SANTA CLARA COUNTY PLANNING DEVELOPMENT APPLICATION

PROPERTY OWNER'S NAME	Phone	Email	Prefer correspondence: Email ☑ Mail ☐
Toni Cupal	650.380.4337	toni e cupal.com	
Mailing Address	**City**	**Zip**	
2 cedar lane	Woodside	94062	
APPLICANT OR APPELLANT NAME	**Phone**	**Email**	**Prefer correspondence: Email ☐ Mail ☐**
Mailing Address	**City**	**Zip**	

ADDRESS OF SUBJECT PROPERTY: 33439 Alpine Road, Portola Valley, CA 94028 APN: 142.15.008

EXISTING USE OF PROPERTY: None ACCESS RESTRICTIONS (gate, dog, etc.): chain

The **ACKNOWLEDGEMENTS AND AGREEMENTS FORM** on the reverse side of this application must be completed and signed by the property owner(s).

FOR DEPARTMENT USE ONLY

FILE NUMBER: 11451 - 10B-10G

PROJECT DESCRIPTION: Building Site Approval and Grading Approval for a (N) SFR

APPLICATION TYPES	FEE(S)	COMMENTS / SUBMITTAL MATERIALS
Architecture and Site Approval / ASX		
Building Site Approval / BA (Urban / Rural)	10,983	✓WSB
Certificate of Compliance		✓Arch Form
Design Review / DRX		✓2 site Plans
CEQA (EA / Cat Ex / Prior CEQA / EIR)	531	
Compatible Use Determination (WA / OSE)		
Geologic Report / Letter		
Grading Approval / Abatement	2,363	
Lot Line Adjustment / Lot Merger		
Pre-Screening		
Special Permit		
Subdivision		
Use Permit		
Variance		
Other Scan	4	
TOTAL FEES	13,981	

Application fees are not refundable.

Submittal reviewed and received by: COT

Date: 11/6/18

Coordinates: X 4 Y 77

Zoning: HS

General Plan: Hillsides

Parcel Size: 4.2 ac

HCP SRA WA Hist Y N

USA / SOI Ø

WA / OSE / HCP Ø

Early Outreach: L1 / L2 Ø

Previous Files: 7165 9232, 8678, 10262

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CALIFORNIA WATER SERVICE
Bear Gulch District 3525 Alameda De Las Pulgas, Suite A
Menlo Park, CA 94025 *Tel:* (650) 561-9709

08/01/2018

3343 Alpine Rd.
Portola Valley, CA
94028

Will Serve Letter
Tract or Parcel Map No: 3343 Alpine Rd.

Dear McKenzie Brooks,

As a regulated utility, California Water Service Company Bear Gulch District ("Cal Water") has an obligation to provide water service in accordance with the rules and regulations of the California Public Utility Commission (CPUC). Assuming you receive all required permits from Town of Portola, Cal Water will provide water service to the above referenced project. Cal Water agrees to operate the water system and provide service in accordance with the rules and regulations of the California Public Utilities Commission (CPUC) and the company's approved tariffs on file with the CPUC. This will serve letter shall remain valid for **two years** from the date of this letter. If construction of the project has not commenced within this **two year** time frame, Cal Water will be under no further obligation to serve the project unless the developer receives an updated letter from Cal Water reconfirming our commitment to serve the above mentioned project. Additionally, Cal Water reserves the right to rescind this letter at any time in the event its water supply is severely reduced by legislative, regulatory or environmental actions.

Cal Water will provide such potable[1] water at such pressure as may be available from time to time as a result of its normal operations per the company's tariffs on file with the CPUC. Installation of facilities through developer funding shall be made in accordance with the current rules and regulations of the CPUC including, among others, Tariff Rules 15 and 16 and General Order 103-A. In order for us to provide adequate water for domestic use as well as fire service protection, it may be necessary for the developer to fund the cost of special facilities, such as, but not limited to, booster pumps, storage tanks and/or water wells,[2] in addition to the cost of mains and services. Cal Water will provide more specific information regarding special facilities and fees after you provide us with your improvement plans, fire department requirements, and engineering fees for this project.

This letter shall at all times be subject to such changes or modifications by the CPUC as said Commission may, from time to time, require in the exercise of its jurisdiction.

Cal Water should be able to supply the project with the required capacity but until we have information regarding Fire Demands, Domestic Supply, Irrigation Supply we are unable to confirm

If you have any questions regarding the above, please call me at *(650) 561-9709*.

Sincerely,

Alauddin Mussa
Customer Service Representative

[1] This portion of the letter to be modified accordingly in the event the development for which this letter is being generated is to be served with potable and non-potable water.
[2] For the districts that collect facility fees on a per lot basis, delete the reference to wells as a special facility here and add in the following sentence, "Developer will also be required to contribute towards Cal Water's water supply by paying facilities fees on a per lot basis as described in Rule 15"

County of Santa Clara Department of Planning and Development

PETITION FOR EXEMPTION FROM AN ENVIRONMENTAL ASSESSMENT

*Certain projects may not require an Environmental Assessment because they are **exempt** under state law. The Envirionmental Review handout describes the types of applications that may qualify for an exemption. Staff at the Planning Office counter can also advise you whether your application may be exempt.*

Submittal of this form must be accompanied by the Environmental Information Form (with photographs), which is used to determine if the project will have any potentially signifiant environmental impacts.

The undersigned hereby requests exemption from the environmental review requirements of the California Environmental Quality Act of 1970, as amended. In completing this request, I / we are affirming our belief that no significant environmental impact will result from the proposed project.

1. Project Type (subdivision, grading etc.): New construction of one single family residence

2. Project Location: 3343 Alpine Rd, Portola Valley 94028 / APN: 142-15-008

3. Project Description (including physical dimensions and proposed use): The proposed project includes the construction of a 5,000 sq foot two-story single family residence with a three car garage on a 0.48-acre area of a 4.2-acre parcel in unincorporated Santa Clara County near the Town of Portola Valley.

4. Project Qualification for Exemption (all answers must be 'No'):

The questions in the table below are used to determine if a project could have any signifiant environmental impacts within different categories, necessitating the preparation of an Environmental Assessment. If the project does not have impacts in the listed categories (answer is "No"), the project may qualify to be an exemption.

Completion of the accompanying Envirionmental Information Form (EIF) can be used to answer the questions listed in the table, which specifies the location in the EIF (page and question) where these items are addressed.

Please note that the questions below are general screening thresholds to determine if an Environmental Assessment is required. Other factors may also be considered in this evaluation.

Would the proposed project involve:	**EIF Page/ Question**	**Yes**	**No**
Biology			
-work within 150 ft.of a watercourse, wetland, or riparian area?	P. 7/Q. 4	Y	
-impacts to or loss of habitat for endangered, threatened or rare wildlife or plants?	P. 10/Q. 10	Y	
-removal of five (5) or more native trees (12 inches in diameter, or 6 inches in diameter within the –h1 historic district)?	P. 6/Q. 2		Y
-removal of ½ acre or more of oak woodland?	P. 6/Q. 2		Y
Historic			
-demolition or alteration of historic resources (e.g., structure more than 50 years old)?	P. 3/Q. 7		Y
Topography / total earthwork			
-construction in area with steep topography – average slope of > 30%?	P. 6/Q. 1		Y
-import or export of more than 2,500 cubic yards of soil / material?	P. 2/Q. 6		Y
-total earthwork exceeds 5,000 cubic yards (cut and fill)?	P. 3/Q. 6		Y
Non-residential			
-generate significant new traffic?	P. 8/Q. 5		Y
-create significant outdoor noise (outdoor amplified music, industrial activity)?	P. 8/Q. 7b		Y
-use of hazardous materials?	P. 8/Q. 6		Y
-development on agricultural lands (A-40, A-20 Zoning Districts)?	P. 7/Q. 3		Y

5. List Categorical Exemption Class for which project is believed to qualify (refer to attached list)

Class #: 3 - new construction of one single family residence

Applicant's Signature: _____ **Date**: 11/6/18

For Staff Use Only

Project file number: _____ Exemption (CEQA Section): _____

Comments: _____

_____

Approved ☐ Denied ☐ Staff Person: _____ Date: _____

Revised Jan. 2013

Exemptions from Environmental Review

Per the California Environmental Quality Act (CEQA), this is a list of exemptions that are most likely applicable to development applications processed by the Santa Clara County Planning Office. It is not comprehensive but, instead describes general categories.

Pick the number of the class that appears to most clearly describe your project and enter it on the form (item 4). Then explain why your project fits that category (item 5); for example: "a single duplex building"; or "an addition of less than 50%".

Categorical Exemptions

Class 1 (CEQA Section 15301): **Minor alteration of existing facilities involving negligible or no expansion of use**
Examples include but are not limited to:

a. Interior or exterior alterations
b. Existing facilities used to provide public utility service
c. Existing highways, streets, sidewalks, gutters, bicycle and pedestrian trails and similar facilities (this includes road grading for the purpose of public safety)
d. Restoration or rehabilitation of deteriorated or damaged structures or facilities to meet public health and safety standards
e. Additions to existing structures
    (1) Up to 50% of floor area or 2,500 square feet, whichever is less
    (2) 10,000 square feet if:
        (a) public services available
        (b) area not environmentally sensitive
f. Addition of safety or health protection devices
g. New copy on existing signs
h. Maintenance of existing landscaping
i. Demolition or removal of small structures
j. Conversion of a single-family residence to office use
k. Use of a single-family residence as a small family day care home

Class 2 (CEQA Section 15302)**: Replacement or reconstruction of an existing structure located on the same site and with substantially the same purpose and capacity**

Class 3 (CEQA Section 15303): **New construction or conversion of small structures**
Examples of this exemption include but are not limited to:

a. One single family residence, or a second dwelling unit in a residential zone (up to 3 structures in an urbanized area)
b. A duplex or similar multi-family residential structure, totaling no more than 4 dwelling units; maximum 6 dwelling units in one building for urbanized areas
c. A store, motel, office, restaurant or similar structure not exceeding 2,500 square feet in floor area (up to 4 commercial buildings, not exceeding 10,000

square feet, in urbanized areas) on sites zoned for such use, not involving the use of significant amounts of hazardous materials, where all necessary public services and facilities are available and the surrounding area is not environmentally sensitive

d. Water, main, sewage, electrical, gas, and other utility extensions, including street improvements, of reasonable length to serve such construction
e. Accessory structures including garages, carports, swimming pools and fences

Class 4 (CEQA Section 15304): **Minor alterations to land, water or vegetation which do not involve removal of healthy, mature, scenic trees except for forestry or agricultural purposes.** Examples of this exemption include but are not limited to:

a. Grading on land with less than 10% slope (if not in waterway, wetland, official scenic area or mapped area of severe geologic hazard).
b. New gardening or landscaping
c. Filling previous excavation
d. Minor alterations in officially designated wildlife areas which result in habitat improvement.
e. Minor temporary uses with no permanent effects (e.g., carnivals, Christmas tree sales, etc.)
f. Minor trenching and backfilling
g. Creation of bicycle lanes
h. Fuel management activities (within 30 feet of structure, or within 100 feet of structure if designated by public agency responsible for fire protection)

Class 5 (CEQA Section 15305): **Minor Alterations in land use limitations**
On land of 20% average slope or less and no change in land use or density including but not limited to:

a. Minor lot line adjustment (not resulting in creation of new lot), and setback variances.
b. Minor encroachment permit
c. Reversion to acreage in accordance to the Subdivision Map Act

Class 11 (CEQA Section 15311): **Construction or replacement of accessory structures**

a. On premise signs
b. Small parking lots
c. Temporary or seasonal structures designed for public use

Class 14 (CEQA Section 15314): **Minor additions to Schools** that do not increase school student capacity by more than 25% or 10 classrooms, whichever is less

Class 15 (CEQA Section 15315): **Minor land divisions**
Which satisfies all of the following criteria**:**

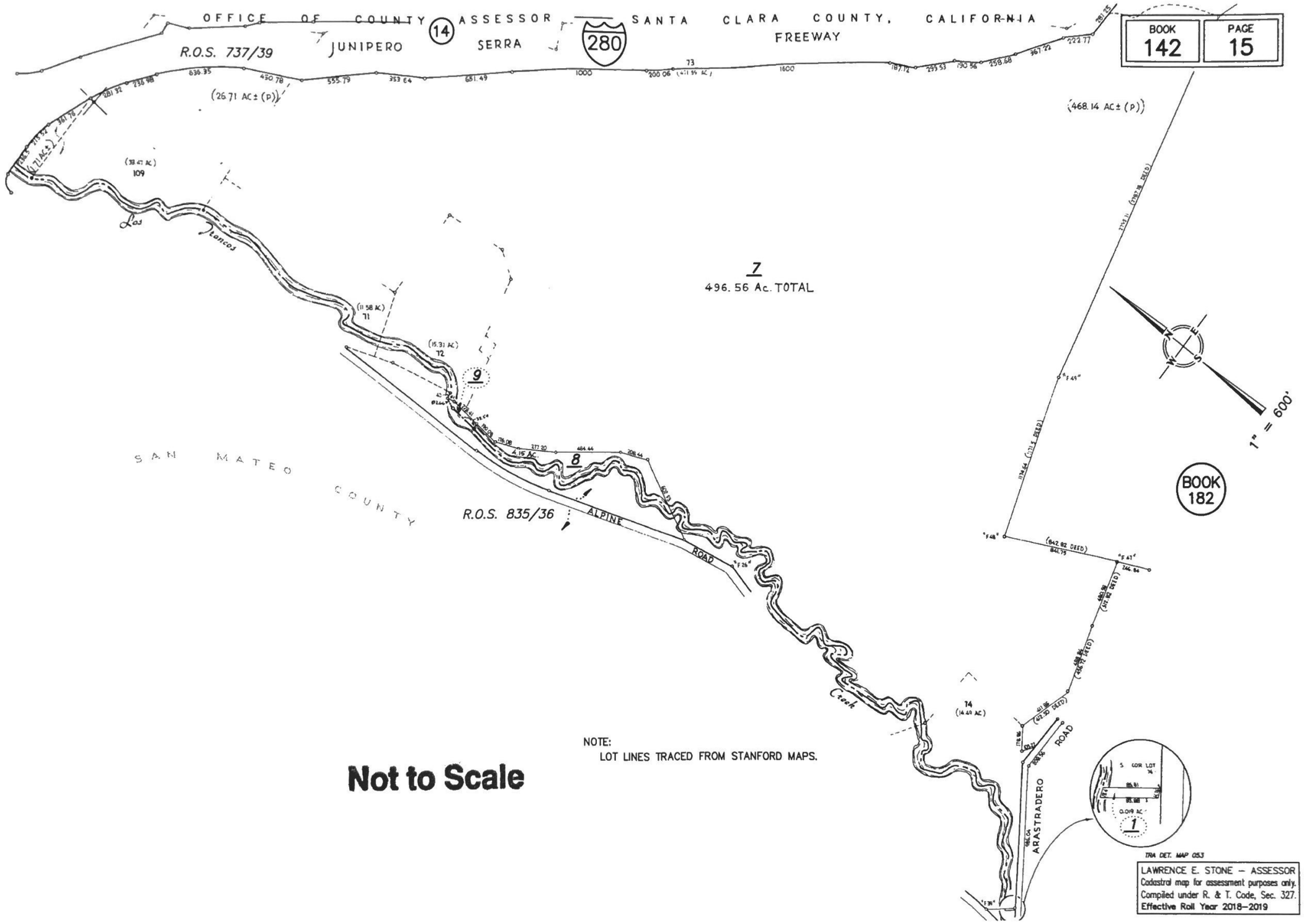
a. Four or fewer parcels (five, if one involves the dedication of permanent open space through a conservation easement);
b. Within the Urban Service Area;
c. Meet riparian setbacks if applicable as shown on the County General Plan;
d. Future parcels will be served by public streets, sewers and water systems;
e. Division is in conformance with the General Plan and zoning and no variance or exceptions are required;
f. The parcel was not involved in the division of a prior subdivision within the previous 2 years; and
g. The parcel does not have an average slope greater than 20 percent.

Class 31 (CEQA Section 15331): **Historical Resource Restoration / Rehabilitation** ***ONLY*** *consists of projects limited to maintenance, repair, stabilization, rehabilitation, restoration, preservation, conservation, or reconstruction of historical resources in a manner consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Restoring, and Reconstructing Historic Buildings* (1995), Weeks and Grimmer.

Class 33 (CEQA Section 15333): **Small Habitat Restoration Projects**

Projects not to exceed 5 acres in size to assure the maintenance, restoration, enhancement, or protection of habitat for fish, plants, or wildlife provided that:

a. There would be no significant adverse impact on endangered, rare or threatened species or their habitat pursuant to section 15065,
b. There are no hazardous materials at or around the project site that may be disturbed or removed, and
c. The project will not result in impacts that are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.
d. Examples of small restoration projects may include, but are not limited to:
   (1). Revegetation of disturbed areas with native plant species;
   (2). Wetland restoration, the primary purpose of which is to improve conditions for waterfowl or other species that rely on wetland habitat;
   (3). Stream or river bank revegetation, the primary purpose of which is to improve habitat for amphibians or native fish;
   (4). Projects to restore or enhance habitat that are carried out prinicipally with hand labor and not mechanized equipment.
   (5). Stream or river bank stabilization with native vegetation or other bioengineering techniques, the primary purpose of which is to reduce or eliminate erosion and sedimentation; and
   (6). Culvert replacement conducted in accordance with published guidelines of the Department of Fish and Game or NOAA Fisheries, the primary purpose of which is to improve habitat or reduce sedimentation.


OFFICE OF COUNTY ASSESSOR
14
SANTA CLARA COUNTY, CALIFORNIA
BOOK 142
PAGE 15
R.O.S. 737/39
JUNIPERO SERRA
280
FREEWAY
(26.71 AC± (P))
(468.14 AC± (P))
(38.47 AC)
109
Los Trancos
7
496.56 Ac. TOTAL
(11.58 AC)
71
(15.31 AC)
72
9
8
4.15 AC
SAN MATEO COUNTY
R.O.S. 835/36
ALPINE ROAD
Creek
74
(14.49 AC)
ARASTRADERO ROAD
BOOK 182
1" = 600'
N
E
S
W
NOTE:
LOT LINES TRACED FROM STANFORD MAPS.
Not to Scale
TRA DET. MAP 053
LAWRENCE E. STONE – ASSESSOR
Cadastral map for assessment purposes only.
Compiled under R. & T. Code, Sec. 327.
Effective Roll Year 2018–2019

23630606

Regina Alcomendras
Santa Clara County - Clerk-Recorder

04/21/2017 10:52 AM

Titles: 1 Pages: 4

Fees: $44.00
Taxes: $2420.00
Total: $2464.00

RECORDING REQUESTED BY:
Lawyers Title Company

When Recorded Mail Document and Tax Statement To:
Michelangelo Volpi and Toni C. Cupal, Trustees of the Volpi-Cupal Family Trust dated April 5, 2000
2 Cedar Lane
Woodside, CA 94062

SPACE ABOVE THIS LINE FOR RECORDER'S USE

Escrow Order No.: FLNP-0051700315

Property Address: 3343 Alpine Road,
Portola Valley, CA 94028
APN/Parcel ID(s): 142-15-008

GRANT DEED

The undersigned grantor(s) declare(s)

Richard Kelley

☐ This transfer is exempt from the documentary transfer tax.
☑ **The documentary transfer tax is $2,420.00** and is computed on:
  ☑ the full value of the interest or property conveyed.
  ☐ the full value less the liens or encumbrances remaining thereon at the time of sale.
The property is located in ☑ an Unincorporated area of **Portola Valley.**

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged, Hare, Brewer & Kelley, Inc., a corporation

hereby GRANT(S) to Michelangelo Volpi and Toni C. Cupal, Trustees of the Volpi-Cupal Family Trust dated April 5, 2000

the following described real property in the Unincorporated Area of Portola Valley of the County of Santa Clara, State of California:

SEE EXHIBIT "A" ATTACHED HERETO AND MADE A PART HEREOF

MAIL TAX STATEMENTS AS DIRECTED ABOVE

GRANT DEED
(continued)

APN/Parcel ID(s): 142-15-008

Dated: April 19, 2017

IN WITNESS WHEREOF, the undersigned have executed this document on the date(s) set forth below.

Hare, Brewer, & Kelley, Inc., a corporation

BY: _____
Richard Kelley
President

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California

County of San Mateo

On April 19, 2017 before me, Jackie Ronson, Notary Public,
(here insert name and title of the officer)

personally appeared Richard Kelley,
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

_____
Signature

(Seal)

JACKIE RONSON
Commission # 2052895
Notary Public - California
San Mateo County
My Comm. Expires Jan 18, 2018

EXHIBIT "A"
Legal Description

For APN/Parcel ID(s): 142-15-008

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE UNINCORPORATED AREA IN COUNTY OF SANTA CLARA, STATE OF CALIFORNIA AND IS DESCRIBED AS FOLLOWS:

PARCEL ONE:

BEGINNING AT A POINT ON THE EASTERLY LINE OF COUNTY ROAD NO. 75 KNOWN AS "ALPINE ROAD", SAID POINT BEING DISTANT NORTH 70° 14' EAST 80 FEET FROM THE SOUTHERLY EXTREMITY OF THAT CERTAIN COURSE SOUTH 19° 46' EAST 24.35 FEET, WHICH FORMS A PORTION OF THE EASTERLY BOUNDARY LINE OF LOT 4 IN "TRACT NO. 593, WESTRIDGE SUBDIVISION NO. 1 IN UNINCORPORATED TERRITORY, SAN MATEO COUNTY, CALIFORNIA", FILED DECEMBER 4 1947 IN BOOK 28, PAGES 20 TO 23 OF MAPS, IN THE OFFICE OF THE RECORDER OF SAN MATEO COUNTY, STATE OF CALIFORNIA, (FOR THE PURPOSE OF THIS DESCRIPTION THE BEARING OF THE EASTERLY TANGENT LINE OF SAID COUNTY ROAD NO. 75 IS TAKEN TO BE NORTH 19° 46' WEST AND ALL BEARINGS HEREIN MENTIONED ARE RELATED THERETO); RUNNING THENCE ALONG THE EASTERLY LINE OF SAID COUNTY ROAD NO. 75 AS WIDENED, THE FOLLOWING COURSES AND DISTANCES: NORTH 19° 46' WEST 1008.24 FEET, NORTHERLY ALONG THE ARC OF A CURVE TO THE RIGHT, TANGENT TO THE PRECEDING COURSES, WITH A RADIUS OF 1960 FEET, A CENTRAL ANGLE OF 17° 58' 30" A DISTANCE OF 614.90 FEET AND NORTH 1° 47' 30" WEST, TANGENT TO THE PRECEDING CURVE, 1221.79 FEET TO A POINT ON THE EASTERLY LINE OF THAT CERTAIN TRACT OF LAND DESCRIBED IN THE DEED FROM PENINSULA HOUSING ASSOCIATION, INC., A CORPORATION TO THE COUNTY OF SAN MATEO, STATE OF CALIFORNIA, DATED NOVEMBER 4, 1949 AND RECORDED NOVEMBER 22, 1949 IN BOOK 1748 OF OFFICIAL RECORDS AT PAGE 187 (FILE 21552-I), RECORDS OF SAN MATEO COUNTY, CALIFORNIA; THENCE SOUTHERLY, ALONG SAID LINE ON THE ARC OF A CURVE TO THE LEFT, TANGENT TO A LINE WHICH BEARS SOUTH 18° 27' 40" EAST, SAID CURVE HAVING A RADIUS OF 270.00 FEET, A CENTRAL ANGLE OF 1° 58' 20", A DISTANCE OF 9.29 FEET; THENCE SOUTH 20° 26' EAST, ALONG SAID EASTERLY LINE AND THE EASTERLY LINE OF OLD COUNTY ROAD (1917), AS SHOWN ON THE MAP RECORDED AS PART OF THE RESOLUTION ABANDONING OLD COUNTY ROAD, WHICH SAID RESOLUTION WAS RECORDED NOVEMBER 22, 1917, IN BOOK 269 OF DEEDS AT PAGE 194, RECORDS OF SAN MATEO COUNTY, A DISTANCE OF 369.98 FEET AND SOUTH 12° 01' 45" EAST A DISTANCE OF 479.20 FEET TO THE CENTER OF LOS TRANCOS CREEK; THENCE SOUTH 77° 55' WEST, A DISTANCE OF 40.00 FEET; THENCE SOUTH 12° 05' EAST, A DISTANCE OF 54.00 FEET AND SOUTH 6° 18' WEST, A DISTANCE OF 228.41 FEET TO THE NORTHEASTERLY CORNER OF THAT CERTAIN 216.33 ACRE PARCEL OF LAND DESCRIBED AND DESIGNATED "SECOND" IN THE DEED FROM JOHN G. AGAR AND WIFE, TO WILLIAM O. B. MACDONOUGH, RECORDED AUGUST 30, 1909 IN BOOK 168 OF DEEDS AT PAGE 451, RECORDS OF SAN MATEO COUNTY, SAID 216.33 ACRE PARCEL OF LAND ALSO BEING SECONDLY DESCRIBED IN PARCEL 1 OF THE DEED FROM ORMONDALE COMPANY, A CORPORATION, TO JOSEPH M. MACDONOUGH, RECORDED MARCH 20, 1920 IN BOOK 514 OF DEEDS AT PAGE 159, RECORDS OF SANTA CLARA COUNTY; THENCE ALONG THE EASTERLY BOUNDARY LINE OF SAID 216.33 ACRE PARCEL, THE FOLLOWING COURSES AND DISTANCES: SOUTH 3° 02' 30" WEST 190.08 FEET, SOUTH 24° 42' 30" EAST 176.88 FEET, SOUTH 32° 27' 30" EAST 277.20 FEET, SOUTH 38° 12' 30" EAST 484.44 FEET, SOUTH 23° 57' 30" EAST 208.44 FEET, TO A POINT ON A LINE DRAWN PARALLEL WITH AND 30 FEET MEASURED AT RIGHT ANGLES NORTHWESTERLY FROM THE NORTHERLY LINE OF THAT CERTAIN TRACT OF LAND CONTAINING 7 ACRES, MORE OR LESS, DESCRIBED IN THE DEED FROM HENRY BARROLLHET TO J. J. FELT, RECORDED IN BOOK 33 OF DEEDS AT PAGE 112, RECORDS OF SAN MATEO COUNTY AND RECORDED IN BOOK 58 OF DEEDS AT PAGE 344, RECORDS OF SANTA CLARA COUNTY; THENCE SOUTH 26° 41' WEST, ALONG SAID PARALLEL LINE, 602.53 FEET TO A POINT ON THE EASTERLY LINE OF COUNTY ROAD NO. 75 KNOWN AS "ALPINE ROAD"; THENCE NORTHERLY ALONG SAID EASTERLY LINE, ON THE ARC OF A CURVE TO THE LEFT, TANGENT TO A LINE WHICH BEARS NORTH 18° 04' 30" WEST, SAID CURVE HAVING A RADIUS OF 1240.00 FEET, A CENTRAL ANGLE OF 1° 41' 30", A DISTANCE OF 36.61 FEET TO THE POINT OF BEGINNING.

EXCEPTING THEREFROM ALL THAT PORTION THEREOF LYING WITHIN THE BOUNDS OF THE COUNTY OF SAN MATEO AS CONVEYED TO THE TOWN OF PORTOLA VALLEY, A MUNICIPAL CORPORATION BY DEED RECORDED FEBRUARY 19, 1971, INSTRUMENT NUMBER 83938AD IN BOOK 5899, PAGE 211, OFFICIAL

EXHIBIT "A"

Legal Description
(continued)

RECORDS OF SAN MATEO COUNTY, CALIFORNIA.

PARCEL TWO:

A NON-EXCLUSIVE EASEMENT FOR ROAD ACCESS BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

ALL THAT CERTAIN REAL PROPERTY SITUATE IN THE COUNTY OF SAN MATEO, STATE OF CALIFORNIA, DESCRIBED AS FOLLOWS:

PORTION OF THE LANDS OF HARE, BREWER AND KELLEY, INC., AS SAID LANDS ARE DESCRIBED IN A DEED RECORDED IN BOOK 3442, PAGE 395 (67643-Q), OF OFFICIAL RECORDS OF SAN MATEO COUNTY, CALIFORNIA, BEING A STRIP OF LAND 30 FEET WIDE, LYING EQUALLY ON EACH SIDE OF THE FOLLOWING DESCRIBED CENTER LINE:

BEGINNING AT A POINT IN THE EASTERLY LINE OF COUNTY ROAD NO. 75, AS WIDENED, KNOWN AS "ALPINE ROAD", SAID LINE ALSO BEING THE WESTERLY BOUNDARY OF THE AFOREMENTIONED LANDS OF HARE, BREWER & KELLEY, INC., SAID POINT BEARING SOUTH 19° 46' EAST ALONG SAID WESTERLY BOUNDARY, A DISTANCE OF 177.00 FEET FROM THE NORTHERLY TERMINUS OF THE COURSE "NORTH 19° 46' WEST 1008.24 FEET", WHICH COURSE FORMS A PORTION OF THE WESTERLY BOUNDARY; THENCE FROM SAID POINT OF BEGINNING, NORTH 70° 14' EAST 208 FEET, MORE OR LESS, TO THE CENTER LINE OF LOS TRANCOS CREEK, SAID CENTER LINE BEING THE DIVIDING LINE BETWEEN SAN MATEO COUNTY AND SANTA CLARA COUNTY.

SAID EASEMENT IS APPURTENANT TO AND FOR THE BENEFIT OF PARCEL ONE ABOVE AND WAS CREATED BY THAT CERTAIN INDENTURE RECORDED FEBRUARY 19, 1971 AS INSTRUMENT NUMBER 83939AD IN BOOK 5899, PAGE 214, OFFICIAL RECORDS OF SAN MATEO COUNTY, CALIFORNIA, AND AS RECORDED FEBRUARY 24, 1971, INSTRUMENT NUMBER 3958734 IN BOOK 9228, PAGE 503, OFFICIAL RECORDS OF SANTA CLARA COUNTY, CALIFORNIA.

CLTA CHAIN OF TITLE

Issued By:

Commonwealth™
LAND TITLE INSURANCE COMPANY

Guarantee Number:

FLNP-TO1800031

SUBJECT TO THE EXCLUSIONS FROM COVERAGE, THE LIMITS OF LIABILITY AND THE CONDITIONS AND STIPULATIONS OF THIS GUARANTEE,

COMMONWEALTH LAND TITLE INSURANCE COMPANY
a corporation, herein called the Company

GUARANTEES

the Assured named in Schedule A against actual monetary loss or damage not exceeding the liability amount stated in Schedule A, which the Assured shall sustain by reason of any incorrectness in the assurances set forth in Schedule A.

Commonwealth Land Title Insurance Company

By:

President

Attest:

Secretary

Lawyers Title Company
675 N. First Street, 4th Fl
San Jose, CA 95112

Countersigned By:

Authorized Officer or Agent

SEAL

COMMONWEALTH LAND TITLE INSURANCE COMPANY

GUARANTEE NO. FLNP-TO1800031

ISSUING OFFICE:
Lawyers Title Company 675 N. First Street, 4th Fl San Jose, CA 95112 Main Phone: (408)436-2700

SCHEDULE A

Liability	Fee	Title Officer
$1,000.00	$200.00	

1. Name of Assured: Volpi-Cupal Family Trust

2. Date of Guarantee: October 4, 2018 at 07:30 AM

The assurances referred to on the face page are:

That, according to those public records which, under the recording laws, impart constructive notice of matters relating to the interest, if any, which was conveyed to

Michelangelo Volpi and Toni C. Cupal, Trustees of the Volpi-Cupal Family Trust dated April 5, 2000

pursuant to a Grant Deed

in and to the land described as follows:

SEE EXHIBIT "A" ATTACHED HERETO AND MADE A PART HEREOF

Only the following matters appear in such records subsequent to August 19, 1958:

NOTES:

1. Document Type: Gift Deed
   Grantor: Dent W. MacDonough and Margaret B. MacDonough, his wife
   Conveyed To: Hare, Brewer & Kelley Inc., a corporation
   Transfer Tax: 0.00
   Recording Date: August 19, 1958
   Recording No.: Book 4153 Page 422

2. Document Type: Grant Deed
   Grantor: Hare, Brewer & Kelley Inc., a corporation
   Conveyed To: Michelangelo Volpi and Toni C. Cupal, Trustees of the Volpi-Cupal Family Trust dated April 5, 2000
   Transfer Tax: 2420.00
   Recording Date: April 21, 2017
   Recording No.: 23630606

This Guarantee does not cover:

1. Taxes, assessments, and matters related thereto.
2. Instruments, proceedings, or other matters which do not specifically describe said land.

SCHEDULE A
(continued)

END OF SCHEDULE A

EXHIBIT "A"
Legal Description

For APN/Parcel ID(s): 142-15-008

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE UNINCORPORATED AREA IN COUNTY OF SANTA CLARA, STATE OF CALIFORNIA AND IS DESCRIBED AS FOLLOWS:

PARCEL ONE:

BEGINNING AT A POINT ON THE EASTERLY LINE OF COUNTY ROAD NO. 75 KNOWN AS "ALPINE ROAD", SAID POINT BEING DISTANT NORTH 70° 14' EAST 80 FEET FROM THE SOUTHERLY EXTREMITY OF THAT CERTAIN COURSE SOUTH 19° 46' EAST 24.35 FEET, WHICH FORMS A PORTION OF THE EASTERLY BOUNDARY LINE OF LOT 4 IN "TRACT NO. 593, WESTRIDGE SUBDIVISION NO. 1 IN UNINCORPORATED TERRITORY, SAN MATEO COUNTY, CALIFORNIA", FILED DECEMBER 4 1947 IN BOOK 28, PAGES 20 TO 23 OF MAPS, IN THE OFFICE OF THE RECORDER OF SAN MATEO COUNTY, STATE OF CALIFORNIA, (FOR THE PURPOSE OF THIS DESCRIPTION THE BEARING OF THE EASTERLY TANGENT LINE OF SAID COUNTY ROAD NO. 75 IS TAKEN TO BE NORTH 19° 46' WEST AND ALL BEARINGS HEREIN MENTIONED ARE RELATED THERETO); RUNNING THENCE ALONG THE EASTERLY LINE OF SAID COUNTY ROAD NO. 75 AS WIDENED, THE FOLLOWING COURSES AND DISTANCES: NORTH 19° 46' WEST 1008.24 FEET, NORTHERLY ALONG THE ARC OF A CURVE TO THE RIGHT, TANGENT TO THE PRECEDING COURSES, WITH A RADIUS OF 1960 FEET, A CENTRAL ANGLE OF 17° 58' 30" A DISTANCE OF 614.90 FEET AND NORTH 1° 47' 30" WEST, TANGENT TO THE PRECEDING CURVE, 1221.79 FEET TO A POINT ON THE EASTERLY LINE OF THAT CERTAIN TRACT OF LAND DESCRIBED IN THE DEED FROM PENINSULA HOUSING ASSOCIATION, INC., A CORPORATION TO THE COUNTY OF SAN MATEO, STATE OF CALIFORNIA, DATED NOVEMBER 4, 1949 AND RECORDED NOVEMBER 22, 1949 IN BOOK 1748 OF OFFICIAL RECORDS AT PAGE 187 (FILE 21552-I), RECORDS OF SAN MATEO COUNTY, CALIFORNIA; THENCE SOUTHERLY, ALONG SAID LINE ON THE ARC OF A CURVE TO THE LEFT, TANGENT TO A LINE WHICH BEARS SOUTH 18° 27' 40" EAST, SAID CURVE HAVING A RADIUS OF 270.00 FEET, A CENTRAL ANGLE OF 1° 58' 20", A DISTANCE OF 9.29 FEET; THENCE SOUTH 20° 26' EAST, ALONG SAID EASTERLY LINE AND THE EASTERLY LINE OF OLD COUNTY ROAD (1917), AS SHOWN ON THE MAP RECORDED AS PART OF THE RESOLUTION ABANDONING OLD COUNTY ROAD, WHICH SAID RESOLUTION WAS RECORDED NOVEMBER 22, 1917, IN BOOK 269 OF DEEDS AT PAGE 194, RECORDS OF SAN MATEO COUNTY, A DISTANCE OF 369.98 FEET AND SOUTH 12° 01' 45" EAST A DISTANCE OF 479.20 FEET TO THE CENTER OF LOS TRANCOS CREEK; THENCE SOUTH 77° 55' WEST, A DISTANCE OF 40.00 FEET; THENCE SOUTH 12° 05' EAST, A DISTANCE OF 54.00 FEET AND SOUTH 6° 18' WEST, A DISTANCE OF 228.41 FEET TO THE NORTHEASTERLY CORNER OF THAT CERTAIN 216.33 ACRE PARCEL OF LAND DESCRIBED AND DESIGNATED "SECOND" IN THE DEED FROM JOHN G. AGAR AND WIFE, TO WILLIAM O. B. MACDONOUGH, RECORDED AUGUST 30, 1909 IN BOOK 168 OF DEEDS AT PAGE 451, RECORDS OF SAN MATEO COUNTY, SAID 216.33 ACRE PARCEL OF LAND ALSO BEING SECONDLY DESCRIBED IN PARCEL 1 OF THE DEED FROM ORMONDALE COMPANY, A CORPORATION, TO JOSEPH M. MACDONOUGH, RECORDED MARCH 20, 1920 IN BOOK 514 OF DEEDS AT PAGE 159, RECORDS OF SANTA CLARA COUNTY; THENCE ALONG THE EASTERLY BOUNDARY LINE OF SAID 216.33 ACRE PARCEL, THE FOLLOWING COURSES AND DISTANCES: SOUTH 3° 02' 30" WEST 190.08 FEET, SOUTH 24° 42' 30" EAST 176.88 FEET, SOUTH 32° 27' 30" EAST 277.20 FEET, SOUTH 38° 12' 30" EAST 484.44 FEET, SOUTH 23° 57' 30" EAST 208.44 FEET, TO A POINT ON A LINE DRAWN PARALLEL WITH AND 30 FEET MEASURED AT RIGHT ANGLES NORTHWESTERLY FROM THE NORTHERLY LINE OF THAT CERTAIN TRACT OF LAND CONTAINING 7 ACRES, MORE OR LESS, DESCRIBED IN THE DEED FROM HENRY BARROLLHET TO J. J. FELT, RECORDED IN BOOK 33 OF DEEDS AT PAGE 112, RECORDS OF SAN MATEO COUNTY AND RECORDED IN BOOK 58 OF DEEDS AT PAGE 344, RECORDS OF SANTA CLARA COUNTY; THENCE SOUTH 26° 41' WEST, ALONG SAID PARALLEL LINE, 602.53 FEET TO A POINT ON THE EASTERLY LINE OF COUNTY ROAD NO. 75 KNOWN AS "ALPINE ROAD"; THENCE NORTHERLY ALONG SAID EASTERLY LINE, ON THE ARC OF A CURVE TO THE LEFT, TANGENT TO A LINE WHICH BEARS NORTH 18° 04' 30" WEST, SAID CURVE HAVING A RADIUS OF 1240.00 FEET, A CENTRAL ANGLE OF 1° 41' 30", A DISTANCE OF 36.61 FEET TO THE POINT OF BEGINNING.

EXCEPTING THEREFROM ALL THAT PORTION THEREOF LYING WITHIN THE BOUNDS OF THE COUNTY OF SAN MATEO AS CONVEYED TO THE TOWN OF PORTOLA VALLEY, A MUNICIPAL CORPORATION BY DEED RECORDED FEBRUARY 19, 1971, INSTRUMENT NUMBER 83938AD IN BOOK 5899, PAGE 211, OFFICIAL RECORDS OF SAN MATEO COUNTY, CALIFORNIA.

PARCEL TWO:

EXHIBIT "A"
Legal Description

A NON-EXCLUSIVE EASEMENT FOR ROAD ACCESS BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

ALL THAT CERTAIN REAL PROPERTY SITUATE IN THE COUNTY OF SAN MATEO, STATE OF CALIFORNIA, DESCRIBED AS FOLLOWS:

PORTION OF THE LANDS OF HARE, BREWER AND KELLEY, INC., AS SAID LANDS ARE DESCRIBED IN A DEED RECORDED IN BOOK 3442, PAGE 395 (67643-Q), OF OFFICIAL RECORDS OF SAN MATEO COUNTY, CALIFORNIA, BEING A STRIP OF LAND 30 FEET WIDE, LYING EQUALLY ON EACH SIDE OF THE FOLLOWING DESCRIBED CENTER LINE:

BEGINNING AT A POINT IN THE EASTERLY LINE OF COUNTY ROAD NO. 75, AS WIDENED, KNOWN AS "ALPINE ROAD", SAID LINE ALSO BEING THE WESTERLY BOUNDARY OF THE AFOREMENTIONED LANDS OF HARE, BREWER & KELLEY, INC., SAID POINT BEARING SOUTH 19° 46' EAST ALONG SAID WESTERLY BOUNDARY, A DISTANCE OF 177.00 FEET FROM THE NORTHERLY TERMINUS OF THE COURSE "NORTH 19° 46' WEST 1008.24 FEET", WHICH COURSE FORMS A PORTION OF THE WESTERLY BOUNDARY; THENCE FROM SAID POINT OF BEGINNING, NORTH 70° 14' EAST 208 FEET, MORE OR LESS, TO THE CENTER LINE OF LOS TRANCOS CREEK, SAID CENTER LINE BEING THE DIVIDING LINE BETWEEN SAN MATEO COUNTY AND SANTA CLARA COUNTY.

SAID EASEMENT IS APPURTENANT TO AND FOR THE BENEFIT OF PARCEL ONE ABOVE AND WAS CREATED BY THAT CERTAIN INDENTURE RECORDED FEBRUARY 19, 1971 AS INSTRUMENT NUMBER 83939AD IN BOOK 5899, PAGE 214, OFFICIAL RECORDS OF SAN MATEO COUNTY, CALIFORNIA, AND AS RECORDED FEBRUARY 24, 1971, INSTRUMENT NUMBER 3958734 IN BOOK 9228, PAGE 503, OFFICIAL RECORDS OF SANTA CLARA COUNTY, CALIFORNIA.

