA
835	Coast live oak *Quercus agrifolia*	12	65	Inside footprint of fire truck turnaround	Small
836	Coast live oak *Quercus agrifolia*	6	50	Inside footprint of fire truck turnaround	Small
837	Coast live oak *Quercus agrifolia*	12	60	Inside footprint of fire truck turnaround	Small

Tag #	Species	Trunk Diam.	Condition	Justification Statement	Size Class for Mitigation Purposes
838	Deodar cedar *Cedrus deodara*	9	50	Inside footprint of fire truck turnaround	NA
840	Coast live oak *Quercus agrifolia*	7	0	Dead	NA
841	Coast live oak *Quercus agrifolia*	7	0	Dead	NA
848	Coast live oak *Quercus agrifolia*	13	45	Inside building footprint	Small
849	Coast live oak *Quercus agrifolia*	12	50	Inside building footprint	Small
850	Bay Laurel *Umbellularia californica*	6, 6	35	Too close to construction	NA
855	Bay Laurel *Umbellularia californica*	8, 9, 14	50	Inside building footprint	NA
856	Coast live oak *Quercus agrifolia*	14	40	Inside building footprint	Small
857	Coast live oak *Quercus agrifolia*	14	45	Inside building footprint	Small
873	Purpleleaf plum *Prunus cerasifera*	9	40	Too close to construction	NA
875	Bay Laurel *Umbellularia californica*	7	45	Too close to construction	NA
876	Japanese maple *Acer palmatum*	Multistem	50	Too close to construction	NA
877	Crape myrtle *Lagerstroemia indica*	Multistem	40	Too close to construction	NA
878	Purpleleaf plum *Prunus cerasifera*	10	35	Too close to construction	NA

There are 21 “small” and 3 “medium” trees scheduled for removal.

ANALYSIS

Using Google maps aerial imagery and measurement tools I calculated the following areas:

Total Property	8.77	acres
Total Tree Canopy (all species)	6.25	acres
Canopy Reduction - all species	0.24	acres
Canopy Reduction - Oak only	0.20	acres

Current landcover at 0 Alpine Road is 71% tree canopy.

Canopy reduction from all proposed removals is 2.7% of total canopy.

Graphic representation of canopy calculations is located in Appendix A.

DISCUSSION

Impact on Oak Woodlands

This project will not have a 'significant impact' upon oak woodlands as defined by the Santa Clara County Planning Office Guide to Evaluating Oak Woodlands Impacts.

Tree Protection During Construction

The objective of tree protection is to reduce the negative impacts of construction on trees to a less than significant level. The Tree Protection Guidelines (Appendix C) in this report are designed to guide the project team and ensure that appropriate practices will be implemented in the field to eliminate undesirable consequences that may result from uninformed or careless acts.

Tree Protection Zone

A tree protection zone (TPZ) is a defined area in which certain activities are prohibited to minimize potential injury to the tree. Some municipal ordinances and general *rules of thumb,* suggest the ideal TPZ extends 10 times the trunk diameter in all directions. Such a conservative TPZ is both unnecessary and infeasible on this project site, as many of the trees to be preserved are growing close to the road and home site. For this project, the TPZ will consist of chain link fence flanking the new road and home site. The fence will be erected such that it comes no closer than 3 to 6 times the trunk diameter of any tree to be preserved. For example, if a tree is two feet in diameter, the TPZ distance would be six to twelve feet from the trunk on one side of the tree. The greater the distance the better, but 3 times trunk diameter is acceptable for this tree population because of the following factors:

1. Disturbance is only occurring on one side of the trees, not on all sides.

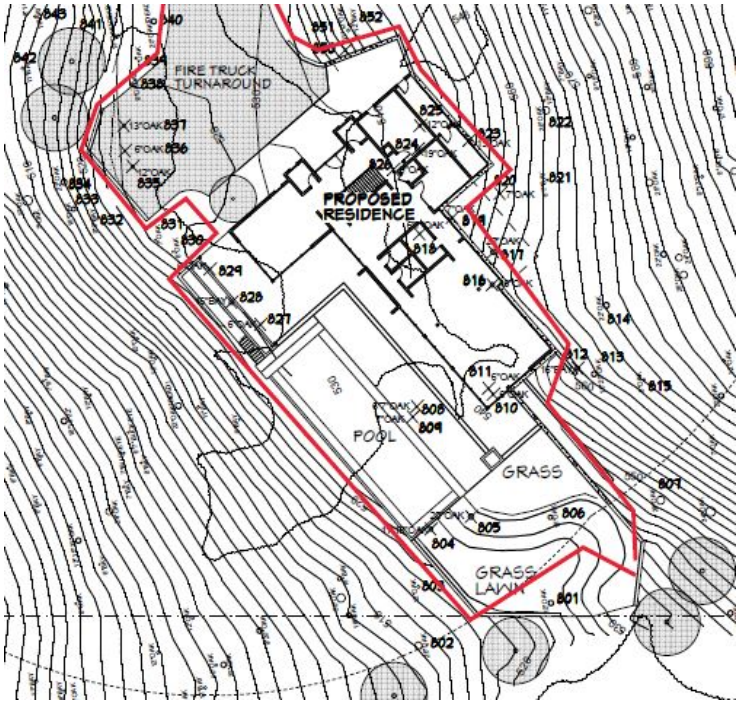
2. There is an existing, compacted dirt road in place where the majority of site disturbance will occur. Tree roots are opportunistic and develop where soil oxygen and moisture are most abundant. Given the compacted condition of the road, roots are likely to be more abundant within the TPZ where soils are undisturbed, better shaded, and of higher moisture content.

3. A review of root severance research found that trees with adequate vigor and vitality can withstand severe root pruning and that roots can usually be safely cut up to the point where their diameter begins to increase markedly near the trunk. (See Exhibit 1).

Figure 1.

Sample of TPZ fencing schematic. The red line depicts the layout of the TPZ.

A full-sized PDF schematic was delivered in conjunction with this report.



Tree #867

The grade of the road will be elevated, and a retaining wall built about one foot from the trunk of Tree #867. As such, the tree protection fencing will need to be removed for this portion of the work. The tree should not be significantly impacted, as fill soil will be placed atop already compacted road surface. No roots will be severed. To protect the trunk while once the fence is removed, straw wattle can be wrapped around the trunk of Tree #867 to a height of 10 feet. See example at right.



Pruning for Equipment Clearance

Some pruning may be necessary to allow equipment access and operation.

All tree pruning should be supervised by an ISA Certified Arborist®. Tree pruning should be specified according to ANSI A-300A pruning standards and adhere to ANSI Z133.1 safety standards.

Pruning should remove as little live foliage as necessary to achieve sufficient clearance. The objective of pruning is to proactively and professionally remove conflicting branches, so they are not broken or torn by equipment.

Pruning should occur prior to the arrival of construction equipment onsite.

Potential Impacts from Construction

If the Tree Protection Guidelines (Appendix C) are adhered to, I assess the impact to all trees to be preserved as LOW.

