INITIAL STUDY

Environmental Checklist and Evaluation for the County of Santa Clara

File Number:	PLN18-11451	**Date:** 1/12/2021
Project Type:	Building Site Approval and Grading Approval	**APN(s):** 142-15-008
Project Location / Address:	3343 Alpine Road	**GP Designation:** Hillsides
Owner's Name:	Toni Cupal	**Zoning:** Hillsides
Applicant's Name:	McKenzie Brooks	**Urban Service Area:** NONE

Project Description

The project is a Building Site Approval and Grading Approval application to construct a 6,882 square foot, two-story single-family residence located at 3343 Alpine Road (APN: 142-15-008) see **Attachment 2** – *Plan Set*. The subject property is 4.2 acres in size and is characterized as a long strip of land running north to south along Los Trancos Creek, which boarders the western side of the parcel. To the east of the parcel is property owned by Stanford University, used as a nursery. To the north, west, and south of the parcel is Ladera Oaks Swim & Tennis Club, a baseball field, and vacant area with a trail, which are all within the Town of Portola Valley.

An existing driveway, constructed within a 30-foot wide right-of-way easement, connects the property to the nearest publicly maintained road, (Alpine Road - maintained by the Town of Portola Valley) through the neighboring property to the west. An existing 74-foot-long permitted bridge (**Attachment 3 -** *County of Santa Clara Building Permit Number 57816*) runs across Los Trancos Creek, connecting the 30-foot wide right-of-way to the proposed building site. No alterations to the existing bridge and driveway are proposed.

The proposed residence is located on the eastern side of Los Trancos Creek, and is a minimum of 20-feet from Los Trancos Creek top-of-bank, pursuant to the Santa Clara Valley Water Collaborative bank stability setback for structures built near streams (**Attachment 4** – *Slope Stability Review*). The proposed residence meets the County of Santa Clara Zoning Ordinance - Hillside Development Standards, Chapter 2.20.030 by being located a minimum of 30-feet away from all property lines.

In addition to the single-family residence, the proposed project includes a firetruck turn around constructed with aggregate base rock, and a 112-foot-long pier-stich wall located to the north of the residence. The pier-stich wall is a minimum of 14.4-feet from the Los Trancos Creek top-of-bank and is situated 2-feet below grade. The pier-stich wall location and design are recommended by the Geotechnical Engineer to protect the proposed residence from possible future alluvial slump on that particular portion of Los Trancos Creek (**Attachment 5 –** *Geotechnical Report*). Pursuant to a technical memorandum prepared by fluvial geomorphologist, Chris Lyle of Stillwater Sciences (**Attachment 6** – *Technical Memorandum*), the creek bank to the north of the building site is very stable and no further incision is anticipated to occur under current conditions. Additionally, it is highly unlikely the stitch-pier wall will come into contact with waters of Los Trancos Creek.

(Project Description is continued in **Attachment 1**)

Environmental Setting and Surrounding Land Uses

The proposed building site is located within the County of Santa Clara, and surrounding land uses include single family residences (across Alpine Road) and a park immediately adjacent to the west. Open space with a trail is located to the south, a swim and racket club to the north, and Stanford University to the east. The subject property is 4.2 acres, with a General Plan designation of Hillsides and a Zoning Hillsides zoning district.

The topography of the building site is relatively flat with an approximate slope of five percent (5%). Los Trancos Creek runs along the western the property line, north to south, with the top of bank a minimum of 20-feet away from the proposed residence (see **Attachment 2**). An existing permitted free span bridge extends from the proposed building site to an existing driveway (located within the Town of Portola Valley), which connects to Alpine Road (maintained by the Town of Portola Valley). According to County of Santa Clara GIS data, the proposed building site contains Valley Oak Woodland habitat, is located a County Geologic Hazard Zone for Liquefaction, and a portion of the fire truck turnaround is within the FEMA Flood Zone.