SCHEDULE OF EXCLUSIONS FROM COVERAGE OF THIS GUARANTEE

1. Except to the extent that specific assurances are provided in Schedule A of this Guarantee, the Company assumes no liability for loss or damage by reason of the following:
   (a) Defects, liens, encumbrances, adverse claims or other matters against the title, whether or not shown by the public records.
   (b) (1) Taxes or assessments of any taxing authority that levies taxes or assessments on real property; or (2) Proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not the matters excluded under (1) or (2) are shown by the records of the taxing authority or by the public records.
   (c) (1) Unpatented mining claims; (2) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (3) water rights, claims or title to water, whether or not the matters excluded under (1), (2) or (3) are shown by the public records.
2. Notwithstanding any specific assurances which are provided in Schedule A of this Guarantee, the Company assumes no liability for loss or damage by reason of the following:
   (a) Defects, liens, encumbrances, adverse claims or other matters affecting the title to any property beyond the lines of the land expressly described in the description set forth in Schedule (A) of this Guarantee, or title to streets, roads, avenues, lanes, ways or waterways to which such land abuts, or the right to maintain therein vaults, tunnels, ramps or any structure or improvements; or any rights or easements therein, unless such property, rights or easements are expressly and specifically set forth in said description.
   (b) Defects, liens, encumbrances, adverse claims or other matters, whether or not shown by the public records; (1) which are created, suffered, assumed or agreed to by one or more of the Assureds; (2) which result in no loss to the Assured; or (3) which do not result in the invalidity or potential invalidity of any judicial or non-judicial proceeding which is within the scope and purpose of the assurances provided.
   (c) The identity of any party shown or referred to in Schedule A.
   (d) The validity, legal effect or priority of any matter shown or referred to in this Guarantee.

GUARANTEE CONDITIONS AND STIPULATIONS

1. DEFINITION OF TERMS

The following terms when used in the Guarantee mean:

(a) the "Assured": the party or parties named as the Assured in this Guarantee, or on a supplemental writing executed by the Company.
(b) "land": the land described or referred to in Schedule A and improvements affixed thereto which by law constitute real property. The term "land" does not include any property beyond the lines of the area described or referred to in Schedule A, nor any right, title, interest, estate or easement in abutting streets, roads, avenues, alleys, lanes, ways or waterways.
(c) "mortgage": mortgage, deed of trust, trust deed, or other security instrument.
(d) "public records": records established under state statutes at Date of Guarantee for the purpose of imparting constructive notice of matters relating to real property to purchasers for value and without knowledge.
(e) "date": the effective date.

2. NOTICE OF CLAIM TO BE GIVEN BY ASSURED CLAIMANT

An Assured shall notify the Company promptly in writing in case knowledge shall come to an Assured hereunder of any claim of title or interest which is adverse to the title to the estate or interest, as stated herein, and which might cause loss or damage for which the Company may be liable by virtue of this Guarantee. If prompt notice shall not be given to the Company, then all liability of the Company shall terminate with regard to the matter or matters for which prompt notice is required; provided, however, that failure to notify the Company shall in no case prejudice the rights of any Assured under this Guarantee unless the Company shall be prejudiced by the failure and then only to the extent of the prejudice.

3. NO DUTY TO DEFEND OR PROSECUTE

The Company shall have no duty to defend or prosecute any action or proceeding to which the Assured is a party, notwithstanding the nature of any allegation in such action or proceeding.

4. COMPANY'S OPTION TO DEFEND OR PROSECUTE ACTIONS; DUTY OF ASSURED CLAIMANT TO COOPERATE

Even though the Company has no duty to defend or prosecute as set forth in Paragraph 3 above:

(a) The Company shall have the right, at its sole option and cost, to institute and prosecute any action or proceeding, interpose a defense, as limited in (b), or to do any other act which in its opinion may be necessary or desirable to establish the title to the estate or interest as stated herein, or to establish the lien rights of the Assured, or to prevent or reduce loss or damage to the Assured. The Company may take any appropriate action under the terms of this Guarantee, whether or not it shall be liable hereunder, and shall not thereby concede liability or waive any provision of this Guarantee. If the Company shall exercise its rights under this paragraph, it shall do so diligently.
(b) If the Company elects to exercise its options as stated in Paragraph 4(a) the Company shall have the right to select counsel of its choice (subject to the right of such Assured to object for reasonable cause) to represent the Assured and shall not be liable for and will not pay the fees of any other counsel, nor will the Company pay any fees, costs or expenses incurred by an Assured in the defense of those causes of action which allege matters not covered by this Guarantee.
(c) Whenever the Company shall have brought an action or interposed a defense as permitted by the provisions of this Guarantee, the Company may pursue any litigation to final determination by a court of competent jurisdiction and expressly reserves the right, in its sole discretion, to appeal from an adverse judgment or order.

(d) In all cases where this Guarantee permits the Company to prosecute or provide for the defense of any action or proceeding, an Assured shall secure to the Company the right to so prosecute or provide for the defense of any action or proceeding, and all appeals therein, and permit the Company to use, at its option, the name of such Assured for this purpose. Whenever requested by the Company, an Assured, at the Company's expense, shall give the Company all reasonable aid in any action or proceeding, securing evidence, obtaining witnesses, prosecuting or defending the action or lawful act which in the opinion of the Company may be necessary or desirable to establish the title to the estate or interest as stated herein, or to establish the lien rights of the Assured. If the Company is prejudiced by the failure of the Assured to furnish the required cooperation, the Company's obligations to the Assured under the Guarantee shall terminate.

5. PROOF OF LOSS OR DAMAGE

In addition to and after the notices required under Section 2 of these Conditions and Stipulations have been provided to the Company, a proof of loss or damage signed and sworn to by the Assured shall be furnished to the Company within ninety (90) days after the Assured shall ascertain the facts giving rise to the loss or damage. The proof of loss or damage shall describe the matters covered by this Guarantee which constitute the basis of loss or damage and shall state, to the extent possible, the basis of calculating the amount of the loss or damage. If the Company is prejudiced by the failure of the Assured to provide the required proof of loss or damage, the Company's obligation to such assured under the Guarantee shall terminate. In addition, the Assured may reasonably be required to submit to examination under oath by any authorized representative of the Company and shall produce for examination, inspection and copying, at such reasonable times and places as may be designated by any authorized representative of the Company, all records, books, ledgers, checks, correspondence and memoranda, whether bearing a date before or after Date of Guarantee, which reasonably pertain to the loss or damage. Further, if requested by any authorized representative of the Company, the Assured shall grant its permission, in writing, for any authorized representative of the Company to examine, inspect and copy all records, books, ledgers, checks, correspondence and memoranda in the custody or control of a third party, which reasonably pertain to the loss or damage. All information designated as confidential by the Assured provided to the Company pursuant to this Section shall not be disclosed to others unless, in the reasonable judgment of the Company, it is necessary in the administration of the claim. Failure of the Assured to submit for examination under oath, produce other reasonably requested information or grant permission to secure reasonably necessary information from third parties as required in the above paragraph, unless prohibited by law or governmental regulation, shall terminate any liability of the Company under this Guarantee to the Assured for that claim.

6. OPTIONS TO PAY OR OTHERWISE SETTLE CLAIMS: TERMINATION OF LIABILITY

In case of a claim under this Guarantee, the Company shall have the following additional options:

(a) To Pay or Tender Payment of the Amount of Liability or to Purchase the Indebtedness.

The Company shall have the option to pay or settle or compromise for or in the name of the Assured any claim which could result in loss to the Assured within the coverage of this Guarantee, or to pay the full amount of this Guarantee or, if this Guarantee is issued for the benefit of a holder of a mortgage or a lienholder, the Company shall have the option to purchase the indebtedness secured by said mortgage or said lien for the amount owing thereon, together with any costs, reasonable attorneys' fees and expenses incurred by the Assured claimant which were authorized by the Company up to the time of purchase.

Such purchase, payment or tender of payment of the full amount of the Guarantee shall terminate all liability of the Company hereunder. In the event after notice of claim has been given to the Company by the Assured the Company offers to purchase said indebtedness, the owner of such indebtedness shall transfer and assign said indebtedness, together with any collateral security, to the Company upon payment of the purchase price.

Upon the exercise by the Company of the option provided for in Paragraph (a) the Company's obligation to the Assured under this Guarantee for the claimed loss or damage, other than to make the payment required in that paragraph, shall terminate, including any obligation to continue the defense or prosecution of any litigation for which the Company has exercised its options under Paragraph 4, and the Guarantee shall be surrendered to the Company for cancellation.

(b) To Pay or Otherwise Settle With Parties Other Than the Assured or With the Assured Claimant.

To pay or otherwise settle with other parties for or in the name of an Assured claimant any claim assured against under this Guarantee, together with any costs, attorneys' fees and expenses incurred by the Assured claimant which were authorized by the Company up to the time of payment and which the Company is obligated to pay.

Upon the exercise by the Company of the option provided for in Paragraph (b) the Company's obligation to the Assured under this Guarantee for the claimed loss or damage, other than to make the payment required in that paragraph, shall terminate, including any obligation to continue the defense or prosecution of any litigation for which the Company has exercised its options under Paragraph 4.

7. DETERMINATION AND EXTENT OF LIABILITY

This Guarantee is a contract of indemnity against actual monetary loss or damage sustained or incurred by the Assured claimant who has suffered loss or damage by reason of reliance upon the assurances set forth in this Guarantee and only to the extent herein described, and subject to the Exclusions From Coverage of This Guarantee.

The liability of the Company under this Guarantee to the Assured shall not exceed the least of:

(a) the amount of liability stated in Schedule A or in Part 2;

(b) the amount of the unpaid principal indebtedness secured by the mortgage of an Assured mortgagee, as limited or provided under Section 6 of these Conditions and Stipulations or as reduced under Section 9 of these Conditions and Stipulations, at the time the loss or damage assured against by this Guarantee occurs, together with interest thereon; or

(c) the difference between the value of the estate or interest covered hereby as stated herein and the value of the estate or interest subject to any defect, lien or encumbrance assured against by this Guarantee.

8. LIMITATION OF LIABILITY

(a) If the Company establishes the title, or removes the alleged defect, lien or encumbrance, or cures any other matter assured against by this Guarantee in a reasonably diligent manner by any method, including litigation and the completion of any appeals therefrom, it shall have fully performed its obligations with respect to that matter and shall not be liable for any loss or damage caused thereby.

(b) In the event of any litigation by the Company or with the Company's consent, the Company shall have no liability for loss or damage until there has been a final determination by a court of competent jurisdiction, and disposition of all appeals therefrom, adverse to the title, as stated herein

(c) The Company shall not be liable for loss or damage to any Assured for liability voluntarily assumed by the Assured in settling any claim or suit without the prior written consent of the Company

9. REDUCTION OF LIABILITY OR TERMINATION OF LIABILITY

All payments under this Guarantee, except payments made for costs, attorneys' fees and expenses pursuant to Paragraph 4 shall reduce the amount of liability pro tanto

10. PAYMENT OF LOSS

(a) No payment shall be made without producing this Guarantee for endorsement of the payment unless the Guarantee has been lost or destroyed, in which case proof of loss or destruction shall be furnished to the satisfaction of the Company

(b) When liability and the extent of loss or damage has been definitely fixed in accordance with these Conditions and Stipulations, the loss or damage shall be payable within thirty (30) days thereafter

11. SUBROGATION UPON PAYMENT OR SETTLEMENT

Whenever the Company shall have settled and paid a claim under this Guarantee, all right of subrogation shall vest in the Company unaffected by any act of the Assured claimant.

The Company shall be subrogated to and be entitled to all rights and remedies which the Assured would have had against any person or property in respect to the claim had this Guarantee not been issued. If requested by the Company, the Assured shall transfer to the Company all rights and remedies against any person or property necessary in order to perfect this right of subrogation. The Assured shall permit the Company to sue, compromise or settle in the name of the Assured and to use the name of the Assured in any transaction or litigation involving these rights or remedies.

If a payment on account of a claim does not fully cover the loss of the Assured the Company shall be subrogated to all rights and remedies of the Assured after the Assured shall have recovered its principal, interest, and costs of collection.

12. ARBITRATION

Unless prohibited by applicable law, either the Company or the Assured may demand arbitration pursuant to the Title Insurance Arbitration Rules of the American Land Title Association.

Arbitrable matters may include, but are not limited to, any controversy or claim between the Company and the Assured arising out of or relating to this Guarantee, any service of the Company in connection with its issuance or the breach of a Guarantee provision or other obligation. All arbitrable matters when the Amount of Liability is One Million And No/100 Dollars ($1,000,000) or less shall be arbitrated at the option of either the Company or the Assured. All arbitrable matters when the amount of liability is in excess of One Million And No/100 Dollars ($1,000,000) shall be arbitrated only when agreed to by both the Company and the Assured. The Rules in effect at Date of Guarantee shall be binding upon the parties. The award may include attorneys' fees only if the laws of the state in which the land is located permits a court to award attorneys' fees to a prevailing party. Judgment upon the award rendered by the Arbitrator(s) may be entered in any court having jurisdiction thereof.

The law of the situs of the land shall apply to an arbitration under the Title Insurance Arbitration Rules.

A copy of the Rules may be obtained from the Company upon request.

13. LIABILITY LIMITED TO THIS GUARANTEE; GUARANTEE ENTIRE CONTRACT

(a) This Guarantee together with all endorsements, if any, attached hereto by the Company is the entire Guarantee and contract between the Assured and the Company. In interpreting any provision of this Guarantee, this Guarantee shall be construed as a whole.

(b) Any claim of loss or damage, whether or not based on negligence, or any action asserting such claim, shall be restricted to this Guarantee.

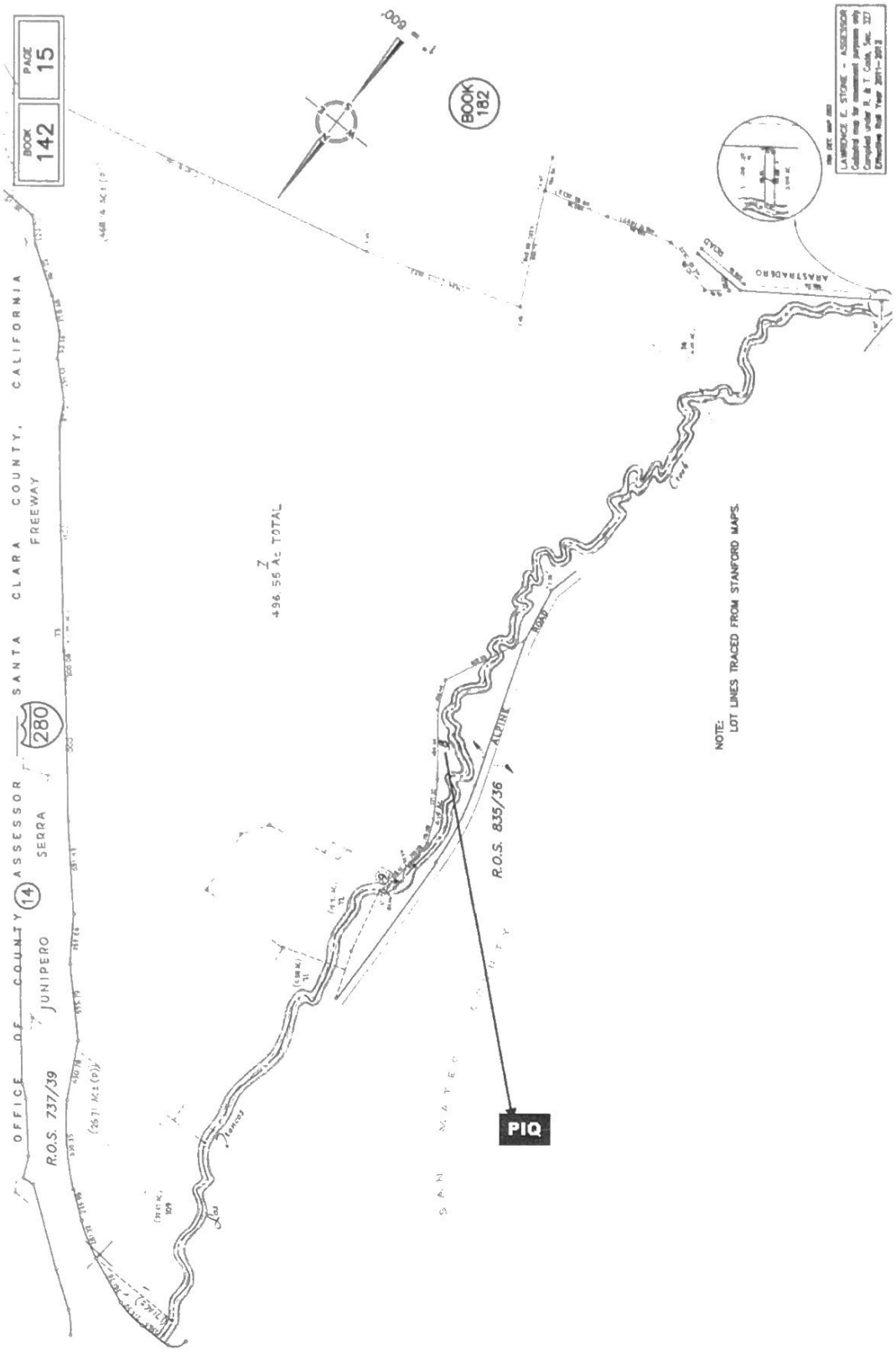
(c) No amendment of or endorsement to this Guarantee can be made except by a writing endorsed hereon or attached hereto signed by either the President, a Vice President, the Secretary, an Assistant Secretary, or validating officer or authorized signatory of the Company.

14. NOTICES, WHERE SENT

All notices required to be given the Company and any statement in writing required to be furnished the Company shall include the number of this Guarantee and shall be addressed to the Company at:

Commonwealth Land Title Insurance Company
P.O. Box 45023
Jacksonville, FL 32232-5023
Attn: Claims Administration

END OF CONDITIONS AND STIPULATIONS



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No Revenue Stamps placed on Deed recorded in San Mateo County

GRANT DEED

DEWT W. MacDONOUGH and MARGARET B. MacDONOUGH, his wife,

GRANT TO

HARE, BREWER & KELLEY, INC., a corporation,

All that certain real property situate partly in the County of San Mateo and partly in the County of Santa Clara, State of California, described as follows:

BEGINNING at a point on the easterly line of County Road No. 75, known as "Alpine Road", said point being distant North 70° 14' East 80 feet from the southerly extremity of that certain course "South 19° 46' East 24.35 feet", which forms a portion of the easterly boundary line of Lot 4 in "Tract No. 593 Westridge Subdivision No. 1 in Unincorporated Territory, San Mateo County, California", filed December 4, 1947 in Book 28 of Maps at pages 20, 21 and 22, in the office of the Recorder of the County of San Mateo, State of California (for the purpose of this description the bearing of the easterly tangent line of said County Road No. 75 is taken to be North 19° 46' West and all bearings herein mentioned are related thereto); running thence along the easterly line of said County Road No. 75, as widened, the following courses and distances; North 19° 46' West 1008.24 feet, northerly along the arc of a curve to the right, tangent to the preceding course, with a radius of 1960 feet, a central angle of 17° 58' 30", a distance of 614.90 feet and North 1° 47' 30" West, tangent to the preceding curve, 1221.79 feet to a point on the easterly line of that certain tract of land described in Deed from Peninsula Housing Association, Inc., a corporation to the County of San Mateo, State of California, dated November 4, 1949 and recorded November 22, 1949 in Book 1748 of Official Records at page 187 (File 21552-I), Records of San Mateo County, California; thence southerly, along said line on the arc of a curve to the left, tangent to a line which bears South 18° 27' 40" East, said curve having a radius of 270.00 feet, a central angle of 1° 58' 20", a distance of 9.29 feet; thence South 20° 26' East, along said easterly line and the easterly line of Old County Road (1917), as shown on the map recorded as part of the Resolution Abandoning Old County Road, which said Resolution was recorded November 22, 1917, in Book 269 of Deeds at page 194, Records of San Mateo County, a distance of 369.98 feet and South 12° 01' 45" East a distance of 479.20 feet to the center of Los Trancos Creek; thence South 77° 55' West, a distance of 40.00 feet; thence South 12° 05' East, a distance of 54.00 feet and South 6° 18' West, a distance of 228.41 feet to the northeasterly corner of that certain 216.33 acre parcel of land described and designated "SECOND" in the Deed from John G. Agar and wife, to William O. E. MacDonough, recorded August 30, 1909 in Book 168 of Deeds at page 451, Records of San Mateo County, said 216.33 acre parcel of land also being secondly described in Parcel 1 of the Deed from Ormondale Company, a corporation, to

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Joseph H. Macdonough, recorded March 20, 1920 in Book 514 of Deeds at page 159, Records of Santa Clara County; thence along the easterly boundary line of said 216.33 acre parcel, the following courses and distances: South 3° 02' 30" West 190.08 feet, South 24° 22' 30" East 176.88 feet, South 32° 27' 30" East 277.20 feet, South 34° 12' 30" East 484.44 feet, South 23° 57' 30" East 208.44 feet, to a point on a line drawn parallel with and 30 feet measured at right angles northwesterly from the northerly line of that certain tract of land containing 7 acres, more or less, described in the Deed from Henry Darrollhet to J. J. Felts, recorded in Book 33 of Deeds at page 122, Records of San Mateo County and recorded in Book 58 of Deeds at page 344, Records of Santa Clara County; thence South 26° 41' West, along said parallel line, 602.53 feet to a point on the easterly line of County Road No. 75 known as "Alpine Road"; thence northerly along said easterly line, on the arc of a curve to the left, tangent to a line which bears North 18° 04' 30" West, said curve having a radius of 1240.00 feet, a central angle of 1° 41' 30", a distance of 36.61 feet to the point of beginning."

Dated August 15-1947

Louis H. Macdonough

Margaret B. Macdonough

State of California } ss
City and County of San Francisco }

On August 15/947 before me, Irene Lonergan

a Notary Public in and for said City and County and State, personally appeared DENT W. Mac DONOUGH MARGARET B. MacDONOUGH

known to me to be the persons whose names are subscribed to the within instrument and acknowledge that they executed the same.

(Seal)

Irene Lonergan
Notary Puclic

My Commission Expires: Jan 9, 1959

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FILED FOR RECORD
AT REQUEST OF
California Pacific Title Insurance Co.
Aug 19 2 30 PM 1958
OFFICIAL RECORDS
SANTA CLARA COUNTY

281

HAZARDOUS WASTE AND SUBSTANCE SITES LIST QUESTIONNAIRE

(AB 3750 - Cortese Bill)

TO BE FILLED OUT AT COUNTER UPON SUBMITTAL OF APPLICATION

Applicant Name: Toni Cupal **APN(s):** 142-15-003

Is the proposed development property listed in the Office of Planning and Research Hazardous Waste and Substance Sites List? **Yes** ☐ **No** ☒

If "yes," complete the following:

Site: _____ Page: _____

Address: _____

_____

I certify that I have reviewed the Hazardous Waste and Substance Sites List, dated April 1998, and, to the best of my knowledge, the above information is correct.

Signature: _____ **Date:** 11/6/18

Santa Clara Valley Water District

WELL INFORMATION QUESTIONNAIRE

FC 808 (11-26-14)

TO BE FILLED OUT AT COUNTER AND MAILED BY CITY/COUNTY OFFICIAL

PRINT Applicant's Name: Toni Cupal Phone: (650) 380-4337

Project Address: 3343 Alpine Road City: Portola Valley

Assessor's Parcel No.: Book 142 Page 15 Parcel 008

Type of Planned Activity: construction of a single family residence.

Is there a well(s) located on your project site: ☐ Yes ☒ No

If yes, type of well: ☐ Water Well ☐ Monitoring Well ☐ Dry Well ☐ Other: (Explain)

Is the well(s) active (in use)? ☐ Yes ☐ No

Will your proposed permit activity affect your well site? ☐ Yes ☐ No

Comments: No wells are located on the project site.

For further information, please contact the Santa Clara Valley Water District Well Ordinance Program, (408) 630-2660.

INFORMATION RECEIVED BY: **FOR OFFICIAL USE ONLY**

Name of City/County Representative: City/County Project File No.:

Name of City/County: Date:

Santa Clara Valley Water District

WELL INFORMATION QUESTIONNAIRE

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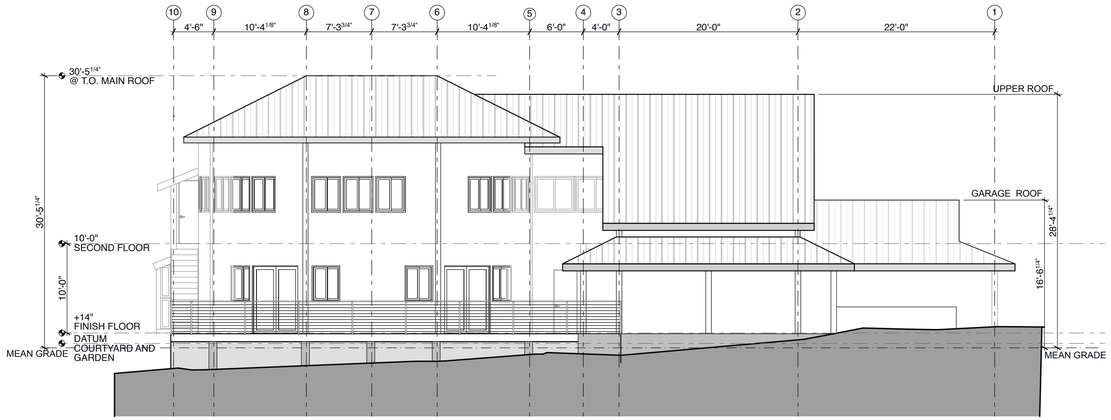
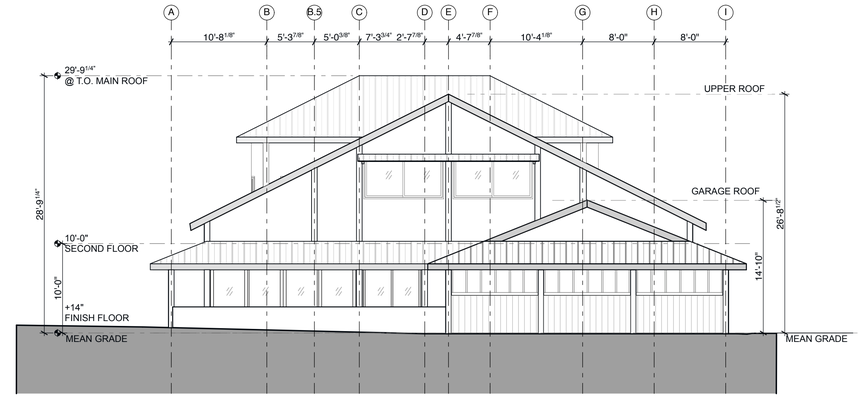


3 **EAST ELEVATION** 1/8" = 1'-0"



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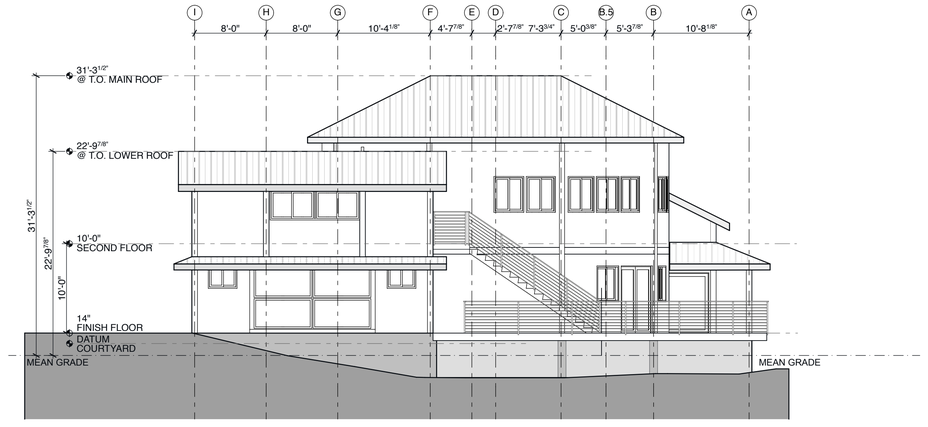

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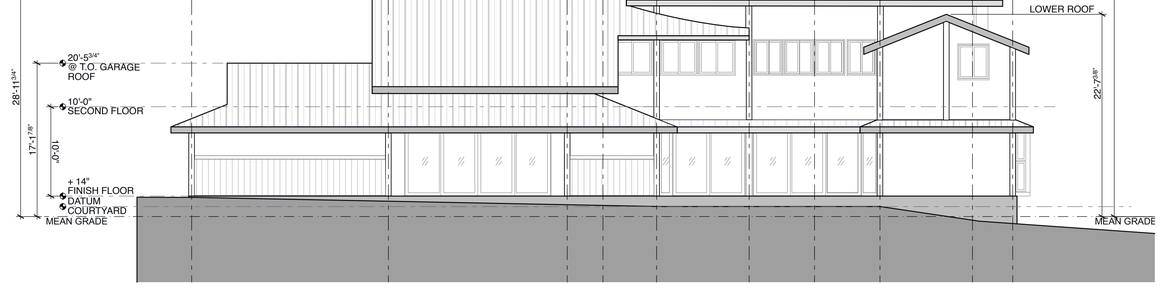

2 **WEST ELEVATION** 1/8" = 1'-0"

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CUPAL RESIDENCE

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STRUCTURAL ENGINEER

MECHANICAL, ELECTRICAL, PLUMBING CONSULTANT

CONTRACTOR

NOT FOR REGULATORY APPROVAL, PERMITTING, OR CONSTRUCTION

ISSUED:
SCHEMATIC PROGRAMING: 10/27/17
PRELIMINARY SITE PLAN: 11/15/17
REVISED SITE PLAN AND FLOOR PLAN R-2: 07/26/18
REVISED SITE PLAN AND FLOOR PLAN R-3: 09/_/18
Printed: 9/21/18

PROPOSED ELEVATIONS

A2.01

Printed: 9/21/18

3343 Alpine Road, Portola Valley, CA
Biological Resources Evaluation

Prepared for:
Toni Cupal
2 Cedar lane
Woodside, CA 94062

Prepared by:
MIG
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San Jose, CA 95134
(650) 400-5767

September 2018

Project Number: 16124

Table of Contents

List of Abbreviated Terms

AMM	Avoidance and Minimization Measures
BMP	Best Management Practice
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CESA	California Endangered Species Act
CEQA	California Environmental Quality Act
CFP	California Fully Protected Species
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRLF	California Red-legged Frog
CSSC	California Species of Special Concern
CWA	Clean Water Act
FESA	Federal Endangered Species Act
HCP	Habitat Conservation Plan
LSAA	Lake and Streambed Alteration Agreement
MBTA	Migratory Bird Treaty Act
NCCP	Natural Community Conservation Plan
NOAA Fisheries Service	National Oceanic and Atmospheric Administrations' National Marine Fisheries Service
NPPA	Native Plant Protection Act
RWQCB	Regional Water Quality Control Board
SFGS	San Francisco garter snake
U.S.	United States
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service

1 Introduction and Summary

This report presents an evaluation of biological resources evaluation for the construction of a single-family residence at 3343 Alpine Road in Santa Clara County, California (project). The purpose of this evaluation is to identify potential sensitive biological resources within or nearby the project site and identify potential impacts to those resources resulting from the project. This report provides:

- an overview of the project
- a list of the federal, state, and local regulations that pertain to the project
- a description of the environmental conditions at the project site, including vegetation communities and associated wildlife habitats present
- a discussion of special-status plant and animal species and sensitive communities that are known to occur or that could potentially occur at the project site
- an evaluation of the potential impacts to biological resources that may occur due to the project
- recommendations to avoid or minimize impacts to biological resources as needed to ensure that the project remains in compliance will all applicable federal, state, and local regulatory requirements and responses to the California Environmental Quality Act (CEQA) Guidelines Appendix G questions related to biological resources
- recommendations to avoid or minimize impacts to biological resources, as needed, to ensure that the project remains in compliance will all applicable federal, state, and local regulatory requirements.

The project site potentially supports several sensitive biological resources that the project could impact. Avoidance and minimization measures are recommended to be included in the project plans to avoid significant biological impacts.

2 Project Location and Description

The proposed project includes the construction of a single-family residence, parking area/fire truck hammerhead, and installation of utilities in a 0.48-acre area (project footprint) of the 4.2-acre parcel adjacent to Los Trancos Creek in unincorporated Santa Clara County (APN 142-15-008; Appendix A, Figure 1). The parcel is accessed via a bridge that spans Los Trancos Creek and is accessed by an easement off Alpine Road in Portola Valley, California, which is located in San Mateo County. Alpine Trail, a 7.6-mile multi-use trail that loosely follows Alpine Road between Menlo Park and Portola Valley is nearby. Los Trancos Creek defines the boundary between San Mateo and Santa Clara County.

3 Regulatory Setting

Biological resources in California are protected under federal, state, and local laws. The laws that may pertain to the biological resources found on the project site include the following:

3.1 Federal Endangered Species Act

The Federal Endangered Species Act of 1973 (FESA), as amended, provides the regulatory framework for the protection of plant and animal species (and their associated critical habitats), which are formally listed, proposed for listing, or candidates for listing as endangered or threatened under FESA. FESA has the following four major components: (1) provisions for listing species, (2) requirements for consultation with the United States (U.S.) Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries Service), (3) prohibitions against "taking" (i.e., harassing, harming, hunting, shooting, wounding, killing, trapping, capturing, or collecting, or attempting to engage in any such conduct) of listed species, and (4) provisions for permits that allow incidental "take". FESA also discusses recovery plans and the designation of critical habitat for listed species. Both the USFWS and NOAA Fisheries Service share the responsibility for administration of FESA. During the NEPA review process, each agency is given the opportunity to comment on the potential of a proposed project to affect plants and animals listed, proposed for listing, or candidate for listing.

3.2 U.S. Migratory Bird Treaty Act

The U.S. Migratory Bird Treaty Act (MBTA; 16 USC §§ 703 et seq., Title 50 Code of Federal Regulations [CFR] Part 10) states it is "unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, kill; attempt to take, capture or kill; possess, offer for sale, sell, offer to barter, barter, offer to purchase, purchase, deliver for shipment, ship, export, import, cause to be shipped, exported, or imported, deliver for transportation, transport or cause to be transported, carry or cause to be carried, or receive for shipment, transportation, carriage, or export any migratory bird, any part, nest, or egg of any such bird, or any product, whether or not manufactured, which consists, or is composed in whole or in part, of any such bird or any part, nest or egg thereof…" In short, under the MBTA it is illegal to disturb a nest that is in active use, since this could result in killing a bird, destroying a nest, or destroying an egg. The United States Fish and Wildlife Service (USFWS) enforces the MBTA. It does not protect all birds that are non-native or human-introduced or that belong to families that are not covered by any of the conventions implemented by the MBTA.

3.3 Clean Water Act

The Clean Water Act (CWA) is the primary federal law regulating water quality. The implementation of the CWA is the responsibility of the U.S. Environmental Protection Agency (EPA). However, the EPA depends on other agencies, such as the individual states and the U.S. Army Corps of Engineers (USACE), to assist in implementing the CWA. The objective of the CWA is to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters." Section 404 and 401 of the CWA apply to activities that would impact waters

of the U.S. The USACE enforces Section 404 of the CWA and the California State Water Resources Control Board enforces Section 401.

3.3.1 Section 404

As part of its mandate under Section 404 of the CWA, the EPA regulates the discharge of dredged or fill material into "waters of the U.S.". "Waters of the U.S." include territorial seas, tidal waters, and non-tidal waters in addition to wetlands and drainages that support wetland vegetation, exhibit ponding or scouring, show obvious signs of channeling, or have discernible banks and high-water marks. Wetlands are defined as those areas "that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3(b)). The discharge of dredged or fill material into waters of the U.S. is prohibited under the CWA except when it is in compliance with Section 404 of the CWA. Enforcement authority for Section 404 was given to the USACE, which it accomplishes under its regulatory branch. The EPA has veto authority over the USACE's administration of the Section 404 program and may override a USACE decision with respect to permitting.

Substantial impacts to waters of the U.S. may require an Individual Permit. Projects that only minimally affect waters of the U.S. may meet the conditions of one of the existing Nationwide Permits, provided that such permits' other respective conditions are satisfied. A Water Quality Certification or waiver pursuant to Section 401 of the CWA is required for Section 404 permit actions.

3.3.2 Section 401

Any applicant for a federal permit to impact waters of the U.S. under Section 404 of the CWA, including Nationwide Permits where pre-construction notification is required, must also provide to the USACE a certification or waiver from the State of California. The "401 Certification" is provided by the State Water Resources Control Board through the local Regional Water Quality Control Board (RWQCB).

The RWQCB issues and enforces permits for discharge of treated water, landfills, storm-water runoff, filling of any surface waters or wetlands, dredging, agricultural activities and wastewater recycling. The RWQCB recommends the "401 Certification" application be made at the same time that any applications are provided to other agencies, such as the USACE, USFWS, or NOAA Fisheries. The application is not final until completion of environmental review under the CEQA. The application to the RWQCB is similar to the pre-construction notification that is required by the USACE. It must include a description of the habitat that is being impacted, a description of how the impact is proposed to be minimized and proposed mitigation measures with goals, schedules, and performance standards. Mitigation must include a replacement of

functions and values, and replacement of wetland at a minimum ratio of 2:1, or twice as many acres of wetlands provided as are removed. The RWQCB looks for mitigation that is on site and in-kind, with functions and values as good as or better than the water-based habitat that is being removed.

3.4 California Environmental Quality Act

The California Environmental Quality Act (Public Resources Code Sections 21000 et. seq.) requires public agencies to review activities which may affect the quality of the environment so that consideration is given to preventing damage to the environment. When a lead agency issues a permit for development that could affect the environment, it must disclose the potential environmental effects of the project. This is done with an "Initial Study and Negative Declaration" (or Mitigated Negative Declaration) or with an "Environmental Impact Report". Certain classes of projects are exempt from detailed analysis under CEQA.

CEQA Guidelines Section 15380 defines endangered, threatened, and rare species for purposes of CEQA and clarifies that CEQA review extends to other species that are not formally listed under the state or federal ESAs but that meet specified criteria. The state maintains a list of sensitive, or "special-status", biological resources, including those listed by the state or federal government or the California Native Plant Society (CNPS) as endangered, threatened, rare or of special concern due to declining populations. During CEQA analysis for a proposed project, the California Natural Diversity Data Base (CNDDB) is usually consulted. CNDDB relies on information provided by the California Department of Fish and Wildlife (CDFW), USFWS, and CNPS, among others. Under CEQA, the lists kept by these and any other widely recognized organizations are considered when determining the impact of a project.

3.5 California Fish and Game Code

3.5.1 California Endangered Species Act

The California Endangered Species Act (CESA; Fish and Game Code 2050 et seq.) generally parallels the federal Endangered Species Act. It establishes the policy of the State to conserve, protect, restore, and enhance threatened or endangered species and their habitats. Section 2080 of the California Fish and Game Code prohibits the take, possession, purchase, sale, and import or export of endangered, threatened, or candidate species, unless otherwise authorized by permit or by the regulations. "Take" is defined in Section 86 of the California Fish and Game Code as to "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." This definition differs from the definition of "take" under FESA. CESA is administered by CDFW. CESA allows for take incidental to otherwise lawful projects but mandates that State lead agencies consult with the CDFW to ensure that a project would not jeopardize the continued existence of threatened or endangered species.

3.5.2 California Fish and Game Code Sections 1600-1607

Sections 1600-1607 of the California Fish and Game Code require that a Notification of Lake or Streambed Alteration Agreement (LSAA) application be submitted to CDFW for "any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake." CDFW reviews the proposed actions in the application and, if necessary, prepares a Lake or Streambed Alteration Agreement that includes measures to protect affected fish and wildlife resources, including mitigation for impacts to bats and bat habitat.

3.5.3 Native Plant Protection Act

The Native Plant Protection Act (NPPA) was created in 1977 with the intent to preserve, protect, and enhance rare and endangered plants in California (California Fish and Game Code sections 1900 to 1913). The NPPA is administered by CDFW, which has the authority to designate native plants as endangered or rare and to protect them from "take." CDFW maintains a list of plant species that have been officially classified as endangered, threatened or rare. These special-status plants have special protection under California law and projects that directly impact them may not qualify for a categorical exemption under CEQA guidelines.

3.5.4 Fully Protected Species and Species of Special Concern

The classification of California fully protected (CFP) species was the CDFW's initial effort to identify and provide additional protection to those animals that were rare or faced possible extinction. Lists were created for fish, amphibians and reptiles, birds, and mammals. Most of the species on these lists have subsequently been listed under CESA and/or FESA. The Fish and Game Code sections (§5515 for fish, §5050 for amphibian and reptiles, §3511 for birds, §4700 for mammals) deal with CFP species and state that these species "…may not be taken or possessed at any time and no provision of this code or any other law shall be construed to authorize the issuance of permits or licenses to take any fully protected species" (CDFW Fish and Game Commission 1998). "Take" of these species may be authorized for necessary scientific research. This language makes the CFP designation the strongest and most restrictive regarding the "take" of these species. In 2003, the code sections dealing with CFP species were amended to allow the CDFW to authorize take resulting from recovery activities for state-listed species.

California species of special concern (CSSC) are broadly defined as animals not listed under the FESA or CESA, but which are nonetheless of concern to the CDFW because they are declining at a rate that could result in listing, or historically occurred in low numbers and known threats to their persistence currently exist. This designation is intended to result in special consideration for these animals by the CDFW, land managers, consulting biologists, and others, and is intended to focus attention on the species to help avert the need for costly listing under FESA and CESA and cumbersome recovery efforts that might ultimately be required. This

designation also is intended to stimulate collection of additional information on the biology, distribution, and status of poorly known at-risk species, and focus research and management attention on them. Although these species generally have no special legal status, they are given special consideration under CEQA during project review.

3.5.5 Nesting Birds

Nesting birds, including raptors, are protected under California Fish and Game Code Section 3503, which reads, “It is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto.” In addition, under California Fish and Game Code Section 3503.5, “it is unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto”. Passerines and non-passerine land birds are further protected under California Fish and Game Code 3513. As such, CDFW typically recommends surveys for nesting birds that could potentially be directly (e.g., actual removal of trees/vegetation) or indirectly (e.g., noise disturbance) impacted by project-related activities. Disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered “take” by CDFW.

3.5.6 Non-Game Mammals

Sections 4150-4155 of the California Fish and Game Code protects non-game mammals, including bats. Section 4150 states “A mammal occurring naturally in California that is not a game mammal, fully protected mammal, or fur-bearing mammal is a nongame mammal. A non-game mammal may not be taken or possessed except as provided in this code or in accordance with regulations adopted by the commission”. The non-game mammals that may be taken or possessed are primarily those that cause crop or property damage. Bats are classified as a non-game mammal and are protected under California Fish and Game Code.

3.6 Sensitive Vegetation Communities

Sensitive vegetation communities are natural communities and habitats that are either unique in constituent components, of relatively limited distribution in the region, or of particularly high wildlife value. These communities may or may not necessarily contain special-status species. Sensitive natural communities are usually identified in local or regional plans, policies or regulations, or by the CDFW (i.e., CNDDB) or the USFWS. The CNDDB identifies a number of natural communities as rare, which are given the highest inventory priority (Holland 1986; CDFW 2016). Impacts to sensitive natural communities and habitats must be considered and evaluated under the CEQA (CCR: Title 14, Div. 6, Chap. 3, Appendix G).