CONCLUSION

Forty (41) trees are prosed for removal, including 26 Coast live oaks that are alive and 5 that are dead. Removals will reduce existing canopy by 0.24 acres, or 2.7% of the existing canopy (6.25 acres.)

This project will not have a ‘significant impact’ upon oak woodlands as defined by the Santa Clara County Planning Office Guide to Evaluating Oak Woodlands Impacts.

This report includes Tree Protection Guidelines that, if followed, will result in LOW impact to all trees scheduled for preservation.

RECOMMENDATIONS

1. Insert a copy of this report into construction plan set.

2. Provide a copy of this report to all contractors and project managers, including the architect, civil engineer, and landscape designer or architect. It is the responsibility of the owner to ensure all parties are familiar with this document.

3. Consult County of Santa Clara Planning Department to determine required mitigation for proposed tree removals.

4. The Tree Protection Guidelines (Appendix C) are to be properly implemented for the entire duration of the project.

5. Arrange a pre-construction meeting with the project arborist or landscape architect to verify tree protection is in place, with the correct materials, and at the proper distances.

6. Arrange for a Certified Arborist® to monitor and document any activity within the dripline or TPS of any tree protection zone.

7. Owner responsible for obtaining tree removal permits if required by local law.

8. If an existing tree becomes damaged during construction, immediately consult the project arborist for recommended action.

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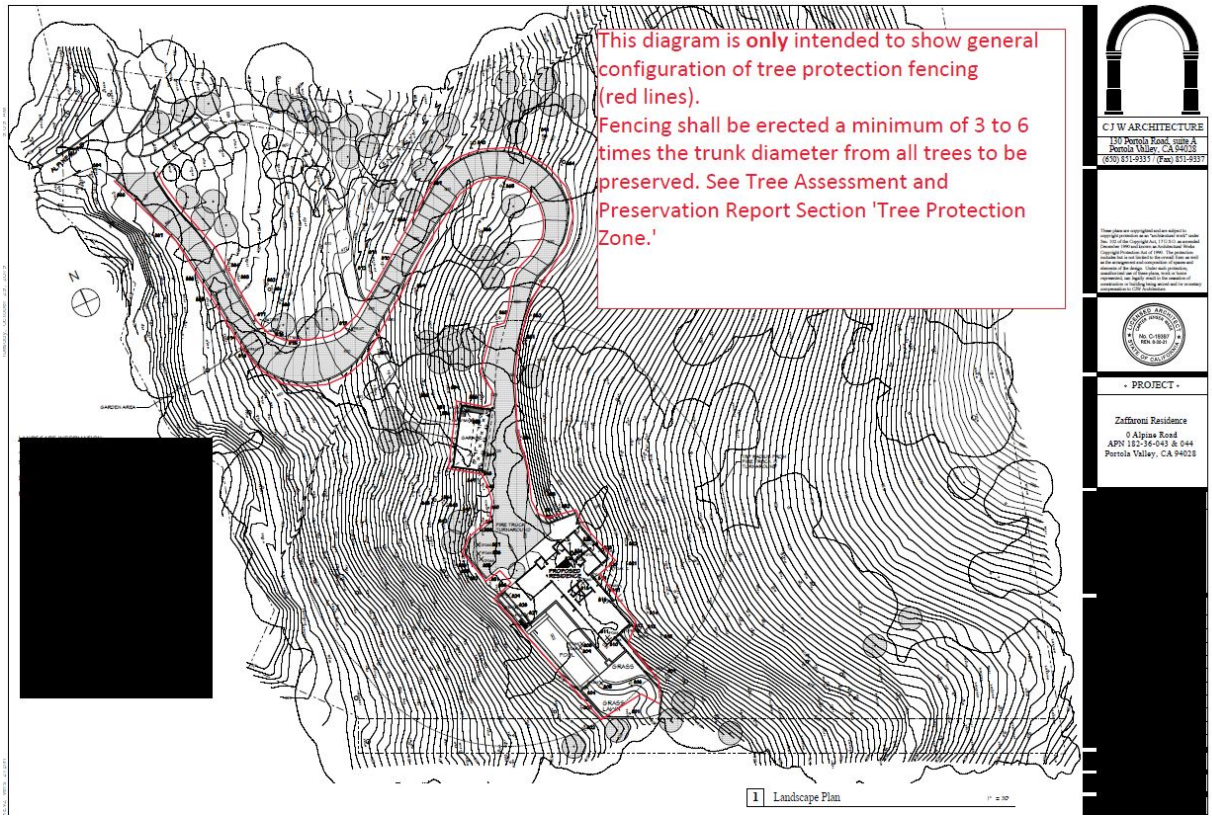
APPENDIX A: TREE MAP and CANOPY CALCULATIONS

Site Plan with Tree Protection Fence Schematic

A full-size PDF of the site plan below is attached to this report and was also delivered to client in a separate file along with this report.



Total Tree Canopy, all species.



Red line is property boundary. Total area is 8.77 acres.

Yellow areas are non-canopy landcover, 2.52 acres.

Canopy cover is 6.25 acres (8.77 less 2.52) or 71% of total land cover.

Total Canopy Reduction



Yellow areas are canopy of oaks proposed for removal, 0.2 acres.

Orange areas are canopy of non-oak species proposed for removal, 0.04 acres.

Total canopy area proposed for removal (all species) is 0.24 acres, or 2.7% of total tree canopy.

APPENDIX B: TREE ASSESSMENT TABLE

Tag #	Species	Trunk Diam. (in.)	Condition	Remove?	Comments / Justification Statement	MINIMUM 3x CRZ (feet)	IDEAL 6x CRZ (feet)
801	Coast live oak *Quercus agrifolia*	19	55		Barbed wire embedded in trunk	4.75	9.5
802	Coast live oak *Quercus agrifolia*	24	55			6	12
803	Coast live oak *Quercus agrifolia*	11	50			2.75	5.5
804	Coast live oak *Quercus agrifolia*	11, 15	55	Remove	Conflicts with pool construction	NA	NA
805	Coast live oak *Quercus agrifolia*	20	55	Remove	Conflicts with pool construction	NA	NA
806	Coast live oak *Quercus agrifolia*	16	50	Remove	Will not survivie planned grade change	NA	NA
807	Coast live oak *Quercus agrifolia*	28	60			7	14
808	Coast live oak *Quercus agrifolia*	6, 7	55	Remove	Inside building footprint	NA	NA
809	Coast live oak *Quercus agrifolia*	7	55	Remove	Inside building footprint	NA	NA
810	Coast live oak *Quercus agrifolia*	6	55	Remove	Inside building footprint	NA	NA
811	Coast live oak *Quercus agrifolia*	6	55	Remove	Inside building footprint	NA	NA