Other agencies sent a copy of this document:

Santa Clara County LAFCO
San Mateo County LAFCO
Town of Portola Valley
Woodside Fire Protection District
West Bay Sanitation District
California Department of Fish and Wildlife
U.S. Army Corp of Engineers
U.S. Fish and Wildlife
National Oceanic and Atmospheric Administration's National Marine Fisheries Service
San Francisco Bay Regional Water Quality Control Board

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED
The proposed project could potentially result in one or more environmental effects in the following areas:

☐ **Aesthetics**	☐ **Agriculture / Forest Resources**	☐ **Air Quality**
☒ **Biological Resource**	☒ **Cultural Resources**	☐ **Energy**
☐ **Geology/Soils**	☐ **Greenhouse Gas Emissions**	☐ **Hazards & Hazardous Materials**
☒ **Hydrology / Water Quality**	☐ **Land Use / Planning**	☐ **Mineral Resources**
☐ **Noise**	☐ **Population / Housing**	☐ **Public Services**
☐ **Recreation**	☐ **Transportation**	☐ **Tribal Cultural Resources**
☐ **Utilities / Service Systems**	☐ **Wildfire**	☒ **Mandatory Findings of Significance**

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a **NEGATIVE DECLARATION** will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A **MITIGATED NEGATIVE DECLARATION** will be prepared.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

☐ I find that the proposed project MAY have a significant effect on the environment, and an **ENVIRONMENTAL IMPACT REPORT** is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on the attached sheets. An **ENVIRONMENTAL IMPACT REPORT** is required, but it must analyze only the effects that remain to be addressed.

Joanna Wilk
Signature

1/12/21
Date

Joanna Wilk, Associate Planner
Printed name

For

ENVIRONMENTAL CHECKLIST AND DISCUSSION OF IMPACTS

A. AESTHETICS							
	IMPACT						
Except as provided in Public Resources Code section 21099, would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies	**Source**
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒	☐	☐	3,4, 6,17f
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings, along a designated scenic highway?	☐	☐	☐	☒	☐	☐	3,4, 6, 17f
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☐	☒	☐	☐	2,3
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒	☐	☐	3,4

SETTING:

The subject property is a long 4.2 acre parcel, is located on the eastern side of Los Trancos Creek in and the northwestern County of Santa Clara. Surrounding land uses adjacent to the building site are include a park immediately adjacent to the west, open space with a trail to the south, a swim and racket club to the north, and Stanford University to the east.

The proposed development site is relatively flat, with an approximate 5% slope, and is surrounded by mature Valley Oak, Coast Live Oak, Bay Laurel, and California Buckeye trees. The subject property has a General Plan designation of Hillsides with a Hillside zoning designation. The property takes access from Alpine Road, which is outside Santa Clara County jurisdiction and is maintained by the Town of Portola Valley. Alpine Road is not a designated scenic road. The subject property is not located within a designated Design Review Viewshed area.

The area around the building site is heavily wooded and no trees are proposed for removal. Due to the existing vegetation and the site's location approximately 250 feet away from Alpine Road, the proposed residence has low visibility from neighboring homes and surrounding uses.

The development includes a new, two-story, Japanese architecture style single-family residence without any exterior lighting proposed.

DISCUSSION:

a, b, c, & d) No Impact – The subject property is not designated as a Viewshed Parcel with the County of Santa Clara, nor does it have a Design Review zoning overlay or Scenic Road zoning overlay. The property takes access from Alpine Road, which is not designated as a scenic highway. No trees are proposed for removal and no scenic vistas are located in the vicinity of the proposed development. Therefore, the proposed project will not have substantial adverse effect on any scenic vista, or substantially damage scenic resources, including, but not limited to, trees, rocks, outcroppings, and historic buildings, along a designated scenic highway.

The proposed project is surrounded by existing, mature trees, which screen the visibility of the proposed development from immediately adjacent properties and neighboring properties. Therefore, the project does not substantially degrade the existing visual character or quality of public views of the site and its surroundings.

Additionally, the proposed development does not include any outdoor lighting. Due to these circumstances, the project would not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area with the required condition of approval.