3.7 Porter-Cologne Water Quality Control Act

The intent of the Porter-Cologne Water Quality Control Act is to protect water quality and the beneficial uses of water, and it applies to both surface and ground water. Under this law, the State Water Resources Control Board develops statewide water quality plans, and the Regional Water Quality Control boards develop basin plans, which identify beneficial uses, water quality objectives, and implementation plans. The RWQCBs have the primary responsibility to implement the provisions of both statewide and basin plans. Waters regulated under Porter-Cologne, referred to as "waters of the State," include isolated waters that are not regulated by the USACE. Any person discharging, or proposing to discharge, waste (e.g. dirt) to waters of the State must file a Report of Waste Discharge and receive either waste discharge requirements (WDRs) or a waiver to WDRs before beginning the discharge.

3.8 Santa Clara County General Plan

The Resource Conservation chapter of the Santa Clara County General Plan addresses several conservation areas, including water supply and quality, habitat and biodiversity, agricultural resources, mineral resources, heritage resources (including heritage trees) scenic resources, solid waste management, and energy resources. With regard to habitat and biodiversity, the General Plan identifies habitat conservation as key to protecting water supply, and specifically the importance of protecting riparian habitat because it has the greatest diversity of species, minimizes the effects of erosion, and protects water quality.

The General Plan outlines policies and implementation for overall resource management. Under C-RC 1 the Plan states, "Natural and heritage resources shall be protected and conserved for their ecological, functional, economic, aesthetic, and recreational values." Policy C-RC 4 provides the following five strategies for resource management, conservation, and preservation:

a. Improve and update current knowledge;
b. Emphasize pro-active, preventative measures;
c. Minimize or compensate for adverse human impacts;
d. restore resources where possible; and
e. monitor the effectiveness of mitigations.

These strategies are also reflected in the strategies, policy and implementation identified for habitat and biodiversity in Santa Clara County.

3.9 Santa Clara County Zoning Ordinance

The parcel is located within the Hillside (HS) District of unincorporated Santa Clara County. The Hillside District is classified as a Rural Base District (Chapter 2.20 Rural Base Districts). The

purpose of rural base districts is to maintain and preserve the predominantly rural character of lands to which they are applied. The base districts further regulate the type of land uses and intensity of development permitted in rural areas in a manner that implements the general plan, and which protects natural resources and maintains compatibility between uses.

The purpose of the HS District, is to preserve mountainous lands unplanned or unsuited for urban development primarily in open space and to promote those uses which support and enhance a rural character, which protect and promote wise use of natural resources, and which avoid the risks imposed by natural hazards found in these areas. These lands are watersheds and may also provide such important resources as minerals, forests, animal habitat, rare or locally unique plant and animal communities, historic and archeological sites, scenic beauty, grazing lands, and recreational areas. Additionally, lands zoned Hillside define the setting or viewshed for the urban area of the county.

Allowable uses in the HS District include agriculture and grazing; very low density residential; low density and low intensity recreation, mineral and other resource extraction; land in its natural state; and low-intensity commercial, industrial and institutional uses meeting certain criteria. Supplemental development standards are also identified in the zoning ordinance for this district.

3.10 Santa Clara County Fire Code

Structures in the Wildland Urban Interface are required to be surrounded with a 30 to 100-foot defensible space where flammable vegetation is reduced. The area needs to be kept free of dead vegetation, and brush and trees need to be limbed up to reduce ladder fuels where fire can rapidly spread. Highly flammable vegetation, such as eucalyptus and scotch broom, should be removed/replaced.

4 Methods

This section describes the methods used to complete the biological resources evaluation. Methods include a database and literature review, field survey, an assessment of plant communities and wildlife habitats and corridors, an assessment of sensitive habitats and aquatic features, and a habitat evaluation for special-status species.

4.1 Database and Literature Review

Available background information pertaining to the biological resources on and in the vicinity of the project was reviewed prior to conducting field surveys. Information was compiled and subsequently compared against site conditions during field surveys. The following sources were consulted:

- CDFW California Natural Diversity Database (CNDDB) record search within a five 5-mile radius of the parcel (CDFW 2017)
- CNPS Rare Plant Program *Inventory of Rare and Endangered Plants of California* record search within a 5-mile radius of parcel (CNPS 2017)
- USFWS list of endangered and threatened species and Critical Habitat record search for the property (IPac; USFWS 2017)
- Aerial photographs of the parcel (Google Earth Pro 2017).
- University of California, California Fish Website (University of California 2017).
- California Herps, A Guide to the Amphibians and Reptiles in California (California Herps 2017)
- eBird: An online database of bird distribution and abundance (eBird 2017)
- The Jepson Manual: Vascular Plants of California, Second Edition (Baldwin et al. 2012)
- Stanford University Habitat Conservation Plan (Stanford University 2013)

4.2 Field Survey

A reconnaissance-level biological survey of the parcel was conducted on September 1, 2017 by MIG biologist David Gallagher. The parcel was surveyed on foot from approximately 0830 to 1030. During the visit, signs (e.g., tracks, scat, and feathers) of wildlife and habitats present within the parcel were documented. The parcel was also searched for any obvious burrows or dens that could provide habitat for some wildlife species. Data were collected using a tablet with a Garmin GLO GPS receiver, a geo-spatial mobile-device application for recording data points and photographs.

4.3 Plant Communities and Wildlife Habitats

Plant communities were classified based on existing descriptions in “A Manual of California Vegetation, Second Edition” (Sawyer et. al. 2009). However, in some cases it is necessary to identify variants of plant community types or to describe non-vegetated areas that are not described in the literature.

4.4 Sensitive Habitats and Aquatic Features

The parcel was inspected for the presence of wetlands, drainages, streams, and other aquatic features, including those that support stream-dependent (i.e., riparian) plant species that could be subject to jurisdiction by the USACE, RWCQB, or CDFW. Wetlands are defined for regulatory purposes in the 33 CFR 328.3 and 40 CFR 230.3 as areas inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal conditions do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.” To be considered subject to federal jurisdiction, a wetland must normally exhibit positive indicators for hydrophytic vegetation, hydric soil, and wetland hydrology.

All plant communities observed on the parcel were evaluated to determine if they are considered sensitive. Sensitive natural communities are communities that are especially diverse; regionally uncommon; or of special concern to local, state, and federal agencies. Elimination or substantial degradation of these communities would constitute a significant impact under CEQA.

4.5 Special-Status Species Habitat Evaluation

During the field survey, the biologist evaluated the suitability of the habitat to support special-status species documented in and within the vicinity of the project footprint. For the purposes of this assessment, special-status species include those plant and animals listed, proposed for listing or candidates for listing as threatened or endangered by the USFWS or NOAA Fisheries Service under the FESA, those listed or proposed for listing as rare, threatened or endangered by the CDFW under the CESA, animals designated as CFP or CSSC by the CDFW, birds protected by the USFWS under the MTBA and/or by the CDFW under Fish and Game Code Sections 3503 and 3513, and plants listed as Rank 1A, 1B, and 2 of the CNPS Inventory.

The potential occurrence of special-status plant and animal species within the project footprint was evaluated by developing a list of special-status species that are known to or have the potential to occur in or in the vicinity of the project footprint based on a search of the CNDDB, CNPS, and USFWS databases. The potential for occurrence of those species included on the list were then evaluated based on the habitat requirements of each species relative to the conditions observed during the field survey. Each species was evaluated for its potential to occur in the project footprint according to the following criteria:

> *No Potential or Not Expected:* There is no suitable habitat present (i.e., habitats are clearly unsuitable for the species requirements [e.g., foraging, breeding, cover, substrate, elevation, hydrology, plant community, disturbance regime]). Additionally, there are no, or few historical records known records of occurrence in the vicinity of the project footprint. The species has no potential of being found.
>
> *Low Potential:* Limited suitable habitat is present (i.e., few of the habitat components meeting the species requirements are present and/or the majority of habitat is unsuitable or of very low quality). Additionally, there are no or few historical records of occurrence in the vicinity of the project footprint. The species has a low probability of being found.
>
> *Moderate Potential*. Suitable habitat is present (i.e., some of the habitat components meeting the species requirements are present and/or the majority of the habitat is suitable or of marginal quality). Additionally, there are few to many modern records of occurrences in the vicinity of the project footprint. The species has a moderate probability of being found.

High Potential: Highly suitable habitat is present (i.e., all habitat components meeting the species requirements are present and/or the habitat is highly suitable or of high quality). Additionally, there are few to many records of occurrences within the last ten years in the vicinity of the project footprint. This species has a high probability of being found.

Present or Assumed Present. Species was observed at the site or has a recent (within five years) recorded observation in the CNDDB or literature at the project footprint.

5 Environmental Setting

5.1 Project Site Description

The parcel is situated in a rural-residential area near Portola Valley, California and is bordered on the north, west, and east by Los Trancos Creek and by a commercial nursery to the south. Undeveloped private property is to the west and east. Los Trancos Creek is a perennial creek that flows northerly from the northeast slope of the Santa Cruz Mountains to its confluence with San Francisquito Creek at Stanford University. Los Trancos Creek drains an area of about seven square miles and consists of about 6.6 miles of channel. At the project site, the creek is un-channelized and free-flowing.

5.2 Plant Communities and Associated Wildlife Habitats

Vegetative communities are assemblages of plant species that occur together in the same area, which are defined by species composition and relative abundance. The plant communities in the parcel were classified using A Manual of California Vegetation (Sawyer et. al. 2009), if applicable.

The parcel contains riparian habitat, developed habitat, and disturbed habitat (Appendix A, Figure 2). Vegetation and habitat type are prime factors in determining the suitability for use by certain wildlife species and the occurrence of certain plant species. Each habitat type and/or vegetation community is described as follows.

5.2.1 Riparian Habitat

The entire parcel is situated within the riparian corridor of Los Trancos Creek. Riparian habitats provide an important transition zone between water (aquatic) and land (terrestrial) habitats. Because riparian habitats contain both aquatic and terrestrial plant and animal species, they have unusually high species diversity. Riparian areas provide essential breeding, nesting, feeding and refuge habitats for many forms of waterfowl, other birds, mammals, amphibians, and reptiles (Appendix B Photos).

Trees observed in the riparian habitat include California buckeye (*Aesculus californica*), valley oak (*Quercus lobata*), California bay laurel (*Umbellularia californica*), coast live oak (*Quercus*

agrifolia), black walnut (*Juglans nigra*), Oregon ash (*Fraxinus latifolia*), red willow (*Salix laevigata*), and white alder (*Alnus rhombifolia*). Shrubs observed include toyon (*Heteromeles arbutifolia*), beaked hazelnut (*Corylus cornuta*), common snowberry (*Symphoricarpos albus*), poison oak (*Toxicodendron diversilobum*), gooseberry (*Ribes sp.)*, mulefat (*Baccharis salicifolia*), California blackberry (*Rubus ursinus*), California wild rose (*Rosa californica*), and the non-native French broom (*Genista monspessulana).* Herbaceous plants observed include stinging nettle (*Urtica dioica*), fringed willowherb (*Epilobium ciliatum*), California hedge nettle (*Stachys bullata*), tall flatsedge (*Cyperus eragrostis*), watercress (*Nasturtium officinale*), and non-native hairy beggarticks (*Bidens pilosa*).

The trees in the vicinity of the project footprint provide suitable nesting habitat for birds and may provide suitable roosting habitat for cavity and leaf roosting bats.

Birds observed during the visit were black phoebe (*Sayornis nigricans*), oak titmouse (*Baeolophus inornatus*), western scrub jay (*Aphelocoma californica*), Chestnut-backed chickadee (*Poecile rufescens*), brown creeper (*Certhia americana*) and Bewick's wren (*Thryomanes bewicki*). Many small fish (unknown species) were observed in the creek. The creek provides suitable habitat for amphibians and reptiles, although none were observed. Animals observed include California ground squirrel (*Otospermophilus beecheyi*). San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*) houses were observed within the riparian habitat.

5.2.2 Developed Habitat

Developed land includes areas where permanent structures and/or pavement, gravel, etc. have been placed, which prevents the growth of vegetation, or where landscaping is cleared, tended, and maintained. Developed habitat within the parcel includes a gravel pad adjacent to the access bridge designated as a fire apparatus turnaround area, which is mapped as part of project footprint (Appendix B Photos).

5.2.3 Disturbed Habitat

Disturbed habitat includes land cleared or partially cleared of vegetation (e.g. mowed fields), that generally contains a preponderance of non-native plant species, including invasive species, and is generally subject to regular disturbance. Disturbed habitat within the parcel includes the project footprint, which was cleared of vegetation at the time of the site visit. Vegetation is removed from this area on a regular basis to maintain a defensible space for the future structure.

Plants observed within the disturbed habitat include the non-native herbaceous yellow star thistle (*Centaurea solstitialis*), wild oat (*Avena sp*.), black mustard (*Brassica nigra*), and Harding grass (*Phalaris aquatica);* the native herbaceous Canada horseweed (*Erigeron canadensis*) and

tarweed (*Madia sp*.). Woody species include coast live oak saplings, and western poison oak (Appendix B Photos).

5.3 Aquatic Features, Wildlife Movement Corridors, and Sensitive Habitats

The USFWS National Wetland Inventory (NWI) map data were reviewed as part of the evaluation for the presence of Waters of the U.S., including wetlands. NWI maps are based on interpretation of aerial photography, limited verification of mapped units, and/or classification of wetland types using the classification system developed by Cowardin et al. 1979. Los Trancos Creek, which is adjacent to the project footprint is mapped as Waters of the U.S. Creeks are perennial and seasonal linear water features (i.e., features that flow year-round or during the wet season). Additionally, the NWI documents Los Trancos Creek flowing into Francisquito Creek, which is also mapped as Waters of the U.S.

The proposed project does not require work within the OHWM of Los Trancos Creek. Additionally, there are no Waters of the U.S. or State as defined by Section 401/404 of the Clean Water Act within the project footprint. Therefore, Section 401/404 permits are not required for the proposed project (Appendix B Photos).

Los Trancos Creek is designated as critical habitat for the federal Threatened Central California Coast steelhead (*Oncorhynchus mykiss irideus*) Distinct Population Segment (DPS; Appendix A, Figure 2).

Critical habitat for the Central California Coast steelhead DPS was designated on September 2, 2005 and includes all river reaches and estuarine areas accessible to listed steelhead in coastal river basins from the Russian River in Sonoma County to Aptos Creek in Santa Cruz County. The San Mateo Hydrologic Unit includes the coastal streams in San Mateo County from San Pedro Creek near Pacifica to Butano Creek near Año Nuevo and the Santa Clara Hydrologic Unit includes South Bay creeks from San Francisquito Creek in Palo Alto eastward to Coyote Creek in San Jose (NOAA 2005).

All ecological systems associated with natural drainages (i.e., riparian vegetation) and drainage and pond features with bed and bank topography may be regulated by Sections 1600-1616 of the California Fish and Game Code. The project footprint contains riparian habitat associated with Los Trancos Creek, as defined by sections 1600-1603 of California Fish and Game Code and may be subject to jurisdiction by CDFW.

Continuous riparian buffers also provide important wildlife migration corridors, which are critical “movement highways” for terrestrial species such as mammals and reptiles as well as for water dependent species such as amphibians and waterfowl. Wildlife corridors play an important role in countering habitat fragmentation. A wildlife corridor is a landscape element which serves as a linkage between historically connected habitats or landscapes that are otherwise separated and is meant to provide avenues along which wildlife can travel, migrate, and meet mates; plants

can propagate; genetic interchange can occur; populations can move in response to environmental changes and natural disasters; and individuals can re-colonize habitats from which populations have been locally extirpated. Corridors can consist of a sequence of stepping-stones across the landscape (i.e., discontinuous areas of habitat such as isolated wetlands and roadside vegetation), continuous lineal strips of vegetation and habitat (e.g., riparian strips and ridge lines), or they may be parts of larger habitat areas of known or likely importance to local wildlife.

No other sensitive natural community types, as defined by CDFW or CNPS, are present on or in the vicinity of the project footprint.

5.4 Special-Status Species

Based on a review of the USFWS, CNDDB, and CNPS databases, the biologist's knowledge of sensitive species, and an assessment of the types of habitats within the project footprint, it was determined that seven special-status species (six animals and one plant) have a high to moderate potential to occur within or near the project footprint. This determination was made due to the presence of essential habitat requirements for the species, the presence of known occurrences within 5 miles of the project footprint, and/or the project site is within the species known range of distribution. Two special-status animal species are present or assumed present in habitats adjacent to the project footprint: San Francisco dusky-footed woodrat and steelhead. A list of special-status species with occurrences within five miles of the project site which were determined to have no potential or low potential to occur within the project site is provided in Appendix C (Tables 1 and 2). Special-status species whose habitat requirements are clearly not met within or adjacent to the project footprint were excluded from the list (e.g. vernal pool obligate).

5.4.1 Special-Status Fish

Steelhead

The Central California Coast Distinct Population Segment of steelhead is a population of fish that is federally listed as threatened. Adult steelhead migrate from the ocean into streams in the late fall, winter, or early spring seeking out deep pools within fast moving water to rest prior to spawning. Steelhead spawn in shallow-water gravel beds and the young typically spend the first one to two years of their lives in their natal stream. The San Francisquito Creek watershed winter-run steelhead population represents one of only a few known remaining runs in South San Francisco Bay.

The most important spawning and rearing habitat for steelhead in the San Francisquito Creek watershed includes Los Trancos Creek, San Francisquito Creek (from Searsville Reservoir to Junipero Serra Boulevard, and Bear Creek and its tributaries. Based on the presence of suitable

habitat and known occurrences of steelhead in Los Trancos Creek, steelhead is assumed to be present in the creek adjacent to the project parcel.

5.4.2 Special-Status Amphibians and Reptiles

California red-legged frog

California red-legged frog (*Rana draytonii*, CRLF) is federally listed as threatened and is designated by the state as a Species of Special Concern. CRLF occurs in different habitats depending on life stage, season, and weather conditions. CRLF typically uses a variety of aquatic habitats (e.g., ephemeral ponds, intermittent streams, seasonal wetlands, springs, seeps, perennial creeks, artificial ponds, marshes, dune ponds, and lagoons), as well as riparian and upland habitats. The common factor among habitats where CRLF occurs is the association with a permanent water source. California red-legged frog is thought to disperse widely during autumn, winter, and spring rains. Juveniles use the wet periods to expand outward from their pond of origin and adults may move between aquatic areas. These frogs disperse through many types of upland vegetation and use a broader range of habitats outside of breeding season. CRLF are known to occur in San Francisquito and Los Trancos Creeks.

Several CNDDB occurrences for CRLF have been documented within 5 miles of the project site. Los Trancos Creek provides breeding and dispersal habitat for CRLF. Based on the presence of suitable dispersal and breeding habitat as well as recent and nearby occurrences, CRLF is considered to have a high potential to occur within Los Trancos Creek and associated riparian habitat. While breeding habitat is limited to the creek, frogs could move out of the creek and onto the project parcel when dispersing to estivation sites or another aquatic habitat. No CRLF were observed during the field survey.

Western pond turtle

Western pond turtle (WPT; *Emys marmorata*) is designated as a California Species of Special Concern. WPT is often seen basking above the water and will quickly slide into the water when it feels threatened. The species is active from around February to November and may be active during warm periods in winter. Western pond turtle hibernates underwater, often in the muddy bottom of a pool and may estivate during summer droughts by burying itself in soft bottom mud. When creeks and ponds dry up in summer, some turtles that inhabit creeks will travel along the creek until they find an isolated deep pool, others stay within moist mats of algae in shallow pools while many turtles move to woodlands above the creek or pond and bury themselves in loose soil where they will overwinter.

Pond turtles are normally found in and along riparian areas, although gravid females have been reported up to a mile away from water in search of appropriate nest sites. The preferred habitat for these turtles includes ponds or slow-moving water with numerous basking sites (logs, rocks, etc.), food sources (plants, aquatic invertebrates, and carrion), and few predators (raccoons,

introduced fishes, and bullfrogs). Typically, the female excavates a nest in hard-packed clay soil in open habitats (usually on south-facing slopes) within a few hundred yards of a watercourse.

WPT is known from San Francisquito Creek and could occur in Los Trancos Creek. Based on a field assessment, Los Trancos Creek and adjacent upland areas could provide suitable habitat for WPT. However, WPT has not been documented within Los Trancos Creek; therefore, WPT is considered to have a moderate potential to occur in Los Trancos Creek as well as adjacent upland areas. The project parcel may provide dispersal habitat but does not provide the open, sunny habitat preferred for nesting. No WPT were observed during the field survey.

5.4.3 Special-Status Mammals

San Francisco dusky-footed woodrat

San Francisco dusky-footed woodrat is designated by the state as a Species of Special Concern. Wood rats occupy forest habitats of moderate canopy and moderate to dense understory. Dusky-footed woodrats are known for their large terrestrial stick houses, some of which are maintained by successive generations for twenty or more years. Houses typically are placed on the ground against or straddling a log or exposed roots of a standing tree, and are often located in dense brush. Nests are also placed in the crotches and cavities of trees and in hollow logs. Sometimes arboreal nests are constructed but this behavior seems to be more common in habitat with evergreen trees such as live oak.

San Francisco dusky-footed woodrat is present within the riparian corridor of Los Trancos Creek and several woodrat houses were observed on the project parcel outside of the project footprint.

Townsend's big-eared bat

Townsend’s big-eared bat (*Corynorhinus townsendii*) is designated as a California Species of Special Concern. It is a medium-sized bat with extremely long, flexible ears, and small yet noticeable lumps on each side of the snout. It is found in a variety of habitats from forests to desert scrub. It prefers to roost in open caves; however, it will use a variety of other roost types, particularly abandoned buildings, mines, and tunnels. When roosting it does not tuck into cracks and crevices like many bat species but prefers large open areas. This species is sensitive to disturbance and it has been documented to abandon roost sites after human disturbance.

Townsend’s big-eared bat hibernates throughout its range during winter months when temperatures are between 0°C and 11.5 degrees Celsius (32-53 degrees Fahrenheit). While hibernating, it hangs alone or in small groups in the open, with fur erect to provide maximum insulation and with ears coiled back. These bats emerge late in the evening to forage and are swift, highly maneuverable fliers. Prey items include small moths, flies, lacewings, dung beetles, and sawflies.

Townsend's big-eared bat has been documented within the San Francisquito Creek system. This species may roost within large tree cavities in both riparian and upland habitats. Based on the presence of recent documented occurrences and suitable roosting habitat within the riparian habitat, Townsend's big-eared bat is considered to have a high potential to occur within the riparian habitat of Los Trancos Creek, and could forage or roost on the project parcel.

Western red bat

Western red bat (*Lasiurus blossevillii*) is a California Species of Special Concern. The western red bat roosts primarily in tree foliage, especially in cottonwood, sycamore, and other riparian trees, or in orchards. The bat prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging, including grasslands, shrublands, and open woodlands. They are solitary by nature but will gather in larger nursery roosts during the summer.

Western red bat has been documented within the San Francisquito Creek system. This species may roost in the riparian vegetation within the Los Trancos Creek riparian corridor. Based on the presence of recent documented occurrences and suitable roosting habitat within the riparian habitat, western red bat is considered to have a high potential to occur within the riparian habitat of Los Trancos Creek, and may forage or roost on the project parcel.

Other bat species

Bats tend to forage and roost near water sources. Therefore, bat species have the potential to roost and forage within the riparian corridor of Los Trancos Creek. A number of bat species are known from the riparian corridors of the San Francisquito Creek system (Stanford University 2013), including hoary bat (*Lasiurus cinereus*), California myotis (*Myotis californicus*), Yuma myotis (*Myotis yumanensis*), long-eared myotis (*Myotis evotis),* fringed myotis (*Myotis thysanodes),* long-legged myotis (*Myotis volans*), big brown bat (*Eptesicus fuscus*), and western pipistrelle (*Pipistrellus hesperus*).

Disturbance of maternity colonies (April to August) of any species of bat could be considered significant under CEQA guidelines.

5.4.4 Birds

Migratory birds and raptors

Nesting birds likely inhabit the dense shrub and tree cover surrounding the project footprint as well as the riparian corridor of Los Trancos Creek. Numerous passerines were noted during the field survey and ample nesting materials and nesting sites occur adjacent to and within the project footprint. The majority of bird species are protected under the MBTA and all bird species are protected under California Fish and Game code.

White-tailed kite

The white-tailed kite (*Elanus leucurus*; WTKI) is a medium-sized raptor that is found throughout the United States and is a year-round breeding resident in California. It is a fully protected species under §5050 of the California Fish and Game Code. WTKI is common to uncommon and a yearlong resident in coastal and valley lowlands. It is found year-round in San Mateo and Santa Clara Counties. It is known to nest within the San Francisquito riparian corridor and forage in the open fields near the SLAC National Accelerator Laboratory, west of Interstate 280. This species forages in undisturbed, open grasslands, meadows, farmlands and emergent wetlands and uses trees with dense canopies for cover. It makes a nest of loosely piled sticks and twigs and lined with grass, straw, or rootlets. Nests are placed near the top of a tree in a dense canopy of oak, willow, or other tree stands and are usually located near an open foraging area.

Based on the presence of recent documented nearby occurrences and suitable nesting habitat within and adjacent to the project footprint, WTKI are considered to have a high potential to nest within the project footprint.

Long-eared owl

The long-eared owl (*Asio otus*) is a strictly nocturnal owl that is widely distributed throughout the Northern Hemisphere. It is a California Species of Special Concern. In California, it is known to breed along the western foothills of the Sierra Nevada and in the Coast Ranges from Sonoma County south to Santa Barbara County. It is a rare breeding resident in Santa Clara County. It is known to breed in Foothills Preserve and Monte Bello Open Space Preserve.

Within Santa Clara County, long-eared owls generally nest along streams and creeks with dense canopies. This species also requires open uncultivated lands near their riparian nest sites for forage.

Based on the presence of recent documented nearby occurrences and suitable nesting and foraging habitat within and adjacent to the project footprint, long-eared owl is considered to have a high potential to nest within the riparian corridor of Los Trancos Creek and may occur on the project parcel.

5.4.5 Special-Status Plants

Western leatherwood

Western leatherwood (*Dirca occidentalis*) is a perennial deciduous shrub/tree and is listed by the CNPS as a 1B.2 (rare, threatened or endangered in California and elsewhere; fairly endangered in California). It is found in mesic habitats in a variety of woodland types, including riparian forest and woodland. It blooms from January to April. There is suitable habitat for this species within the project site. Based on the presence of suitable habitat and on a recent and

nearby CNDDB occurrences, Western leatherwood is considered to have a moderate potential to occur within the riparian corridor of Los Trancos Creek. However, western leatherwood was not observed during the field survey.

6 Biological Impact Assessment

This section describes potential impacts to sensitive biological resources—including special-status plants and animals, and waters of the U.S. and the state—that may occur in or near the project footprint. Each impact discussion includes Avoidance and Minimization Measures (AMMs) that should be implemented during the project to avoid and/or reduce the potential for and/or level of impacts to each resource. A complete list of AMMs is included in the Conclusions and Recommendations section. With the implementation of the AMMs, all impacts to biological resources under CEQA are anticipated to be reduced to less than significant.

This section also describes the biological permits that are anticipated to be required for construction of the proposed project.

6.1 Significance Criteria

Potential impacts to biological resources were assessed in accordance with Appendix G of the CEQA Guidelines. Impacts would be considered potentially significant if the proposed project will:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS
- Have a substantial adverse effect on any sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFW or USFWS
- Have a substantial adverse effect on federally protected wetlands, as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrologic interruption, or other means
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance
- Conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plant (NCCP), or other approved local, regional, or state HCP

Direct take of a federally or state-listed species is considered a significant impact. Temporary and/or permanent habitat loss is not considered a significant impact to sensitive species (other than for listed or candidate species under the FESA and CESA) unless a significant percentage of total suitable habitat throughout the species' range is degraded or somehow made unsuitable, or areas supporting a large proportion of the species' population are substantially and adversely impacted.

Potential impacts to nesting bird species will be considered significant due to their protection under the MBTA and California Fish and Game Code, and such impacts will need to be avoided through AMMs incorporated into the project.

6.2 Sensitive Species – *Less-than-Significant Impact with Mitigation*

6.2.1 Special-Status Animals

Steelhead is assumed to be present in Los Trancos Creek. The project could result in temporary impacts to steelhead by increasing sediment and erosion, thereby impacting water quality and spawning substrate in the creek. However, with the implementation of AMMs, the impacts from the project would be less than significant. These AMMs include, but are not limited to, conducting an environmental awareness training for construction personnel, implementing Best Management Practices (BMPs), and conducting construction activities during the dry season (April 15 through October 31), if feasible.

CRLF and WPT have the potential to move through the project site. Direct impacts to CRLF and WPT could occur if individuals move into work areas and become trapped or crushed. In addition, the project could result in temporary impacts to these species by increasing sediment and erosion in the creek. However, with the implementation of AMMs, the impacts from the project would be less than significant. These AMMs include, but are not limited to, conducting an environmental awareness training for construction personnel, implementing Best Management Practices (BMPs), installation of a wildlife exclusion fence, and a pre-construction surveys for CRLF and WPT.

San Francisco dusky-footed woodrat is present within the Los Trancos riparian corridor and several woodrat houses occur on the parcel. However, no vegetation suitable for a woodrat house occurs in the project footprint, and it is unlikely that construction would require the removal of a woodrat house. However, indirect effects from noise and vibration associated with construction could have negative impacts on nearby wood rats, including flushing of woodrats from their houses, thereby exposing them to an increased risk from predation or injury/death from construction activities. With the implementation of AMMs, the impacts from the project would be less than significant. These AMMs include mapping and clearly marking existing wood rat houses and establishing suitable buffers around them.

6.2.2 Roosting Bats

There is a high potential that Townsend's big-eared bat and western red bat forage and roost within the Los Trancos riparian corridor, and suitable roosting and foraging habitat for several other bat species occurs on the parcel. Removal or disturbance of roost habitat may result in significant impacts to bat populations if an occupied or perennial (but unoccupied) maternity or colony roost is disturbed or removed. However, no riparian vegetation, trees, or dense vegetation will be removed for the proposed project and construction will be limited to the existing access road and project footprint, which is regularly cleared of vegetation. Therefore, no direct impact to roosting or foraging bats is expected to occur. Indirect effects from additional noise and vibration associated with construction could have negative impacts on nearby roosting bats, including flushing of roosting bats, thereby exposing them to an increased risk from predation or abandonment of a maternity roost. However, with the implementation of AMMs, the impacts from the project would be less than significant. These AMMs include a pre-construction bat survey and consultation with CDFW if a maternity or colony roost is detected.

6.2.3 Nesting Birds (including white-tailed kite and long-eared owl)

Nesting birds, including raptors, protected under the MBTA and California Fish and Game Code are potentially present in the trees and shrubs in the project footprint. White-tailed kite and long-eared owl are both considered to have a high potential to be present in or adjacent to the project parcel. If construction activities occur during the avian breeding season (February 1 to September 15), injury to individuals or nest abandonment could occur. Noise and increased construction activity could temporarily disturb nesting or foraging activities, potentially resulting in the abandonment of nest sites. However, with the implementation of AMMs, the impacts from the project would be less than significant. These AMMs include a pre-construction nesting bird survey if construction is scheduled during the breeding season, consultation with CDFW if an active nest is discovered, and establishment of a buffer to protect the nest until the young have fledged. If a suitable buffer cannot be established there could be a delay in construction.

6.2.4 Special-Status Plants

Western leatherwood has the potential to occur within the vicinity of the project footprint. However, no riparian vegetation, trees, or dense vegetation will be removed for the proposed project and construction will be limited to the existing access road and project footprint, which is regularly cleared of vegetation. Therefore, the project will have no impacts on western leatherwood.

6.3 Sensitive Natural Vegetation Communities – *Less-than-Significant Impact with Mitigation*

Sensitive vegetation communities include riparian habitat or other sensitive natural communities identified in local or regional plans, policies, or regulations, or designated by the USFWS and CDFW. The project footprint is within the Los Trancos Creek riparian corridor; therefore, project activities could impact a sensitive natural community. However, no riparian vegetation, trees, or dense vegetation will be removed for the proposed project and construction will be limited to the existing access road and project footprint, which is regularly cleared of vegetation. Therefore, no direct impact to the riparian corridor would take place. The proposed project could have indirect impacts (e.g., inadvertent damage by construction equipment or decreased water/habitat quality due to runoff) to riparian habitat.

Since construction is taking place within the Los Trancos riparian corridor, the project likely requires an LSAA from the CDFW with AMMs incorporated into the project to meet the LSAA permit conditions. These measures will reduce potential impacts to Los Trancos Creek and associated riparian habitat to less than significant.

Additionally, an arborist report prepared for the proposed project identified trees adjacent to the project footprint that could potentially be impacted by construction activities as well as measures for protecting trees during construction (McClenahan Consulting, LLC 2017). Some of these trees may be trimmed to maintain defensible space, and some shrubs may be required to be removed. Defensible space requirements for the project are not expected to result in removal of a significant amount of vegetation or habitat on the project site.

No other sensitive natural communities are present in the project footprint. Therefore, with AMMs incorporated, impacts to sensitive natural communities would be less than significant.

The proposed project could have indirect impacts (e.g., inadvertent damage by construction equipment or decreased water/habitat quality due to runoff) to sensitive natural communities downstream or near the project, such as Francisquito Creek. However, with the implementation of AMMs, including Best Management Practices (BMPs) and preparing a hazardous spill plan, these impacts would be reduced to less than significant.

6.4 Jurisdictional Waters – *Less-than-Significant Impact*

Los Trancos Creek is a jurisdictional water, but it will not be directly impacted by the project. No work will be conducted below the ordinary high-water mark within the Los Trancos Creek channel; therefore, a Section 404/401 CWA permit from the USACE and the RWQCB is not required. Impacts to waters under the jurisdiction of the USACE, CDFW, and/or RWQCB in the project footprint will be less than significant.

The proposed project could have indirect impacts (e.g., inadvertent damage by construction equipment or decreased water/habitat quality due to runoff) on jurisdictional waters downstream or in the vicinity of the project footprint. However, with the implementation of AMMs, including Best Management Practices (BMPs) and preparing a hazardous spill plan, these impacts would

be reduced to less than significant. As a result, impacts to the quality of waters under the jurisdiction of the USACE, CDFW, and/or RWQCB downstream of the construction area will be less than significant.

6.5 Interfere with Native Wildlife Movement – *No Impact*

The section of Los Trancos Creek within and adjacent to the project footprint is part of a continuous riparian corridor that connects the Santa Cruz Mountains to Francisquito Creek and the San Francisco Bay. Riparian corridors are important wildlife migration corridors for many species. However, no riparian vegetation, trees, or dense vegetation will be removed for the proposed project and construction will be limited to the existing access road and project footprint. No work will be conducted below the banks of the creek or at night when many species actively move along the corridor; therefore, the proposed project will not result in a barrier to wildlife movement (temporary or permanent). The project will not have a substantial adverse effect on the riparian and wetland habitat; therefore, the project will not impede the use of the project footprint as a wildlife nursery site or wildlife corridor.

6.6 Conflict with Local Policies – *No Impact*

The proposed project does not conflict with the Santa Clara County General Plan and Zoning Ordinance.

6.7 Conflict with Conservation Plan – *No Impact*

The proposed project is not within an area covered by an HCP or NCCP. As a result, the project will have no impact related to a conservation plan.

7 Conclusions and Recommendations

This section lists needed permits and provides recommended AMMs that should be incorporated prior to, during, and after construction of the proposed project in order to minimize impacts to sensitive habitats (including jurisdictional waters) and special-status species.

7.1 Permits

Since construction is taking place within the Los Trancos riparian corridor, the project likely requires an LSAA from the CDFW with AMMs incorporated into the project to meet the LSAA permit conditions. These measures will reduce potential impacts to Los Trancos Creek and associated riparian habitat to less than significant.

7.2 Sensitive Habitats and Jurisdictional Features

The proposed project includes the construction of a single-family residence, parking area, and installation of utilities. The following general AMMs are recommended as part of the proposed project and should be included on the project plans to minimize impacts to sensitive habitats and jurisdictional features:

1. Travel and parking of vehicles and equipment will be limited to pavement, existing roads, and previously disturbed areas. Ground disturbance and vegetation removal may not exceed the minimum amount necessary to complete work at the site.

2. Temporary work areas will be restored with respect to pre-existing contours and conditions upon completion of work. Restoration work including re-vegetation and soil stabilization will be evaluated upon completion of work and performed as needed.

3. The potential for adverse effects to water quality in aquatic habitat within the project footprint will be avoided by implementing BMPs. These BMPs will be used to minimize any erosion or other sources of water pollution. The BMPs will be established by a Stormwater Pollution Prevention Plan prepared for the site, and may include measures such as the following:
   a) Store, handle, and dispose of construction materials and wastes properly to prevent their contact with stormwater.

   b) Control and prevent the discharge of all potential pollutants, including solid wastes, paints, concrete, petroleum products, chemicals, wash water or sediment and non-stormwater discharges to storm drains and water courses.

   c) Avoid cleaning, fueling, or maintaining vehicles on site, except in a designated area in which run-off is contained and treated.

   d) Perform clearing and earth moving activities during dry weather to the maximum extent practical.

   e) Delineate clearing limits, easements, setbacks, sensitive or critical areas, buffer zones, trees, and discharge course with field markers.

   f) Removing spoils promptly and avoid stockpiling of fill materials when rain is forecast. If rain threatens stockpiles soils and other materials shall be covered with a tarp or other waterproof material.

   g) Limit construction access routes and stabilize designated access points.

   h) Trash and construction related solid wastes must be deposited into a covered receptacle to prevent contamination and dispersal by wind.

   i) Sanitary facilities will be maintained on the project site at all times.

j) An erosion control plan shall be established during the wet season (September 15 through April 15). The following measures are included in the plan:

- During the rainy season, all paved areas shall be kept clear of earth material and debris. The project site shall be maintained to minimize sediment-laden run-off to any storm drainage system, including existing drainage swales and water courses.
- Down slope drainage courses, streams, and storm drains will be protected with rock filled sand bags, temporary swales, silt fences, and earth berms in conjunction of all landscaping.
- Inlet protection shall be installed at open inlets to prevent sediment from entering the storm drain system.
- Straw rolls shall be placed at the toe of slopes and along the down slope perimeter of the project site.
- No materials containing monofilament shall be used, because these materials entrap small mammals, reptiles and amphibians.

4. A hazardous spill plan will be developed prior to construction. The plan will describe what actions will be taken in the event of a spill. The plan will also incorporate preventative measures to be implemented, such as vehicle and equipment staging, cleaning, maintenance, and refueling; and contaminant (including fuel) management and storage. In the event of a contaminant spill, work at the site will immediately cease until the contractor has contained and mitigated the spill. The contractor will immediately prevent further contamination and notify appropriate authorities and mitigate damage as appropriate. Adequate spill containment materials, such as oil diapers and hydrocarbon cleanup kits, shall always be available on site. Containers for storage, transportation, and disposal of contaminated absorbent materials will be provided in the project footprint.

7.3 Special-Status Species

Steelhead (Central California Coast DPS) is assumed to be present in Los Trancos Creek and San Francisco dusky-footed woodrat is present in areas adjacent to the project footprint. California red-legged frog, western pond turtle, Townsend's big-eared bat, western red bat, white-tailed kite, and long-eared owl have the potential to occur within and adjacent to the project footprint. In addition, other birds protected by the MBTA and California Fish and Game Code could nest in vegetation adjacent to and within the project footprint, and other bats protected by California Fish and Game Code could roost in trees within and nearby the project footprint. Therefore, measures to protect special-status species, bats, and nesting birds during construction will be necessary. It is recommended that the following AMMs be incorporated into the project to avoid harming special-status species, bats, and nesting birds during construction. These should be included as specifications on the construction plan set:

1. Wildlife Exclusion Fence. A wildlife exclusion/environmental fence with exit funnels at ground level every 25 feet will be erected around active construction areas to prevent the movement of animals into active construction areas. The fence should be a minimum of 3 feet in height, buried in the soil at least 4 inches, and the base backfilled to form a tight seal to discourage CRLF and WPT from crawling under and entering the project site. If the fence cannot be buried, the base will be weighed down and sealed with gravel bags. During construction, the fence shall be checked every day for damage or breaks before construction activities commence. Any damage to the fence will be repaired in a timely manner.

2. Silt Fencing. Silt fencing should be installed between the creek and the work areas to minimize sedimentation into Los Trancos Creek or a silt barrier can be added to the wildlife exclusion fence to minimize the amount of fencing installed within the project footprint. During construction, the fence shall be checked every day for damage or breaks before construction activities commence. Any damage to the fence will be repaired in a timely manner.

3. Daily Fence Inspections. A qualified biologist will inspect the area inside of the fence for CRLF and WPT every day before construction activities commence. If any special-status species are found, construction activities will not be allowed to start and the USFWS and CDFW will be consulted on an appropriate course of action. Such action could include leaving the animal alone to move away on its own or the relocation of the animal to outside of the project footprint.

4. Designation of Work Area. Prior to project activities, a qualified biologist will clearly delineate riparian vegetation, including trees to be avoided and protected from construction activities. No riparian vegetation shall be removed.

5. Employee Education Program. An employee education program will be conducted, consisting of a brief presentation to explain biological resources concerns to contractors, their employees, and any other personnel involved in construction of the project. The program will include the following: a description of relevant special-status species, nesting birds, and bats along with their habitat needs as they pertain to the project; a report of the occurrence of these species in the project vicinity, as applicable; an explanation of the status of these species and their protection under the federal and state regulations; a list of measures being taken to reduce potential impacts to natural resources during project construction and implementation; and instructions if a special-status species is found onsite. A fact sheet conveying this information will be prepared for distribution to the above-mentioned people and anyone else who may enter the project footprint. Upon completion of training, employees will sign a form stating that they attended the training and agree to all the conservation and protection measures.

6. Pre-construction Survey for Special-Status Species. A qualified biologist will conduct a pre-construction survey within the project footprint for the presence of CRLF and WPT. The survey will be conducted immediately prior to the start of project activities, including vegetation removal, grubbing, grading, installation of fencing, and construction. If any of these species are found, work will not commence until the appropriate state and/or federal resource agencies are contacted and avoidance measures are in place.

7. San Francisco Dusky-footed Wood Rat. Within 30 days prior to the start of construction activities, a qualified biologist will map all San Francisco dusky-footed woodrat houses within a 50-foot buffer around the project footprint. All mapped woodrat houses will be clearly marked with flagging to avoid physical disturbance of the woodrat house from construction activities. Additionally, a suitable buffer area around each woodrat house will also be clearly marked with flagging. Buffer areas are generally a 10-foot radius around each woodrat house. The buffer areas shall be left in a natural, vegetated state and no construction activities or staging of equipment shall take place within the buffer areas.