Tag #	Species	Trunk Diam. (in.)	Condition	Remove?	Comments / Justification Statement	MINIMUM 3x CRZ (feet)	IDEAL 6x CRZ (feet)
812	Bay Laurel *Umbellularia californica*	14	40	Remove	Too close to construction	NA	NA
813	Coast live oak *Quercus agrifolia*	15, 20	21	Remove	Diseased and leaning over residence	NA	NA
814	Coast live oak *Quercus agrifolia*	21	45			5.25	10.5
815	Coast live oak *Quercus agrifolia*	7	0	Remove	Dead	NA	NA
816	Coast live oak *Quercus agrifolia*	15	60	Remove		NA	NA
817	Coast live oak *Quercus agrifolia*	19	0	Remove	Dead	NA	NA
818	Coast live oak *Quercus agrifolia*	6	60	Remove	Inside building footprint	NA	NA
819	Coast live oak *Quercus agrifolia*	6	55	Remove	Inside building footprint	NA	NA
820	Coast live oak *Quercus agrifolia*	7	60	Remove	Too close to construction	NA	NA
821	Bay Laurel *Umbellularia californica*	6, 7	60			2.5	5
822	Coast live oak *Quercus agrifolia*	26	20	Remove	Mostly dead	NA	NA

Tag #	Species	Trunk Diam. (in.)	Condition	Remove?	Comments / Justification Statement	MINIMUM 3x CRZ (feet)	IDEAL 6x CRZ (feet)
823	Coast live oak *Quercus agrifolia*	13	55	Remove	Inside building footprint	NA	NA
824	Coast live oak *Quercus agrifolia*	19	45	Remove	Inside building footprint	NA	NA
825	Coast live oak *Quercus agrifolia*	12	50	Remove	Inside building footprint	NA	NA
826	Coast live oak *Quercus agrifolia*	8	45	Remove	Inside building footprint	NA	NA
827	Coast live oak *Quercus agrifolia*	6	55	Remove	Inside building footprint	NA	NA
828	Bay Laurel *Umbellularia californica*	14	40	Remove	Inside building footprint	NA	NA
829	Coast live oak *Quercus agrifolia*	6	50	Remove	Inside building footprint	NA	NA
830	Coast live oak *Quercus agrifolia*	6	50			1.5	3
831	Coast live oak *Quercus agrifolia*	7	60			1.75	3.5
832	Coast live oak *Quercus agrifolia*	7, 7	50			2.5	5
833	Coast live oak *Quercus agrifolia*	15	0	Remove	Dead	NA	NA

Tag #	Species	Trunk Diam. (in.)	Condition	Remove?	Comments / Justification Statement	MINIMUM 3x CRZ (feet)	IDEAL 6x CRZ (feet)
834	Coast live oak *Quercus agrifolia*	20	60		Leans away from project site; no overhanging canopy	5	10
835	Coast live oak *Quercus agrifolia*	12	65	Remove	Inside footprint of fire truck turnaround	NA	NA
836	Coast live oak *Quercus agrifolia*	6	50	Remove	Inside footprint of fire truck turnaround	NA	NA
837	Coast live oak *Quercus agrifolia*	12	60	Remove	Inside footprint of fire truck turnaround	NA	NA
838	Deodar cedar *Cedrus deodara*	9	50	Remove	Inside footprint of fire truck turnaround	NA	NA
839	Coast live oak *Quercus agrifolia*	7	58			1.75	3.5
840	Coast live oak *Quercus agrifolia*	7	0	Remove	Dead	NA	NA
841	Coast live oak *Quercus agrifolia*	7	0	Remove	Dead	NA	NA
842	Bay Laurel *Umbellularia californica*	11	35			2.75	5.5

Tag #	Species	Trunk Diam. (in.)	Condition	Remove?	Comments / Justification Statement	MINIMUM 3x CRZ (feet)	IDEAL 6x CRZ (feet)
843	Bay Laurel *Umbellularia californica*	10	50			2.5	5
844	Bay Laurel *Umbellularia californica*	8, 14	45			4	8
845	Coast live oak *Quercus agrifolia*	30	62			7.5	15
846	Coast live oak *Quercus agrifolia*	8	50			2	4
847	Coast live oak *Quercus agrifolia*	6	45			1.5	3
848	Coast live oak *Quercus agrifolia*	13	45	Remove	Inside building footprint	NA	NA
849	Coast live oak *Quercus agrifolia*	12	50	Remove	Inside building footprint	NA	NA
850	Bay Laurel *Umbellularia californica*	6, 6	35	Remove	Too close to construction	NA	NA
851	Coast live oak *Quercus agrifolia*	11, 12	40		Canopies lean over road. Good because all support roots are uphil and wont be disturbed	4	8

Tag #	Species	Trunk Diam. (in.)	Condition	Remove?	Comments / Justification Statement	MINIMUM 3x CRZ (feet)	IDEAL 6x CRZ (feet)
852	Bay Laurel *Umbellularia californica*	6, 12	40		Canopies lean over road. Good because all support roots are uphil and wont be disturbed	4	8
853	Coast live oak *Quercus agrifolia*	34	50		Canopies lean over road. Good because all support roots are uphil and wont be disturbed	8.5	17
854	Madrone *Arbutus menziesii*	12	65			3	6
855	Bay Laurel *Umbellularia californica*	8, 9, 14	50	Remove	Inside building footprint	NA	NA
856	Coast live oak *Quercus agrifolia*	14	40	Remove	Inside building footprint	NA	NA
857	Coast live oak *Quercus agrifolia*	14	45	Remove	Inside building footprint	NA	NA
858	Coast live oak *Quercus agrifolia*	32	60		Crown reduce, especially on limbs extending over garage	8	16

Tag #	Species	Trunk Diam. (in.)	Condition	Remove?	Comments / Justification Statement	MINIMUM 3x CRZ (feet)	IDEAL 6x CRZ (feet)
859	Coast live oak *Quercus agrifolia*	18	55			4.5	9
860	Coast live oak *Quercus agrifolia*	16	50			4	8
861	Valley oak Quercus lobata	13	35			3.25	6.5
862	Valley oak Quercus lobata	18	55			4.5	9
863	Coast live oak *Quercus agrifolia*	20, 26	58			8	16
864	Coast live oak *Quercus agrifolia*	32	68			8	16
865	Coast live oak *Quercus agrifolia*	24	48			6	12
866	Valley oak Quercus lobata	23	48			5.75	11.5
867	Valley oak Quercus lobata	22	50			5.5	11
868	Coast live oak *Quercus agrifolia*	14, 14	40			4.5	9
869	Bay Laurel *Umbellularia californica*	6, 7	58			2	4
870	Coast live oak *Quercus agrifolia*	7	50			1.75	3.5

Tag #	Species	Trunk Diam. (in.)	Condition	Remove?	Comments / Justification Statement	MINIMUM 3x CRZ (feet)	IDEAL 6x CRZ (feet)
871	Bay Laurel *Umbellularia californica*	9, 10, 12, 14	48			5	10
872	Valley oak Quercus lobata	20	42			5	10
873	Purpleleaf plum *Prunus cerasifera*	9	40	Remove	Too close to construction	NA	NA
874	Purpleleaf plum *Prunus cerasifera*	8	50			2	4
875	Bay Laurel *Umbellularia californica*	7	45	Remove	Too close to construction	NA	NA
876	Japanese maple *Acer palmatum*	Multistem	50	Remove	Too close to construction	NA	NA
877	Crape myrtle *Lagerstroemia indica*	Multistem	40	Remove	Too close to construction	NA	NA
878	Purpleleaf plum *Prunus cerasifera*	10	35	Remove	Too close to construction	NA	NA
879	Goldenrain tree *Koelreuteria* sp.	10	40			2.5	5
880	Coast live oak *Quercus agrifolia*	28	50			7	14

Tag #	Species	Trunk Diam. (in.)	Condition	Remove?	Comments / Justification Statement	MINIMUM 3x CRZ (feet)	IDEAL 6x CRZ (feet)
881	Coast live oak *Quercus agrifolia*	32	45			8	16
882	Coast live oak *Quercus agrifolia*	28	45			7	14
883	Crape myrtle *Lagerstroemia indica*	6	50			1.5	3
884	Walnut *Juglans* sp.	6, 6, 7	55			2.5	5
885	Cherry *Prunus* sp.	6	45			1.5	3
886	Purpleleaf plum *Prunus cerasifera*	12	35			3	6
887	Maple *Acer* sp.	17	52			4.25	8.5
888	Pear, Ornamental *Pyrus* sp.	8	35			2	4
889	Bay Laurel *Umbellularia californica*	8	35			2	4
890	Coast live oak *Quercus agrifolia*	32	80			8	16
891	Coast live oak *Quercus agrifolia*	30	58			7.5	15

APPENDIX C: TREE PROTECTION GUIDELINES

Project Arborist

1. A Registered Consulting Arborist® or Certified Arborist® is to be retained to act as the Project Arborist to monitor any construction activates that may impact the health of protected trees.

Preconstruction Meeting with Project Arborist

2. 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.

Monitoring

3. Schedule for Project Arborist monitoring on a monthly basis, and when trenching near protected trees or working inside the Tree Protection Zone.

Tree Protection Zone (TPZ)

See Site Plan with Tree Protection Fencing (Appendix A)

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

5. Prior to the arrival of construction equipment or materials on site, six-foot high chain link fence mounted on 8-feet tall, 2-inch diameter metal posts, driven 2 feet into the ground and spaced no more than 10 feet apart shall be erected at the limits of each Tree Protection Zone (TPZ)

6. 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 function.

7. Laminated warning signs, minimum size 8.5” x 11”, stating that all areas within the fencing are Tree Protection Zones and that disturbance is prohibited are to be attached. Signs should be spaced no more than 10 feet apart. Text on the signs should be in both English and Spanish (Appendix E).

8. The area within the fencing is the Tree Protection Zone (TPZ)

9. TPZ fencing may only be only be moved, crossed or altered with permission of the Project Arborist.

10. Tree Protection Zone (TPZ) Restrictions

a. NO operation, storage, or parking of vehicles or heavy equipment.

b. NO storage or disposal of building materials, refuse, soil, excavated spoils, or chemicals of any kind.

c. NO cutting of tree roots by utility trenching, foundation digging, or any miscellaneous excavation without prior approval of the Project Arborist.

d. NO use of TPZ as a rest/lunch/break area by project staff.

e. NO grade changes of any kind, except as expressly designed or approved by the Project Arborist.

f. NO alteration or disturbance, for any duration, of the ground inside the TPZ.

11. **All work within the TPZ is to be approved by the Project Arborist prior to commencement of the task**.

Grading Limitations

12. Grade changes outside of the TPZ shall not significantly alter drainage to any tree.

13. Grade changes under specifically approved circumstances shall not allow more than 6-inches of fill soil added or allow more than 4-inches of existing soil to be removed from natural grade unless mitigated.

14. Grade cuts exceeding 4-inches shall incorporate retaining walls or an appropriate transition equivalent.

Root Pruning and Trenching

15. Roots over 1 inch in diameter should be pruned, rather than crushed or torn. Prune roots clean and square at undamaged tissue using hand pruners or a saw.

16. Roots 2 inches and greater must remain injury free.

17. If pruning of roots 2 inches or greater is unavoidable, this pruning must be monitored and documented by the Project Arborist or a qualified ISA Certified Arborist.

18. Roots should be cut beyond sinker roots or outside root branch junctions. Once severed, exposed roots and upper 3 feet of trench walls should be kept moist with several layers of burlap or backfilled within one hour.

19. Any trenching, construction or demolition that is expected to damage or encounter tree roots 2 inches or greater, or inside the TPZ, should be monitored and documented by the Project Arborist or a qualified ISA Certified Arborist.

Excavation

20. Excavation, demolition or extraction of material shall be performed by equipment sitting outside the TPZ. Other methods permitted are hand digging, hydraulic or pneumatic air excavation technology.

21. Avoid excavation within the TPZ during hot, dry weather.

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

Boring or Tunneling

23. 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

24. If the construction is to occur during the summer months supplemental watering should be applied to help ensure survival during and after construction.

Tree Pruning and Removal Operations

25. All tree pruning or removals should be performed by a qualified arborist with a C-61/D-49 California Contractors License.

26. Tree pruning should be specified according to ANSI A-300A pruning standards and adhere to ANSI Z133.1 safety standards.

27. Trees that need to be removed or pruned should be identified in the pre-construction walk through.

Post-Construction Phase

28. Monitor the health and structure of all trees for any changes in condition.

29. Perform any other mitigation measures to help ensure long term survival.

APPENDIX D: SAMPLE TREE PROTECTION SIGN



Laminated warning signs, minimum size 8.5” x 11”, stating that all areas within the fencing are Tree Protection Zones and that disturbance is prohibited, are to be attached to TPZ fencing.

Signs should be spaced no more than 10 feet apart.

Text on the signs should be in both English and Spanish.

EXHIBIT 1

SIGNIFICANCE OF ROOT SEVERANCE ON PERFORMANCE OF ESTABLISHED TREES[1]

by W. Douglas Hamilton

Abstract. There are many factors to consider when severing the roots of established trees. Factors governing root growth are discussed. Acceptable survival following severe root severance is interdependent with the condition of the top. It is important to know the location of various kinds of roots—large lateral, sinker, heart, non-woody. Key factors to successful results from severe root-pruning include: a tree species with adequate vigor, adequate moisture in the root area, healthy carbohydrate reserves, proper timing in climates with temperature extremes and knowing how to judge a tree that should not be severely root pruned. Many landscape trees appear to have a wide tolerance to root removal.