8. Pre-construction Survey for Nesting Birds. To avoid impacts to nesting birds and violation of state and federal laws pertaining to birds, all construction-related activities (including but not limited to mobilization and staging, clearing, grubbing, vegetation removal, fence installation, demolition, and grading) should occur outside the avian nesting season (that is, prior to February 1 or after September 15). If construction and construction noise occurs within the avian nesting season (from February 1 to September 15), all suitable habitats located within the project's area of disturbance including staging and storage areas plus a 250-foot (passerines) and 1,000-foot (raptor nests) buffer around these areas shall be thoroughly surveyed, as feasible, for the presence of active nests by a qualified biologist no more than five days before commencement of any site disturbance activities and equipment mobilization. If project activities are delayed by more than five days, an additional nesting bird survey shall be performed. Active nesting is present if a bird is building a nest, sitting in a nest, a nest has eggs or chicks in it, or adults are observed carrying food to the nest. The results of the surveys shall be documented.

   If pre-construction nesting bird surveys result in the location of active nests, no site disturbance and mobilization of heavy equipment (including but not limited to equipment staging, fence installation, clearing, grubbing, vegetation removal, fence installation, demolition, and grading), shall take place within 250 feet of non-raptor nests and 1,000 feet of raptor nests, or as determined by a qualified biologist in consultation with the California Department of Fish and Wildlife, until the chicks have fledged. Monitoring shall be required to insure compliance with MBTA and relevant California Fish and Game Code requirements. Monitoring dates and findings shall be documented.

9. Preconstruction Bat Roost Surveys. At least five days before the start of construction-related activities (including but not limited to mobilization and staging, clearing, grubbing, tree removal, vegetation removal, fence installation, demolition, and grading), a survey for tree cavities suitable for roosting bats will be conducted within the project footprint, including a 50-foot buffer, as feasible. If suitable tree cavities are found, an emergence survey of the cavities will be conducted by a qualified biologist for colony bat roosts before the onset of construction-related activities. If an occupied maternity or colony roost is detected, CDFW shall be consulted to determine appropriate measures, such as bat exclusion methods, if disturbance of the roost cannot be avoided. The results of the surveys shall be documented.

10. Construction Site Sanitation. Food items may attract wildlife onto the construction site, which will expose them to construction-related hazards. The construction site shall be maintained in a clean condition. All trash (e.g., food scraps, cans, bottles, containers, wrappers, and other discarded items) will be placed in closed containers and properly disposed of.

11. Species Discovery. If an animal is found at the work site and is believed to be a protected species, work must be stopped, and the project biologist be contacted for guidance. Care must be taken not to harm or harass the species. No wildlife species will be handled and/or removed from the project footprint by anyone except a qualified biologist.

12. Wildlife Entrapment. The contractor shall avoid the use of monofilament netting, including its use in temporary and permanent erosion control materials. All holes greater than one-foot deep must be sealed overnight to prevent the entrapment of wildlife. Where holes or trenches cannot be sealed, escape ramps that are no greater than 30% slope will be positioned such that entrapped wildlife will be able to escape. The escape ramps should be at least one-foot wide and covered/fitted with a material that provides traction.

13. Daily Species Inspections for Open Trenches or Holes. Open trenches or holes for CRLF and other special-status species will be inspected every day before construction activities commence. If any special-status species are found, construction activities will not be allowed to start and the USFWS and CDFW will be consulted on an appropriate course of action.

8 References

Baldwin, B.G., D.H. Goldman, D. J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken, editors. 2012. The Jepson manual: vascular plants of California, second edition. University of California Press, Berkeley.

Beir, P. and S. Loe. 1992. In my experience: a checklist for evaluating impacts to wildlife movement corridors. Wildlife Society Bulletin, Vol. 20, No. 4. (Winter 1992), pp. 434-440.

Bouseman, W. G. 2007. Breeding Bird Atlas of Santa Clara County, California. Santa Clara Valley Audubon Society.

California Herps. 2017. California Herps. A Guide to Amphibians and Reptiles of California. Website http://www.californiaherps.com/ [accessed October 2017].

CDFW, Environmental Services Division (ESD). 1994. A Field Guide to Lake and Streambed Alteration Agreements, Sections 1600-1607, California Fish and Game Code.

CDFW. 2010. List of Vegetation Alliances and Associations. Vegetation Classification and Mapping Program, California Department of Fish and Game. Sacramento, CA. September 2010.

CDFW. 2017. California Natural Diversity Database. Rare Find 5 online map and query application [accessed September 2017].

CNPS. 2017. Inventory of Rare and Endangered Plants (online edition, v8-02). California Native Plant Society, Sacramento, CA. Website http://www.rareplants.cnps.org [accessed September 2017].

Cowardin, L. M., V. Carter, F. C. Golet, E. T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U. S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. Jamestown, ND: Northern Prairie Wildlife Research Center Home Page. (Version 04DEC98).

eBird. 2017. eBird: An online database of bird distribution and abundance. Cornell Lab of Ornithology, Ithaca, New York. Available: http://www.ebird.org [accessed October 2017].

Erickson, Gregg. et al. 2003. Bat and Bridges Technical Bulletin (Hitchhikers Guide to Bat Roosts). California Department of Transportation, Sacramento, CA.

Holland, R. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. Nongame-Heritage Program. California Department of Fish and Wildlife.

McClenahan Consulting, LLC. 2017. Arborist Report for 3343 Alpine Road.

McEuen, A. 1993.The Wildlife Corridor Controversy: A Review. Endangered Species Update, 10 (11&12).

McEwan, D. and T.A. Jackson. 1996. Steelhead Restoration and Management Plan for California. 234 pp.

NOAA 2005. National Oceanic and Atmospheric Administration Endangered and Threatened Species: Final Listing Determinations for 10 Distinct Population Segments of West Coast Steelhead; Final Rule. 50 CFR Part 17 Vol. 70 (170): 52488- 52627. September 2.

Sibley, D.A. 2000. The Sibley Guide to Birds. New York: Chanticleer Press, Inc.

Stanford University. 2013. Stanford University Habitat Conservation Plan. Prepared by Stanford University Land Use and Environmental Planning Office, Stanford, CA.

Stebbins, R. C. 2003. A Field Guide to Western Reptiles and Amphibians. 3rd Edition. Houghton Mifflin Company. New York, New York. 533 pp.

University of California. 2017. University of California, Department of Agriculture and Natural Resources, California Fish Website Fish Species by Location – San Francisquito Creek-180500030404 http://calfish.ucdavis.edu/location/?ds=697&reportnumber=1294&catcol=4703&categorysearch=San%20Mateo [accessed October 2017]

USFWS. 2017. National Wetlands Inventory. Wetland Mapper V2 https://www.fws.gov/wetlands/Data/Mapper.html [accessed September 2017].

USFWS. 2017. Information for Planning and Conservation (IPaC). Website https://ecos.fws.gov/ipac/ [accessed September 2017].

9 Appendix A – Figures

10 Appendix B – Photos

Photo 1. Looking northeast form the gravel lined fire apparatus turnaround area (developed habitat). The project footprint extends beyond the gravel into the surrounding open areas (disturbed habitat). No trees or the surrounding vegetation will be removed for the project.

Photo 2. Los Trancos Creek within the parcel. The dense riparian habitat surrounding the creek is clearly visible. No riparian vegetation will be removed for the project. Additionally, work will not take place within the bed or banks of the creek.

Photo 3. Looking north from the edge of the project footprint. The gravel lined fire apparatus turnaround area is visible in the background (area with the parked vehicle). The project footprint is confined to the open area. Portions of the project footprint are shaded by the tree canopy that forms the overstory of the riparian corridor around Los Trancos Creek, as seen by the coast live oaks visible in the foreground.

11 Appendix C – Special-Status Plant and Animal Species Evaluated for Potential to Occur within and Nearby the Project Footprint

Table 1. Special-Status Plant Species Evaluated for Potential to Occur on the Project Footprint.

Species Name	Federal, State, and CNPS Listing Status[1]	Habitat Preferences, Distribution Information, and Additional Notes	Flowering Phenology	Potential to Occur
Anderson's manzanita (*Arctostaphylos andersonii*)	1B.2	Anderson's manzanita is found in the openings and edges of broad-leafed upland forest, chaparral, and north coast coniferous forest.	November – May	There are several historical occurrences within 5 miles of the project footprint. There is no suitable habitat for this species within or adjacent to the project footprint. **Not Expected**
Arcuate bush-mallow (*Malacothamnus arcuatus*)	1B.2	Arcuate bush-mallow is found growing in gravelly alluvium substrates in chaparral and cismontane woodland habitats.	April – September	Known from Jasper Ridge Biological Preserve and Crystal Springs area. There is no suitable habitat for this species within or adjacent to the project footprint. **Not Expected**
Choris' popcorn-flower (*Plagiobothrys chorisianus var. chorisianus*)	1B.2	Choris' popcorn-flower grows in mesic chaparral, coastal prairie, and coastal scrub habitats.	March – June	There is a single extant CNDDB occurrence for Choris' popcorn-flower documented within 5 miles of the proposed project footprint. This occurrence was documented in 1898. No suitable habitat for this species is present within the project footprint. **Not Expected**
Fragrant fritillary (*Fritillaria liliacea*)	1B.2	Fragrant fritillary is often found on serpentine soils in cismontane woodland, coastal scrub, valley and foothill grassland, and coastal prairie habitats.	February – April	There is a single CNDDB occurrence for fragrant fritillary documented within 5 miles of the proposed project footprint. This occurrence is dated 1934 and was found near Lake Lagunitas on the Stanford University campus. No suitable habitat for this species is present within the project footprint. **Not Expected**

Species Name	Federal, State, and CNPS Listing Status[1]	Habitat Preferences, Distribution Information, and Additional Notes	Flowering Phenology	Potential to Occur
Franciscan onion (*Allium peninsulare* var. *franciscanum*)	1B.2	Franciscan onion is found in clay, volcanic or serpentine soils in cismontane woodland and valley and foothill grassland habitats.	May – June	Two extant CNDDB occurrences for Franciscan onion have been documented within 5 miles of the proposed project footprint. One occurrence was observed in 1902 and one in 2003. None from Jasper Ridge Biological Preserve. No suitable habitat for this species is present within the project footprint. **Not Expected**
San Francisco collinsia (*Collinsia multicolor*)	1B.2	San Francisco collinsia is found in closed-cone coniferous forest and coastal scrub habitats, sometimes in serpentine soils.	March – May	There is a single CNDDB occurrence for San Francisco collinsia documented within 5 miles of the proposed project footprint. This occurrence is dated 1903 and was observed in the vicinity of Stanford University. Known from the Crystal Springs area. No suitable habitat for this species is present within the project footprint. **Not Expected**
Two-fork clover (*Trifolium amoenum*)	FE 1B.1	Two-fork clover grows in moist, heavy soils in disturbed areas within coastal bluff scrub and valley/foothill grasslands.	April – June	One CNDDB occurrence for two-fork clover has been documented within 5 miles of the project footprint. This occurrence is dated 1950 and was observed near San Francisquito Creek. Suitable habitat for this species is not present within the project footprint. **Not Expected**
Western leatherwood (*Dirca occidentalis*)	1B.2	Western leatherwood is found in mesic habitats including broad-leafed upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, north coast coniferous forest, and riparian forest and woodland.	January – April	Known from San Francisquito Creek watershed and Jasper Ridge Biological Preserve. Suitable habitat for this species is present within the Los Trancos Creek riparian corridor. **Moderate Potential**

Species Name	Federal, State, and CNPS Listing Status[1]	Habitat Preferences, Distribution Information, and Additional Notes	Flowering Phenology	Potential to Occur
White-flowered rein orchid (*Piperia candida*)	1B.2	White-flowered rein orchid grows in broad-leafed upland forest, lower coniferous forest, and north coast coniferous forest habitats, sometimes in serpentine soils.	March – September	A single CNDDB occurrence for white-flowered rein orchid has been documented within 5 miles of the proposed project footprint in 1992. No suitable habitat for this species is present in the project footprint. **Not Expected**
Woodland monolopia (*Monolopia gracilens*)	1B.2	Woodland monolopia grows in serpentine soils in openings in broad-leafed upland forests, openings in chaparral, cismontane woodlands, north coast coniferous forests, and valley foothill grassland habitats.	February – July	There are several occurrences for woodland monolopia documented within 5 miles of the project footprint. This most recent occurrence was documented in 2008. There is no suitable habitat for this species present within the project footprint. **Not Expected**

STATUS KEY:

Federal

FE: Federally-listed Endangered

FT: Federally-listed Threatened

State

CE: California-listed Endangered

CT: California-listed Threatened

CR: California-listed Rare

California Native Plant Society (CNPS)**:**

Rank 1A – Presumed extinct in California;

Rank 1B – Rare, threatened, or endangered in California and elsewhere;

Rank 2A: Plants presumed extirpated in California, but more common elsewhere; Rank 2B: Rare, threatened, or endangered in California, but more common elsewhere;

Rank 3 – Plants for which more information is needed – A review list; and

Rank 4 – Plants of limited distribution – A watch list.

Additional threat ranks endangerment codes are assigned to each taxon or group as follows:

.1 – Seriously endangered in California (over 80% of occurrences threatened/high degree of immediacy of threat).

.2 – Fairly endangered in California (20-80% occurrences threatened).

.3 – Not very endangered in California (<20% of occurrences threatened or no current threats known).

Table 2. Special-Status Animal Species Evaluated for Potential to Occur on or Nearby the Project Footprint.

Species Name	Federal, State, and CNPS Listing Status[1]	Habitat Preferences, Distribution Information, and Additional Notes	Potential to Occur
Invertebrates			
Bay checkerspot butterfly (*Euphydryas editha bayensis*)	FT	Bay checkerspot butterfly is found in shallow, serpentine-derived soils in native grasslands supporting larval host plants, including dwarf plantain (*Plantago erecta*) or purple owl's clover (*Castilleja densiflora* or *Castilleja exserta*).	One CNDDB occurrence for Bay checkerspot butterfly has been documented within 5 miles of the proposed project footprint. However, there is no suitable habitat within the project footprint. **Not Expected**
Fish			
Steelhead- central California coast DPS (*Oncorhynchus mykiss irideus*)	FT	This DPS includes all populations of steelhead from the Russian River south to Aptos Creek. Steelhead in drainages of San Francisco, San Pablo, and Suisun Bays are also part of this DPS. Adult steelhead migrate from the ocean into streams in the late fall, winter, or early spring seeking out deep pools within fast moving water to rest prior to spawning. Steelhead spawn in shallow-water gravel beds.	The San Francisquito Creek watershed winter-run steelhead population represents one of only a few known remaining runs in South San Francisco Bay. The most important spawning and rearing habitat for steelhead in the San Francisquito Creek watershed is in Los Trancos Creek, San Francisquito Creek (from Searsville Reservoir to Junipero Serra Boulevard, and Bear Creek and its tributaries. **Assumed Present** in Los Trancos Creek, adjacent to the project footprint.
Amphibians			
California giant salamander (*Dicamptodon ensatus*)	CSSC	Known from wet coastal forests near streams and seeps from Mendocino County south to Monterey County and east to Napa County. Aquatic larvae found in cold, clear streams, occasionally in lakes and ponds. Adults known from wet forests under rocks and logs near streams and lakes.	Known to occur in creeks and streams on both the east and west sides of the Santa Cruz Mountains. The closest known occurrence is from a creek near Wunderlich County Park. There is marginal habitat for this species within the Los Trancos riparian corridor. **Low Potential**

Species Name	Federal, State, and CNPS Listing Status[1]	Habitat Preferences, Distribution Information, and Additional Notes	Potential to Occur
California red-legged frog (*Rana draytonii*)	FT, CSSC	California red-legged frog (CRLF) occurs in different habitats depending on life stage, season, and weather conditions. CRLF typically use a variety of aquatic habitats (e.g., ephemeral ponds, intermittent streams, seasonal wetlands, springs, seeps, perennial creeks, artificial ponds, marshes, dune ponds, and lagoons), as well as riparian and upland habitats. The common factor among habitats where CRLF occur is the association with a permanent water source with deep pools, ideally free of non-native predators.	CRLF are known to occur in San Francisquito and Los Trancos Creeks. Los Trancos Creek and associated riparian habitat provides high quality breeding and dispersal habitat for CRLF. **High Potential**
California tiger salamander (*Ambystoma californiense*)	FT CT CSSC	California tiger salamander are found in grasslands and open oak woodlands. Necessary habitat components for this species include California ground squirrel (*Otospermophilus beecheyi*) or gopher burrows for underground retreats and breeding ponds, such as seasonal wetlands, vernal pools, or slow-moving streams that do not support predatory fish or frog populations.	There are several CNDDB occurrences for California tiger salamander have been documented within 5 miles of the proposed project footprint; however, most of these are from Lagunita Lake on the Stanford University Campus. Tiger salamanders require a mosaic of habitats consisting of seasonally filled pools in or near grasslands or oak woodlands. Semi- permanent ponds, reservoirs, and portions of slow moving, seasonal creeks may also be used. Los Trancos creek provides cool, clear, flowing water year-round that is not typically tiger salamander habitat. **Not Expected**

Species Name	Federal, State, and CNPS Listing Status[1]	Habitat Preferences, Distribution Information, and Additional Notes	Potential to Occur
Reptiles			
San Francisco garter snake (*Thamnophlis sirtalis tetrataenia*)	FE CE	San Francisco garter snake is a highly aquatic species that utilizes a wide variety of habitats, preferring grasslands or wetlands near ponds, marshes and sloughs. They generally use open hillsides adjacent to wetlands where they can bask, feed, and find cover in rodent burrows.	There are several CNDDB occurrences in nearby areas, but SFGS has not been documented in Los Trancos Creek. Additionally, there is marginal habitat within Los Trancos Creek since it generally provides cool, clear, flowing water that is not typically SFGS habitat. **Low Potential**
Western pond turtle (WPT) (*Emys marmorata*)	CSSC	WPT requires permanent or nearly permanent bodies of water including ponds, marshes, rivers, streams, and irrigation ditches. It requires basking sites, such as submerged rocks, logs, open mud banks, or floating vegetation mats. This species also requires sandy banks or grassy open fields up to 0.5 kilometers from the water's edge for egg laying.	Two CNDDB occurrences for WPT have been documented within 5 miles of the project footprint. There is suitable aquatic and upland habitat for WPT in Los Trancos Creek and associated riparian corridor. Known from San Francisquito Creek but have not been documented in Los Trancos Creek. **Moderate Potential**

Species Name	Federal, State, and CNPS Listing Status[1]	Habitat Preferences, Distribution Information, and Additional Notes	Potential to Occur
Birds			
Alameda song sparrow (*Melospiza melodia pusillula*)	CSSC	Alameda song sparrow is a resident of salt marshes bordering the south arm of the San Francisco Bay. It prefers tidally influenced habitats. This species is found in all relatively large marshes (e.g., Dumbarton Marsh, Palo Alto Baylands) and in most remnant patches of marsh vegetation along sloughs, dikes, and levees, including some highly disturbed and urbanized sites. Vegetation is required for nesting sites, song perches, and concealment from predators. In addition, Alameda song sparrow requires some upper marsh vegetation for nesting in order to ensure the nests remain dry during high tide.	Alameda song sparrow is a regular breeder and common throughout the year in Santa Clara County. Multiple CNDDB occurrences for Alameda song sparrow have been documented within 5 miles of the proposed project footprint. However, the project footprint does not support suitable foraging or nesting habitat. **Not Expected**
Long-eared owl (*Asio otus*)	CSSC	Long-eared owl frequents dense, riparian and live oak thickets near meadow edges, as well as nearby woodland and forest habitats. Generally, this owl requires open uncultivated areas adjacent to riparian habitat for successful foraging. At higher elevations, it is also found in dense conifer stands.	Known to breed in Foothills Preserve and Monte Bello Open Space Preserve but considered rare in San Mateo and Santa Clara Counties. There is suitable nesting habitat in the riparian habitat adjacent to the project footprint along with nearby suitable open space for foraging. **High Potential**
Saltmarsh common yellowthroat (*Geothylpis trichas sinuosa*)	CSSC	Saltmarsh common yellowthroat nests and forages in fresh and saltwater marshes and seasonal wetlands. It breeds on the ground or up to 8 centimeters off the ground under the cover of dense shrubs and emergent aquatic vegetation.	Multiple CNDDB occurrences have been documented within 5 miles of the proposed project footprint. However, no suitable nesting or foraging habitat is present in within the project footprint. **Not Expected**

Species Name	Federal, State, and CNPS Listing Status[1]	Habitat Preferences, Distribution Information, and Additional Notes	Potential to Occur
White-tailed kite (*Elanus leucurus*)	CFP	White-tailed kites often nest in trees along forest edges adjacent to grasslands and agricultural areas, where they forage.	It is found year-round in San Mateo and Santa Clara Counties. It is known to nest within the San Francisquito riparian corridor and forage in the open fields near the SLAC National Accelerator Laboratory, west of Interstate 280. **High Potential**
Mammals			
American badger (*Taxidea taxus*)	CSSC	American badger is rare in western San Francisco Bay area. It occurs in grasslands and open stages of forest and scrub habitats with friable soils and good prey base of burrowing rodents.	No CNDDB occurrences for American badger have been documented within 5 miles of the project footprint since 1981. American badger is known from the western flanks of the Santa Cruz Mountains. No suitable habitat for this species is present in the project footprint. **Not Expected**
Pallid bat (*Antrozous pallidus*)	CSSC	Pallid bat is uncommon, especially in urban areas. They typically will use three different types of roosts in areas with rocky outcroppings, to open, sparsely vegetated grasslands: a day roost which can be a warm, horizontal opening such as in attics, shutters or crevices; the night roost is in the open, but with foliage nearby; and the hibernation roost, which is often in buildings, caves, or cracks in rocks. Water must be available close by at all sites. It is most common in open, dry habitats with rocky areas for roosting.	There are several CNDDB occurrences for pallid bat within 5 miles of the project site. However, the most recent record is from 1960. There is no suitable foraging or roosting habitat in the vicinity and within the project site. **Not Expected**

Species Name	Federal, State, and CNPS Listing Status[1]	Habitat Preferences, Distribution Information, and Additional Notes	Potential to Occur
San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*)	CSSC	San Francisco Dusky-footed woodrat is a nocturnal species that is known for constructing large terrestrial stick houses. Houses typically are placed on the ground against or straddling a log or exposed roots of a standing tree, and, are often located in dense brush. Nests are also placed in the crotches and cavities of trees and in hollow logs. Sometimes arboreal nests are constructed in habitat with evergreen trees such as live oak. The San Francisco dusky-footed woodrat can be found throughout the SF Bay area.	There are several woodrat houses on the parcel adjacent to the project footprint. **Present**
Townsend's big-eared bat (*Corynorhinus townsendii*)	CPT CSSC	Townsend's big-eared bat roosts in the open within caves, mines, abandoned buildings, and large cavities within trees. It forages along the edges of vegetation. This species is extremely sensitive to human disturbance.	Townsend's big-eared bat has been documented within the San Francisquito Creek system. The riparian habitat of Los Trancos Creek provides suitable roosting and foraging habitat. **High Potential**
Western red bat (*Lasiurus blossevillii*)	CSSC	The western red bat roosts primarily in tree foliage, especially in cottonwood, sycamore, and other riparian trees or orchards. The bat prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging, including grasslands, shrublands, and open woodlands. They are solitary by nature but will gather in larger nursery roosts during the summer.	Western red bat has been documented within the San Francisquito Creek system. The riparian habitat of Los Trancos Creek provides suitable roosting and foraging habitat. **High Potential**

Notes: FE – Federal Endangered; FT – Federal Threatened; FC – Federal Candidate; CE – State Endangered; CT – State Threatened; CPT – State Proposed Threatened; CFP – California Fully Protected; CSSC – California Species of Special Concern.

ARBORIST REPORT

Submitted To:

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2 Cedar Lane
Woodside, CA 94062

Project Location:

3343 Alpine Road
Portola Valley, CA 94028

Submitted By:
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September 28, 2017

Ms. McKenzie Brooks
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RE: **3343 Alpine Road**
Portola Valley, CA

Assignment

As requested, I performed a visual inspection of 27 trees to determine species, size and condition and provide tree protection and tree preservation guidelines.

Summary

This site is a vacant lot, with access coming from the Town of Portola Valley, San Mateo County over a bridge and into unincorporated Santa Clara County. The rear property line borders Stanford land. Plans were not available at the time of inspection. Trees 1 through 20 are in Santa Clara County, with trees 12, 13 and part of 14 located on Stanford land. Neighboring trees were included because of potential impacts from site improvements. Trees 21 through 27 are in Portola Valley, San Mateo County. Tree Protection Zones (TPZ's) have been defined for each tree. A Tree Protection Zone is defined as a distance 6 times the trunk diameter and measured as a radius from the root flare. To minimize injuries to trees, we recommend grading and excavation operations encroach no closer than six times the trunk diameter. Any root damage or root cutting within the TPZ requires mitigation from a qualified arborist. Any grading or excavation within a defined TPZ must be accomplished by a qualified arborist.

Methodology

No root crown exploration, climbing or plant tissue analysis was performed as part of this survey. For purposes of identification, trees have been marked with aluminum tags.

In determining Tree Condition several factors have been considered which include:

Rate of growth over several seasons;
Structural decays or weaknesses;
Presence of disease or insects; and
Life expectancy.

Tree Description/Observation

1: California buckeye *(Aesculus californica)*
Diameter: 20.2" below bifurcation Low Branching
Height: 20' **Spread:** 30'
Condition: Poor to Fair
Location: Near creek bank
Observation: Dormant at time of inspection. Recent oak limb failure broke off two large scaffold limbs. Structure is considered weak with a high failure potential. The TPZ is 11-feet.

2: Bay laurel *(Umbellularia californica)*
Diameter: 7.5"
Height: 22' **Spread:** 8'
Condition: Fair
Location: Near creek bank
Observation: Narrow spreading crown, with slight lean. Adjacent to tree one. The TPZ is 4-feet.

3: California buckeye
Diameter: 9.5"
Height: 16' **Spread:** 20'
Condition: Poor to Fair
Location: Near creek bank
Observation: More than 40 percent of crown damages be recent oak limb failure and has been removed. Resulting primary stem is weak due to mechanical wound in tension wood. The TPZ is 6-feet.

4: Valley oak *(Quercus lobata)*
Diameter: 39.5"
Height: 55' **Spread:** 60'
Condition: Fair
Location: Near creek bank
Observation: Crown is somewhat one sided. Wound from recent 18-inch branch failure is visible at 20-feet. Recommend root collar inspection and crown reduction pruning. The TPZ is 20-feet.

5: California buckeye
Diameter: 13.3" Low Branching
Height: 30' **Spread:** 30'
Condition: Poor to Fair
Location: Near creek bank
Observation: Dormant at time of inspection. Scaffold limbs broken by recent adjacent oak limb failure. The TPZ is 7-feet.

6: Bay laurel
Diameter: 11.7" below bifurcation, Low Branching
Height: 30' **Spread:** 32'
Condition: Fair
Location: Near creek bank
Observation: Crown exhibits a moderate accumulation of deadwood. Grows to a significant lean toward buildable area of lot. The TPZ is 6-feet.

7: Coast live oak *(Quercus agrifolia)*
Diameter: 45.2"
Height: 38' **Spread:** 40'
Condition: Poor to Fair
Location: Near creek bank
Observation: Crown exhibits a minor accumulation of deadwood. Extensive decay visible on main stem in lower 20-feet. Decay is the result of an old large limb failure. Structure is considered poor. Leans toward creek. The TPZ is 23-feet.

8: Black walnut *(Juglans hindsii)*
Diameter: 20.9"
Height: 40' **Spread:** 36'
Condition: Poor to Fair
Location: Near creek
Observation: Crown exhibits a moderate accumulation of deadwood. Codominant leaders at 5-feet create an inherent structural defect. The TPZ is 11-feet.

9: Coast live oak
Diameter: 27.0"
Height: 55' **Spread:** 50'
Condition: Fair
Location: Rear corner
Observation: Crown exhibits a moderate accumulation of deadwood. Old poison oak vine hanging on scaffold limbs has been severed at 9-feet. The TPZ is 14-feet.

10: California buckeye
Diameter: 16.0" Low Branching
Height: 20' **Spread:** 25'
Condition: Fair
Location: Rear of property
Observation: Grows to a 45 degree lean away from larger oak. Dormant at time of inspection. The TPZ is 8-feet.

11: Coast live oak
Diameter: 35.4"
Height: 50' **Spread:** 60'
Condition: Fair
Location: Rear of property
Observation: Crown exhibits a moderate accumulation of deadwood. Canopy overhang into property is 34-feet. Narrow scaffold limb attachments. The TPZ is 18-feet.

12: Valley oak *(Quercus lobata)*
Diameter: 35.1"
Height: 55' **Spread:** 70'
Condition: Fair
Location: Off property
Observation: Should not be impacted within TPZ of 18-feet. Dead limbs and smaller deadwood observed. The TPZ is 18-feet.

13: Valley oak
Diameter: 34.2"
Height: 45' **Spread:** 55'
Condition: Fair
Location: Off property
Observation: Should not be impacted within TPZ of 18-feet. Dead limbs and smaller deadwood observed. Leans toward bridge.

14: Coast live oak
Diameter: 40.3" at 8-inches, Low Branching
Height: 45' **Spread:** 50'
Condition: Fair
Location: Near property line right rear
Observation: Crown exhibits a moderate accumulation of deadwood. Secondary leader exhibits narrow attachment. The TPZ is 21-feet.

15: Coast live oak
Diameter: 12.0"
Height: 30' **Spread:** 25'
Condition: Fair
Location: Near creek bank
Observation: Crown exhibits a moderate accumulation of deadwood. Mottled bark above root flare is symptomatic of old western sycamore borer infestation. Mechanical wounds on trunk appear to be the result of poison oak removal from main stem. The TPZ is 6-feet.

16: Coast live oak
Diameter: 8.0"
Height: 20' **Spread:** 22'
Condition: Poor to Fair
Location: Near creek bank
Observation: Crown exhibits a heavy accumulation of deadwood. Leans away from larger oak. The TPZ is 6-feet.

17: Coast live oak
Diameter: 23.5"
Height: 45' **Spread:** 25'
Condition: Poor to Fair
Location: Near creek bank
Observation: Crown exhibits a moderate accumulation of deadwood and old vines hanging in crown. Small broken limbs hanging. Below average vigor. The TPZ is 12-feet.

18: Bay laurel
Diameter: 8.5, 8.5" Multi trunk
Height: 35' **Spread:** 20'
Condition: Poor to Fair
Location: Edge of creek bank
Observation: Dieback of crown observed. An old cut from previous primary stem removal or failure is visible at 7-feet. The TPZ is 10-feet.

19: Coast live oak
Diameter: Estimated 42.0"
Height: 45' **Spread:** 30'
Condition: Poor to Fair
Location: Edge of creek bank
Observation: Dieback of crown observed. Old wound from possible failure weakens tree structure. The TPZ is 21-feet.

20: Bay laurel
Diameter: 13.3" Low Branching
Height: 18' **Spread:** 18'
Condition: Poor to Fair
Location: Edge of creek bank
Observation: Crown exhibits a moderate accumulation of deadwood. Leans toward bridge. The TPZ is 23-feet.

21: Coast live oak
Diameter: 10.0"
Height: 28' **Spread:** 12"
Condition: Poor
Location: Between bridge and pedestrian path
Observation: Crown dieback. One sided as leans. The TPZ is 6-feet.

22: Coast live oak
Diameter: 16.0"
Height: 28' **Spread:** 18'
Condition: Fair
Location: Between bridge and pedestrian path
Observation: Crown is one sided with small deadwood observed on northwest side. The TPZ is 8-feet.

23: Bay laurel
Diameter: 17.5"
Height: 25' **Spread:** 18'
Condition: Poor to Fair
Location: Between bridge and pedestrian path
Observation: Leans toward bridge. Crown exhibits a moderate accumulation of deadwood. Suckers observed at base. The TPZ is 9-feet.

24: Bay laurel
Diameter: 18.8"
Height: 20' **Spread:** 12'
Condition: Poor
Location: Between bridge and pedestrian path
Observation: Canopy consists of two water sprouts with a failed and old decayed central leader. Main stem failed at 12-feet. The TPZ is 10-feet.

25: Coast live oak
Diameter: 8.8"
Height: 16' **Spread:** 18'
Condition: Poor
Location: Between bridge and pedestrian path
Observation: Leans toward Alpine. Bleeding cankers and Hypoxylon fruiting bodies visible in tension wood. The TPZ is 6-feet.

26: Coast redwood *(Sequoia sempervirens)*
Diameter: 26.1"
Height: 50' **Spread:** 26'
Condition: Fair
Location: Alpine entry gate
Observation: Crown appears slightly water stressed with suckering at root flare, including two 7-inch suckers. The TPZ is 13-feet.

27: Valley oak
Diameter: 14.4"
Height: 35' **Spread:** 26'
Condition: Fair to Good
Location: Alpine entry gate
Observation: Crown exhibits a minor accumulation of deadwood. Scaffold limbs exhibit narrow attachments. The TPZ is 8-feet.


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TREE PRESERVATION GUIDELINES

Tree Preservation and Protection Plan
In providing recommendations for tree preservation, we recognize that injury to trees as a result of construction include mechanical injuries to trunks, roots and branches, and injury as a result of changes that occur in the growing environment.

To minimize these injuries, we recommend grading operations encroach no closer than six times the trunk diameter, (i.e. 30" diameter tree x 6=180" distance). At this distance, buttress/anchoring roots would be preserved and minimal injury to the functional root area would be anticipated. Should encroachment within the area become necessary, hand digging is ***mandatory.***

Barricades
Prior to initiation of construction activity, temporary barricades should be installed around all trees in the construction area. Six-foot high, chain link fences are to be mounted on steel posts, driven 2 feet into the ground, at no more than 10-foot spacing. The fences shall enclose the entire area under the drip line of the trees or as close to the drip line area as practical. These barricades will be placed around individual trees and/or groups of trees as the existing environment dictates.

The temporary barricades will serve to protect trunks, roots and branches from mechanical injuries, will inhibit stockpiling of construction materials or debris within the sensitive 'drip line' areas and will prevent soil compaction from increased vehicular/pedestrian traffic. No storage of material, topsoil, vehicles or equipment shall be permitted within the tree enclosure area. The ground around the tree canopy shall not be altered. Designated areas beyond the drip lines of any trees should be provided for construction materials and onsite parking.

Root Pruning (if necessary)
During and upon completion of any trenching/grading operation within a Tree Protection Zone, clean pruning cuts of exposed, damaged or severed roots greater than one-inch diameter should be accomplished under the supervision of a qualified Arborist to minimize root deterioration beyond the soil line ***within twenty-four (24) hours.***

Pruning
Pruning of the foliar canopies to include removal of deadwood is recommended and should be initiated prior to construction operations. Such pruning will provide any necessary construction clearance, will lessen the likelihood or potential for limb breakage, reduce 'windsail' effect and provide an environment suitable for healthy and vigorous growth.

Fertilization
A program of fertilization by means of deep root soil injection is recommended with applications in spring and summer for those trees to be impacted by construction. Fertilizer should include organic

Such fertilization will serve to stimulate feeder root development, offset shock/stress as related to construction and/or environmental factors, encourage vigor, alleviate soil compaction and compensate for any encroachment of natural feeding root areas.

Inception of this fertilizing program is recommended prior to the initiation of construction activity.

Mulch
Mulching with wood chips (maximum depth 3") within tree environments (outer foliar perimeter) will lessen moisture evaporation from soil, protect and encourage adventitious roots and minimize possible soil compaction.

Inspection
Periodic inspections by the ***Site Arborist*** are recommended during construction activities, particularly as trees are impacted by trenching/grading operations.

Inspections at approximate four (4) week intervals would be sufficient to assess and monitor the effectiveness of the Tree Preservation Plan and to provide recommendations for any additional care or treatment.

We thank you for this opportunity to be of assistance in your tree preservation concerns.

Should you have any questions, or if we may be of further assistance in these concerns, kindly contact our office at any time.

McCLENAHAN CONSULTING, LLC

By: **John H. McClenahan**
ISA Board Certified Master Arborist, WE-1476B
member, American Society of Consulting Arborists

JHMc: pm

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ARBORIST DISCLOSURE STATEMENT

Arborists are tree specialists who use their education, knowledge, training and experience to examine trees, recommend measures to enhance the beauty and health of trees, and attempt to reduce the risk of living near trees. Clients may choose to accept or disregard the recommendations of the arborist, or seek additional advice.

Arborists cannot detect every condition that could possibly lead to the structural failure of a tree. Trees are living organisms that fail in ways we do not fully understand. Conditions are often hidden within trees and below ground. Arborists cannot guarantee that a tree will be healthy or safe under all circumstances, or for a specified period of time. Likewise, remedial treatments, like a medicine, cannot be guaranteed.

Treatment, pruning, and removal of trees may involve considerations beyond the scope of the arborist's services such as property boundaries, property ownership, site lines, disputes between neighbors, landlord-tenant matters, etc. Arborists cannot take such issues into account unless complete and accurate information is given to the arborist. The person hiring the arborist accepts full responsibility for authorizing the recommended treatment or remedial measures.

Trees can be managed, but they cannot be controlled. To live near a tree is to accept some degree of risk. The only way to eliminate all risks is to eliminate all trees.

Arborist: John H. McClenahan
Date: September 28, 2017

Phase I Cultural Resources Report
3343 Alpine Road, Portola Valley, California

Prepared for:
Toni Cupal
2 Cedar lane
Woodside, CA 94062

Prepared by:
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(650) 400-5767

Project Location:
Palo Alto, CA United States Geological Survey 7.5" Quadrangle Map,
Un-sectioned Portions of Township 6S; Range 3W
UTM 10N 4139067 mn.N 571618 mn. E

September 2018

Project Number: 16124

Table of Contents

Figures

Appendices

List of Acronyms

AB	Assembly Bill
APN	Assessor Parcel Number
ARPA	Archaeological Resources Protection Act
CEQA	California Environmental Quality Act
CHRIS	California Historical Resource Inventory System
CRHR	California Register of Historic Resources
MLD	Most Likely Descendent
NAGPRA	Native American Graves Protection and Repatriation Act
NAHC	Native American Heritage Commission
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
NWIC	Northwest Information Center
PRC	Public Resource Code
RPA	Registered Professional Archaeologist
SLF	Sacred Lands File
TCR	Tribal Cultural Resource
UCMP	University of California at Berkeley Museum of Paleontology

Executive Summary

The project includes construction and operation of a single-family home within a 4.2-acre parcel (APN 142-15-008) (project area) along Los Trancos Creek in unincorporated Santa Clara County, adjacent to the San Mateo County border, near the town of Portola Valley. A study area of 0.5-mile radius around the project area was established for cultural record searches to identify historic and prehistoric resources near the project and evaluate the historic and prehistoric significance of the project area.

Historical Resources

Two (2) historic resources were identified by the California Historical Resources Information System (CHRIS) search, the Bracewell Observatory and the Old Felt Dam. The Old Felt Dam is approximately 0.25 mile away from the project site, and it is not visible from its boundary. The proposed project would not affect the dam's historic character or affect its eligibility for the California Register of Historic Resources (CRHR). The antenna discovered on the pedestrian survey is the last remaining complete antenna of the Bracewell Observatory. Implementation of the proposed project would not adversely affect the eligibility of the Bracewell Observatory site and impacts to historical resources would be less than significant.

Archaeological Resources

The area immediately surrounding the project site, and along Los Trancos creek, contains Native American human burials and sites. There is a high potential of discovering Native American archaeological resources during ground moving operations. As a result, Avoidance and Minimization Measures (AMMs; included in Section 8 of this report) are recommended to be incorporated into the project and shown as specifications in construction documents to avoid significant impacts defined under the California Environmental Quality Act (CEQA).

Paleontological Resources

Although no known paleontological resources from the University of California Museum of Paleontology at Berkeley (UCMP) records are indicated within the 0.5 mile the study area, and no resources were identified during the pedestrian survey, the site is may be underlain by undisturbed Quaternary deposits that are known to contain vertebrate fossils. There is a potential of uncovering significant vertebrate fossils even at depths as shallow as six feet below the surface. As a result, AMMs are recommended to be incorporated into the project to avoid significant impacts as defined in CEQA. See Section 8 of this report.

Human Remains

There are at least two known sites containing human burials found near the project parcel. There is at least a moderate potential to find further human burials during ground moving activity on the project parcel. As a result, AMMs (included in Section 8 of this report) are recommended to be incorporated into the project to avoid significant impacts as defined in CEQA.

Tribal Cultural Resources

As with Archaeological Resources, the area immediately surrounding the project, and along Los Trancos creek, contains Native American human burials and sites. There is a high potential of discovering Native American resources during ground moving operations. As a result, it is recommended that AMMs included in Section 8 of this report be incorporated into the project and shown in construction document specifications to avoid significant impacts as defined in CEQA.

1 Introduction

1.1 Project Description and Location

The proposed project is located in unincorporated Santa Clara County near the Town of Portola Valley on the San Mateo-Santa Clara county border (Figure 1) The proposed project includes the construction of a single-family home in a 0.48-acre area (project footprint) of the 4.2-acre parcel adjacent to Los Trancos Creek (APN 142-15-008; Figure 2 and Figure 3). The parcel is accessed via a bridge that spans Los Trancos Creek and is accessed by an easement off Alpine Road in Portola Valley, California, which is located in San Mateo County. Alpine Trail, a 7.6-mile multi-use trail that loosely follows Alpine Road between Menlo Park and Portola Valley is nearby. Los Trancos Creek defines the boundary between San Mateo and Santa Clara counties.

1.2 Scope of Study and Personnel

MIG conducted a phase I cultural resources assessment of the project area from January 2018 through March 2018 to identify cultural resources (including archaeological, historical, and paleontological resources) on the site and within the study area (0.5 radius surrounding the project area), to identify potential impacts to cultural resources resulting from the project, and to develop Avoidance and Minimization Measures that could be incorporated into the project to avoid, reduce, or mitigate potential impacts to resources for the purpose of complying with CEQA and Santa Clara County cultural resource guidelines. The scope of work for this assessment included a cultural resources records search through CHRIS at the Northwest Information Center (NWIC), a Sacred Lands File (SLF) search through the Native American Heritage Commission (NAHC), a paleontological resources records search through the UCMP, a field survey, research of land use history, impact analyses, and the recommendations of additional work and AMMs as necessary. The assessment and this report was compiled by Mr. Robert Templar, M.A. The site visit survey and record searches were performed by Mr. Templar. Quality control was conducted by Mr. Chris Purtell, M.A. RPA. Qualifications of key personnel are provided in Appendix A.

Both Mr. Templar and Mr. Purtell meet the Secretary of the Interior's standards for Archaeology and History.

2 Regulatory Setting

2.1 Federal

2.1.1 National Historic Preservation Act of 1966

In summary, the National Historic Preservation Act (NHPA) establishes the nation's policy for historic preservation and sets in place a program for the preservation of historic properties by requiring federal agencies to consider effects to significant cultural resources (i.e. historic properties) prior to undertakings.