Résumé. Il a plusieurs facteurs à considérer lorsque les racines d'arbres à maturité doivent être endommagées. Les facteurs influençant la croissance des racines sont discutés. Une bonne survie d'une arbre après des dommages aux racines est dépendante de la condition de la cime. Il est important de connaître l'emplacement des divers types de racines - les racines primaires, secondaires et les radicelles. Les facteurs-clés afin d'avoir des résultats positifs après des dommages aux racines incluent: une espéce d'arbre avec une bonne vigueur, une humidité adéquate dans la zone racinaire, de bonnes réserves d'hydrate de carbone, le choix de la période appropriée dans les climats avec des températures extrêmes et savior reconnaître les arbres dont les racines ne devraient pas être endommagées. Plusieurs arbres d'ornement semblent avoir une grande tolérance à la taille des racines.

Several questions about tree roots have been dealt with in the past few years: pest problems, sidewalk-curb breaking and some relating to how and where they grow. To my knowledge, the question of severity of root removal has not been addressed. There is little question that root loss affects tree growth, appearance, and stability. But how significant are the effects and are there guidelines for management? There is a need to adjust our standards of expected performance of established trees as a result of severe root loss (greater than 50%). Root pruning has become an important arboriculture practice.

Essential root growth is a summation of casual factors:

- The type and quantity of wood formed in a root depends on the growth conditions of the stem.
- The location of the root or root part is dependent on growth of the stem. There is greater growth of roots near the base of trees than on roots further out.
- Carbohydrate (food) storage has priority over growth in roots. Root growth may not occur until a threshold of reserves has been stored in the root. Radial growth of roots begins after "food" reserves have been stored in existing woody roots.
- If there is a depletion of food reserves and a delay in their replenishment, there is a delay in recovery of root growth and a slower growth of shoots.
- Tree stress indirectly affects root growth through the adverse influence on photosynthesis. Stress reduces the amount of carbohydrates available in roots for use and storage.

It is apparent then that condition of the leaves, stems, and roots are all interdependent. Roots have a priority over top growth for the accumulation of food reserves, and that can affect the canopy. A delay in the recovery from root pruning can stress the leaf canopy. If the food-storage reserves in the roots have not been met, root enlargement is delayed. If there is a concentration of roots near the base of the tree, vigor can be retained even though root pruning may be quite close to the trunk, perhaps up to ten feet from the trunk. If carbohydrate reserves are high, chances are enhanced for acceptable recovery and general performance. It makes sense to strengthen carbohydrate reserves before root removal.

Should we thin the top when pruning roots? The purpose is to reduce demands on a damaged root system. Reducing the photosynthetic area reduces the supply of carbohydrates moving to the roots. We all have seen trees survive acceptably well when 50% of the root system has been severed, with little observed reduction in leaf sur-

1. Presented at the annual conference of the International Society of Arboriculture in Vancouver, B.C. in August of 1988.

face.

The availability of carbohydrates to support new root growth is limited during active shoot growth in the spring. We should avoid root pruning during that time. The worst time to root prune is just prior to bud break. Initiation of cambial activity in roots is a continuation of that in the stem, proceeding from the trunk towards the root tip. Activation of the vascular cambium in the root depends upon the arrival of hormonal substances. One is auxin, much of which is synthesized in the buds, but may also be formed in root tips. It moves downward to the base and outward to the root tips. High concentrations of auxin are necessary for root initiation and it is important in the formation of compression wood in roots. Evidence from Japan suggests that pruning shoot tips stops or delays root growth, an interruption in the supply of auxin. Research from California casts doubt on the advisability of pruning newly planted young trees, probably for this reason. Rapid recovery following the shock of severe root removal is dependent not only on the rapid initiation of new roots, but on the initiation of cambial activity and the movement of auxin from the buds. Top pruning should be limited to removal of weak and shaded leaf surfaces on vigorous trees.

Gibberellin, another naturally occurring plant hormone, stimulates cell elongation. It is produced in roots as well as in leaves and seeds. In roots, it moves through new wood. Rapid elongation of new roots is important to shorten the period of shock after root pruning. Where rapid growth is desired after root removal such as in utility trenching, stimulation through applications of gibberellins may be desirable.

Cytokinins in high concentrations inhibit lateral root formation. Root pruning removes the root tip which contains the highest concentrations of cytokinins and allows callus tissue to close the cut. Thus, root pruning is beneficial to root branching. Nurserymen who root prune and transplant, benefit from this. To the arborist or landscaper who wants rapid branching of roots, high concentrations of cytokinins may be undesirable. Future research will bring more light on how these and perhaps other hormones influence root growth.

Tissue structure is important to root growth. In general, roots are less dense than stems. There is a high percentage of thin-walled paranchyma cells in the large and surface-growing roots. These cells store most of the food, so, removal of large lateral roots can remove large amounts of starch which puts the tree under stress, sometimes escalating to decline and death. The diameter and length of cells in vertical (sinker) and heart roots tend to be smaller than those in lateral roots at a similar distance from the tree-base. These have a high tensile strength which is important when large horizontal roots close to the trunk are cut.

The entire woody cylinder of the root transports water and nutrients, so reduction in root diameter over a long time may not be critical for survival. Some arborists shave large roots on one side to reduce the rates of radial expansion. This appears to work without significantly impairing tree performance, if the shaving is not done too close to the tree trunk.

Long-term soil moisture levels affect the distribution of roots. Some studies suggest that soil moisture has more influence on root distribution than on root size. Under drought conditions, root growth tends to shift towards the root tip rather than to increase in diameter, so severe root pruning in desert areas may be quite harmful. Infrequent irrigation produces poor root growth in surface soils, but more roots in the deeper layers. Growth of deep roots begins later than growth of surface roots. Under droughty conditions, large roots may be deep and may escape pruning. Experience in the West indicates this to be true.

Root growth continues longer at the base of the trunk than further out. Cessation of cambial activity proceeds from root tip to the tree base and thence to the shoot tip. This means that most root activity is near the tree base and for a long part of the growing season.

Temperature effects are also important. There are temperature minimums for root growth which vary with the species. Warm temperatures (68°F) on shoots can accelerate starch reduction in fibrous roots. At a cooler 50°F, there can be an increase in soluble sugars in the larger roots. The effects of severe root pruning are probably more drastic in cool-cold climates, especially when soil temperatures are lowering or are below minimum for root growth, due to more food being stored

and not used in growth of new roots.

After the roots have been pruned, the regeneration of roots proceeds most rapidly when top growth is least rapid. New root generation, even though rapid, does not require as much energy as is required for shoot growth. In the summer and fall assimilates from the leaves are likely to go to the roots and to the severed ends of roots.

The location of the large roots is arbitrary. They grow where their requirements for air, water, temperature, nutrition, and freedom from toxic substances are satisfied. Tree roots commonly grow outward 1½ to 2 times the height of the tree, yet, arborists consider the risk small if tree roots are cut off at the drip line. If done on one tangential side, about 15% of the roots will be cut. If a single straight-line cut is made midway between the drip line and the trunk, it has been estimated that 30% of the roots will have been severed, and that trees of reasonable vitality should withstand this. In my opinion, adhering to the recommendation of not pruning closer than midway between the drip line and the trunk is, in many situations, more conservative than necessary. It is frequently violated without serious consequences. In California, mature olive trees are transported any time of the year with a 2' X 2' X 1½' root balls and Washington fan palms are transported during the summer with closely cropped roots. I have seen 75% to 80% of the root system of mature southern magnolias in a compacted clay soil destroyed by rototiller, yet resulting in no top thinning. After a short period of severe leaf fall, the trees returned to acceptability in a city government complex. Results of a recent controlled study in Ohio on root pruning of young apple trees indicate that vegetative growth of young apple trees can be reduced by root pruning, but root pruning must be severe and the reduction of growth is only temporary. Growth reductions are likely related to the changed moisture status of the trees. Later reductions in shoot growth, however, can be attributed to an increased allocation of photosynthates to the roots and to hormonal imbalances. Trees re-establish their root-shoot balance by enhancing root growth at the expense of shoot growth. With the development of new roots, water relations in the tree improve and photosynthesis and shoot growth rates increase.

In this apple tree study, water stress was most severe one to six hours after treatment. Leaf wilting was observed for the first seventy-two hours in severe treatments. One day after root pruning, photosynthesis was reduced 35% to 50%. Photosynthesis and transpiration generally followed similar patterns. Both started to recover after ten days. Shoot growth was reduced 25% one month after treatment on the more severe treatments and leaf area was reduced about one-third. Although significant amounts of roots were removed in pruning, no difference in root weight was observed four weeks after treatment. More new roots were produced on root-pruned trees than on trees unpruned. Similar observations have been noted for several other kinds of trees. This illustrates that the effects of severe root loss can be temporary and that root pruning can stimulate production of new roots.

Several years ago, I conducted a test to determine why 65 uniform 3-year-old iron bark eucalyptus trees *(Eucalyptus sideroxylon)* grew vigorously after being severely potbound in one-gallon containers. I trenched 5 feet deep and 18 inches from the trunk on one side. I then directed

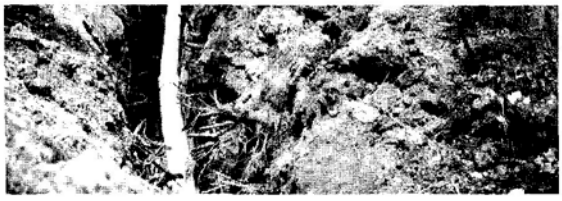


Fig. 1. Trenching within two feet of this Quercus agrifolia in Berkley, California is risky in this year of drought.

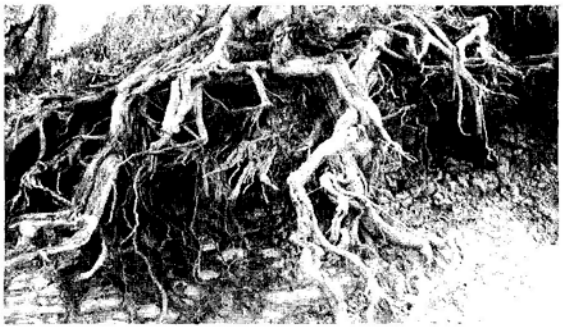


Fig. 2. A high percentage of the tree's roots are located close to the trunk even though some extend outward several times the tree height.

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a water jet at 200 psi to blast the soil from the roots. Much of the root bark was removed in the process. The trees were left exposed for several weeks, until after the appearance of new-shoot growth. All the trees remained in their original position and most amazing was the rapid growth of new roots and top growth in the weeks following soil replacement.

How can landscape trees survive such a loss of roots? A very high percentage of water-absorbing roots are under and close to the tree stem. I suggest that a high percentage of water-nutrient-absorbing roots are not disturbed. Many, if not most, of the sinker roots originate from the primary roots within four feet of the trunk; these vertically descending roots are minimally disturbed. Downward-growing heart-roots also originate from the buttress of the trunk. So, many trees with adequate vigor and vitality can withstand severe root pruning. Adequate tree vigor and vitality are the key words.

Some arborists use a rule of thumb for transplanting trees which is radical root pruning: a soil ball of 12-inch diameter for each inch of trunk diameter. In practice, this appears fairly realistic for root pruning in the established landscape. When we observe practices in large-tree container-nurseries and the practices of successful tree movers, these figures appear realistic. Trees should not be moved during rapid shoot growth and tree stresses should be alleviated *before* severance.

The effect of root pruning on the stability of the tree is a major factor of concern. This is most important when the tree is very large, very tall, old for the species, has a dense canopy for the root volume (a low root:shoot ratio), or is wounded near the soil line. Unusually strong winds and strong winds from a non-prevailing direction are also important. This excludes small-sized trees, open and naturally grown trees, most trees having adequate vigor and vitality and trees that have been thinned to allow a body of air to blow through. It does not exclude young evergreen trees with a heavy top which are spring-planted and/or stimulated to excessive growth.

In the San Francisco Bay area of California, an informal survey of supervisors responsible for street-tree maintenance indicates that less than 1% of trees fall over as a result of root pruning, planting, being too close to buildings, or being surrounded by pavement. But even that may be unacceptable if substantial damage occurs. City Forester Gary Nauman of Palo Alto recorded the failure of 25 to 50 pink flowering locust *(Robinia* sp.) after root pruning. Gordon Mann in Redwood City cites several storm-damage problems to the following trees which had been root pruned: *Acacia melanoxylon* (black acacia), *Schinus molle* (California pepper), and *Fraxinus velutina* "Modesto" (Modesto ash). Those safe to root prune include: *Cinnamomum camphora* (Camphor tree), *Ulmus americana* (American elm), *Ulmus* pumila (Siberian elm), *Populus* sp. (poplars), *Liquidambar styriciflua* (sweet gum), and *Platanus acerifolia* (London plane). In nearby Burlingame, the problem appears to lie with certain tree species: *Acacia melanoxylon* (black acacia), *Ulmus sp, Juglans nigra* (black walnut), and *Morus alba* (fruitless mulberry) in soft soils. Results from 35 locations surrounding San Francisco Bay with regards to tree failure during severe storms of November-December, 1982, indicated no failure attributed to root pruning, although many trees went down.

Plant Pathologist Terry Tatter, at the University of Massachusetts, says that the probability of tree failure increases with the amount of root system cut. Trees in exposed locations are especially at risk. He advises to remove trees that have lost 50% or more of their root system during construction.

Lee Payne, retired researcher from the Pacific Southwest Forest and Range Experiment Station,



Fig. 3. The downward growing sinker roots are important to tree survival after root severance.

in discussing California forest campground trees, says there is an increasingly high probability of tree failure for trees greater than 30 inches in diameter, leaning trees, trees in winds over 30 miles per hour, and in trees with internal rot.