2.1.2 National Register of Historic Places

The National Register of Historic Places (NRHP) was established by the NHPA of 1966 as "an authoritative guide to be used by federal, state, and local governments, private groups, and citizens to identify the Nation's cultural resources and to indicate what properties should be considered for protection from destruction or impairment." The NRHP recognizes properties that are significant at the national, state, and local levels. To be eligible for listing in the NRHP, a resource must be significant in American history, architecture, archaeology, engineering, or culture. Districts, sites, buildings, structures, and objects of potential significance must also possess integrity of location, design, setting, materials, workmanship, feeling, or association. A property is eligible for the NRHP if it is significant under one or more of the following criteria:

Criterion A: It is associated with events that have made a significant contribution to the broad patterns of our history.

Criterion B: It is associated with the lives of persons who are significant in our past.

Criterion C: It embodies the distinctive characteristics of a type, period, or method of construction; represents the work of a master; possesses high artistic values; or represents a significant and distinguishable entity whose components may lack individual distinction.

Criterion D: It has yielded, or may be likely to yield, information important in prehistory or history.

Cemeteries, birthplaces, or graves of historic figures; properties owned by religious institutions or used for religious purposes; structures that have been moved from their original locations; reconstructed historic buildings; and properties that are primarily commemorative in nature are not considered eligible for the NRHP unless they satisfy certain conditions. In general, a resource must be at least 50 years of age to be considered for the NRHP, unless it satisfies a standard of exceptional importance.

2.1.3 Native American Graves Protection and Repatriation Act of 1990

The Native American Graves Protection and Repatriation Act of 1990 (NAGPRA), sets provisions for the intentional removal and inadvertent discovery of human remains and other cultural items from federal and tribal lands. It clarifies the ownership of human remains and sets forth a process for repatriation of human remains and associated funerary objects and sacred religious objects to the Native American groups claiming to be lineal descendants or culturally affiliated with the remains or objects. It requires any federally funded institution housing Native American remains or artifacts to compile an inventory of all cultural items within the museum or with its agency and to provide a summary to any Native American tribe claiming affiliation.

2.1.4 Secretary of the Interior's Standards

The Secretary of the Interior's Standards provide a framework for the experience needed to work with historic or archaeological sites and structures. The Standards define minimum education and experience required to perform identification, evaluation, registration, and treatment activities on historic and archaeological properties and sites. The requirements have been previously published in the Code of Federal Regulations, 36 CFR Part 61.

2.2 State

2.2.1 California Environmental Quality Act Section 15064.5

Pursuant to CEQA, a historical resource is a resource listed in, or eligible for listing in, the CRHR. In addition, resources included in a local register of historic resources or identified as significant in a local survey conducted in accordance with state guidelines are considered historic resources under CEQA, unless a preponderance of the facts demonstrates otherwise. Per CEQA, the fact that a resource is not listed in or determined eligible for listing in the CRHR or is not included in a local register or survey shall not preclude a Lead Agency, as defined by CEQA, from determining that the resource may be a historic resource as defined in California Public Resources Code (PRC) Section 5024.1.

Physical demolition, destruction, relocation, or alteration of an historic resource or its immediate surroundings may constitute a significant effect on the environment.

CEQA applies to archaeological resources when (1) the archaeological resource satisfies the definition of a historical resource or (2) the archaeological resource satisfies the definition of a "unique archaeological resource." A unique archaeological resource is an archaeological artifact, object, or site that has a high probability of meeting any of the following criteria:

1. The archaeological resource contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information.

2. The archaeological resource has a special and particular quality such as being the oldest of its type or the best available example of its type.

3. The archaeological resource is directly associated with a scientifically recognized important prehistoric or historic event or person.

To the extent that unique archaeological resources are not preserved in place or not left in an undisturbed state, mitigation measures shall be required (PRC §21083.2(c)). If an archaeological resource is neither a unique archaeological nor an historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment, and it shall be sufficient that both the resource and the effect on it are noted in the IS or EIR (14 CCR §15064.5(c)(4)).

When an initial study identifies the existence of, or the probable likelihood of Native American human remains within the project, a lead agency shall work with the appropriate Native Americans as identified by the Native American Heritage Commission as provided in Public Resources Code section 5097.98.

In the event of the accidental discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until the coroner of the county in which the remains are discovered is contacted to determine that no investigation of the cause of death is required. If the coroner determines the remains to be Native American then the coroner will contact the Native American Heritage Commission within 24 hours, and the Native American Heritage Commission will identify the person or persons it believes to be the most likely descended from the deceased Native American.

The significance thresholds for impacts to cultural resources are described in Section 7.1, below.

2.2.2 Health and Safety Code

In the event of the discovery of human remains outside a dedicated cemetery, all ground disturbances must cease and the county coroner must be notified per section 7050.5 of the California Health and Safety Code. Section 7052 of the Code establishes a felony penalty for mutilating, disinterring, or otherwise disturbing human remains, except by relatives.

2.2.3 Penal Code Section 622.5

Under Penal Code Section 622.5 there are misdemeanor penalties for injuring or destroying objects of historic or archaeological interest located on public or private lands but specifically excludes the landowner.

2.2.4 Public Resources Code 5020.1(k)

Under 5020.1(k), the PRC defines a *local register of historical resources* as “a list of properties officially designated or recognized as historically significant by a local government pursuant to a local ordinance or resolution.” Thus, some properties not officially recognized at the federal or state level as historical resources may still be protected under state law.

2.2.5 Public Resources Code 5024.1(c)

The PRC establishes the California Register of Historical Resources, the authoritative guide that identifies the state’s historical resources and indicates what properties are to be protected to the extent possible. A resource may be listed as an historical resource in the California Register if it meets any of the following criteria:

(1) Is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage.

(2) Is associated with the lives of persons important in our past.

(3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.

(4) Has yielded, or may be likely to yield, information important in prehistory or history.

2.2.6 Public Resources Code 21074

The PRC establishes what constitutes tribal cultural resources (TCRs). TCRs are sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either included or determined to be eligible for inclusion in the California Register of Historical Resources or included in a local register of historical resources.

When applying the criteria set forth in subdivision (c) of Section 5024.1 the lead agency shall consider the significance of the resource to a California Native American tribe.

A cultural landscape is a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape.

A historical resource, a unique archaeological resource, or a nonunique archaeological resource may also be a tribal cultural resource if it is a site, feature, place, cultural landscape, sacred place, or object with a cultural value to a California Native American tribe.

2.2.7 Public Resources Code 21084.1

This section of the PRC explicitly states that an adverse effect on a historical resource qualifies as a significant effect on the environment under CEQA.

2.2.8 Public Resources Code Sections 5097.9 – 5097.991

The NAHC was established in 1976 by Section 5097.91 of the Public Resources Code (PRC). Its duties include the inventory of places of religious or social significance to Native Americans and the identification of known graves and cemeteries of Native Americans on private lands. The Commission is charged with the duty of preserving and ensuring accessibility of sacred sites and burials, the disposition of Native American human remains and burial items, maintaining an inventory of Native American sacred sites located on public lands, and reviewing current administrative and statutory protections related to these sacred sites. Per Section 5097.98 of the PRC, a specific protocol must be followed when the NAHC receives notification of a discovery of Native American human remains from a county coroner. The unauthorized disturbance or removal of archaeological, historic, or paleontological resources located on public lands is defined as a misdemeanor under Section 5097.5.

2.2.9 California Native American Graves Protection and Repatriation Act of 2001

Codified in the California Health and Safety Code Sections 8010–8030, the California Native American Graves Protection Act (California NAGPRA) is consistent with the federal NAGPRA. Intended to "provide a seamless and consistent state policy to ensure that all California Indian human remains and cultural items be treated with dignity and respect." The California NAGPRA also encourages and provides a mechanism for the return of remains and cultural items to lineal descendants. Section 8025 established a Repatriation Oversight Commission to oversee this process. The act also provides a process for non–federally recognized tribes to file claims with agencies and museums for repatriation of human remains and cultural items.

2.2.10 Assembly Bill 52, amendment to the Public Resources Code

A project that may cause a substantial adverse change in the significance of a tribal cultural resource, as defined in Assembly Bill 52 (AB 52), is a project that may have a significant effect on the environment. AB 52 requires a Lead Agency to begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project, if the tribe requests

in writing to the Lead Agency that the Lead Agency inform the tribe of proposed projects in that geographic area, and the tribe requests consultation from the Lead Agency, prior to the Lead Agency determining whether a negative declaration, mitigated negative declaration, or environmental impact report is required for a project. AB 52 specifies examples of mitigation measures that may be considered to avoid or minimize impacts on tribal cultural resources. The bill makes the above provisions applicable to projects that have a notice of preparation or a notice of negative declaration filed, or mitigated negative declaration, on or after July 1, 2015. AB 52 amends Sections 5097.94 and adds Sections 21073, 21074, 2108.3.1., 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3 to the California Public Resources Code (PRC), relating to Native Americans.

2.3 Local

2.3.1 San Mateo County General Plan Policies

5.12 Rehabilitation of Historic Structures. Encourage the rehabilitation and recycling of historic structures.

5.16 Demolition of Resources. Discourage the demolition of any designated historic district or landmark.

5.20 Site Survey. Determine if sites proposed for new development contain archaeological/ paleontological resources. Prior to approval of development for these sites, require that a mitigation plan, adequate to protect the resource and prepared by a qualified professional, be reviewed and implemented as a part of the project.

5.21 Site Treatment.

a) Encourage the protection and preservation of archaeological sites.
b) Temporarily suspend construction work when archaeological/paleontological sites are discovered. Establish procedures which allow for the timely investigation and/or excavation of such sites by qualified professionals as may be appropriate.
c) Cooperate with institutions of higher learning and interested organizations to record, preserve, and excavate sites.

2.3.2 Santa Clara County Historic Preservation Ordinances

The Historical Preservation Ordinance, C17 of the Santa Clara County Code of Ordinances, has the intention to preserve, protect, enhance, and perpetuate resources of architectural, historical, and cultural merit within Santa Clara County and to benefit the social and cultural enrichment, and general welfare of the people. Applicable policies include the preservation of existing historic resources, the establishment of a list of historic structures, and the addition of new historic structures to the list.

3 Environmental Setting

3.1 Area Description

The parcel is situated in a rural-residential area near Portola Valley, California and is bordered on the west by Los Trancos Creek, by a commercial nursery to the south and by undeveloped private property is to the north and east. Los Trancos Creek is a perennial creek that flows northerly from the northeast slope of the Santa Cruz Mountains to its confluence with San Francisquito Creek near Alpine Road and Piers Lane. Los Trancos Creek drains an area of about seven square miles and consists of about 6.6 miles of channel.

Geologically, the Study Area is located within the Coast Ranges Geomorphic Province, a relatively geologically young and seismically-active region on the western margin of the North American plate. The ranges and valleys trend northwest, sub-parallel to the San Andreas Fault. The Coast Ranges are composed of thick Mesozoic and Cenozoic sedimentary strata. The northern and southern ranges are separated by a depression containing the San Francisco Bay. West of the San Andreas is the Merced

Formation that is composed of sediment deposited in a variety of coastal settings, ranging from shelf through near shore to non-marine environments. The underlying geology of the project area is Holocene alluvium, formed in the second epoch of the Quaternary period, approximately 11,700 years ago. The streambed is mapped as modern stream channel deposits.

3.2 Site Description

The project parcel is located in a riparian corridor and is predominantly heavily vegetated. The project impact area on the parcel is not heavily vegetated, containing primarily grasses. The site has a sloped topography. The banks of the creek are steeply sloped and rise sharply, and they are comprised of exposed bedrock and hillwash. The north and south areas of the project area have a higher elevation higher than the center. There are flat plateaus above the creek in some areas, including the proposed impact area (Figure 4). The creek is un-channelized and free-flowing. Exposed bedrock formed the lower banks of portions of the stream bed. The earthen banks of the stream are weathered and eroded. Photographs of the site are provided in Figure 5.

4 Cultural Setting

4.1 Ethnographic Background

The Bay Area is in the traditional territory of the Ohlone (or Costanoans as they were known by the Spanish) Native American Tribe. Considered as ‘complex hunter-gatherers’, the Ohlone lived in tribelets or nations that were dialectally distinct from each other. Each tribelet is autonomous, and territorially separated. They consisted of one or more permanent villages, with various seasonal temporary encampments located throughout their territory for the gathering of raw material resources, hunting and fishing. The Ohlone lived in extended family units in domed dwellings constructed from tule, grass, wild alfalfa, and ferns. The diet consisted of plant resources such as acorns, buckeyes, and seeds that were supplemented with the hunting of fish, shellfish, elk, deer, grizzly bear, mountain lions, sea lions, whales, and waterfowl. The Costanoan peoples practiced controlled burning on an annual basis throughout their territory as a form of land management to insure plant and animal yields for the coming year.

4.2 Prehistoric Background

The area around the modern town of Portola Valley was heavily utilized by the native Ohlone. Rich in resources, especially in and around water sources, such as Los Trancos Creek, the area was used for hunting, fishing, gathering and settling. Evidence of Native American activity in the area is well known, particularly in the modern-day Jasper Ridge Biological Preserve where numerous occupation sites are known to have existed. Artifacts from the prehistoric period have been found throughout the Portola Valley area.

4.3 Historic Background

The first Europeans to reach the Bay Area were Spanish explorers in 1769 as part of the Portolá expedition. In 1774, the de Anza expedition had set out to convert the Native American tribes to Christianity, resulting in the establishment of (among others) Mission San Francisco de Asis (Mission Dolores) (founded in 1776) and Mission Santa Clara de Asis (founded in 1777). In this historic period, the Ohlone people were subjugated and absorbed into the mission system that resulted in the loss of their freedom of movement, their culture, and customs.

The area of the project site is within the Mexican land grant of Rancho Corte El Madera. The Spanish and later Mexican governments encouraged settlement of Alta California (now known as California) by giving prominent men large land grants called ranchos, usually two or more square leagues (a league is 3 miles). Land-grant titles (concessions) were government-issued, permanent, unencumbered property-ownership rights to the ranchos. Spain made about 30 grants between 1784 and 1821, and Mexico granted about 270 more between 1833 and 1846. The ranchos established land-use patterns and place names that

are still in use in California today. Rancho boundaries became the basis for California's land survey system, and can still be found on modern maps and land titles.

The grant of Rancho Corte El Madera was given to Máximo Martínez in 1844. He had been a soldier in San Francisco from 1819 until 1827 and was a regidor (councilman) in the Pueblo of San José in 1833.

Later demand for lumber for missions and towns in the 1850's led to the establishment of sawmills adjacent to San Francisquito Creek and other nearby creeks. A small town, Searsville, sprang up to the north of the project site, but was short-lived; it was condemned in 1879 to make way for the construction of Searsville Dam. Most redwoods in the area nearby area were clear cut by the 1870's.

The area of the project site does not appear to have been developed at any prior point in history. Examination of historic aerial photos seems to indicate land management has occurred, although not to a significant level.

5 Record Searches

5.1 California Historical Resources Information System Search

A CHRIS search was requested by MIG and completed by the NWIC on February 5, 2018. No known historic or archaeological resources were identified within the project boundary. Two historic resources, four prehistoric resources, and one unknown cultural resource were identified within the 0.5 mile radius search area (the Study Area). The resource locations can be seen on Confidential Figure 6. These resources are:

- P-41-000296/ P-43-003884: Prehistoric site split into two resource numbers due to county line.
- P-43-000556: Prehistoric site containing human burials
- P-43-000557: Prehistoric site containing human burials
- P-43-000668: Prehistoric site
- P-43-001733: Bracewell Observatory
- P-43-002196: Old Felt Lake Dam
- C-439: Undefined cultural resource

Human burials were discovered at P-43-000556, in a property adjacent to the project site, as well as P-43-000557, which is along to the banks of Los Trancos Creek, to the south of the project site. Native American middens were discovered at: P-41-000296/ P-43-003884, P-43-000557, P-43-000668. Additional evidence of Native American activity in the form of either bone, shell, worked stone, or fire cracked stone was discovered in differing amounts at all the prehistoric sites. All the sites were located on, or close to the banks of Los Trancos Creek.

To the south-east of the project site, the Old Felt Dam (P-43-002196) is located on Felt Lake. This is an earthen embankment dam constructed to form the lake. The damn is currently partially submerged after the construction of a new, higher dam and expansion of the reservoir in 1930 to provide additional irrigation water to the Stanford campus.

Directly bordering the project site to the east is the site of the Bracewell Observatory (P-43-001733). This is described as having been a radio telescope array consisting of 32 10-foot diameter dish antennae, and 5 60-foot dish antennae. At the time of authorship of the resource information, the 32 10-foot antennae has been removed, although the concrete mounting pillars had been retained and the 60 foot antennae were still present. The 60-foot antennae have since been removed. It is unknown if the concrete mounting pillars are still present.

Full results of the CHRIS search are provided in Confidential Appendix B.

Exact locations of prehistoric sites and archaeological resources are restricted from public information pursuant to California Government Code (CGC) 6254.10, Section 304 of the National Historic Preservation Act (NHPA), and Section 9(a) of the Archaeological Resources Protection Act (ARPA).

5.2 Sacred Lands File Search

A Sacred Lands File (SLF) search was requested by MIG and completed by the Native American Heritage Commission (NAHC) on January 16, 2018 with negative results (Appendix C).

5.3 Fossil Record Search

The University of California Museum of Paleontology (UCMP) at Berkeley was contacted by MIG for a search of fossil records within the project site and to a radius of one half mile. The UCMP completed this search on January 11, 2018. No results were returned for the area, however, the UCMP did note that that a number of fossils from the Miocene (the fourth epoch of the Tertiary period) were found during excavation of the Stanford Linear Accelerator and in the bed of San Francisquito Creek where it crossed Alpine Road as well as noting that that the area occasionally produces fossils from the Pleistocene (the first epoch of the Quaternary period, commonly known as the Ice Age) (Appendix D).

6 Pedestrian Survey

6.1 Methodology

A survey was performed by MIG archaeologist, Robert Templar on 02/28/2018. The site was surveyed in diagonal transects where possible. Survey points had been previously laid out to mark the edge of the property. Both sides of the creek, and the immediate environment were surveyed to identify potential surface cultural resources.

Thick vegetation prevented complete transects from being walked in some areas. Steep slopes prevent access between the stream and much of the rest of the site. The stream bed was surveyed as far as was accessible to search for evidence of cultural resources both in the creek and in the eroded areas of the creek banks.

Photographs of the site were taken from various views and in-situ remains of debris were recorded photographically.

6.2 Results

Thick leaf mulch across most of the site reduced ground visibility, although the area of the proposed project impact was clear of leaf mold and consisted of grasses and laid wood chips in some areas.

Modern detritus was discovered throughout the site. This includes: multiple beer and wine bottles (predominantly whole), tin cans, small oil drums or similar, a rusted metal pully, other unidentified rusted metalwork, fiberglass bodywork from what appeared to be a boat, baby strollers (one forming part of a wood rat nest), several bricks and a sherd of ceramic pot, most likely a flowerpot or similar. This is in addition to minimal other assorted trash and debris.

No prehistoric or cultural resources were identified on the site. Although bedrock was visible at the edges of the creek, no bedrock mortars were seen. No stone tools were observed. Several bones were observed during the pedestrian survey, which included: a rib bone, believed to be bovine in origin, with a severed end, indicating cutting with a metal blade (not retained); a disassociated coyote skull and disassociated dear mandible with no visible made-made marks (not retained); and a bovine tibia with what was appeared to be butchery marks (retained for study). After further analysis, the butchery marks are believed to come from animal tooth marks, most likely canid.

No structures exist currently on the site; however, a radio telescope antenna is approximately 25 feet away from the site boundary and was spotted from the edge of the project area (Figure 7). The structure

is in an area that could become part of the site if a lot-line adjustment were to happen. This antenna appears to be the last remaining antenna of the Bracewell Observatory, also known as Site 515 (CHRIS reference: P-43-001733). This antenna was the 33rd of the small 10-foot dish arrays, placed away from the other 32 antennae to improve accuracy. The array can be seen in Figure 8, with the 33rd antenna circled in red. The 32 antennae in a cross shape were demolished in 1972. The 5 large antennae were demolished in 2006. The Bracewell Array is currently listed as a historic resource by NWIC, being eligible for inclusion on the CRHR. Despite the demolition of the remaining antennae and buildings, no update has been made to the resource in the CHRIS system, and the 33rd antennae should be considered as a historic resource forming part of the Bracewell Observatory until it has been deemed otherwise.

No other historic or potential historic resources were noted as part of the survey nor were any surface paleontological resources or unique geological features discovered

7 Impacts

The purpose of this section is to identify the potential impacts to archaeological, historical, paleontological and cultural tribal resources, and human remains associated with implementing the proposed project. Avoidance and Minimization Measures listed in Section 8 should be incorporated into the project to prevent significant impacts.

7.1 Significance Thresholds

To consider impacts, the questions from Appendix G of the CEQA guidelines are included to show the potential impacts to cultural and tribal cultural resources under CEQA caused by the implementation of the proposed project.

Would the proposed project:

a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

d) Disturb any human remains, including those interred outside of dedicated cemeteries?

e) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

   i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1, or

   ii) ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

7.2 Historical Resources

Two resources identified by the CHRIS search, the Bracewell Observatory and the Old Felt Dam are historical resources as defined by CEQA Section 15064.5. The Old Felt Dam is approximately 0.25 miles away from the project site, and it is not visible from its boundary. Implementation of the proposed project would not affect the dam's historic character or affect its eligibility for the CRHR. The antenna discovered on the pedestrian survey is the last remaining complete antenna of the Bracewell Observatory. As no paperwork has been filed to show that removal of the buildings and antennae that formed the observatory may have altered its eligibility for the CRHR and given that this antenna may be the last trace of the Bracewell Observatory, it is being treated as a historic resource until determined otherwise. The antenna is effectively hidden in the woods about 25 feet from the parcel boundary, on Stanford University property. Given the dense vegetation, the project would not be visible from the antenna's location. Although the area surrounding the project site in Santa Clara County is mostly undeveloped, the surrounding land in San Mateo County is developed with residential properties and construction of a single-family residence on the parcel would not adversely affect the eligibility of the Bracewell Observatory site. Impacts to historical resources would therefore be ***Less than Significant***.

7.3 Archaeological Resources

Although no surface archaeological resources were noted during the pedestrian survey, the area immediately surrounding the project site, and along Los Trancos creek contains Native American human burials and sites. There is considered to be a high potential of discovering Native American archaeological resources during ground moving operations, and grading the site to build the single-family home could cause a substantial adverse change to an archaeological resource. As a result, Avoidance and Minimization Measures (AMMs) recommended to be incorporated into the project are provided in Section 8 to reduce potentially significant impacts to a less than significant level. With AMMs incorporated into the project the impact would be considered less than significant.

7.4 Paleontological Resources and Geological Features

No known paleontological resources from the UCMP records were recorded within the Study Area and no resources were identified during the pedestrian survey. However, the results of the search at the UCMP indicates the project area is potentially underlain by undisturbed Quaternary deposits that have the potential of yielding significant vertebrate fossils even at depths as shallow as six feet below the surface. As a result, AMMs recommended to be incorporated into the project are provided in Section 8 to reduce potentially significant impacts to paleontological resources or unique geological features that may be encountered during project implementation to a less than significant level. With AMMs incorporated into the project the impacts would be less than significant.

7.5 Human Remains

As mentioned above, in *Archaeological Resources*, there have been previous human burials found on a parcel of land adjacent to the project parcel as well within a half-mile along Los Trancos Creek. There is at least a moderate potential to find further human burials during ground moving activity, and as a result, AMMs recommended to be incorporated into the project are provided in Section 8 to reduce potentially significant impacts to a less than significant level. With AMMs incorporated into the project the impacts would be less than significant.

7.6 Tribal Cultural Resource

As mentioned above, in *Archaeological Resources*, the area immediately surrounding the project site, and along Los Trancos creek contains Native American human burials and sites. There is a high potential of discovering Native American resources during ground moving operations on the parcel. As a result, AMMs recommended to be incorporated into the project are provided in Section 8 to reduce potentially

significant impacts to a less than significant level. With these AMMs incorporated into the project the impacts would be less than significant.

8 Avoidance and Minimization Measures to be Incorporated into the Project and Other Recommendations

Prior to initiating the CEQA analysis for the project, it is recommended that the Lead Agency contact Tribal Representatives, per the recommendations of the NAHC (Appendix C) to identify if there are additional Native American cultural sites in the vicinity known to individual tribes that have not been reported to the NWIC.

The following AMMs should be incorporated into the project and included as specifications in construction documents. These measures will mitigate potential project impacts to archaeological, paleontological and tribal cultural resources:

Impact CULT-1: Disturbance of unknown archaeological cultural resources, including tribal cultural resources, during project construction.

AMM CULT-1: Due to the abundance of evidence of cultural resources near the project area, there is a high potential to discover archaeological resources during ground disturbing activity. Archaeological monitoring is required for all ground disturbing activities. An archaeologist meeting the Secretary of the Interior's Standards for Archaeology will be present at the project site during any ground disturbing activities, such as machine or hand excavation, or vegetation grubbing, take place. No ground disturbing activities of any kind can take place if the archaeologist is not present.

If archaeological resources from either a historic or prehistoric period are discovered (or have been suspected to have been discovered) during project construction, all ground disturbing work within a 100' radius buffer of the discovery will cease. The archaeologist will assess the discovery before any additional ground disturbing work within the 100-foot buffer will be allowed to continue. No further ground disturbing work will be allowed to continue until the archaeologist has fully evaluated the find and permits work to continue. Dependent on the evaluation by the archaeologist, archaeological excavation and recordation may be required before construction can continue.

If the newly discovered resources are determined, or suspected to be, Native American in origin, Native American Tribes/Representatives will be contacted and consulted as directed by the NAHC and Native American construction monitoring will be initiated. All Native American artifacts and finds suspected to be Native American in nature are to be considered as significant tribal cultural resources until the County has determined otherwise with the consultation of a qualified archaeologist and local tribal representative(s) as directed by the NAHC.

Implementation of AMM CULT-1 would reduce impacts to archaeological and tribal cultural resources to Less than Significant.

Impact CULT-2: Disturbance of unrecorded paleontological resources during project construction.

AMM CULT-2: If unrecorded paleontological resources are encountered during construction, all ground disturbing activities will cease, and the developer will avoid altering the resource in any way. No work shall be carried out within the stratigraphic context that the resource was discovered in until a qualified paleontologist has evaluated, recorded, and determined appropriate treatment of the resource consistent with protocols of the Society for Vertebrate Paleontology.

Implementation of AMM CULT-2 would reduce potential project impacts to paleontological resources to Less than Significant.

Impact CULT-3: The project could result in disturbance of unknown human remains during project construction.

AMM CULT-3: If human remains are unearthed during construction of the proposed project, the developer shall comply with State Health and Safety Code Section 7050.5 and will cease work and contact the County. The County shall immediately notify the County Coroner and no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to PRC Section 5097.98. If the remains are determined to be of Native American descent, the coroner has 24 hours to notify the NAHC. The NAHC shall then identify the person(s) thought to be the Most Likely Descendent (MLD).

After the MLD has inspected the remains and the site, they have 48 hours to recommend to the landowner the treatment and/or disposal of, with appropriate dignity, the human remains and any associated funerary objects. Upon the reburial of the human remains, the MLD shall file a record of the reburial with the NAHC and the project archaeologist shall file a record of the reburial with the NWIC. If the NAHC is unable to identify an MLD, or the MLD identified fails to make a recommendation, or the landowner rejects the recommendation of the MLD and the mediation provided for in Subdivision (k) of Section 5097.94, if invoked, fails to provide measures acceptable to the landowner, the landowner or his or her authorized representative shall inter the human remains and items associated with Native American human remains with appropriate dignity on the property in a location not subject to further and future subsurface disturbance.

Implementation of AMM CULT-3 would reduce potential project impacts to human remains to Less than Significant.

9 References

Bureau of Land Management, 2018. General Land Office (GLO) Records Automation. https://glorecords.blm.gov/default.aspx Accessed March 8, 2018.

Cabrillo College, 2017. Missionization. https://www.cabrillo.edu/~crsmith/anth6_missions.html Accessed March 8, 2018.

California Department of Conservation 2002 California Geologic Survey. California Geomorphic Provinces, Note 36.

California Department of Geology, 2006. Seismic Hazard Zone Report for the Palo Alto 7.5-Minute Quadrangle, San Mateo and Santa Clara Counties, California. http://gmw.conservation.ca.gov/SHP/EZRIM/Reports/SHZR/SHZR_111_Palo_Alto.pdf Accessed March 8, 2018

Clifton, H.E., and Hunter, R.E.1999, Depositional and other features of the Merced Formation in seacliff exposures south of San Francisco, California, in Wagner, D.L., and Graham, S.A., eds., Geologic field trips in northern California: California Division of Mines and Geology Special Publication 119, p. 89-100.

California State Parks, 2018. Office of Historic Preservation. http://ohp.parks.ca.gov/ Accessed March 8, 2018

City of Santa Clara, 2017. History. http://santaclaraca.gov/visitors/santa-clara-history/the-mission-city. Accessed March 8, 2018

Historic Aerials, 2018. https://www.historicaerials.com/viewer Accessed March 8, 2018

Historic Map Works, 2018. Map 001, S Alviso, Mountain View, Mayfield. http://www.historicmapworks.com/Atlas/US/7490/ March 8, 2018

Kroeber, A. L. 1976. Handbook of the Indians of California. Dover Publications Inc. New York.

Levy, Richard. 1987. Costanoan in R.F. Heizer (ed.) Handbook of North American Indians. Vol. 8: California: 485-495. Washington D.C. Smithsonian Institute.

National Park Service, 2018. National Register of Historic Places. https://www.nps.gov/nR/index.htm Accessed March 8, 2018

Native American Heritage Commission (NAHC). 2018. Sacred Lands File Search 085939, January 16, 2018.

Northwest Information Center (NWIC), Sonoma State University 2017. California Historical Resources Information System - Record Search, File No. 17-1795. February 5, 2018.

Stanford University, 2004. Demolition delayed for decaying radio antenna farm with glorious past. October 20, 2004. https://news.stanford.edu/news/2004/october20/antenna-1020.html Accessed March 8, 2018

Stanford University, 2018. Jasper Ridge Biological Preserve. https://jrbp.stanford.edu/about/history Accessed March 8, 2018

United States Census 2010, Census 2010 https://www.census.gov/2010census/ Accessed March 8, 2018

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Figures

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REVISED REPORT

GEOTECHNICAL ENGINEERING INVESTIGATION
PROPOSED CUPAL RESIDENCE
3343 ALPINE ROAD
PORTOLA VALLEY, CALIFORNIA

Prepared for:

Toni Cupal

BAYGG ENGINEERS

October 10, 2018
BAGG Job No. CUPAL-18-01

Toni Cupal
C/O McKenzie Brooks, Project Manager
mckenzie@healingcultures.org

Dear Ms. Cupal:

REVISED REPORT
Geotechnical Engineering Investigation
Proposed Cupal Residence
3343 Alpine Road
Portola Valley, CA
APN: 142-15-008

Transmitted herewith is our geotechnical engineering investigation report for the subject proposed residential project in Portola Valley, California. This report presents a description of our investigative methods, the subsurface conditions encountered in the areas of the proposed residential structure and associated improvements, a discussion of the potential geologic and seismic hazards that could impact the site, the results of our laboratory testing in addition to our findings, conclusions and recommendations for site preparation, the support of the proposed house, and site drainage. As a part of these services, we advanced five borings at the site, and collected disturbed bulk and relatively undisturbed ring samples of the site earth materials for visual examination and laboratory testing, as discussed in detail in the report.

Thank you for the opportunity to be of service on this project. Please do not hesitate to contact us should you have any questions or comments.

Very truly yours,

BAGG Engineers

Jeannie Tran
Project Manager

Mike Matusich
Senior Engineer

REGISTERED PROFESSIONAL ENGINEER
MICHAEL MATUSICH
GE 3013
EXP. 12/31/18
GEOTECHNICAL
STATE OF CALIFORNIA

Sadek M. Derrega
Certified Engineering Geologist

REVISED REPORT
Geotechnical Engineering Investigation
Proposed Cupal Residence
3343 Alpine Road
Portola Valley, CA
APN: 142-15-008

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ASFE document titled “Important Information About Your Geotechnical Engineering Report”

REVISED REPORT

GEOTECHNICAL ENGINEERING INVESTIGATION
PROPOSED CUPAL RESIDENCE
3343 ALPINE ROAD
PORTOLA VALLEY, CA
APN: 142-15-008

1.0 INTRODUCTION

This report presents the results of our geotechnical engineering investigation performed to characterize the subsurface conditions at the site and assess the potential for geologic and geotechnical issues potentially affecting the design and construction of the proposed residence in Portola Valley, California. The attached Plate 1, Vicinity Map, shows the general location of the subject site. Plate 2, Site Plan and Geology, depicts the site layout, the results of our geologic mapping at the site, the approximate locations of the proposed structures, and the borings advanced for this investigation.

The following documents received from the design team provided the basis for this investigation, the attached site plan, and the recommendations contained herein:

- Site Plan, “Cupal Residence,” Prepared by Paul Discoe Design in association with Irongrain, third revision issued September 2018.
- Topographic Survey Plan, titled, "New Topo Survey," prepared by Lea & Braze Engineering, dated October 3, 2017.
- Geotechnical Investigation Report, titled, "Geotech and Bridge Engineering Reports," prepared by JF Consulting, dated May 28, 2013.

The following sections of this report present the result of our reviews, research, site reconnaissance, findings, and geotechnical evaluations following the advancement of five (5) exploratory borings at the subject site and by collection of disturbed bulk and relatively undisturbed ring samples of the subsurface earth materials for visual examination and laboratory testing.

2.0 SITE CONDITIONS

The subject site is located immediately east of the Los Trancos Creek northward-flowing channel in Portola Valley, California, approximately 300 feet east-northeast of Alpine Road and roughly 800 feet directly north of the intersection of Alpine Road and Westridge Drive. The lot is bordered by undeveloped land to the north and south, Los Trancos creek to the west, and by the lands of Leland Stanford University to the east. The site is irregular in shape and encompasses a total approximate area of 4.2 acres. The most prominent site features consist of a bridge that crosses over Los Trancos Creek channel and provides access from Alpine Road to the proposed residence site as well as the meandering curvature of the creek channel along the northern edge of the project area. Otherwise, a gravel road connects Alpine Road with the western end of the bridge and a gravel-covered fire truck turn around is present along the south end of the project site.

The site surface is mostly unpaved, aside from the gravel road, and slopes down in a north and westerly direction with roughly 8 feet of relief. Several mature trees surround the footprint of the proposed residence.

3.0 PROJECT DESCRIPTION

As we understand, the project will consist of the construction of a single-family, two story residence with a total footprint of approximately 4,800 square feet. The main house will consist of six bedrooms with full baths, two half baths in addition to an indoor pool and sunken garden. As we also understand, the client would like to limit the amount of site grading.

4.0 PURPOSE AND SCOPE OF SERVICES

The purpose of our services was to conduct a geotechnical engineering investigation at the location of the proposed residence to characterize the existing conditions and assess the geologic and seismic hazards that could adversely impact the parcel and the planned improvements. To this end, our report addresses the following:

- Geologic site conditions and seismicity of the project site, including a review of the published geologic maps and reports pertinent to the site area, a discussion of the site geology and seismicity with distance to the active faults in the region, as well as the probability of a major earthquake on each fault,

- Seismic design parameters for the site per the 2016 edition of the California Building Code,

- Encountered subsurface conditions discovered by the borings such as expansive, loose, saturated, collapsible, or soft surface and subsurface soils that may require special mitigation measures or impose restrictions on the project, including the thickness and consistency of any existing fill soils and the type and consistency of the native bedrock materials, if encountered,

- Criteria for preparation of the building pad, if any, to receive the new improvements (foundations), placement of fills and backfills, and trench backfill requirements, including the suitability of the excavated soils from the site for use as fill and backfill material,

- Criteria for the support of the proposed residence, including conventional shallow foundations (mats, spread footings), and/or drilled pier foundations, as necessary,

- Earth pressures acting on any new site retaining walls, including the vertical and lateral support requirements,

- Estimate of the post-construction total and differential settlements for the new foundations,

- Criteria for the design of rigid and flexible pavements.

To fulfill the above purpose, we completed to following specific tasks as part of the scope of our investigation:

1. Reviewed available site-specific geotechnical reports and published geologic/seismic maps and reports pertinent to the site and the immediate vicinity, and had our Certified Engineering Geologist (CEG) performed a geologic site reconnaissance.

2. Marked the planned boring locations in the field, coordinated the field exploration with the client representatives, and notified Underground Service Alert (USA) at least 72 hours in advance.

3. Drilled, logged, and sampled three (3) borings to depths in the range of 19½ to 29 feet within the footprint of the proposed house, and two (2) borings to a depth of approximately 4½ feet within the fire truck turnaround using a truck-mounted drilling rig equipped with hollow-stem augers. Advanced the borings under the supervision of one of our engineers who also collected disturbed bulk and relatively undisturbed geotechnical

samples at 3- to 5-foot-intervals from the borings for visual examination and laboratory testing. Backfilled the borings with neat cement grout and left the drill cuttings at the site.

4. Performed a laboratory testing program on the collected soil samples to evaluate the geotechnical engineering characteristics of the subsurface soils. Tests included direct shear tests, Atterberg Limits, moisture-density measurements, and R-value tests, as judged appropriate.

5. Performed engineering analyses directed toward the above purpose of our investigation.

6. Prepared a geotechnical engineering report containing the investigation results, summarizing our findings and recommendations for the support of the proposed house and the related improvements, and including a vicinity map, a site plan, subsurface profile(s), the boring logs, and laboratory test results.

5.0 FIELD EXPLORATION AND LABORATORY TESTING

Subsurface conditions at the subject site were explored by drilling five (5) borings using a truck-mounted drilling rig with hollow-stem augers at the approximate locations depicted on the attached Plate 2, Site Plan and Geology. The borings were extended to depths ranging from approximately 4½ to 29 feet.

The borings were directed technically by one of our engineers who maintained a continuous log of the subsurface conditions encountered in the boreholes. Disturbed bulk and relatively undisturbed ring samples of the site materials were obtained for visual examination and laboratory testing.

The subsurface materials were visually classified in the field, checked by visual examination in the laboratory, and then reevaluated based on the results of the laboratory testing. In addition to sample classification, the boring logs contain interpretation of where stratum changes or gradational changes occur between samples. The boring logs depicts BAGG's interpretations of subsurface conditions only at the locations indicated on Plate 2, Site Plan and Geology, and only on the date noted on the logs. The boring logs are intended for use only in conjunction with this report, and only for the purpose outlined by this report.

The graphical representation of the materials encountered in the borings and the results of laboratory tests performed by BAGG Engineers as well as explanatory/illustrative data are attached, as follows:

- Plate 6, Unified Soil Classification System; illustrates the general features of the soil classification system used on the boring logs.
- Plate 7, Soil Terminology; lists and describes the soil engineering terms used on the boring logs.
- Plate 8, Rock Terminology; lists the terms used to describe the native bedrock materials on the boring logs.
- Plate 9, Boring Log Notes; describes general and specific conditions that apply to the boring logs.
- Plate 10, Key to Symbols; describes various symbols used on the boring logs.
- Plates 11 through 15, Boring Logs; describes the subsurface materials encountered, shows the depths and blow counts for the sample obtained, and summarizes the results of the strength tests and moisture-density data.
- Plate 16, Plasticity Data; presents the results of eight (8) Atterberg Limits tests performed on selected samples of the site materials.
- Plate 17, Gradation Test Data; presents the results of a gradation test performed on a sample of the site materials.
- Plate 18, R-Value Test Data; presents the results of a Caltrans Resistance Value (R-Value) test performed on a composite bulk soil sample obtained from Borings B-4 and B-5.

Strength tests, consisting of direct shear tests, were performed on the collected soil and bedrock samples to evaluate the strength parameters of the site materials. The tests were performed at both natural (field) and artificially increased moisture contents, and under various surcharge pressures. The moisture content and dry density of several undisturbed samples were measured to aid in correlating their engineering properties. Additionally, Atterberg Limits and gradation tests were performed on samples of the site soils to aid in their classification. Furthermore, an R-value test was performed to assist in designing the rigid and flexible pavements. The results of the noted tests are shown on the boring logs and on the plates described above.

6.0 GEOLOGY AND SEISMICITY

6.1 Regional and Site Geology

The San Francisco Bay Area lies within the Coast Ranges geomorphic province, a series of discontinuous northwest trending mountain ranges, ridges, and intervening valleys characterized by complex folding and faulting. Geologic and geomorphic structures within the San Francisco Bay Area are dominated by the San Andreas Fault (SAF), a right-lateral strike-slip fault that extends from the Gulf of California in Mexico, to Cape Mendocino, on the Coast of Humboldt County in northern California. It forms a portion of the boundary between two independent tectonic plates on the surface of the earth. To the west of the SAF is the Pacific plate, which moves north relative to the North American plate, located east of the fault. In the San Francisco Bay Area, movement across this plate boundary is concentrated on the SAF; however, it is also distributed, to a lesser extent across a number of other faults that include the Hayward, Calaveras, San Gregorio, and Concord among others. Together, these faults are referred to as the SAF system. Movement along the SAF system has been ongoing for about the last 25 million years. The northwest trend of the faults within this fault system is largely responsible for the strong northwest structural orientation of geologic and geomorphic features in the San Francisco Bay Area.

Basement rocks west of the SAF are generally granitic, while to the east they consist of a chaotic mixture of highly deformed marine sedimentary, submarine volcanic and metamorphic rocks of the Franciscan Complex. Both are typically Jurassic to Cretaceous in age (200-65.5 million years old [USGS, 2010]). Overlying the basement rocks are Cretaceous (about 145.5 to 65.5 million years old) marine, as well as Tertiary (about 65 to 2.6 million years old) marine and non-marine sedimentary rocks with some continental volcanic rock. These Cretaceous and Tertiary rocks have typically been extensively folded and faulted as a result of Late Tertiary and Quaternary regional compressional forces. The inland valleys as well as the structural depression within which the San Francisco Bay is located are filled with unconsolidated to semi-consolidated deposits of Quaternary age (about the last 2.6 million years). Continental surficial deposits (alluvium, colluvium, and landslide deposits) generally consist of unconsolidated to semi-consolidated deposits.

6.2 Site and Area Geology

The project site is located more than 6 miles to the southwest of the southwestern end of San Francisco Bay, on a portion of the northeast-facing foothills of the northwest-trending Santa Cruz Mountains in the Coast Range geomorphic province. The axis of the Santa Cruz Mountains and several broad-crested ridges are aligned roughly parallel to the prominent northwest trending San Andreas Fault zone. From the Santa Cruz Mountains, numerous creeks and small streams originate and flow into San Francisco Bay.