The root system of northern red oaks was studied by Walter H. Lyford, Harvard University. He notes that by the time the trees are 30 to 40 years old and 4 to 5 inches in diameter, the roots can be divided into central and peripheral systems. The central system at the base of the tree extends 3½ to 7 feet and consists of main laterals, numerous vertically and obliquely descending woody and non-woody roots. These provide the support and anchoring system. Although large in diameter at the juncture with the trunk, they taper rapidly to a small diameter of 1 to 2 inches where they lose much of their strength and where they tend to break in storms. Also noted was the fact that sinker roots were found only within 3½ to 7 feet of the trunk.

In his book, *Arboriculture,* Richard Harris says that "if you want to lower the soil grade near the trunk, you will, in many cases, encounter no large horizontal roots or sinker roots until you are within 6 to 10 feet of the trunk. For tree stability, do not cut sinker roots unless they are a considerable distance from the trunk. Horizontal roots can usually be safely cut up to the point where their caliper begins to increase markedly near the trunk".

Severe root pruning of landscape trees does not adversely affect the value of the tree to the general public. Growth reduction and unacceptable appearance from root severance can be of a relatively short duration if the tree has strong vigor and vitality. Trees re-establish their root-shoot balance by enhancing root generation at the expense of shoot growth. With the development of new roots, water imbalances in the tree improve and photosynthesis and shoot growth rates increase.

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Horticultural Consultant
38531 Acacia Street
Fremont, California 94536

QUALIFICATIONS, ASSUMPTIONS, & 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, Matthew Fried, 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 appraisal is stated in the attached report and the 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 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.

I further certify that I am Registered Consulting Arborist® #651 with the American Society of Consulting Arborists, and acknowledge, accept, and adhere to the ASCA Standards of Professional Practice. I am an International Society of Arboriculture Certified Arborist and have been involved in the practice of arboriculture and the study of trees for over twelve years.

Matthew Fried

Matthew Fried
ASCA Registered Consulting Arborist® # 651
ISA Certified Arborist® MA-4851A
ISA Tree Risk Assessor Qualified

UPP GEOTECHNOLOGY
Engineering Geology • Geotechnical Engineering
a division of C2EARTH, INC.

11 July 2019
Document Id. 18062C-01L2
Serial No. 19002

Mr. Charles Zaffaroni
1 La Sandra Way
Portola Valley, CA 94028

SUBJECT: FEASIBILITY EVALUATION
ALTERNATE BENCH BUILDING SITE
PROPOSED SITE DEVELOPMENT
APN 182-36-043
ALPINE ROAD
SANTA CLARA COUNTY, CALIFORNIA

Dear Mr. Zaffaroni:

INTRODUCTION

As requested, we have conducted further evaluation of the alternate "bench" building site to assess the feasibility of developing this area on your property, APN 182-36-043 on Alpine Road in the Portola Valley area of unincorporated Santa Clara County, California. Our Geologic and Geotechnical Study dated 9 April 2019 (Document Id. 18062C-01R1) presented our findings concerning the subject alternate building site. Subsequently, the County has requested additional information concerning the feasibility of developing the subject area. The following presents the results of our additional analysis.

SLOPE STABILITY ANALYSES

To further qualify the stability of the steep slopes and the existing mapped landsliding in the subject area, we modeled the proposed slope conditions and conducted a quantitative slope stability evaluation based upon the methodology presented in our Report.

We performed the slope stability analyses utilizing the surface profile designated as Section 3 on Sheet A-1.3a, dated 9 July 2019, by CJW Architecture. The modeled surface profile represents the proposed building pad configuration and includes the proposed excavations into the hillside. We interpreted the subsurface conditions and utilized soil/rock strength parameters based upon data presented in our Report.

The results of our analysis indicated that the slope is potentially unstable under earthquake-induced seismic shaking. Mitigation measures would be necessary to achieve an factor of safety comparable to that of the building site in the "clearing". Because of the depth of potential landsliding and steepness of the slope, we anticipated that a below grade stitch pier retaining wall would be the most suitable system to mitigate the risk for slope instability.

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Using an iterative approach, we determined that the modeled stitch piers would need to have a shear resistance of at least 65kip per linear foot and would need to extend to a depth of approximately 80 feet below the ground surface. A graphic illustration of the results of our analysis are presented on Figure 1, Slope Stability Analysis – Bench Mitigation Measures.

FINDINGS

While technically possible, constructing a dwelling on the "bench" site would require extensive landslide hazard mitigation measures. Given the depth and load requirements obtained from our analysis, we anticipate that a double row of stitch piers, with a minimum diameter of 2½ feet and a depth of about 80 feet, would be required along the downhill side of the development area, roughly extending more than 200 feet. With this configuration, we anticipate at least 1,200 cubic yards of concrete would be required to construct the stitch piers.

Based upon the results of our analysis, it remains our professional opinion that the bench area is subject to adverse geologic and geotechnical engineering conditions and we advise against siting the proposed dwelling in this area.

We appreciate the opportunity to continue assisting you with this project. If there are any questions, please contact our office.

Sincerely,
Upp Geotechnology
a division of C2Earth, Inc.

Kirby G. Kiefer
Senior Staff Geologist

THIS DOCUMENT HAS BEEN DIGITALLY SIGNED

REGISTERED PROFESSIONAL ENGINEER
CRAIG N. REID
No. 3060
GEOTECHNICAL
STATE OF CALIFORNIA

Craig N. Reid, Principal
Certified Engineering Geologist 2471
Registered Geotechnical Engineer 3060

Distribution: Addressee (via e-mail to charles@zaffaroni.us)
Inclusions: Figure 1, Slope Stability Analysis - Bench Mitigation Measures