The Seismic Hazard Zone Report 111 for the Palo Alto quadrangle shows the site area to be underlain by Holocene age (younger than about 11,700 years) undifferentiated alluvium. A review of the " Geologic map and map database of the Palo Alto 30' x 60' quadrangle, California," by E.E. Brabb, R.W. Graymer, and D.L. Jones, 2000, indicates that the general site area is underlain by old alluvial fan deposits (Pleistocene) described as follows:

> **Older alluvial fan deposits (Pleistocene), (Qpoaf)** - Brown, dense, gravelly and clayey sand or clayey gravel that fines upward to sandy clay. All Qpoaf deposits can be related to modern stream courses. They are distinguished from younger alluvial fans and fluvial deposits by higher topographic position, greater degree of dissection, and stronger profile development. They are less permeable than younger deposits, and locally contain fresh-water mollusks and extinct Pleistocene vertebrate fossils.

The material encountered beneath the site consisted of brown to reddish brown sandy clay underlain by a brown dense clayey sand which is similar to the description of the Pleistocene age alluvium. However, bedrock consisting of sandstone was encountered at relatively shallow depths. The portion of the Santa Cruz Mountains to the immediate west-southwest of the site is illustrated to be underlain by The Whiskey Hill Formation (middle and lower Eocene) by Brabb et al. (2000), which is described as follows:

> **Whiskey Hill Formation (middle and lower Eocene), (Tw)** - light-gray to buff, coarse-grained arkosic sandstone, with light-gray to buff silty claystone, glauconitic sandstone, and tuffaceous siltstone.

This description generally agrees with the sandstone material encountered at the project site beneath the overlaying soils. For more information involving the site geology, refer to a portion of the Brabb et al. (2000) geologic map presented as Plate 4, Local Geology Map.

6.3 Geologic Reconnaissance

Our CEG conducted a site reconnaissance of the site area on August 27, 2018 and walked the Los Trancos Creek channel. His observations are summarized below and also on Plate 2, Site Plan and Geology:

- The creek channel flows northward although, at the time of our reconnaissance, the creek was dry.
- The axis of the creek channel is blanketed with cobbles generally between the bridge and the prominent eastward bend in the creek situated to the north. The remainder of the creek channel is covered with loose sand and gravel.
- Both banks of the creek exposed a section of alluvial soils that appeared to consist of gravelly clayey soil with a concentration of gravels and cobbles along the base of the unit. In the vicinity of the bridge and farther south, the underlying buff sandstone bedrock was observed. The bedrock appeared highly weathered, oxide stained, and weak to friable.
- The alluvial section forming the bank immediately to the north of the proposed residential structure appeared to have slumped into the creek channel most likely due to the erosive action of the flowing creek along the toe of the creek bank. While future erosion, which can cause this alluvial wedge to mobilize again, cannot be ruled out, no fresh scarring indicative of recent erosion or movement was observed during our reconnaissance.
- The gradient of the creek banks to the north of the planned structure, within the prominent meander beyond the slumped alluvium section discussed above, appeared steep and relatively high. These banks are expected to experience future erosion and subsequent retreat and recession during the design life of the project due to their increased height, their unconsolidated and granular composition, weak cementation, and steep gradient. Such occurrences can lead to bank failure and possibly partially damming the creek channel and potentially causing localized flooding.

6.4 Seismicity

The site and the entire San Francisco Bay area, is located within a seismically active region at the contact between the Pacific Plate to the west and the North American tectonic plate to the east. The zone of faulting at the contact in this area stretches from the western side of the Central Valley to just offshore in the Pacific Ocean. The major fault in this system is the San Andreas fault located approximately 3½ kilometers (km) southwest of site. This fault generated an earthquake with an estimated Moment

Magnitude (Mw) of 7.0+ on the San Francisco peninsula in 1838, the 1906 Great San Francisco Earthquake with an estimated Mw of 7.8, and the 1989 Loma Prieta earthquake with an estimated Mw of 9.6.

The site area is not situated within an Alquist-Priolo Earthquake Zone which has been delineated by the CGS around faults they classify as active, and no known faults have been mapped extending across the site area. The distances to the major faults in the area from the site, and their estimated probability of generating a major earthquake ($M_w \geq 6.7$) are listed in the following table. Other faults are too distant and/or judged incapable of generating ground accelerations large enough to be considered significant threats to this site. The major active faults with the respect to the subject site are depicted on Plate 5, Regional Fault Map.

Table 1
Significant Earthquake Scenarios

Fault	Approximate Distance to Site (kilometers)[1]	Location with Respect to Site	Probability of $M_W \geq 6.7$ within 30 Years[2]
Monte Vista – Shannon	½	SW	1%
San Andreas (Peninsula)	3½	SW	9%
San Andreas (Entire)	3½	SW	33%
Hayward – Rogers Creek	26	NE	32%
San Gregorio	30	SW	5%
Calaveras	33	NE	25%

[1] USGS Fault Files from Google Earth
2 Working Group on California Earthquake Probabilities, 2014

6.5 CBC 2016 Seismic Design Parameters

The Structural Engineering Design Provisions in Chapter 16 of the California Building Code (CBC) have been revised in recent years to reflect the changing knowledge regarding earthquake shaking from major earthquakes. The new code uses mapped spectral acceleration values for periods of 0.2 and 1.0 seconds, to better represent the probabilistic shaking that can be expected for different structures at a given site. The "mapped" values generally represent "bedrock" shaking with a 2 percent probability of being exceeded in a 50-year period. The values are then modified for site-specific use based on classification of the soil profile at the site.

Based on the existing subsurface information, the soil profile is classified as type "C", described as a very dense soil or soft bedrock site with an average blow count (standard penetration resistance) values of the soils above 50 blow per foot with an average shear wave velocity in the range of 1200 to 2500 feet per second and average undrained shear strength greater than 2,000 psf within the top 100 feet of the soil profile.

Using the site coordinates at the approximate center of the site and the web site for the Seismic Design Maps by the USGS, (http://earthquake.usgs.gov/designmaps/us/application.php), earthquake ground motion parameters were computed in accordance with the 2016 California Building Code and are listed in the table on the following page.

Table 2
Parameters for Seismic Design

2016 CBC Site Parameter	Value
Site Latitude	37.3956° N
Site Longitude	122.1909° W
Site Class, Chapter 20 of ASCE 7	Class C, Soft Rock
Risk Category	I, II, III
Mapped Spectral Acceleration for Short Periods S_s	2.73g
Mapped Spectral Acceleration for 1-second Period S_1	1.02g
Site Coefficient F_a	1.0
Site Coefficient F_v	1.3
Site-Modified Spectral Acceleration for short Periods S_{Ms}	2.73g
Site-Modified Spectral Acceleration for 1-second Period S_{M1}	1.33g
Design Spectral Acceleration for short Periods S_{Ds}	1.82g
Design Spectral Acceleration for 1-second Periods S_{D1}	0.89g

6.6 Liquefaction Potential

A review of the California Geologic Survey (CGS) publication, "Earthquake Zones of Required Investigation for the Palo Alto Quadrangle (2006a)," indicates that the subject site is situated within a seismic hazard zone associated with liquefaction; however, based on out site-specific investigation at the project site, which indicates very dense subsurface conditions immediately underlain by bedrock, we estimate that the potential for liquefaction is very low to negligible. Furthermore, the Seismic Hazard Zone report 111 (CGS, 2006b) for the Palo Alto quadrangle indicates that the depth to groundwater in the area of the site exceeds 30 feet bgs and the site area is underlain by Holocene age undifferentiated alluvium (map symbol

Qha). According to the noted CGS report, the potential for liquefaction for this geologic unit is low if the groundwater is 30 to 40 feet deep and very low if the depth to groundwater exceeds 40 feet bgs. No historic ground failures associated with historic earthquakes have been documented in the vicinity of the site by Youd and Hoose (1978).

7.0 SITE CONDITIONS

7.1 Surface Conditions

The project site is undeveloped and primarily covered in underbrush with several mature trees spread throughout the site. The site slopes down to the north and west with gradients as steep as 3½ feet horizontal to 1 foot vertical (3½:1 H:V).

7.2 Subsurface Conditions

7.2.1 Native Soils

An approximately 3-foot thick sandy lean clay layer with significant organics was encountered, blanketing the entire site. This material was typically brown, damp to moist, very stiff to hard. Measured volume changes in our laboratory-saturated direct shear tests indicated that theses soils are moderately to highly expansive despite having Liquid Limits in the range of 26 to 37 and Plasticity Indices in the range of 10 to 22.

The sandy lean clay was underlain by yellow-brown clayey sand with fines contents of 25 percent; however, the fines portion also proved to be highly expansive. The material was very dense, consisting of primarily fine-grained sand with occasional hard cobble- and boulder-sized inclusions. The thickness of this layer varies from 2½ in Boring B-1 to 8 feet in Boring B-3, with the layer thinning as it approaches the creek to the north and west.

7.2.2 Native Bedrock Materials

Tertiary age sandstone bedrock was encountered all three (3) of the deeper borings advanced for this investigation. The bedrock consisted of yellow-brown and red-brown, completely to intensely weathered, closely to very closely fractured, and soft to moderately hard, fine-grained sandstone, most probably of

the Whiskey Hills Formation. The upper portion of the sandstone bedrock appeared reddish yellow to buff due to oxidation, and transitioned to a gray color with depth because of reduction.

For more information regarding our interpretation of the subsurface materials, we refer you to Plates 11 through 15, Borings Logs, and Plate 3, Idealized Subsurface Profiles.

7.3 Groundwater

Groundwater was not encountered in any of the five (5) borings drilled for this investigation and the creek channel appeared dry during our investigation. The Seismic Hazard Zone Report 111 for the Palo Alto quadrangle indicates that the groundwater depth in the area of the site is more than 30 feet bgs. There is a possibility that seepage and localized perched water zones may develop in the subsurface often in the interface between the native soils and bedrock, particularly if construction commences in the winter rainy months.

8.0 DISCUSSION AND RECOMMENDATIONS

8.1 General

Based on our review of the published geologic and geotechnical documents, the subsurface exploration conducted at the subject site, and the results obtained from our laboratory testing program, it is our opinion that the proposed residential project is geologically and geotechnically feasible, provided the recommendations presented in this report are incorporated into the project design and construction. When the final project plans become available, they should be reviewed by this office to confirm that they have been prepared in accordance with this report, and that our recommendations properly address the proposed project in its final form.

The primary geotechnical constraint for this project is the moderately to highly expansive near surface soils which could experience large amounts of shrink and swell activity that could cause differential movement of the building foundations or floor slabs unless precautions are taken. To mitigate these issues, we recommend drilled pier foundations with an elevated floor slab and deepened grade beams for

the proposed residence. Additionally, exterior flat work will need to be constructed on a layer of non-expansive fill.

A secondary concern for the project site is the slumping, recession, and retreat of the creek bank. During the geologic reconnaissance, our CEG observed a moderate size slump of the north-facing southern creek bank immediately to the north of the planned residential structure. The slump occurred in the alluvial soils comprising the entire bank/slope bank in that area and it resulted in decreasing the bank gradient in that area. This alluvial slump was most likely caused by the erosive forces of the flowing creek along the toe of the southern creek bank. Since additional erosion and subsequent mobilization of the alluvial slump cannot be ruled out during the design life of the project, we recommend that the slope face where the slump occurred be blanketed with rip rap or a stitch pile/pier wall be installed along the top of the southern bank of the Los Trancos Creek channel and where approximately delineated on the attached Plate 2, Site Plan and Geology.

Furthermore, an additional southern creek bank section located immediately beyond the mapped alluvial slump to the north and another to the northwest across the channel appeared relatively high and steep to nearly vertical (See Plate 2). Consideration should be given to protecting these creek bank sections with rip rap to lessen the potential of erosion and subsequent failure into the channel, which could result in partially damming the channel and causing localized flooding.

According to the FEMA Flood maps, the project site is located on the border of Zone X described as "areas determined to be outside of the 0.2% annual chance floodplain," and Zone A, described as a "special flood hazard area subject to inundation by the 1% annual chance flood without base flood elevation." The project civil engineer should assess if the pad grades need to be raised based on the assigned FEMA categories noted above.

Based on the above discussion, it will be imperative for the professional staff of the project geotechnical engineers to have an active role during the site grading and foundation construction.

The site could experience very strong ground shaking from future earthquakes during the anticipated lifetime of the project. The intensity of the ground shaking will depend on the magnitude of the earthquake, distance to the epicenter, and the response characteristics of the on-site soils. While it is not

possible to totally preclude damage to structures during major earthquakes, strict adherence to good engineering design and construction practices will help reduce the risk of damage. The 2016 California Building Code defines the minimum standards of good engineering practice.

8.2 Site Grading

Grading activities at the site are expected to be minimal and will likely involve removal and stripping of the topsoil, trees, and vegetation from the proposed construction areas. Subgrade preparation will need to be made for the proposed driveways and hardscape.

As used in this report, the term "compact" and its derivatives mean that all on-site soils should be compacted to a minimum of 95 percent of the maximum dry density, as determined by the latest ASTM Test Method D1557, within the top 12 inches of pavement subgrades, and to 90 percent elsewhere, while at a moisture content that is at least 3 percent above the optimum moisture content.

The following grading procedures should be followed during construction of proposed building pads and subgrade for and the associated improvements:

- Strip and remove all bushes, vegetation, roots, and organically contaminated topsoil, tanbark, and other debris from the proposed house footprint. Remove all organically-contaminated soils from the site and do not re-use as site fill. Where trees are to be removed, the removal should include all major root systems down to 1 inch in size.

- Where necessary, place fill on any over-excavated surfaces and in holes or depressions created by grading activities in uniformly moisture conditioned and compacted lifts not exceeding 8 inches in loose thickness. Rocks or cobbles larger than 4 inches in maximum dimensions should not be allowed to remain in the areas to be compacted, unless they can be crushed in-place by the construction equipment.

- Thoroughly moisture condition each layer of fill and backfill to a moisture content that is at least 3 percent over optimum, and re-compact as specified above.

- Where slab-on-grade floor slab subgrades expose highly expansive soils, the end result of grading must be to achieve a minimum of 18 inches of properly compacted imported non-expansive soils beneath the slab. The thickness of the non-expansive soils may be reduced to 12 inches under the walkways and exterior

flatwork (the recommended non-expansive thickness may include the gravel base).

The excavated on-site soils from the site *are not* suitable for use in the upper 18 inches of subgrade for floor slabs or pavements as structural fill due to its highly expansive nature. However, the on-site soils may be used elsewhere as fill. Imported fill soils if needed, should be predominantly granular in nature and should be free of organics, debris, or rocks over 4 inches in size, and should be approved by the Geotechnical Engineer before importing to the site. As a general guide to acceptance, imported soils should have a Plasticity Index less than 15, and R-value of at least 20, and fines content between 15 and 60 percent. All aspects of site grading including clearing/stripping, demolition and placement of fills or backfills should be performed under the observation of BAGG's field representatives.

It must be the Contractor's responsibility to select equipment and procedures that will accomplish the grading as described above. The Contractor must also organize his work in such a manner that one of our field representatives can observe and test the grading operations, including clearing, excavation, compaction of fill and backfill, and compaction of subgrade.

8.3 Drilled Pier Foundations

As discussed earlier, the residence should be supported on a drilled pier foundation with interconnecting grade beams and crawlspace to elevate the floor. The piers should be a minimum of 16 inches in diameter and should penetrate at least 6 feet into the bedrock formation. The piers can be designed for a skin friction support of 600 psf below 3 feet from finished grade for compressive loading and short-term uplift. Sustained uplift should be taken at 400 psf in bedrock only, disregarding embedment in soils.

Grade beams should be designed with the assumption that they obtain no vertical support from the underlying soils. In addition, due to the highly expansive nature of the on-site surficial soils, the grade beams should be founded at least 24-inches below the adjacent grade and a 1,500 psf uplift pressure should be assumed to act on the bottom of the grade beams for design purposes. Alternatively, if minimal earthwork is desired, grade beams may be raised above the existing grade; however, if the grade beams are raised, the supporting piers must be designed to take the additional vertical and all of the lateral loads for the residence. In addition, appropriate measures to ensure surficial runoff is diverted around the

foundation system and adequate drainage occurs beneath the house should be included in the design to limit the effects of ponding water against the foundation members or beneath the residence.

Actual depths and pier dimensions should be established by the design engineer. Final pier depths in the field should be approved by the geotechnical engineer during the drilling operations. Design of the beam reinforcement, depth, size, and spacing of the piers will depend upon actual building loads and should be determined by the engineer responsible for the foundation design.

It is imperative for the Geotechnical Engineer to have an active role during the foundation construction to identify the materials encountered and confirm that proper penetration into the native bedrock materials has been achieved. Therefore, full-time observation of the grading operations by the Geotechnical Engineer will be required as adjustments will need to be made during construction. The final foundation excavation depths should be determined under the geotechnical engineers' field representatives and expose the native bedrock materials.

8.4 Shallow Foundations

For ancillary structures, or if shallow foundations are preferred for the construction of the proposed residence despite expected differential movements, we recommend that the allowable bearing value should be taken as 2,000 pounds per square foot (psf) for dead loads, and 2,500 psf for total design loads. The latter value may be increased by one-third, when resisting transient and seismic loads. All footings should be properly established a minimum of 24 inches below the nearest adjacent grade and the minimum required width for the isolated and continuous shallow footings is 24 inches and 12 inches, respectively.

If a mat foundation is used, it may be designed using a modulus of subgrade reaction of 120 psi/in. Bearing value for the mat should be limited to 1,500 psf for total design loads. The entire mat should be established on a well compacted subgrade, as discussed under the Site Grading section above. Also, it is advisable for the mat to contain thickened (turned down) edges for proper support and for preventing from moisture seeping under the mat. We recommend that thickened edges extend to a depth of approximately 24 inches below the nearest adjacent edge.

The bottom of the footing and mat foundation excavations should be relatively clean, firm, and free of any loose cuttings before reinforcing steel and concrete are placed.

All foundations and concrete pads must be appropriately reinforced as deemed appropriate by the project structural engineers.

8.5 Settlement of House Foundations

We have estimated that the total post construction settlements of the proposed house supported on either shallow footings or drilled piers established in bedrock will be ½ inch or less; however, the estimated expansion of the near surface site materials when saturated may be 2 inches or greater, which could cause differential movements of up to 2½ inches across the site for shallow foundations.

8.6 Lateral Resistance

Lateral loads may be resisted by passive soil/bedrock pressures against the sides of the spread footings, grade beams, or drilled piers. The allowable passive resistance to wind or seismic loads can be taken as an equivalent fluid pressure of 350 pounds per cubic foot (pcf) in compacted fill and undisturbed native soil materials, and as 400 pcf in the native bedrock formation. A coefficient of friction may be used in conjunction with the passive pressure. This value may be assumed to be 0.30 between undisturbed native soil or compacted fill materials and concrete. The top 12 inches of the lateral capacity should be ignored, unless the footing or mat is laterally confined by a pavement or a concrete slab.

8.7 Retaining Walls

Retaining walls, such as those for the sunken garden or for the below-grade wall for creek bank protection as detailed in the section below, should be designed to resist lateral earth pressures from the adjoining soil and bedrock materials. Walls that are restrained from movement at the top should be designed to resist an equivalent fluid pressure of 65 pcf for level backfill. For sloping backfill, the above pressures should be increased by 4 pcf for every 5 degree increase in the slope angle up to a maximum gradient of 3:1 (H to V).

Free standing walls should be designed to resist active lateral pressures taken as an equivalent fluid pressure of 45 pounds per cubic foot (pcf)for level backfill. For sloping backfill, the above pressures should be increased by 4 pcf for every 5 degree increase in the slope angle up to a maximum gradient of 3:1 (H to V). Surcharge loads should be added to the above pressures at a rate of 33% and 50% percent of the applied surcharge load for cantilever and restrained walls, respectively.

Seismic pressures on the retaining walls may be simulated by a rectangular pressure distribution against the wall equal to 10H, where H is the height of the wall.

The above lateral pressures do not include any hydrostatic pressures resulting from groundwater, seepage water, or infiltration of natural rainfall and/or irrigation water behind the walls. Therefore, all walls over 2 feet in height should be provided with a drainage blanket behind the wall. The drainage blanket should consist of a pre-manufactured drainage panel or a one-foot-thick blanket of either Caltrans Class 2 Permeable material or free-draining gravel encapsulated by a suitable filter fabric. A 12-inch cap of relatively impermeable soil should be placed at the top of the drainage blanket to minimize infiltration of surface water. The cap material should be compacted to a minimum of 90 percent relative compaction at a moisture content of at least 3 percent over optimum. A 4-inch diameter perforated PVC pipe should be installed at the base of the drainage layer to facilitate removal of water collected behind the wall.

General backfill behind the walls, excluding drainage materials, should conform to the fill requirements included under the “Site Grading” section of this report. Retaining walls should be supported as recommended under "Foundations."

8.8 Creek Bank Protections

As discussed above in Section 8.1, our CEG mapped an alluvial slump along the southern creek bank immediately to the north of the proposed residence location during the site reconnaissance. As such, we recommend that rip rap slope protection, a stitch pile/pier wall, a sheetpile wall, or other appropriate slope protection be placed along the southern bank of Los Trancos Creek, north of the project site. The location of the wall should be setback about between 5 and 10 feet from the top of the creek bank at that location. In addition, the top of the piles/piers maybe terminated about 2 feet below the final grade so

that they do not interfere with daily activities or form obstacles. See Plate 2 for a proposed location of the wall.

Stitch piers should be designed to support 10 feet of active material using pressures noted in the "Retaining Walls" section above, spaced at center to center spacing of 3 diameters, use the parameters noted under the "Drilled Pier Foundations" section, and utilize the passive soil resistance as noted the "Lateral Design" section.

Either rip rap slope protection or a pile/pier wall, designed with the pressures noted under the "Retaining Wall" section above would be appropriate for this situation.

8.9 Swimming Pool

The swimming pool walls should be designed to withstand the lateral earth pressures given above under "Retaining Walls" equal to an equivalent fluid pressure of 65 pcf plus the allowance for the sloping ground on the upslope edge, as well as the soil creep forces. The pool walls should also be designed as free-standing walls, assuming the soil has shrunk away from the pool walls when it is filled (i.e., without soil support).

We recommend that flexible waterproofing be used between the pool and surrounding decks and walkways to minimize moisture intrusion into subsurface soils and bedrock.

Depending on the planned depth of the pool, much of the excavation is expected to expose firm soils and/or bedrock without any seepage layers or groundwater. Even if absent at the time of excavation, seepage layers may develop in the future. Therefore, we recommend a drainage layer below the pool shell. If possible, this drain should be connected to the back-drain behind other the other retaining walls or subdrains and discharged to a suitable outfall. Alternatively, the pool shell should be fitted with a hydro-relief valve at the deep end as a precaution against hydrostatic uplift. An appropriate drainage layer beneath the pool will consist of at least 8 inches of 3/4-inch crushed rock.

8.10 Slab-on-Grade Floors and Exterior Flatwork

As discussed under Site Grading, the floor for the house should be elevated through the use of a crawlspace to avoid issues caused by the highly expansive near surface soils. Additionally, any slabs on grade, such as that used for the garage or pool deck, must be structurally independent of the house foundation.

Exterior slabs, walkways, and pool decks should be underlain by a minimum of 12 inches of imported non-expansive soils as well as 4 inches of Caltrans Class 2 aggregate base. This recommendation is intended to isolate the slabs and walkways from the shrinking and swelling nature of the surficial soils covering the site.

8.11 Temporary Shoring

Vertical site excavations greater than 5 feet in depth should be properly shored as per the Cal-OSHA guidelines. Temporary shoring may consist of soldier-pile and wood lagging walls, soil-nail or tie-back walls with shotcrete, or other approved alternative. The temporary shoring should be designed to withstand an active earth pressure of 45 pcf (triangular distribution) with a backfill slope up to a gradient of 3:1 (H to V). Construction equipment should not be allowed at the top of the excavation closer than a distance equal to the height of the excavation.

Where a *temporary* sloped excavation is desired, it may be opened at a gradient of 1:1 (horizontal to vertical) if the excavation exposes clayey soils and 1½:1 (H to V) if the excavation contains granular materials.

8.12 Utility Trench Backfill

Vertical trenches deeper than 5 feet will require temporary shoring. Where shoring is not used, the sides should be sloped or benched, with a maximum slope of 1:1 (horizontal: vertical) if the trench exposes clayey soils, and 1½:1 (H to V) if the material is granular and sandy in nature. The trench spoils should not be placed closer than 3 feet or one-half of the trench depth (whichever is greater) from the trench sidewalls. All work associated with trenching must conform to the State of California, Division of Industrial Safety requirements. Based on our boring and laboratory results, it is our opinion most of the fill soils at the site can be classified as a type “B” soil.

The utility trenches may be backfilled with on-site soils. Backfill soils should be free of debris, roots and other organic matter, and rocks or lumps exceeding 4 inches in greatest dimension. The fill material should be uniformly moisture conditioned to the proper moisture content and compacted as per the recommendations included in the "Site Grading" section of this report. The utility lines should be properly bedded and shaded with granular material, such as, sand or pea gravel. As a general rule, the bedding layer should be at least 4 inches thick. The bedding and shading layers should be compacted using a vibratory compactor. The contractor should use extreme caution with the vibratory compactor on the shading layer because excessive vibrations and/or imbalanced shading materials could result in dislodging the pipe and loosening of the joints.

Alternatively, the utility trenches may be backfilled with flowable fill, a cementitious slurry consisting of a mixture of fine aggregate or filler, water, and cementitious material(s) capable of filling all voids in irregular excavations and hard to reach places. The flowable fill is self-leveling material that hardens in a matter of hours without the need for compaction in layers. Flowable fill is sometimes referred to as controlled density fill (CDF), controlled low strength material (CLSM), and lean concrete slurry. A 2-sack flowable fill material is considered to be acceptable for the subject project.

8.13 Pavement Design

8.13.1 Flexible Pavements

A composite bulk sample of the shallow subsurface soils from approximately 1 to 4 feet was collected from Borings B-4 and B-5 and tested for its R-value. The resultant R-value was 12 at an expansion pressure of 28 psf. As the subgrade soils are expansive in nature, the pavement thickness and the strength of the cover must not only be sufficient to protect the subgrade soil from displacement due to traffic loads, but must also be of sufficient weight to prevent excessive expansion with the resulting loss of stability.

Using an R-value of 12, the calculated pavement sections for Traffic Indices of 5.0, 6.0, and 7.0 with aggregate base and subbase are tabulated below. Generally, a Traffic Index (TI) of 5.0 is appropriate for automobile parking stalls, whereas a Traffic Index of 6.0 would be appropriate for heavily-used automobile driveways with only occasional use by heavy trucks (such as once a week or so by garbage trucks), and Traffic Indices of 7.0 or higher are used where the pavement would be subject to more frequent truck traffic such as daily use by delivery trucks. However, for this project, given the expansive

nature of the subgrade soils, and the requirement to maintain the driveway as a firetruck turn around, we recommend any flexible paving should be designed using a minimum TI of 6.0.

The pavement sections presented below have been calculated using the design method described in the Caltrans Highway Design Manual (Topic 633, May 2012) with the added safety factors. The method characterizes the subgrade soil conditions with laboratory R-value tests, and characterizes the traffic loading conditions with a Traffic Index. All materials and construction procedures, including placement and compaction of pavement components, should be performed in conformance with the latest edition of the Caltrans Standard Specifications, except that compaction should be performed in accordance with ASTM Test Method D1557, and at moisture contents specified under the Site Grading section of this report.

Table 3
Summary of Asphaltic Concrete Pavement Sections
(Subgrade R-value=12 @ Expansion Pressure=28 psf)

Pavement Component	TI=5.0		TI=6.0		TI=7.0	
Asphaltic Concrete (AC) in Inches	3	3	3½	3½	4	4
Class II Aggregate Base (R_{Min}=78)	9	4	11	4	14	5
Class II Aggregate Subbase or Recycled AB (R_{Min}=50)	--	5	--	8	--	10
Total Thickness in Inches	12	12	14½	15½	18	19

All pavement components should be compacted to at least 95 percent of maximum dry density at slightly above optimum moisture content.

8.13.2 Rigid Pavements

Where Portland Cement Concrete (rigid) Pavements are to be used, they should be supported on a subgrade that has been prepared as recommended under "Site Grading". Concrete pavements exposed to regular automobiles and weekly use by a garbage truck (if applicable), should consist of 4.5 inches of concrete with a minimum compressive strength of 3,700 psi (MR=550 psi) supported on at least 6 inches of Class II Aggregate Base material compacted to a minimum of 95 percent relative compaction.

As a minimum, concrete pavements should be reinforced with deformed bars in both directions to control cracking, and joints should be provided in both directions within the pavement designed to prevent formation of irregular cracks.

Where traffic can drive over the edge of the concrete pavement, such as at transition to AC paving, the Portland Cement Association suggests the thickened edge should be increased by 20 percent, and tapered back to normal slab thickness over a distance of 10 times the slab thickness.

8.14 Drainage

Drainage measures to collect and control surface runoff are an integral considerations for sites with expansive soils or near slopes, and it is imperative that the drainage recommendations presented below are followed. Exterior grades which direct surface water away from all sides of the house, should be provided. The house should have roof gutters and downspouts, and all water from downspouts should be drained away from the house in a manner that will not create erosion or over-saturation of the foundations soils and nearby slopes.

Surface waters should not be permitted to drain over slopes or under structures. The retaining walls should similarly contain back drainage and a lined gutter above them to the collected runoff from all swales/ditches, and subdrains should be discharged in a manner that will not cause erosion on the nearby slopes or undermine the foundations. The swales should be sized to provide adequate capacity per the local codes, and should contain appropriate erosion protection means (grass cover, concrete lining, etc.).

Roof downspouts and surface drains must be maintained entirely separate from subdrains and retaining wall back drains. The outlets should discharge into the local storm drainage system; otherwise, erosion protection should be provided at discharge points. Surface and subsurface drainage facilities and catchment areas should be protected from damage by construction equipment, and cleaned/maintainedafter the construction.

8.15 Plan Review

It is recommended that the Geotechnical Engineer (BAGG Engineers) be retained to review the final grading, drainage, and foundation plans. This review is intended to assess general suitability of the earthwork, and foundation recommendations contained in this report and to verify the appropriate implementation of our recommendations into the project plans and specifications.

8.16 Observation and Testing

It is recommended that the Geotechnical Engineer (BAGG Engineers) be retained to provide observation and testing services during the grading, excavation, backfilling, and foundation construction phases of work. This is intended to verify that the work in the field is performed as recommended and in accordance with the approved plans and specifications, as well as verify that subsurface conditions encountered during construction are similar to those anticipated during the design phase. Unanticipated soil conditions may warrant revised recommendations. For this reason, we cannot accept responsibility for the performance of the project, unless we are given the opportunity to oversee the construction activities.

9.0 CLOSURE

This report has been prepared in accordance with generally accepted engineering practices for the strict use of Ms. Toni Cupal and other professionals associated with the specific project described in this report. The recommendations presented in this report are based on our understanding of the proposed construction as described herein, and upon the subsurface conditions encountered in the exploratory borings advanced for this project.

The conclusions and recommendations contained in this report are based on a review of various published documents and the subsurface conditions revealed at the locations shown on Plate 2, Site Plan. It is not uncommon for unanticipated conditions to be encountered during site grading and/or foundation installation and it is not possible for all such variations to be found by a field exploration program appropriate for this type of project. The recommendations contained in this report are therefore contingent upon the review of the final grading and foundation plans by this office, and upon geotechnical observation and testing by BAGG Engineers of all pertinent aspects of site grading, placement of fills and backfills, and foundation construction.

Subsurface conditions and standards of practice change with time. Therefore, we should be consulted to update this report, if the construction does not commence within 18 months from the date this report is submitted. Additionally, the recommendations of this report are only valid for the proposed development

as described herein. If the proposed project is modified, our recommendations should be reviewed and either approved or modified by this office in writing.

The following references and plates are attached and complete this report:

Plate 1	Vicinity Map
Plate 2	Site Plan
Plate 3	Idealized Subsurface Profiles
Plate 4	Local Geologic Map
Plate 5	Regional Fault Map
Plate 6	Unified Soil Classification System
Plate 7	Soil Terminology
Plate 8	Rock Terminology
Plate 9	Boring Log Notes
Plate 10	Key to Symbols
Plates 11 thr 15	Boring Logs
Plate 16	Plasticity Data
Plate 17	Gradation Test Data
Plate 18	R-Value Test Data

ASFE document titled “Important Information About Your Geotechnical Engineering Report”

10.0 REFERENCES

Association of Bay Area Governments (ABAG), 2003, *The San Francisco Bay Area - On Shaky Ground*. (http://www.abag.ca.gov/bayarea/eqmaps/mapsba.html).

Brabb, E.E.,Graymer, R.W., and Jones D.L., 2000, *Geologic Map and Map Database of the Palo Alto 30'x60' Quadrangle, California*, prepared by U.S. Geological Survey Miscellaneous Field Studies MF-2332, 2 sheets (USGS, 2000).

Bryant, W.A. and Hart, E.W., 2007, *Fault-Rupture Hazard Zones in California: California Division of Mines and Geology*, Special Publication 42, 2007 revised edition.

California Code of Regulations, 2016, Title 24, Part 2, Volume 2 of 2, *2016 California Building Code*, California Building Standards Commission, Based on 2012 International Building Code.

California Department of Transportation, August 2011, *Trenching and Shoring Manual*, Issued by Office of Structure Construction, Revision 1.

California Geological Survey, 2006a, *Earthquake Zones of Required Investigation, Palo Alto Quadrangle, California Geological Survey, Alquist-Priolo Earthquake Fault Zones*, Official Map, July 1, 1974 and Seismic Hazard Zones, Official Map, October 18, 2006.

California Geological Survey, 2006b, *Seismic Hazard Zone Report 111 for the Palo Alto Quadrangle, California*.

Division of Mines and Geology, 2000, *Digital Images of Official Maps and Alquist-Priolo Earthquake Fault Zones of California, Central Coast Region: California Division of Mines and Geology*, CD 2000-03.

Ellen, D.S. and Wentworth, C.M.,1995, *Hillside Materials and Slopes of the San Francisco Bay Region, California: U.S. Geological Survey Professional Paper 1357*.

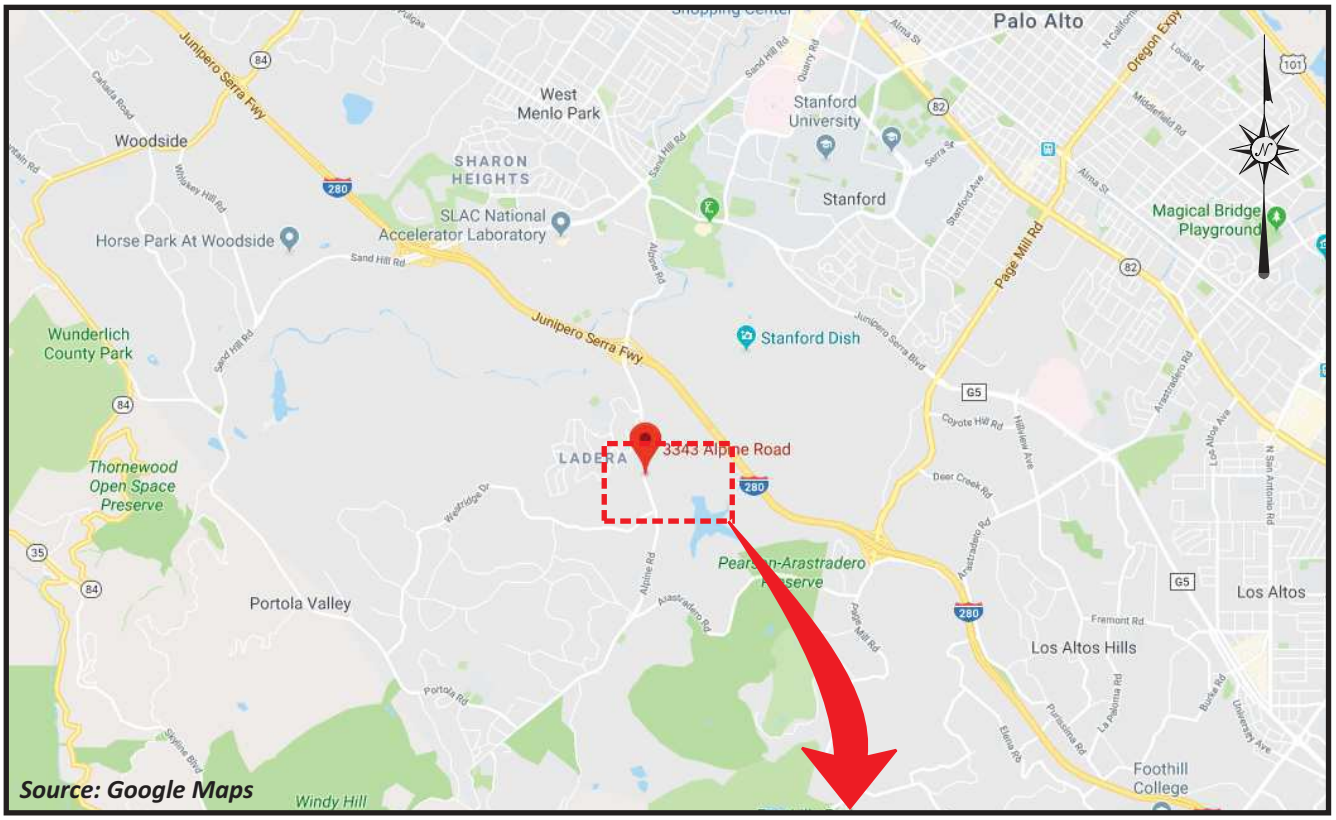
Knudsen, K.L., Sowers, J.M., Witter, R.C., Wentworth, C.M., Helley, E.J., Nicholson, R.S., Wright, H.M., and Brown, K.H., 2000, *Preliminary maps of Quaternary deposits and liquefaction susceptibility, nine-county San Francisco Bay region, California: a digital database: U.S. Geological Survey, Open-File Report OF-2000-444*, scale 1:275,000.

United States Geological Survey (USGS, 2010), *Division of Geologic Time*, US Geological Survey Geologic Names Committee.

U.S Geological Survey (USGS), 2013, *U.S. Seismic Design Maps*, USGS Earthquake Hazards Program (http://earthquake.usgs.gov/designmaps/us/application.php).

Working Group on California Earthquake Probabilities, 2013, *The Uniform California Earthquake Rupture Forecast, Version 3 (UCERF3)*, U. S. Geological Survey Open File Report 2013-1165.

Youd, T.L., and Hoose, S.N., 1978, *Historic ground failures in northern California triggered by earthquakes: U.S. Geological Survey, Professional Paper 993*, scale 1:250,000.

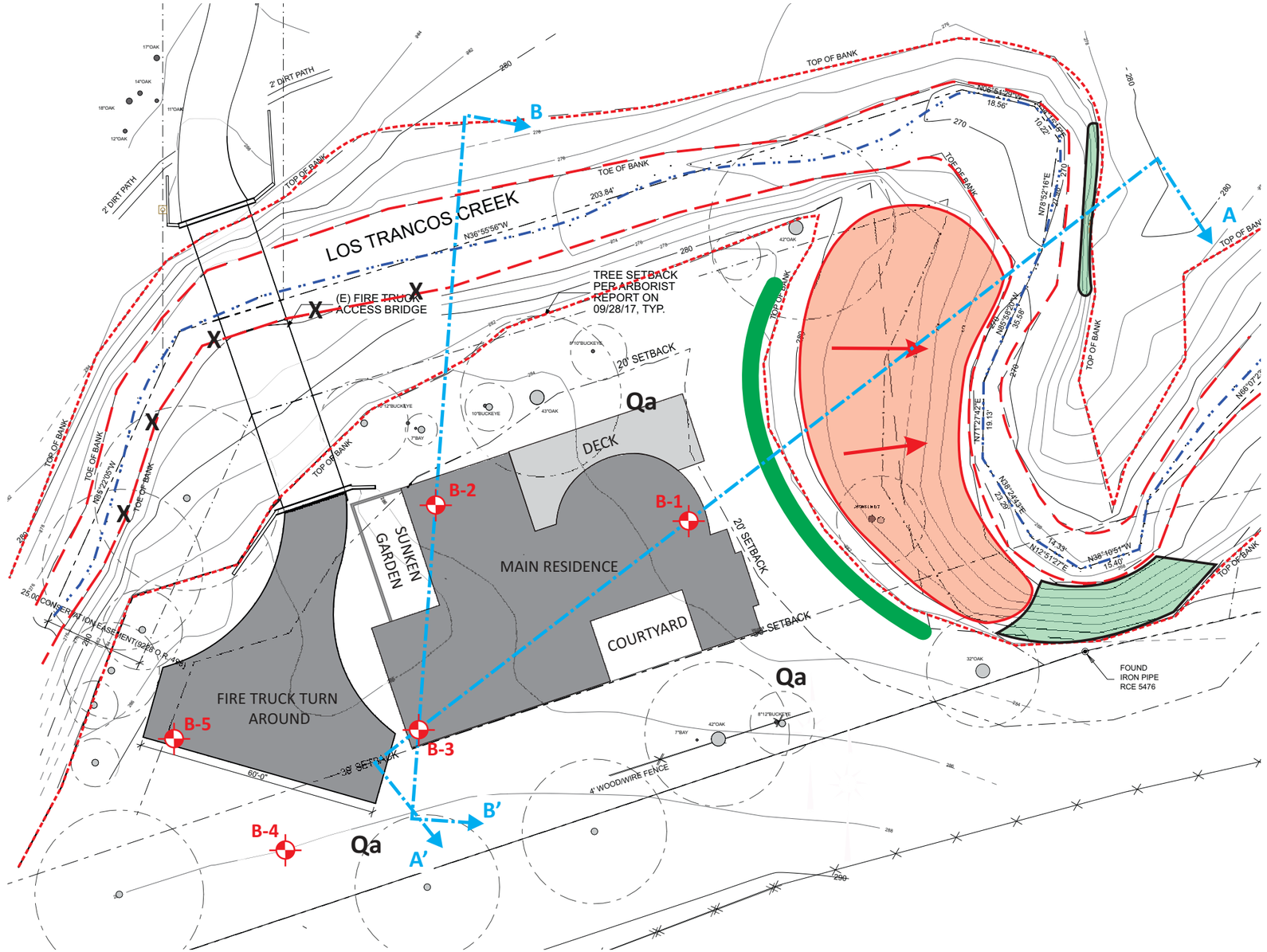


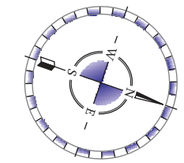
GEOTECHNICAL ENGINEERING INVESTIGATION
PROPOSED CUPAL RESIDENCE
3343 ALPINE ROAD
PORTOLA VALLEY, CA

VICINITY MAP

DATE:	JOB NO.:	PLATE:
SEPTEMBER 2018	CUPAL-18-01	1

BAGG ENGINEERS





0′ 15′ 30′ 60′

LEGEND

- B-1 — APPROX. BORING LOCATION, TYP.
- APPROX. CROSS SECTION LOCATION, TYP
- APPROX. TOP OF BANK
- APPROX. TOE OF BANK
- APPROX. CREEK CHANNEL FLOW LINE
- Qa — UNDIFFERENTIATED ALLUVIUM
- X — EXPOSED SANDSTONE BEDROCK
- ALLUVIAL SLUMP
- PROPOSED BELOW GRADE WALL LOCATION
- PROPOSED RIP RAP BLANKET ON STEEP SLOPES

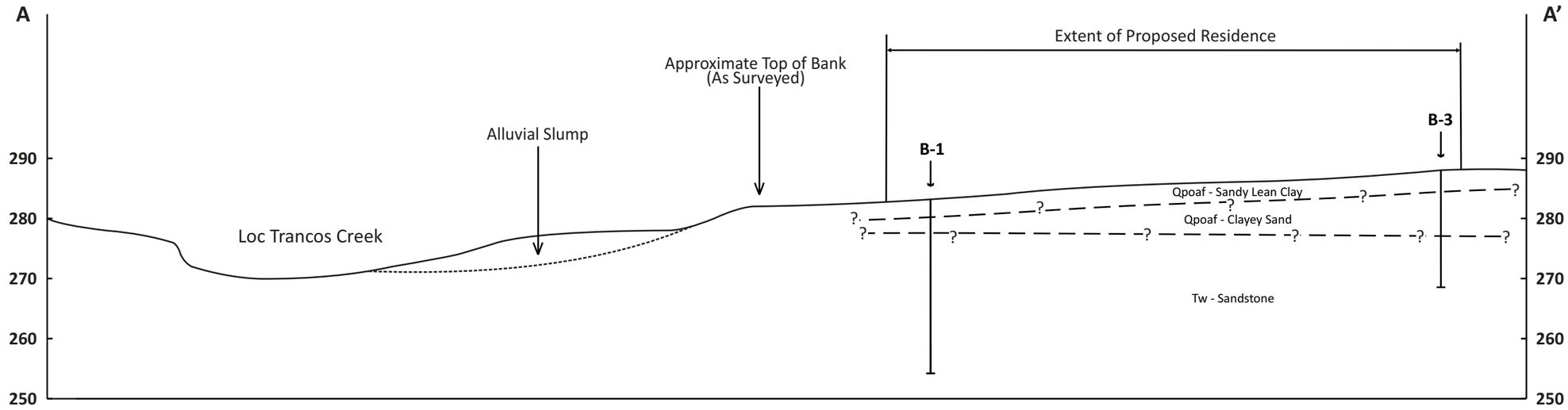
Base Map:
"Cupal Residence," Prepared by Paul Discoe Design in association with Irongrain, third revision issued September 2018.

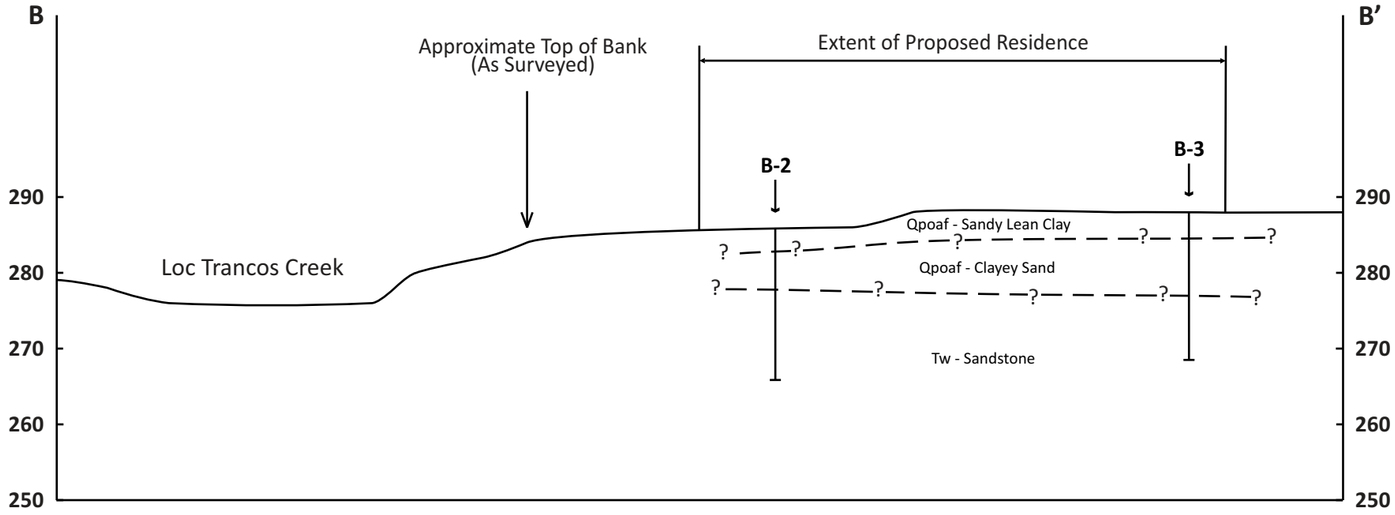
GEOTECHNICAL ENGINEERING INVESTIGATION
PROPOSED CUPAL RESIDENCE
3343 ALPINE ROAD
PORTOLA VALLEY, CA

BAYGG ENGINEERS

SITE PLAN & GEOLOGY

DATE:	SCALE:	JOB NO:	PLATE:
SEPTEMBER 2018	1" = 30'	CUPAL-18-01	2





LEGEND

———	Approximate Existing Ground
— — —	Approximate Geologic Contact
B-6 ↓	Boring Location
Qpoaf	Older alluvial fan deposits (Pleistocene)
Tw	Whiskey Hill Formation (middle and lower Eocene)

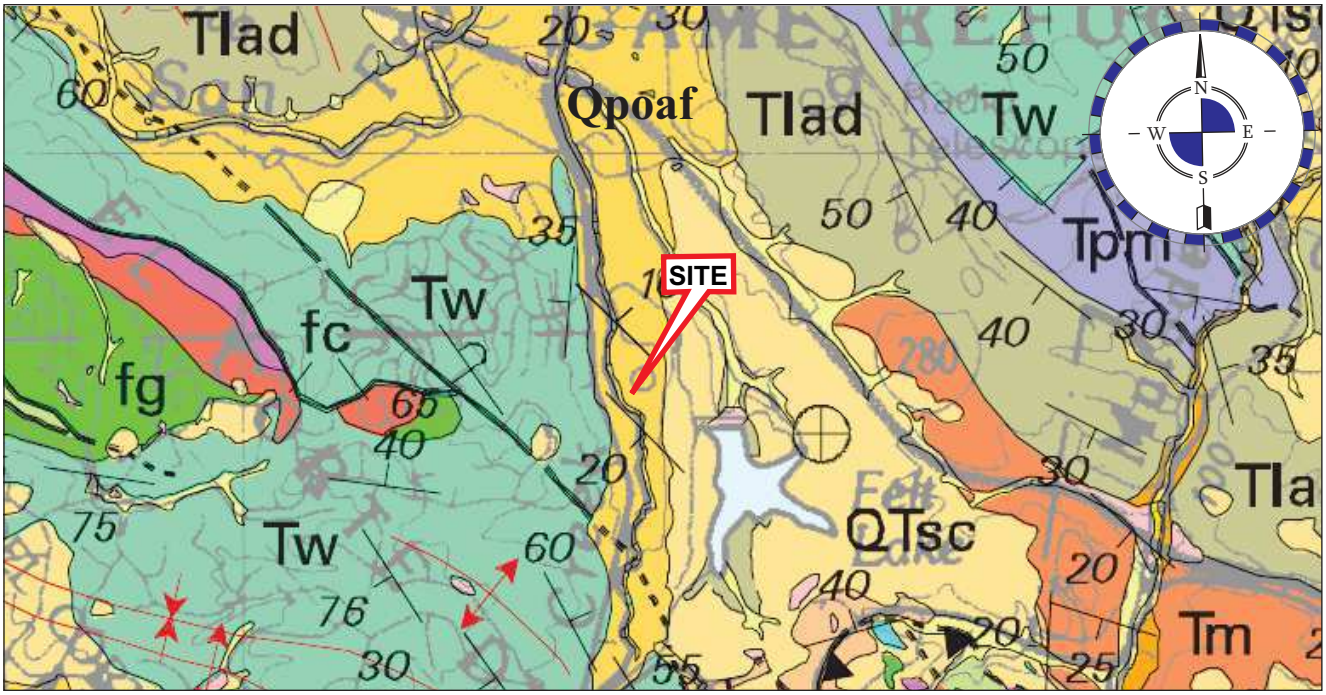
Base Map:
"Healing Cultures Wellness Center," Prepared by Paul Discoe Design in association with Irongrain, issued as preliminary site plan on 11/15/17.

GEOTECHNICAL ENGINEERING INVESTIGATION
PROPOSED CUPAL RESIDENCE
3343 ALPINE ROAD
PORTOLA VALLEY, CA

BAGG ENGINEERS

IDEALIZED SUBSURFACE PROFILES

DATE:	SCALE:	JOB NO:	PLATE:
SEPTEMBER 2018	1" = 20'	CUPAL-18-01	3



LEGEND

Qpoaf — **Older alluvial fan deposits (Pleistocene) –** Brown, dense, gravelly and clayey sand or clayey gravel that fines upward to sandy clay. All Qpoaf deposits can be related to modern stream courses.

Qtsc — **Santa Clara Formation (lower Pleistocene and upper Pliocene) –** Gray to red-brown poorly indurated conglomerate, sandstone, and mudstone in irregular and lenticular beds.

Tw — **Whiskey Hill Formation (middle and lower Eocene) -** Light-gray to buff, coarse-grained arkosic sandstone, with light-gray to buff silty claystone, glauconitic sandstone, and tuffaceous siltstone.

Tlad — **Ladera Sandstone (upper(?) and middle Miocene) -** Medium- to light-gray to yellowish-gray and buff, fine-grained, poorly cemented sandstone and siltstone, with minor amounts of coarse-grained sandstone, yellow-brown dolomitic claystone, and white to light-gray porcelaneous shale and porcelanite.

Tm — **Monterey Formation (middle Miocene) -** Grayish-brown and brownish-black to very pale orange and white, porcelaneous shale with chert, porcelaneous mudstone, impure diatomite, calcareous claystone, and with small amounts of siltstone and sandstone near base.

Tpm — **Page Mill Basalt (middle Miocene) -** Interlayered, columnar-jointed basaltic flows and agglomerate.

fg — **Greenstone -** Dark-green to red, altered basaltic rocks, including flows, pillow lavas, breccias, tuff breccias, tuffs, and minor related intrusive rocks, in unknown proportions.

fc — **Chert -** White, green, red, and orange chert, in places interbedded with reddish-brown shale.

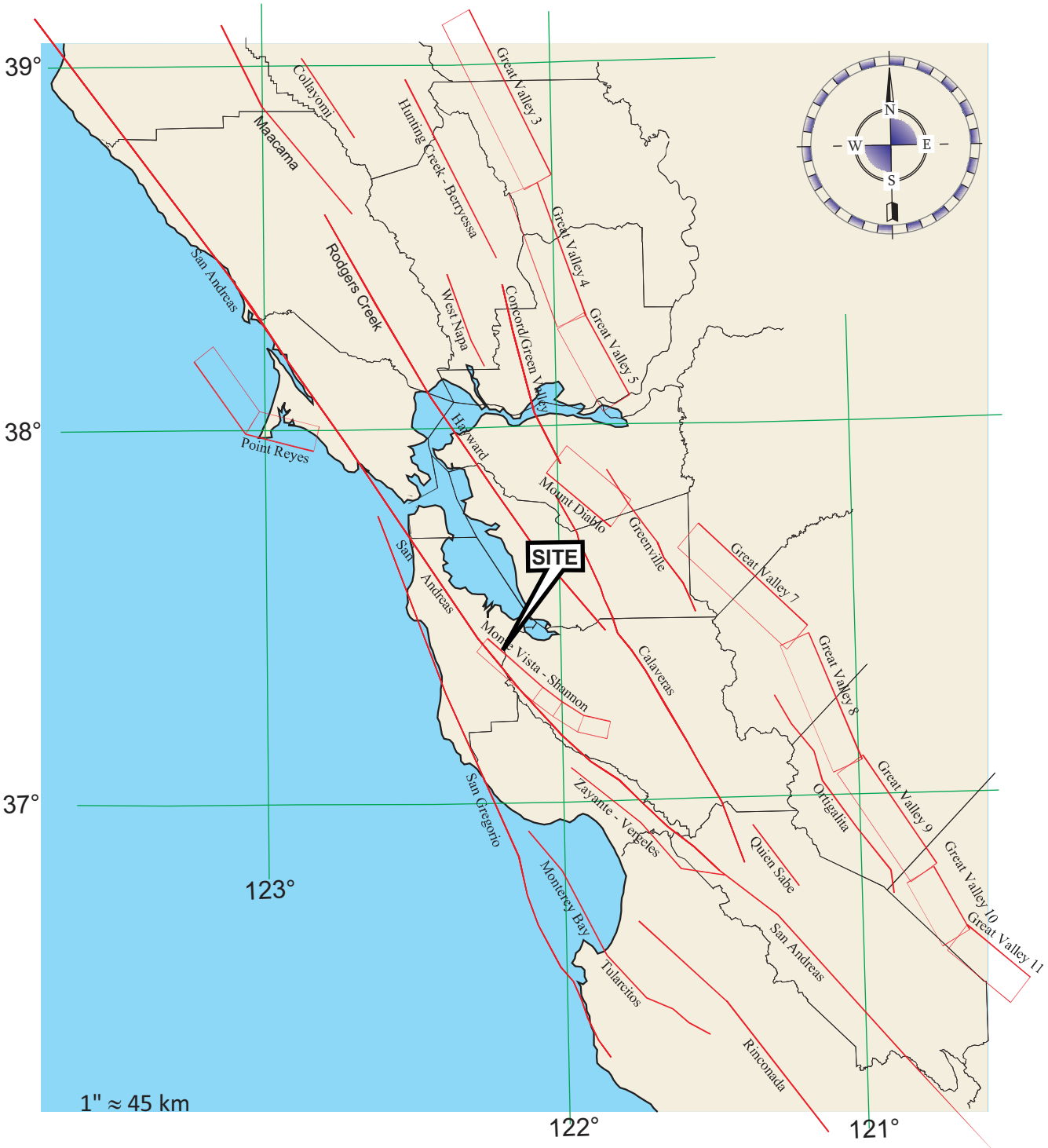
Reference: *"Geologic map and map database of the Palo Alto 30' X 60' quadrangle, California,"* by Brabb et al., 2000.

GEOTECHNICAL ENGINEERING INVESTIGATION
PROPOSED CUPAL RESIDENCE
3343 ALPINE ROAD
PORTOLA VALLEY, CA

LOCAL GEOLOGY MAP

DATE:	JOB NUMBER:	PLATE:
SEPTEMBER 2018	CUPAL-18-01	4

BvGG ENGINEERS



Reference: Taken from the 2002 California Geological Survey Fault Model

GEOTECHNICAL ENGINEERING INVESTIGATION **PROPOSED CUPAL RESIDENCE** **3343 ALPINE ROAD** **PORTOLA VALLEY, CA**	**REGIONAL FAULT MAP**		
	DATE: SEPTEMBER 2018	JOB NUMBER: CUPAL-18-01	PLATE 5

BAGG ENGINEERS

COARSE-GRAINED SOILS

LESS THAN 50% FINES*

GROUP SYMBOLS	ILLUSTRATIVE GROUP NAMES	MAJOR DIVISIONS
GW	Well graded gravel Well graded gravel with sand	GRAVELS More than half of coarse fraction is larger than No. 4 sieve size
GP	Poorly graded gravel Poorly graded gravel with sand	
GM	Silty gravel Silty gravel with sand	
GC	Clayey gravel Clayey gravel with sand	
SW	Well graded sand Well graded sand with gravel	SANDS More than half of coarse fraction is smaller than No. 4 sieve size
SP	Poorly graded sand Poorly graded sand with gravel	
SM	Silty sand Silty sand with gravel	
SC	Clayey sand Clayey sand with gravel	

NOTE: Coarse-grained soils receive dual symbols if:
(1) their fines are CL-ML (e.g. SC-SM or GC-GM) or
(2) they contain 5-12% fines (e.g. SW-SM, GP-GC, etc.)

FINE-GRAINED SOILS

MORE THAN 50% FINES*

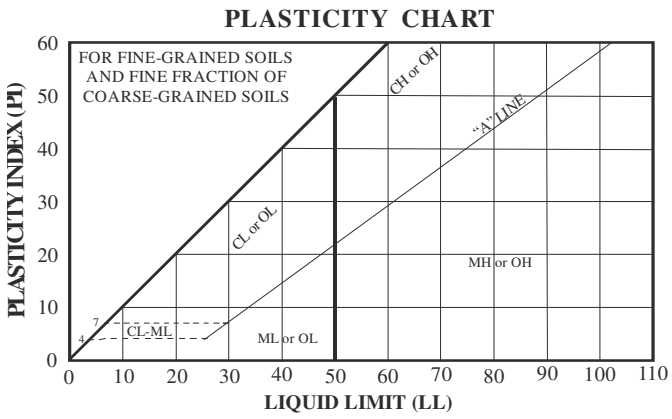
GROUP SYMBOLS	ILLUSTRATIVE GROUP NAMES	MAJOR DIVISIONS
CL	Lean clay Sandy lean clay with gravel	SILTS AND CLAYS liquid limit less than 50
ML	Silt Sandy silt with gravel	
OL	Organic clay Sandy organic clay with gravel	
CH	Fat clay Sandy fat clay with gravel	SILTS AND CLAYS liquid limit more than 50
MH	Elastic silt Sandy elastic silt with gravel	
OH	Organic clay Sandy organic clay with gravel	
PT	Peat Highly organic silt	HIGHLY ORGANIC SOIL

NOTE: Fine-grained soils receive dual symbols if their limits in the hatched zone on the Plasticity Chart(L-M)

SOIL SIZES

COMPONENT	SIZE RANGE
BOULDERS	ABOVE 12 in.
COBBLES	3 in. to 12 in.
GRAVEL	No. 4 to 3 in.
Coarse	¾ in to 3 in.
Fine	No. 4 to ¾ in.
SAND	No. 200 to No.4
Coarse	No. 10 to No. 4
Medium	No. 40 to No. 10
Fine	No. 200 to No. 40
*FINES:	BELOW No. 200

NOTE: Classification is based on the portion of a sample that passes the 3-inch sieve.



Reference: ASTM D 2487-06, Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System).

GENERAL NOTES: The tables list 30 out of a possible 110 Group Names, all of which are assigned to unique proportions of constituent soils. Flow charts in ASTM D 2487-06 aid assignment of the Group Names. Some general rules for fine grained soils are: less than 15% sand or gravel is not mentioned; 15% to 25% sand or gravel is termed "with sand" or "with gravel", and 30% to 49% sand or gravel is termed "sandy" or "gravelly". Some general rules for coarse-grained soils are: uniformly-graded or gap-graded soils are "Poorly" graded (SP or GP); 15% or more sand or gravel is termed "with sand" or "with gravel", 15% to 25% clay and silt is termed clayey and silty and any cobbles or boulders are termed "with cobbles" or "with boulders".

UNIFIED SOIL CLASSIFICATION SYSTEM

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SOIL TYPES (Ref 1)
Boulders: particles of rock that will not pass a 12-inch screen.
Cobbles: particles of rock that will pass a 12-inch screen, but not a 3-inch sieve.
Gravel: particles of rock that will pass a 3-inch sieve, but not a #4 sieve.
Sand: particles of rock that will pass a #4 sieve, but not a #200 sieve.
Silt: soil that will pass a #200 sieve, that is non-plastic or very slightly plastic, and that exhibits little or no strength when dry.
Clay: soil that will pass a #200 sieve, that can be made to exhibit plasticity (putty-like properties) within a range of water contents, and that exhibits considerable strength when dry.

MOISTURE AND DENSITY
Moisture Condition: an observational term; dry, moist, wet, or saturated.
Moisture Content: the weight of water in a sample divided by the weight of dry soil in the soil sample, expressed as a percentage.
Dry Density: the pounds of dry soil in a cubic foot of soil.

DESCRIPTORS OF CONSISTENCY (Ref 3)
Liquid Limit: the water content at which a soil that will pass a #40 sieve is on the boundary between exhibiting liquid and plastic characteristics. The consistency feels like soft butter.
Plastic Limit: the water content at which a soil that will pass a #40 sieve is on the boundary between exhibiting plastic and semi-solid characteristics. The consistency feels like stiff putty.
Plasticity Index: the difference between the liquid limit and the plastic limit, i.e. the range in water contents over which the soil is in a plastic state.

MEASURES OF CONSISTENCY OF COHESIVE SOILS (CLAYS) (Ref's 2 & 3)

Very Soft	N=0-1*	C=0-250 psf	Squeezes between fingers
Soft	N=2-4	C=250-500 psf	Easily molded by finger pressure
Medium Stiff	N=5-8	C=500-1000 psf	Molded by strong finger pressure
Stiff	N=9-15	C=1000-2000 psf	Dented by strong finger pressure
Very stiff	N=16-30	C=2000-4000 psf	Dented slightly by finger pressure
Hard	N>30	C>4000 psf	Dented slightly by a pencil point

***N**=blows per foot in the Standard Penetration Test. In cohesive soils, with the 3-inch-diameter ring sampler, 140-pound weight, divide the blow count by 1.2 to get N (Ref 4).

MEASURES OF RELATIVE DENSITY OF GRANULAR SOILS (GRAVELS, SANDS, AND SILTS) (Ref's 2 & 3)

Very Loose	N=0-4**	RD=0-30	Easily push a ½-inch reinforcing rod by hand
Loose	N=5-10	RD=30-50	Push a ½-inch reinforcing rod by hand
Medium Dense	N=11-30	RD=50-70	Easily drive a ½-inch reinforcing rod
Dense	N=31-50	RD=70-90	Drive a ½-inch reinforcing rod 1 foot
Very Dense	N>50	RD=90-100	Drive a ½-inch reinforcing rod a few inches

****N**=Blows per foot in the Standard Penetration Test. In granular soils, with the 3-inch-diameter ring sampler, 140-pound weight, divide the blow count by 2 to get N (Ref 4).

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Ref 1: ASTM Designation: D 2487-06, **Standard Classification of Soils for Engineering Purposes** (Unified Soil Classification System).

Ref 2: Terzaghi, Karl, and Peck, Ralph B., **Soil Mechanics in Engineering Practice,** John Wiley & Sons, New York, 2nd Ed., 1967, pp. 30, 341, and 347.

Ref 3: Sowers, George F., **Introductory Soil Mechanics and Foundations: Geotechnical Engineering,** Macmillan Publishing Company, New York, 4th Ed., 1979, pp. 80, 81, and 312.

Ref 4: Lowe, John III, and Zaccheo, Phillip F., **Subsurface Explorations and Sampling,** Chapter 1 in "Foundation Engineering Handbook," Hsai-Yang Fang, Editor, Van Nostrand Reinhold Company, New York, 2nd Ed, 1991, p. 39.

SOIL TERMINOLOGY

WEATHERING DESCRIPTORS

Fresh — No discoloration, not oxidized, no separation, hammer rings when crystalline rocks are struck.

Slight — Discoloration or oxidation is limited to surface of, or short distance from, fractures; some feldspar crystals are dull, no visible separation, hammer rings when crystalline rocks are struck, body of rock not weakened.

Moderate — Discoloration extends from fractures, usually throughout ;Fe-Mg materials are "rusty", feldspar crystals are "cloudy", all fractures are discolored or oxidized, partial separation of boundaries visible, texture generally preserved, hammer dose not ring when rock is struck, body of rock is slightly weakened.

Intense — Discoloration or oxidation throughout; all feldspars and Fe-Mg minerals are altered to clay to some extent; or chemical alteration produces in situ disaggregation, all fracture surfaces are discolored or oxidized, surfaces friable, partial separation, texture altered by chemical disintegration, dull sound when struck with hammer, rock is significantly weakened.

Decomposed — Discolored or oxidized throughout, but resistant mineral such as quartz may be unaltered, all feldspars and Fe-Mg minerals are completely altered to clay, complete separation of grain boundaries, resembles a soil, partial or complete remnant of rock structure may be preserved, can be granulated by hand, resistant minerals such as quartz may be present as "stringers" or "dykes".

BEDDING FOLIATION AND FRACTURE SPACING DESCRIPTORS

Millimeters	Feet	Bedding	Fracture Spacing
>10	<0.03	Laminated	Very Close
10-30	0.03-0.1	Very Thin	Very Close
30-100	0.1-0.3	Thin	Close
100-300	0.3-1	Moderate	Moderate
300-1000	1-3	Thick	Wide
1000-3000	3-10	Very Thick	Very Wide
>3000	>10	Massive	Extremely Wide

ROCK HARDNESS/STRENGTH DESCRIPTORS*

Extremely Hard — Core, fragment, or exposure cannot be scratched with knife or sharp pick; can only be chipped with repeated heavy hammer blows.

Very Hard — Cannot be scratched with knife or sharp pick. Core or fragment breaks with repeated heavy hammer blows.

Hard — Can be scratched with knife or sharp pick with difficulty (heavy pressure). Heavy hammer blow required to break specimen.

Moderately Hard — Can be scratched with knife or sharp pick with light or moderate pressure. Core or fragment breaks with moderate hammer blow.

Moderately Soft — Can be grooved $^{1}/_{16}$ inch (2mm) deep by knife or sharp pick with moderate or heavy pressure. Core fragment breaks with light hammer blow or heavy manual pressure.

Soft — Can be grooved or gouged easily by knife or sharp pick with light pressure, can be scratched with fingernail. Breaks wit light to moderate manual pressure.

Very Soft — Can be readily indented, grooved, or gouged with fingernail, or carved with a knife. Breaks with light manual pressure.

*Note: — Although "sharp pick" is included in those definitions, descriptions of ability to be scratched, grooved, or gouged by a knife is the preferred criteria.

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"Engineering Geology Field Manual, Second Edition, Volume 1, by U.S. Department of Interior, Bureau of Reclamation, 1998

ROCK TERMINOLOGY

GENERAL NOTES FOR BORING LOGS:

The boring logs are intended for use only in conjunction with the text, and for only the purposes the text outlines for our services. The Plate "Soil Terminology" defines common terms used on the boring logs.

The plate "Unified Soil Classification System," illustrates the method used to classify the soils. The soils were visually classified in the field; the classifications were modified by visual examination of samples in the laboratory, supported, where indicated on the logs, by tests of liquid limit, plasticity index, and/or gradation. In addition to the interpretations for sample classification, there are interpretations of where stratum changes occur between samples, where gradational changes substantively occur, and where minor changes within a stratum are significant enough to log.

There may be variations in subsurface conditions between borings. Soil characteristics change with variations in moisture content, with exchange of ions, with loosening and densifying, and for other reasons. Groundwater levels change with seasons, with pumping, from leaks, and for other reasons. Thus boring logs depict interpretations of subsurface conditions only at the locations indicated, and only on the date(s) noted.

SPECIAL FIELD NOTES FOR THIS REPORT:

1. The boring for this investigation was advanced on August 14, 2018, with a truck-mounted drilling rig using 8-inch diameter hollow stem augers. The borings were backfilled with cement grout immediately after the last soil sample was retrieved.

2. The boring locations were approximately located with a measuring tape from the existing site features such as trees, bridge retaining walls, etc. Boring elevations were estimated from the elevations shown on the topographic drawing of the site.

3. The soils' Group Names [e.g. LEAN CLAY] and Group Symbols [e.g. (CL)] were determined or estimated per ASTM D 2487, Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System, see Plate 6). Other engineering terms used on the boring logs are defined on Plate 7, Soil Terminology and Plate 8, Rock Terminology.

4. Groundwater was not encountered in any of the borings advanced for this investigation.

5. The undisturbed soil samples were obtained using the sampler types noted on the boring logs and described on Plate 10, Key to Symbols.

6. The "Blow Count" Column on the boring logs indicates the number of blows required to drive the Modified California and Standard Penetration Test samplers below the bottom of the boring, with the blow counts given for each 6 inches of sampler penetration.

7. The tabulated strength values on the boring logs are peak strength values.

KEY TO SYMBOLS

Symbol	Description
Strata symbols	
	Description not given for: "OG:"
	Clayey sand
	Sandstone
	Sandy lean clay
Misc. Symbols	
	Boring continues
Soil Samplers	
	Modified California Sampler: 2.375" ID by 3" OD, split-barrel sampler driven w/ 140-pound hammer falling 30 inches
	Standard Penetration Test: 1 3/8" ID by 2" OD, split-spoon sampler driven with 140-pound hammer falling 30" (ASTM D 1586-99)
Line Types	
_____	Denotes a sudden, or well identified strata change
_ _ _	Denotes a gradual, or poorly identified strata change
Laboratory Data	
DS	Direct shear test performed on a sample at natural moisture content (ASTM D3080).
DSX	Direct shear test performed on a sample at an artificially increased moisture content (ASTM D3080).
bgs	Below the Ground Surface

Symbol	Description
LL	Liquid Limit (ASTM D4318).
PI	Plasticity Index (ASTM D4318)
NAT	Natural Water Content
%Fines	Percent of material that passes through a #200 sieve (ASTM C117).
%Sand	Percent of material that passes through a #4 sieve but is retained on a #200 sieve (ASTM D136).
%Gravel	Percent of material that is retained on a #4 sieve (ASTM C136).
%Swell	Percentage the sample swelled while being saturated for the saturated direct shear test (ASTM D6080)

BORING LOG

Boring No. B-1
Page 1 of 2

JOB NAME: Proposed Cupal Residence
CLIENT: Ms. Toni Cupal
LOCATION: 3343 Alpine Road, Portola Valley, CA
DRILLER: HEW Drilling Company
DRILL METHOD: Truck-mounted 8-inch Hollow-stem Auger

JOB NO.: CUPAL-18-01
DATE DRILLED: 8/14/2018
ELEVATION: 283±
LOGGED BY: JKT

Type of Strength Test	Test Surcharge Pressure, psf	Test Water Content, %	Shear Strength, psf	In-Situ Water Content, %	In-Situ Dry Unit Weight, pcf	Depth, ft.	Soil Symbols, Samplers and Blow Counts	USCS	Description	Remarks
						0	35 50/4"	CL	SANDY CLAY with GRAVEL: brown, damp, very stiff to hard, fine-grained sands, trace coarse sand, trace fine subrounded gravels, trace angular sandstone and shale cobbles.	LL=27, PI=14
						3	33 30 30	SC	CLAYEY SAND: yellow-brown to red-yellow, damp, dense, fine-grained sands. ... cobbles encountered at 3.5-feet.	%Fines=25
DS	600	NAT	5101	12.1	117		49 50/6"			
						6	50/3"	ROCK	SANDSTONE: yellow-brown, damp, highly weathered to completely weathered, firm, weak to friable.	LL=36, PI=18
							30 36 50/6"			
DS	1000	NAT	3866	20.1	107		58/6" 50/3"			
						9				
						12				
DS	1600	NAT	1858	12.4	101		70/5"		... moist.	
						15			... gray-brown, damp to moist, highly weathered, firm, weak to friable.	
						18	65/4"			

BYGG ENGINEERS

BORING LOG

Boring No. B-1
Page 2 of 2

JOB NAME: Proposed Cupal Residence

JOB NO.: CUPAL-18-01

Type of Strength Test	Test Surcharge Pressure, psf	Test Water Content, %	Shear Strength, psf	In-Situ Water Content, %	In-Situ Dry Unit Weight, pcf	Depth, ft.	Soil Symbols, Samplers and Blow Counts	USCS	Description	Remarks
				15.1	102	21			... color changes to gray, damp to moist, less cemented.	
						24	70/3" 100/3			
						27	50/6" 50/1"			LL=34, PI=12
						30			The boring was terminated at approximately 29-feet bgs. Groundwater was not encountered. Immediately after the last sample was retrieved, the borehole was backfilled with neat cement grout and capped with soil cuttings.	
						33				
						36				
						39				

BAGG ENGINEERS

BORING LOG

Boring No. B-2
Page 1 of 2

JOB NAME: Proposed Cupal Residence
CLIENT: Ms. Toni Cupal
LOCATION: 3343 Alpine Road, Portola Valley, CA
DRILLER: HEW Drilling Company
DRILL METHOD: Truck-mounted 8-inch Hollow-stem Auger

JOB NO.: CUPAL-18-01
DATE DRILLED: 8/14/2018
ELEVATION: 286±
LOGGED BY: JKT

Type of Strength Test	Test Surcharge Pressure, psf	Test Water Content, %	Shear Strength, psf	In-Situ Water Content, %	In-Situ Dry Unit Weight, pcf	Depth, ft.	Soil Symbols, Samplers and Blow Counts	USCS	Description	Remarks
						0		CL	SANDY LEAN CLAY: brown, damp, very stiff to hard, fine-grained sands, trace coarse sands, trace fine subrounded to subangular gravel, trace organics (roots) .	
DSX	320	16.2	945	9.2	129		30 50/4"			%Swell=2%
						3		SC	CLAYEY SAND: yellow-brown, damp, very dense, fine-grained sand. Cobbles or boulder encountered at 3-feet.	
							44 55/6" 53/6"			LL=37, PI=22 %Gravel=34 %Sand=41 %Fines=25
						6				
DS	1000	NAT	2000	13.7 15.5	105		100/5 60/6" 50/2"	ROCK	SANDSTONE: yellow-brown and red-yellow, damp, highly weathered to completely weathered, firm, weak to friable.	LL=35, PI=13 %Fines=76
						9				
						12				
							80/4"		... gray, damp to moist, highly weathered, firm, weak to friable.	
						15				
						18				

BYGG ENGINEERS

BORING LOG

Boring No. B-2
Page 2 of 2

JOB NAME: Proposed Cupal Residence

JOB NO.: CUPAL-18-01

Type of Strength Test	Test Surcharge Pressure, psf	Test Water Content, %	Shear Strength, psf	In-Situ Water Content, %	In-Situ Dry Unit Weight, pcf	Depth, ft.	Soil Symbols, Samplers and Blow Counts	USCS	Description	Remarks
DS	2300	NAT	4419	12.8	119		70/6"			
						21			The boring was terminated at approximately 20-feet bgs. Groundwater was not encountered. Immediately after the last sample was retrieved, the borehole was backfilled with neat cement grout and capped with soil cuttings.	
						24				
						27				
						30				
						33				
						36				
						39				

BORING LOG

Boring No. B-3
Page 1 of 2

JOB NAME: Proposed Cupal Residence
CLIENT: Ms. Toni Cupal
LOCATION: 3343 Alpine Road, Portola Valley, CA
DRILLER: HEW Drilling Company
DRILL METHOD: Truck-mounted 8-inch Hollow-stem Auger

JOB NO.: CUPAL-18-01
DATE DRILLED: 8/14/2018
ELEVATION: 288±
LOGGED BY: JKT

Type of Strength Test	Test Surcharge Pressure, psf	Test Water Content, %	Shear Strength, psf	In-Situ Water Content, %	In-Situ Dry Unit Weight, pcf	Depth, ft.	Soil Symbols, Samplers and Blow Counts	USCS	Description	Remarks
						0	13 25 36	CL	SANDY LEAN CLAY: brown, damp to moist, very stiff to hard, fine-grained sands, trace fine angular gravel, trace organics.	LL=26, PI=10
DSX DS	500 500	19.8 NAT	1745 5428	13.1 12.6	115 116	3	24 38 23	SC	CLAYEY SAND: yellow-brown, dry to damp, dense, fine-grained sands, trace coarse sand, trace subrounded fine gravel, trace organics, cemented.	%Swell=5%
						6				
						9	40 50/3"		... red-brown, dry to damp, very dense, fine to coarse sands, trace subangular fine gravel.	
						12		ROCK	SANDSTONE: yellow-brown, damp to moist, highly weathered to completely weathered, firm, weak to friable.	
DS	1600	NAT	2312	13.7	113		55/6"		... cobbles discovered in samples.	
						15				
						18	60/3"		... gray, damp to moist, highly weathered, firm, weak to friable.	

BYGG ENGINEERS

BORING LOG

Boring No. B-3
Page 2 of 2

JOB NAME: Proposed Cupal Residence

JOB NO.: CUPAL-18-01

Type of Strength Test	Test Surcharge Pressure, psf	Test Water Content, %	Shear Strength, psf	In-Situ Water Content, %	In-Situ Dry Unit Weight, pcf	Depth, ft.	Soil Symbols, Samplers and Blow Counts	USCS	Description	Remarks
DSX DS	2200 2200	20.9 NAT	1773 2426	15.3 14.8 13.7	103 104		50/6"			Non-Plastic %Fines=37
						21			The boring was terminated at approximately 19.5-feet bgs. Groundwater was not encountered. Immediately after the last sample was retrieved, the borehole was backfilled with neat cement grout and capped with soil cuttings.	
						24				
						27				
						30				
						33				
						36				
						39				

BORING LOG

Boring No. B-4
Page 1 of 1

JOB NAME: Proposed Cupal Residence
CLIENT: Ms. Toni Cupal
LOCATION: 3343 Alpine Road, Portola Valley, CA
DRILLER: HEW Drilling Company
DRILL METHOD: Truck-mounted 8-inch Hollow-stem Auger

JOB NO.: CUPAL-18-01
DATE DRILLED: 8/14/2018
ELEVATION: 288±
LOGGED BY: JKT

Type of Strength Test	Test Surcharge Pressure, psf	Test Water Content, %	Shear Strength, psf	In-Situ Water Content, %	In-Situ Dry Unit Weight, pcf	Depth, ft.	Soil Symbols, Samplers and Blow Counts	USCS	Description	Remarks
						0		CL	SANDY LEAN CLAY: brown, damp to moist, very stiff to hard, trace angular fine gravel, trace organics.	
DS	320	NAT	489	7.9	103		22 42 50/5"			
						3		SC	CLAYEY SAND: brown, dry to damp, very dense, well-graded sands, trace subrounded to rounded fine gravel.	
DSX DS	500 500	18.9 NAT	1802 6805	13.1 14.2	115 115		31 50/6"			%Swell=4%
						6			The boring was terminated at approximately 4.5-feet bgs. Groundwater was not encountered. Immediately after the last sample was retrieved, the borehole was backfilled with neat cement grout and capped with soil cuttings.	
						9				
						12				
						15				
						18				

BORING LOG

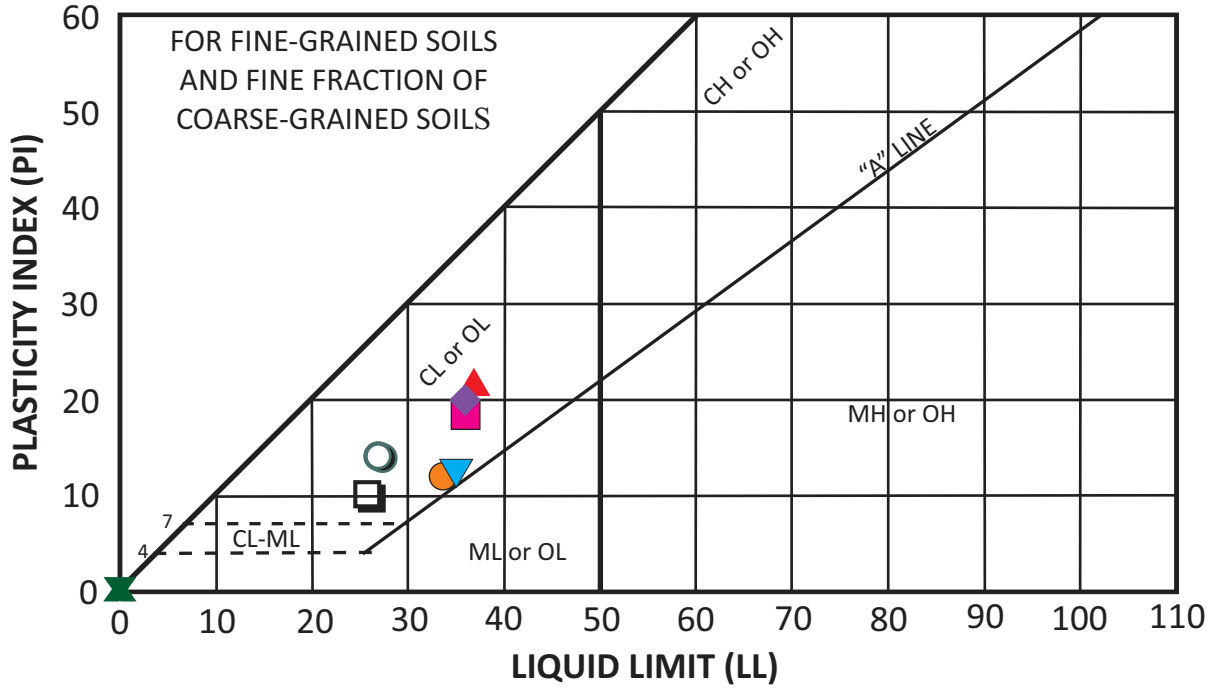
Boring No. B-5
Page 1 of 1

JOB NAME: Proposed Cupal Residence
CLIENT: Ms. Toni Cupal
LOCATION: 3343 Alpine Road, Portola Valley, CA
DRILLER: HEW Drilling Company
DRILL METHOD: Truck-mounted 8-inch Hollow-stem Auger

JOB NO.: CUPAL-18-01
DATE DRILLED: 8/14/2018
ELEVATION: 287±
LOGGED BY: JKT

Type of Strength Test	Test Surcharge Pressure, psf	Test Water Content, %	Shear Strength, psf	In-Situ Water Content, %	In-Situ Dry Unit Weight, pcf	Depth, ft.	Soil Symbols, Samplers and Blow Counts	USCS	Description	Remarks
						0	17 37 50/3"	CL	SANDY LEAN CLAY: brown, dry to damp, very stiff to hard, trace coarse sands, trace organics.	
						3	40 50/4"	SC	CLAYEY SAND: yellow-brown, dry to damp, very dense, well-graded sands, trace subrounded to rounded fine gravel.	LL=39, PI=20
						6			The boring was terminated at approximately 4.5-feet bgs. Groundwater was not encountered. Immediately after the last sample was retrieved, the borehole was backfilled with neat cement grout and capped with soil cuttings.	
						9				
						12				
						15				
						18				

PLASTICITY CHART



SYMBOL	SAMPLE SOURCE	DEPTH (FEET)	NATURAL WATER CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	SOIL DESCRIPTION
○	Boring B-1	1.3	N/A	27	13	14	Brown Sandy Lean Clay (CL)
■	Boring B-1	5.8	12.1	36	18	18	Red-Brown Clayey Sand (SC)
●	Boring B-1	28.5	N/A	34	22	12	Gray-Brown Sandstone
▲	Boring B-2	4	N/A	37	15	22	Yellow-Brown Clayey Sand (SC)
▼	Boring B-2	8.5	15.5	35	22	13	Yellow-Brown Sandstone
□	Boring B-3	1	9.2	26	16	10	Brown Sandy Lean Clay (CL)
⧓	Boring B-3	19	15.3		Non-plastic		Gray Sandstone
◆	Boring B-5	3.8	N/A	36	16	20	Yellow-Brown Clayey Sand (SC)

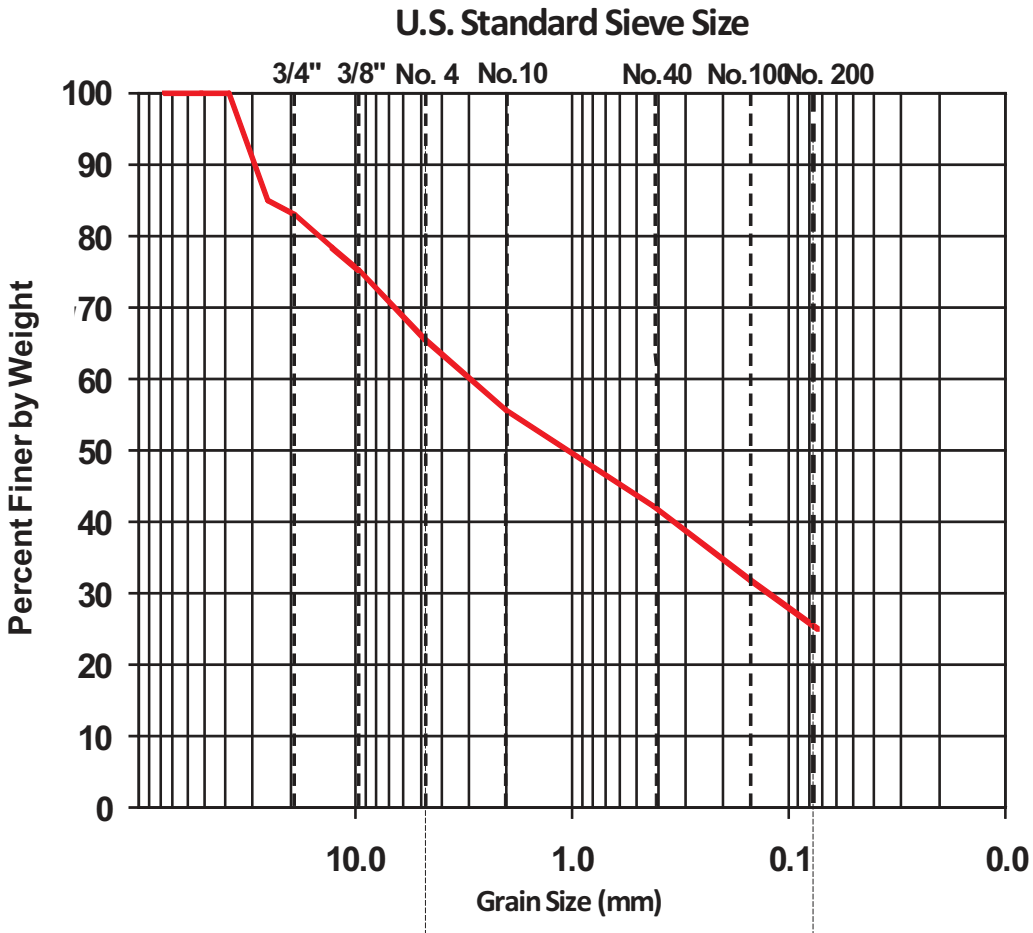
Note: "NP" denotes non-plastic.