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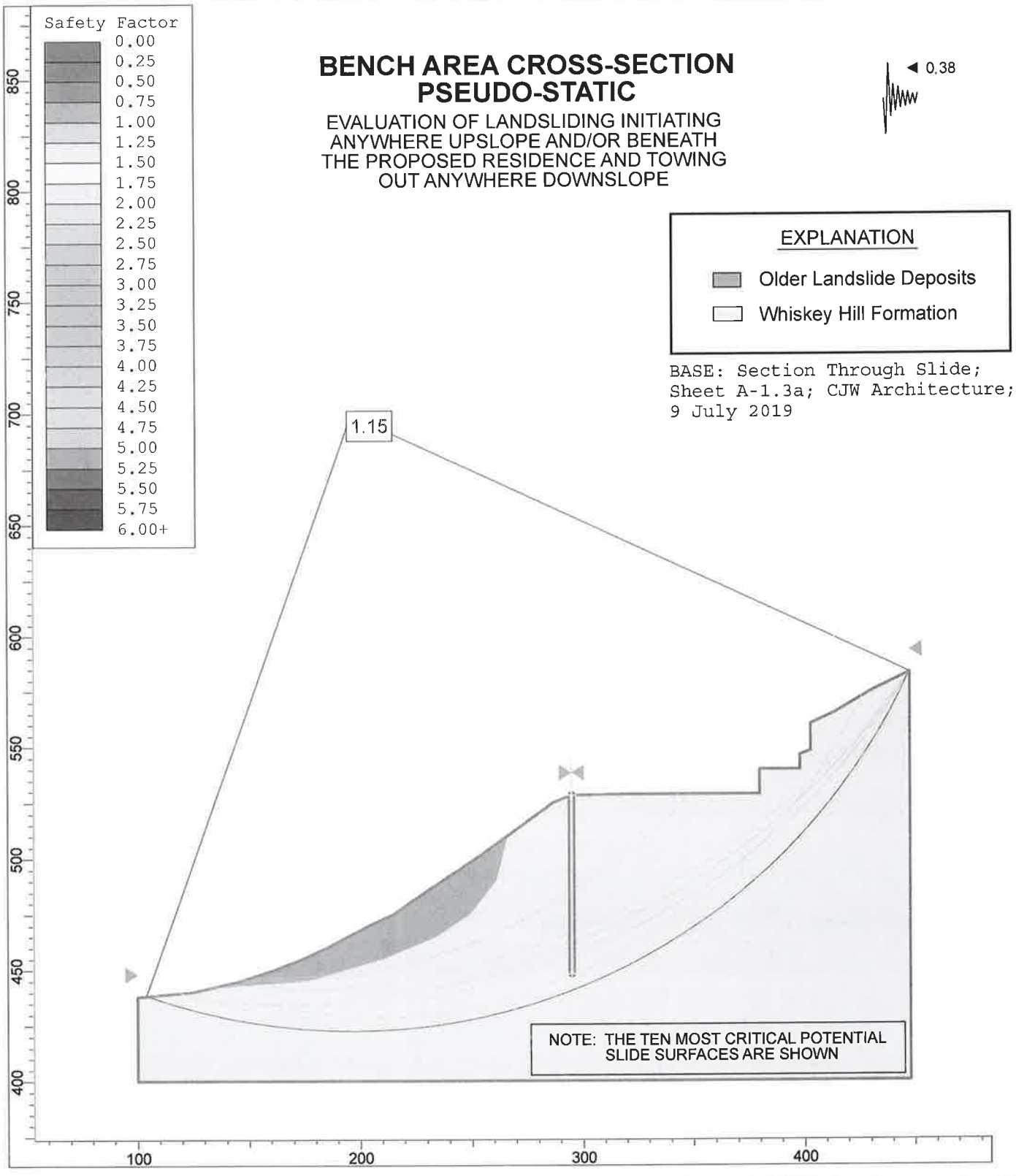
BENCH AREA CROSS-SECTION PSEUDO-STATIC

EVALUATION OF LANDSLIDING INITIATING ANYWHERE UPSLOPE AND/OR BENEATH THE PROPOSED RESIDENCE AND TOWING OUT ANYWHERE DOWNSLOPE

◄ 0.38



SLOPE STABILITY ANALYSIS - BENCH MITIGATION MEASURES

UPP GEOTECHNOLOGY
a division of C2EARTH, INC.

APN 182-36-043
Alpine Road
Santa Clara County, California

DRAFTED/REVIEWED	SCALE	DOCUMENT ID.	DATE	
KK/CR	As Shown	18062C-01L2	July 2019	Figure 1

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Attachment H

From: Laura Russell
To: Tran, Lara
Subject: [EXTERNAL] RE: Bridge Replacement - Off Creek Park Drive for APN: 182-36-043
Date: Tuesday, December 10, 2019 4:17:01 PM
Attachments: image002.png
image003.png
Email from Town of Portola Valley on Bridge.pdf
Bridge Plan Improvement 12-10-19.pdf

Hi Lara,

The information in my email of June 18, 2019 is still relevant and reflects the best information available to us.

Thanks,
Laura

Laura C. Russell, AICP
Planning & Building Director

Town of Portola Valley
650-851-1700 Ext. 218
www.portolavalley.net

Follow us:

From: Tran, Lara <lara.tran@pln.sccgov.org>
Sent: Tuesday, December 10, 2019 3:15 PM
To: Laura Russell <lrussell@portolavalley.net>
Subject: Bridge Replacement - Off Creek Park Drive for APN: 182-36-043

Good afternoon Ms. Russell,

The County of Santa Clara Planning Department received the application for development of the property with APN: 182-36-043. However, in order for development to occur on the subject

property, improvement to an existing bridge off from Creek Park Drive, within the jurisdiction of the Town of Portola Valley, is required. I have an email that was received from the current property owner which indicated that improvement to the bridge would require a building permit from the Town of Portola Valley.

County Planning is ready to deem the application submittal complete and I want to confirm the information provided to the owner regarding the bridge from Portola Valley is still relevant. Attached is the email from the current owner provided to county planning staff and the civil plans for the bridge.

Please let me know if you have any questions.

Warm regards,

Lara Tran
Associate Planner
County of Santa Clara
70 W. Hedding Street, East Wing 7th Floor
San Jose, CA 95110
Phone: (408) 299-5759
lara.tran@pln.sccgov.org

Please visit our website at www.sccplanning.org
To look up unincorporated property zoning information: www.sccplanning.org/gisprofile
Questions on Plan Check Status?, please e-mail: PLN-PermitCenter@pln.sccgov.org

From: **Robert Waterman** bobwaterman67@gmail.com
Subject: Fwd: Bridge Replacement - Off Creek Park Drive
Date: June 18, 2019 at 12:02 PM
To: Charles Zaffaroni charles@zaffaroni.us

BW

Let me know if there is anything that I can do before tomorrow. You should have the emails from the neifgbors,Woodside Fire ,and here is the Town. It will go well tomorrow I am confident.
Best regards,
Bob

Robert H. Waterman
650/619-1897
bobwaterman67@gmail.com **MY NEW EMAIL ADDRESS**

---------- Forwarded message ---------
From: **Laura Russell** <lrussell@portolavalley.net>
Date: Tue, Jun 18, 2019 at 10:31 AM
Subject: Bridge Replacement - Off Creek Park Drive
To: bobwaterman67@gmail.com <bobwaterman67@gmail.com>
Cc: Carol Borck <CBorck@portolavalley.net>

Bob,

We understand that there are potential buyers for a property in Santa Clara County with access over a bridge off Creek Park Drive which is located in the Town of Portola Valley (APN079-112-270). The bridge is proposed to be replaced for structural reasons and to improve Fire access. The permitting authority for the bridge is Portola Valley while the permitting authority for the proposed development of the lot is Santa Clara County.

Based on the information available at this time, the Town has preliminarily determined that reconstruction of the bridge would require ministerial building permit review by the Town (discretionary review by the Architectural and Site Control Commission would most likely not be required). The project would need to meet all requirements for engineering, building, planning, geology, and Fire as well as receive permits from all the other outside agencies.

We are not aware of any issues with removing and replacing the bridge as long as the project meets the requirements of all reviewing departments/agencies.

Thanks,

Laura

Laura C. Russell, AICP

Planning & Building Director

Town of Portola Valley

650-851-1700 Ext. 218

www.portolavalley.net