GEOTECHNICAL ENGINEERING INVESTIGATION
PROPOSED CUPAL RESIDENCE
3343 ALPINE ROAD
PORTOLA VALLEY, CA

PLASTICITY DATA

DATE:	JOB NUMBER:	PLATE
SEPTEMBER 2018	CUPAL-18-01	19

BAGG ENGINEERS



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	COARSE	

LEGEND	———			
SAMPLE NUMBER	B-2-2			
DEPTH (FEET)	4			
SOIL DESCRIPTION	Clayey Sand with Gravel (SC)			

GEOTECHNICAL ENGINEERING INVESTIGATION
PROPOSED CUPAL RESIDENCE
3343 ALPINE ROAD
PORTOLA VALLEY, CA

GRADATION TEST DATA

DATE:	JOB NUMBER:	PLATE:
SEPTEMBER 2018	CUPAL-18-01	17

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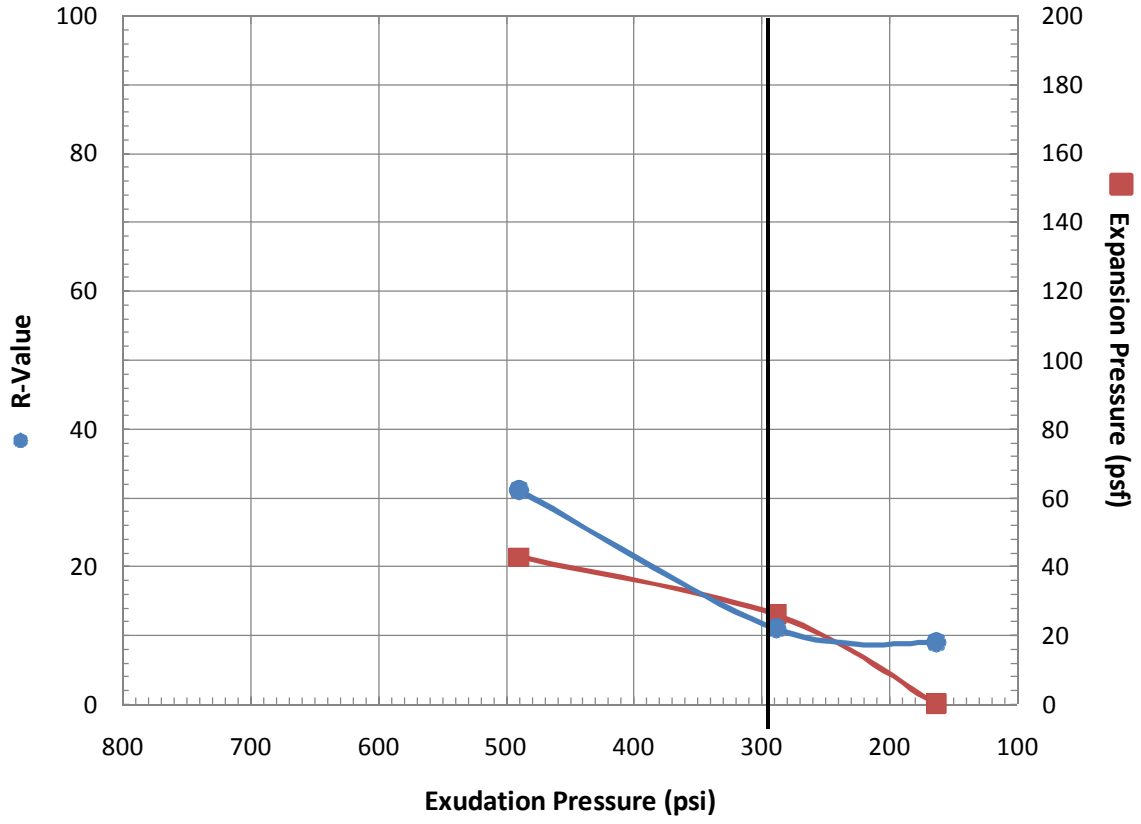
B-4 Bulk Sample



Resistance R-Value and Expansion Pressure - Cal Test 301

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psf	Horizontal Press. Psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	250	118.6	13.5	43	102	2.62	489	29	31
2	120	113.1	14.9	26	134	2.69	288	10	11
3	100	110.7	16.6	0	135	2.62	163	9	9

R-value at 300 psi exudation pressure = 12

Exp. Pressure at 300 psi exudation pressure = 28

GEOTECHNICAL ENGINEERING INVESTIGATION
PROPOSED CUPAL RESIDENCE
3343 ALPINE ROAD
PORTOLA VALLEY, CA

R-VALUE TEST DATA

DATE:	JOB NUMBER:	PLATE
SEPTEMBER 2018	CUPAL-18-01	18

BvGG ENGINEERS

Important Information about This

Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

The Geoprofessional Business Association (GBA) has prepared this advisory to help you – assumedly a client representative – interpret and apply this geotechnical-engineering report as effectively as possible. In that way, clients can benefit from a lowered exposure to the subsurface problems that, for decades, have been a principal cause of construction delays, cost overruns, claims, and disputes. If you have questions or want more information about any of the issues discussed below, contact your GBA-member geotechnical engineer. Active involvement in the Geoprofessional Business Association exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project.

Geotechnical-Engineering Services Are Performed for Specific Purposes, Persons, and Projects

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical-engineering study conducted for a given civil engineer will not likely meet the needs of a civil-works constructor or even a different civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client. *Those who rely on a geotechnical-engineering report prepared for a different client can be seriously misled*. No one except authorized client representatives should rely on this geotechnical-engineering report without first conferring with the geotechnical engineer who prepared it. *And no one – not even you – should apply this report for any purpose or project except the one originally contemplated.*

Read this Report in Full

Costly problems have occurred because those relying on a geotechnical-engineering report did not read it *in its entirety*. Do not rely on an executive summary. Do not read selected elements only. *Read this report in full.*

You Need to Inform Your Geotechnical Engineer about Change

Your geotechnical engineer considered unique, project-specific factors when designing the study behind this report and developing the confirmation-dependent recommendations the report conveys. A few typical factors include:

- the client's goals, objectives, budget, schedule, and risk-management preferences;
- the general nature of the structure involved, its size, configuration, and performance criteria;
- the structure's location and orientation on the site; and
- other planned or existing site improvements, such as retaining walls, access roads, parking lots, and underground utilities.

Typical changes that could erode the reliability of this report include those that affect:

- the site's size or shape;
- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light-industrial plant to a refrigerated warehouse;
- the elevation, configuration, location, orientation, or weight of the proposed structure;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes – even minor ones – and request an assessment of their impact. *The geotechnical engineer who prepared this report cannot accept responsibility or liability for problems that arise because the geotechnical engineer was not informed about developments the engineer otherwise would have considered.*

This Report May Not Be Reliable

Do not rely on this report if your geotechnical engineer prepared it:

- for a different client;
- for a different project;
- for a different site (that may or may not include all or a portion of the original site); or
- before important events occurred at the site or adjacent to it; e.g., man-made events like construction or environmental remediation, or natural events like floods, droughts, earthquakes, or groundwater fluctuations.

Note, too, that it could be unwise to rely on a geotechnical-engineering report whose reliability may have been affected by the passage of time, because of factors like changed subsurface conditions; new or modified codes, standards, or regulations; or new techniques or tools. *If your geotechnical engineer has not indicated an "apply-by" date on the report, ask what it should be*, and, in general, *if you are the least bit uncertain* about the continued reliability of this report, contact your geotechnical engineer before applying it. A minor amount of additional testing or analysis – if any is required at all – could prevent major problems.

Most of the "Findings" Related in This Report Are Professional Opinions

Before construction begins, geotechnical engineers explore a site's subsurface through various sampling and testing procedures. *Geotechnical engineers can observe actual subsurface conditions only at those specific locations where sampling and testing were performed*. The data derived from that sampling and testing were reviewed by your geotechnical engineer, who then applied professional judgment to form opinions about subsurface conditions throughout the site. Actual sitewide-subsurface conditions may differ – maybe significantly – from those indicated in this report. Confront that risk by retaining your geotechnical engineer to serve on the design team from project start to project finish, so the individual can provide informed guidance quickly, whenever needed.

This Report's Recommendations Are Confirmation-Dependent

The recommendations included in this report – including any options or alternatives – are confirmation-dependent. In other words, *they are not final*, because the geotechnical engineer who developed them relied heavily on judgment and opinion to do so. Your geotechnical engineer can finalize the recommendations *only after observing actual subsurface conditions* revealed during construction. If through observation your geotechnical engineer confirms that the conditions assumed to exist actually do exist, the recommendations can be relied upon, assuming no other changes have occurred. *The geotechnical engineer who prepared this report cannot assume responsibility or liability for confirmation-dependent recommendations if you fail to retain that engineer to perform construction observation.*

This Report Could Be Misinterpreted

Other design professionals' misinterpretation of geotechnical-engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer serve as a full-time member of the design team, to:

- confer with other design-team members,
- help develop specifications,
- review pertinent elements of other design professionals' plans and specifications, and
- be on hand quickly whenever geotechnical-engineering guidance is needed.

You should also confront the risk of constructors misinterpreting this report. Do so by retaining your geotechnical engineer to participate in prebid and preconstruction conferences and to perform construction observation.

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can shift unanticipated-subsurface-conditions liability to constructors by limiting the information they provide for bid preparation. To help prevent the costly, contentious problems this practice has caused, include the complete geotechnical-engineering report, along with any attachments or appendices, with your contract documents, *but be certain to note conspicuously that you've included the material for informational purposes only*. To avoid misunderstanding, you may also want to note that "informational purposes" means constructors have no right to rely on the interpretations, opinions, conclusions, or recommendations in the report, but they may rely on the factual data relative to the specific times, locations, and depths/elevations referenced. Be certain that constructors know they may learn about specific project requirements, including options selected from the report, *only* from the design drawings and specifications. Remind constructors that they may perform their own studies if they want to, and *be sure to allow enough time* to permit them to do so. Only then might you be in a position to give constructors the information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions. Conducting prebid and preconstruction conferences can also be valuable in this respect.

Read Responsibility Provisions Closely

Some client representatives, design professionals, and constructors do not realize that geotechnical engineering is far less exact than other engineering disciplines. That lack of understanding has nurtured unrealistic expectations that have resulted in disappointments, delays, cost overruns, claims, and disputes. To confront that risk, geotechnical engineers commonly include explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely*. Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The personnel, equipment, and techniques used to perform an environmental study – e.g., a "phase-one" or "phase-two" environmental site assessment – differ significantly from those used to perform a geotechnical-engineering study. For that reason, a geotechnical-engineering report does not usually relate any environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated subsurface environmental problems have led to project failures*. If you have not yet obtained your own environmental information, ask your geotechnical consultant for risk-management guidance. As a general rule, *do not rely on an environmental report prepared for a different client, site, or project, or that is more than six months old.*

Obtain Professional Assistance to Deal with Moisture Infiltration and Mold

While your geotechnical engineer may have addressed groundwater, water infiltration, or similar issues in this report, none of the engineer's services were designed, conducted, or intended to prevent uncontrolled migration of moisture – including water vapor – from the soil through building slabs and walls and into the building interior, where it can cause mold growth and material-performance deficiencies. Accordingly, ***proper implementation of the geotechnical engineer's recommendations will not of itself be sufficient to prevent moisture infiltration.*** Confront the risk of moisture infiltration by including building-envelope or mold specialists on the design team. ***Geotechnical engineers are not building-envelope or mold specialists.***

GEOPROFESSIONAL BUSINESS ASSOCIATION

Telephone: 301/565-2733
e-mail: info@geoprofessional.org www.geoprofessional.org

Grading Ordinance Design Standards

Supplemental Checklist for Improvement Plans ***County of Santa Clara*** ***Office of the County Surveyor***

GENERAL INSTRUCTIONS:

This form is to be furnished to the County Surveyor by the design engineer at the time of submission of preliminary and final grading plans. Many of the items are crucial to the design concept and need to be considered at the time of preliminary and final approval. If an item is not applicable to the project, so state on the form.

DESIGN REQUIREMENTS:

The Santa Clara County grading ordinance specifies in Article 5, Section C12-489 through C12-527, the minimum design standards for all grading work unless otherwise recommended by the design engineer for a particular project. In many situations, other standards may be appropriate, either higher or lower, depending on the purpose of the grading, such as a house pad or the intended land use, such as a subdivision.

PROJECT DATA:

Applicant: Toni Cupal **Date:** 10/25/2018

Location (Street): 3343 Alpine Road, Portola Valley **File #:** _____

Soils and/ or Geotechnical Report prepared by BAGG Engineers **Date:** 10/10/2018

ENGINEER'S DESIGN RECOMMENDATIONS:

Item	*Ordinance Requirmnt.*	*Engineer's Recomnd.*	*Location of Deviation (if any)*	*Reason/ Justification for Deviation*
1. Cut Slopes (see C12-489)	1.5 : 1	3:1 to 5:1	Dwy and house	Improved slope stability
2. Fill Slopes (C12-497)	2 : 1	3:1	Driveway	Improved slope stability
3. Drainage Terraces (C12-498)	25' height (max) 6' width (min)	N/A		
4. Fill Compaction (C12-495)	90% min	90%		
5. Road Sub-grade Co. Std. Road Spec.	95%	95%		
6. Benching (C12-496)	6' width (min) (keyed)	N/A		
7. Sub-drains (C12-496)	In natural drainage courses under fills, etc.	N/A		

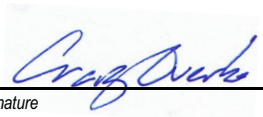
Item	*Ordinance Requirmnt.*	*Engineer's Recomnd.*	*Location of Deviation (if any)*	*Reason/ Justification for Deviation*
8. Setbacks (C12-505)	See Ord. Fig. 2	30' min. all sides		
9. Storm Drainage	See adopted standards	N/A		No SD system, surface runoff only. Project is below limits requiring LID treatment or hydromodification.
10. Erosion Control (C12-515) (C12-516)	Planting, energy dissipators, ditch lining, etc.	Rock energy dissipator	Driveway	
11. Planting of Large Slopes (C12-519) (C12-520)	Slopes of 15' vertical height or more	N/A		
12. Irrigation Devices (C12-525)	As needed	N/A		

ADDITIONAL RECOMMENDATIONS AND JUSTIFICATION:

STATEMENT AND CERTIFICATION:

I hereby state that the above design recommendations are in conformance with good engineering practice and in the best public interest considering the intended use of the land, environmental factors and field conditions. They are based upon a field investigation with soils and geologic reports as appropriate or required under the grading ordinance. The proposed design will adequately control and dispose of storm water runoff, minimize erosion, and cause minimal disturbance of the terrain consistent with the proposed land use.

I hereby certify that the slopes will be stable and that the graded areas will provide suitable foundation support for the structures or other improvements that are intended as the purpose of grading.



Signature

10/25/2018
Date

60301
R.C.E. No.

Attachments:
Soils Report (X); Laboratory Tests ( )
Geologic Reports ( ); Other _____

Form Revised 4/24/01

BOHLEY CONSULTING ENGINEERING · SURVEYING · PLANNING

Memorandum

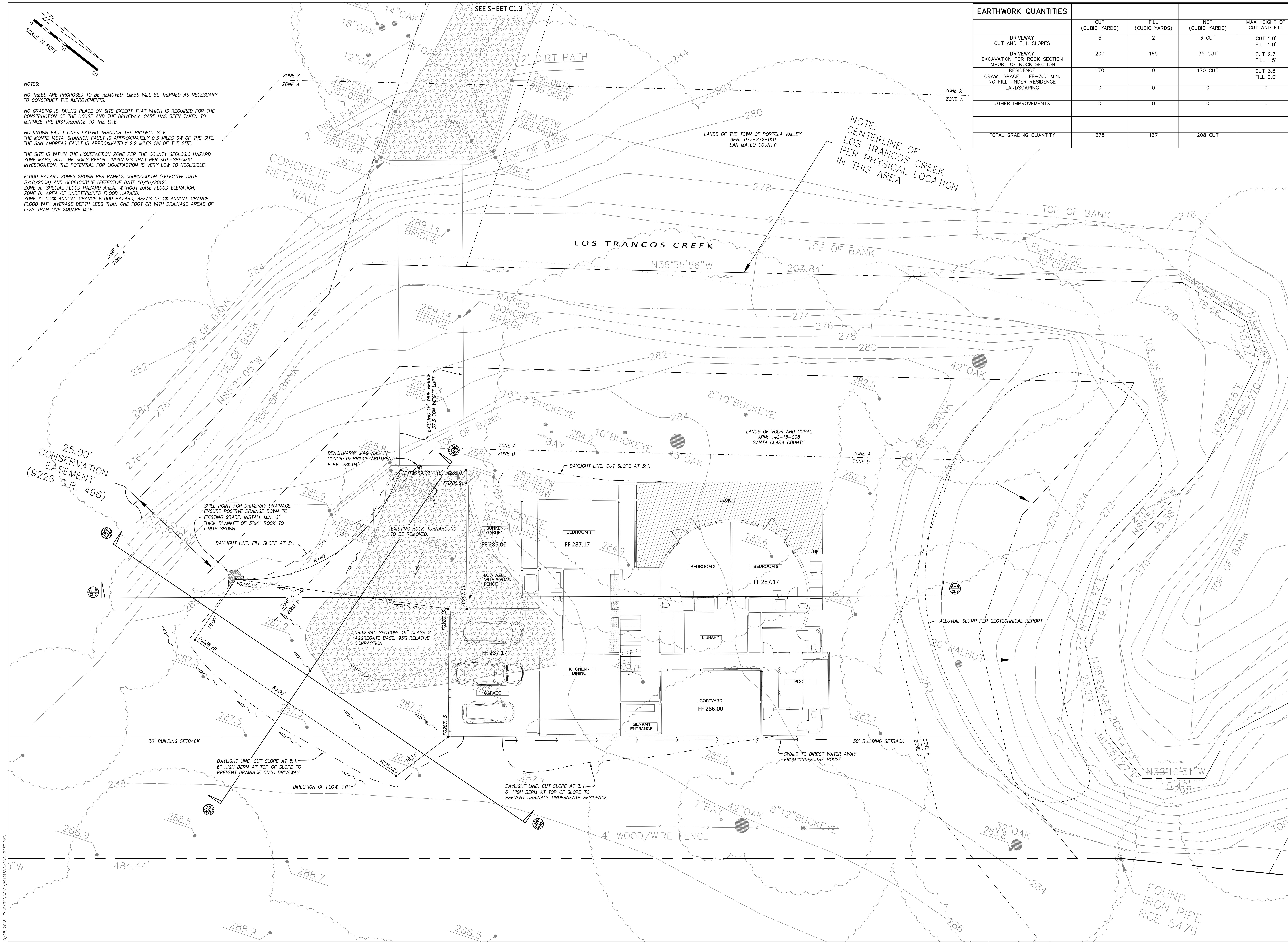
To: County of Santa Clara

From: Craig Overbo

Subject: 3343 Alpine Road, Portola Valley
Justification for Proposed Grading

The grading taking place for the construction of the residence is minimal; the only grading being performed is that which is required for the construction of the residence and the driveway. The residence has been situated below the existing bridge elevation in order to blend into the existing site as much as possible, minimizing grading and visual impact. The fact that the only grading is for the house and driveway reduces the impact to the natural landscape, biological and aquatic resources, and minimizes erosion impacts. We believe that the grading amount, design, location, and the nature of the proposed grading conforms to the use presently permitted by law on the property.

3150 ALMADEN EXPRESSWAY, SUITE 123, SAN JOSE, CA, 95118 • (408) 265-1600 • (408) 265-1604 FAX



NOTES:

NO TREES ARE PROPOSED TO BE REMOVED. LIMBS WILL BE TRIMMED AS NECESSARY TO CONSTRUCT THE IMPROVEMENTS.

NO GRADING IS TAKING PLACE ON SITE EXCEPT THAT WHICH IS REQUIRED FOR THE CONSTRUCTION OF THE HOUSE AND THE DRIVEWAY. CARE HAS BEEN TAKEN TO MINIMIZE THE DISTURBANCE TO THE SITE.

NO KNOWN FAULT LINES EXTEND THROUGH THE PROJECT SITE.
THE MONTE VISTA–SHANNON FAULT IS APPROXIMATELY 0.3 MILES SW OF THE SITE.
THE SAN ANDREAS FAULT IS APPROXIMATELY 2.2 MILES SW OF THE SITE.

THE SITE IS WITHIN THE LIQUEFACTION ZONE PER THE COUNTY GEOLOGIC HAZARD ZONE MAPS, BUT THE SOILS REPORT INDICATES THAT PER SITE–SPECIFIC INVESTIGATION, THE POTENTIAL FOR LIQUEFACTION IS VERY LOW TO NEGLIGIBLE.

FLOOD HAZARD ZONES SHOWN PER PANELS 06085C0015H (EFFECTIVE DATE 5/18/2009) AND 06081C0314E (EFFECTIVE DATE 10/16/2012).
ZONE A: SPECIAL FLOOD HAZARD AREA, WITHOUT BASE FLOOD ELEVATION.
ZONE D: AREA OF UNDETERMINED FLOOD HAZARD.
ZONE X: 0.2% ANNUAL CHANCE FLOOD HAZARD, AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTH LESS THAN ONE FOOT OR WITH DRAINAGE AREAS OF LESS THAN ONE SQUARE MILE.

EARTHWORK QUANTITIES				
	CUT (CUBIC YARDS)	FILL (CUBIC YARDS)	NET (CUBIC YARDS)	MAX HEIGHT OF CUT AND FILL
DRIVEWAY CUT AND FILL SLOPES	5	2	3 CUT	CUT 1.0' FILL 1.0'
DRIVEWAY EXCAVATION FOR ROCK SECTION IMPORT OF ROCK SECTION	200	165	35 CUT	CUT 2.7' FILL 1.5'
RESIDENCE CRAWL SPACE = FF–3.0' MIN. NO FILL UNDER RESIDENCE	170	0	170 CUT	CUT 3.8' FILL 0.0'
LANDSCAPING	0	0	0	0
OTHER IMPROVEMENTS	0	0	0	0
TOTAL GRADING QUANTITY	375	167	208 CUT	

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SAN JOSE, CA 95118 (408) 265-1600
WWW.BOHLEYCONSULTING.COM

CUPAL RESIDENCE

3343 ALPINE ROAD
PORTOLA VALLEY, CA

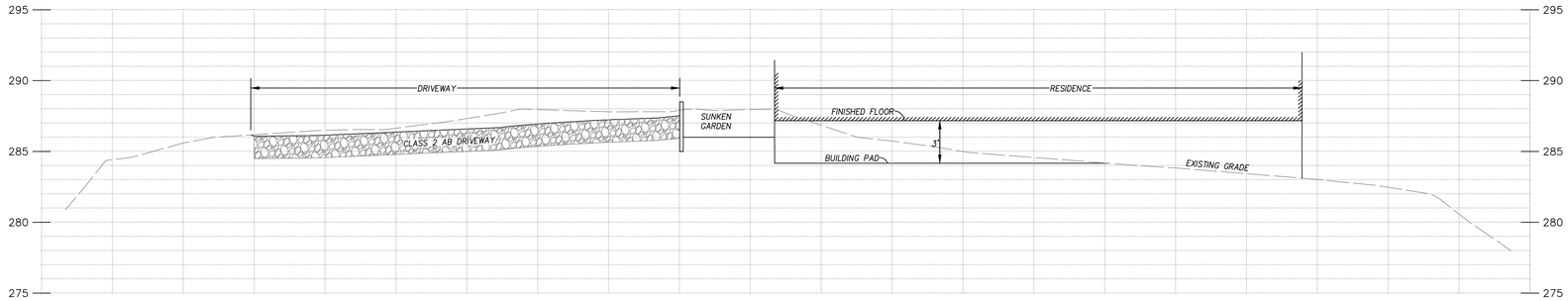
Scale	1"=10'
Drawing	C-BASE.DWG
Job No	201718

Date	Description
10/25/18	SUBMITTAL

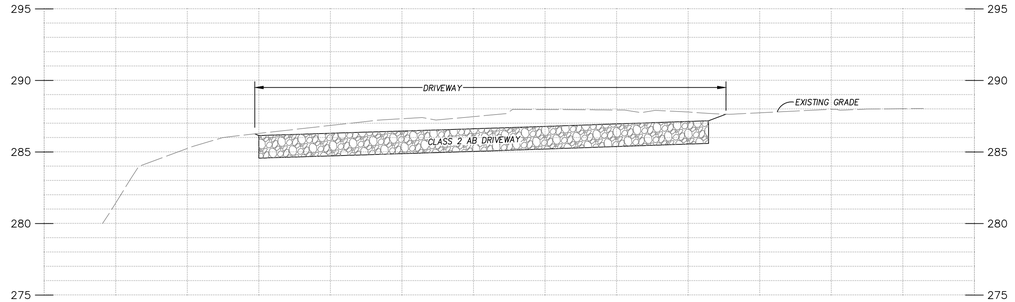
PRELIMINARY GRADING PLAN

SITE GRADING

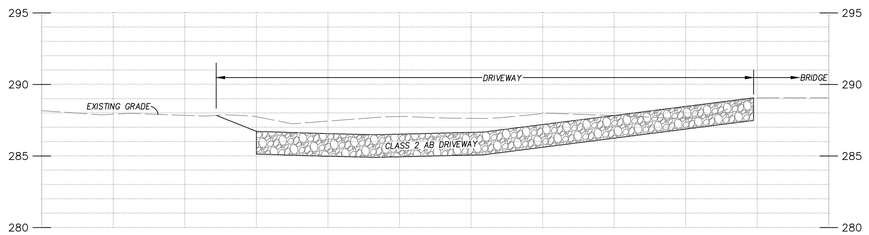
C1.1



SECTION A–A
HORIZ 1"=10'
VERT 1"=5'



SECTION B–B
HORIZ 1"=10'
VERT 1"=5'



SECTION C–C
HORIZ 1"=10'
VERT 1"=5'

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CUPAL RESIDENCE

3343 ALPINE ROAD
PORTOLA VALLEY, CA

Scale	AS SHOWN
Drawing	C-BASE.DWG
Job No	201718

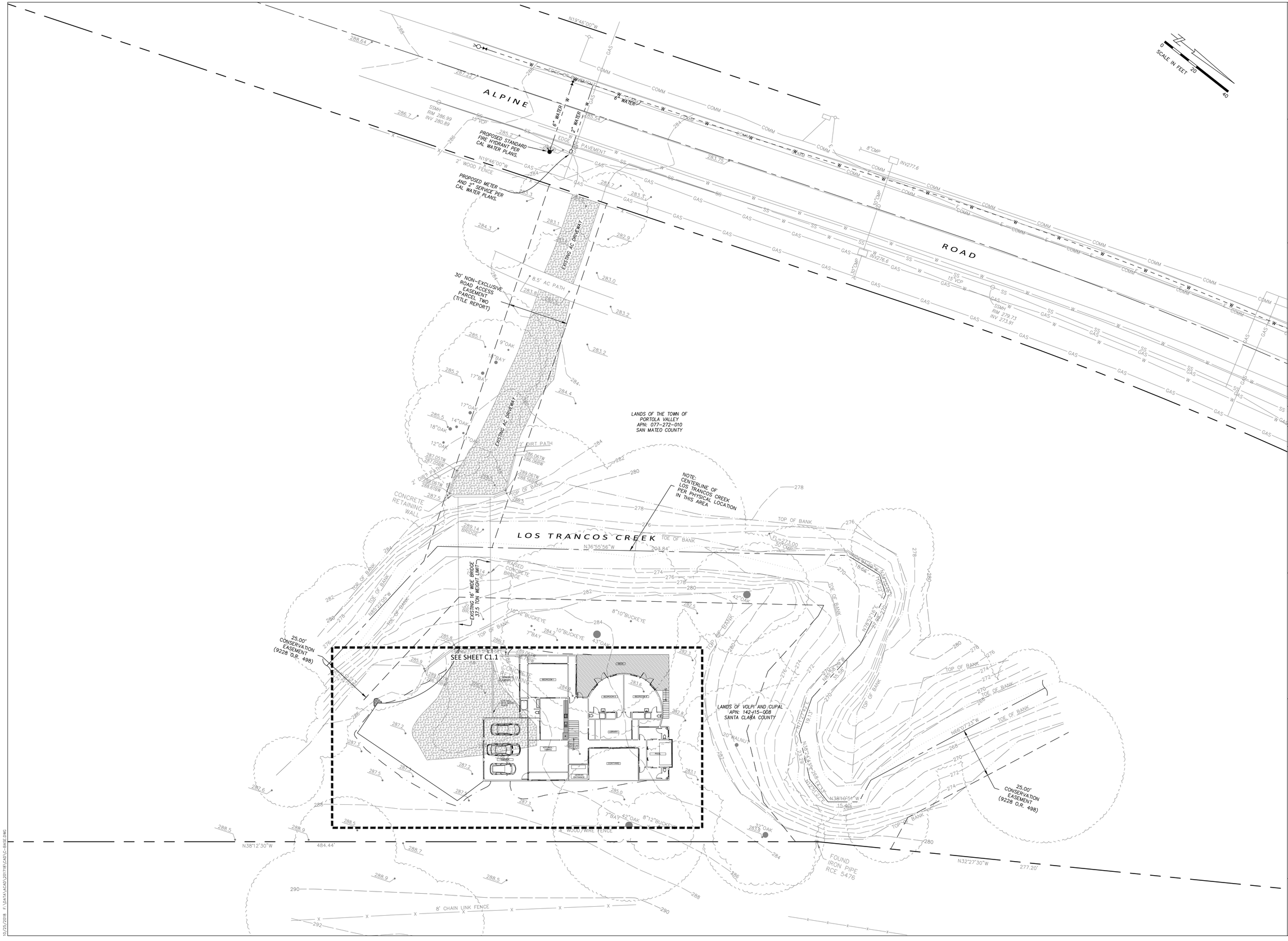
Date	Description
10/25/18	SUBMITTAL

PRELIMINARY GRADING PLAN

SECTIONS

C1.2

10/25/2018 F:\DATA\ACAD\201718\CAD\C-BASE.DWG



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CUPAL RESIDENCE

3343 ALPINE ROAD
PORTOLA VALLEY, CA

Scale	1"=20'
Drawing	C-BASE.DWG
Job No	201718

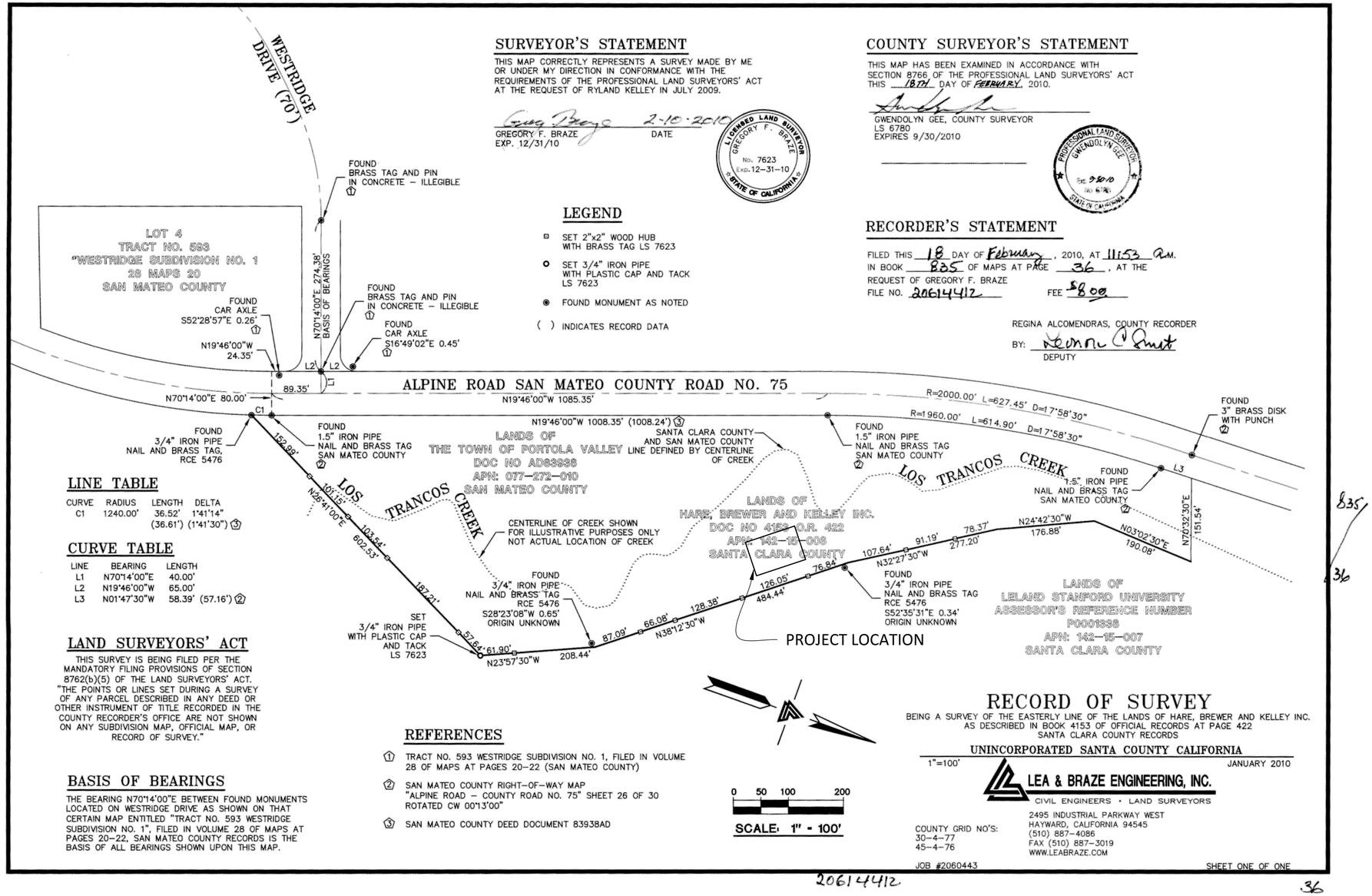
Date	Description
10/25/18	SUBMITTAL

PRELIMINARY GRADING PLAN

SITE OVERVIEW

C1.3

10/25/2018 F:\DATA\ACAD\201718\CAD\C-BASE.DWG



SURVEYOR'S STATEMENT

THIS MAP CORRECTLY REPRESENTS A SURVEY MADE BY ME OR UNDER MY DIRECTION IN CONFORMANCE WITH THE REQUIREMENTS OF THE PROFESSIONAL LAND SURVEYORS' ACT AT THE REQUEST OF RYLAND KELLEY IN JULY 2009.

Greg Braze 2-10-2010

GREGORY F. BRAZE DATE
EXP. 12/31/10

LICENSED LAND SURVEYOR GREGORY F. BRAZE No. 7623 Exp. 12-31-10 STATE OF CALIFORNIA

LEGEND

- ⊡ SET 2"x2" WOOD HUB WITH BRASS TAG LS 7623
- ○ SET 3/4" IRON PIPE WITH PLASTIC CAP AND TACK LS 7623
- ◉ FOUND MONUMENT AS NOTED
- ( ) INDICATES RECORD DATA

COUNTY SURVEYOR'S STATEMENT

THIS MAP HAS BEEN EXAMINED IN ACCORDANCE WITH SECTION 8766 OF THE PROFESSIONAL LAND SURVEYORS' ACT THIS 18TH DAY OF FEBRUARY, 2010.

GWENDOLYN GEE, COUNTY SURVEYOR
LS 6780
EXPIRES 9/30/2010

PROFESSIONAL LAND SURVEYOR GWENDOLYN GEE Exp. 9-30-10 STATE OF CALIFORNIA

RECORDER'S STATEMENT

FILED THIS 18 DAY OF February, 2010, AT 11:53 A.M.
IN BOOK 835 OF MAPS AT PAGE 36, AT THE REQUEST OF GREGORY F. BRAZE
FILE NO. 20614412 FEE $8.00

REGINA ALCOMENDRAS, COUNTY RECORDER
BY: DEPUTY

LINE TABLE

CURVE	RADIUS	LENGTH	DELTA
C1	1240.00'	36.52'	1°41'14"
		(36.61')	(1°41'30") (3)

CURVE TABLE

LINE	BEARING	LENGTH
L1	N70°14'00"E	40.00'
L2	N19°46'00"W	65.00'
L3	N01°47'30"W	58.39' (57.16') (2)

LAND SURVEYORS' ACT

THIS SURVEY IS BEING FILED PER THE MANDATORY FILING PROVISIONS OF SECTION 8762(b)(5) OF THE LAND SURVEYORS' ACT. "THE POINTS OR LINES SET DURING A SURVEY OF ANY PARCEL DESCRIBED IN ANY DEED OR OTHER INSTRUMENT OF TITLE RECORDED IN THE COUNTY RECORDER'S OFFICE ARE NOT SHOWN ON ANY SUBDIVISION MAP, OFFICIAL MAP, OR RECORD OF SURVEY."

BASIS OF BEARINGS

THE BEARING N70°14'00"E BETWEEN FOUND MONUMENTS LOCATED ON WESTRIDGE DRIVE AS SHOWN ON THAT CERTAIN MAP ENTITLED "TRACT NO. 593 WESTRIDGE SUBDIVISION NO. 1", FILED IN VOLUME 28 OF MAPS AT PAGES 20–22, SAN MATEO COUNTY RECORDS IS THE BASIS OF ALL BEARINGS SHOWN UPON THIS MAP.

REFERENCES

1. TRACT NO. 593 WESTRIDGE SUBDIVISION NO. 1, FILED IN VOLUME 28 OF MAPS AT PAGES 20–22 (SAN MATEO COUNTY)
2. SAN MATEO COUNTY RIGHT–OF–WAY MAP "ALPINE ROAD – COUNTY ROAD NO. 75" SHEET 26 OF 30 ROTATED CW 00°13'00"
3. SAN MATEO COUNTY DEED DOCUMENT 83938AD

RECORD OF SURVEY

BEING A SURVEY OF THE EASTERLY LINE OF THE LANDS OF HARE, BREWER AND KELLEY INC. AS DESCRIBED IN BOOK 4153 OF OFFICIAL RECORDS AT PAGE 422 SANTA CLARA COUNTY RECORDS

UNINCORPORATED SANTA COUNTY CALIFORNIA

1"=100' JANUARY 2010

LEA & BRAZE ENGINEERING, INC.
CIVIL ENGINEERS • LAND SURVEYORS
2495 INDUSTRIAL PARKWAY WEST
HAYWARD, CALIFORNIA 94545
(510) 887–4086
FAX (510) 887–3019
WWW.LEABRAZE.COM

COUNTY GRID NO'S: 30–4–77, 45–4–76

JOB #2060443

SHEET ONE OF ONE

20614412

835/36

36

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CUPAL RESIDENCE

3343 ALPINE ROAD
PORTOLA VALLEY, CA

Scale	AS SHOWN
Drawing	C–BASE.DWG
Job No	201718

Date	Description
10/25/18	SUBMITTAL

PRELIMINARY GRADING PLAN

RECORD OF SURVEY

C1.4

10/25/2018 - F:\DATA\ACAD\201718\CAD\C-BASE.DWG

November 6th, 2018

PROJECT SITE
APN: 142-15-008
Address: 3343 Alpine Road, Portola Valley, CA 94028

Planning Department Staff,

In the attached folder are our required documents for both Building Site Approval and Grading Approval in reference to the above project site. We are planning for the new construction of one single family residence. It will be 5,000 sq feet with less than 500 sq feet of landscaping.

If you have any questions in your review, please feel free to contact either myself at (650)380-4337 or my Project Manager, McKenzie Brooks, at (650)847-8612. We look forward to working with you.

Regards,

Toni Cupal, owner