MITIGATION:

- None required

B. AGRICULTURE / FOREST RESOURCES

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

	IMPACT						
WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies	**Source**
a) Convert 10 or more acres of farmland classified as prime in the report *Soils of Santa Clara County (Class I, II)* to non-agricultural use?	☐	☐	☐	☒	☐	☐	3,23,24,26
b) Conflict with existing zoning for agricultural use?	☐	☐	☐	☒	☐	☐	9
c) Conflict with an existing Williamson Act Contract or the County's Williamson Act Ordinance (Section C13 of County Ordinance Code)?	☐	☐	☐	☒	☐	☐	17
d) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒	☐	☐	9, 17
e) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒	☐	☐	17, 32
f) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒	☐	☐	3,23,24,26, 9, 17, 32

SETTING:

The subject property has a General Plan designation of Hillsides and is zoned Hillsides. According to County GIS, the property consists of non-prime farmland soils, is not encumbered by a Williamson Act Contract, and is not within a forest or timberland area. Surrounding uses are non-agricultural, with the exception of Stanford University (adjacent to the east of the project site) which appears to be operating a nursey based on 2019 aerial imaging.

DISCUSSION:

a, b, c, d, e, & f) No Impact – The subject property consists of non-prime farmland soils, and therefore the proposed development would not result in the conversion of 10 or more acres prime farmland to a non-agricultural use. Additionally, the subject property is not zoned for agriculture, nor are the surrounding properties, and therefore the proposed project does not conflict with existing zoning for agricultural uses.

The property is not encumbered by a Williamson Act, or within a forestland/timberland area, and therefore the proposed development would not conflict with Williamson Act Guidelines, the Williamson Act Ordinance, or existing zoning for forestland and/or timberland areas. No trees are proposed for removal, and the property is not within a forestland area, and therefore the proposed development does not result in the loss of forest land.

The proposed development does not involve changes in the existing environment which could result in conversion of farmland, to non-agricultural use or conversion of forest land to non-forest use, since the property consist of non-prime farmland soils and is not in a forest land area.

MITIGATION:

- None required

C. AIR QUALITY							
Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations.							
	IMPACT						
WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies	Source
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒	☐	☐	4, 29, 30, 31
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☐	☒	☐	☐	4, 29, 30, 31
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☒	☐	☐	4, 29, 30, 31, 17
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☐	☒	☐	☐	4, 29, 30, 31

SETTING:

The proposed development includes a single-family residence which takes access from Alpine Road approximately, 1-mile South of Highway 280, in the unincorporated area of Santa Clara County. Surrounding land uses immediately adjacent to the building site are a swim and tennis club to the north (approximately 700 feet from the proposed residence), a baseball filed to the south (approximately 350 feet from the proposed residence), single family homes to the west (closest home is approximately 375 feet from the proposed residence), Stanford University to the east (approximately 80 feet from the proposed residence). Land uses surrounding the property include vacant, undeveloped land with a trail, Sandford University, and single-family residential homes.

DISCUSSION:

a, b, c, & d) No Impact – The proposed project is located within the San Francisco Bay Area Air Quality Management District (BAAQMD), which regulates air pollutants, including those that may be generated by construction and operation of development projects. These criteria pollutants include reactive organic gases, carbon monoxide, nitrogen dioxide, and particulate matter (PM). BAAQMD also regulates toxic air contaminants (fine particulate matter), long-term exposure to which is linked with respiratory conditions and increased risk of cancer. Major sources of toxic air contaminants in the Bay Area include major automobile and truck transportation corridors (e.g., freeways and expressways) and stationary sources (e.g., factories, refineries, power plants). The subject property takes access from Alpine Road, approximately 1 mile south of Highway 280, in unincorporated Santa Clara County.

The subject property is not located within the Bay Area Air Quality Management District (BAAQMD) Air Hazard (Cancer; PM2.5) area. The operational criteria pollutant screening size for single-family residential projects established by BAAQMD is 325 dwelling units, and the construction-related screening size for single-family residential projects is 114 dwelling units. Emissions generated from the proposed single-family residence would be well below the BAAQMD operational-related emissions and construction emission thresholds.

Development of the proposed single-family residence would involve grading and construction activities. Fugitive dust would be created during the construction of the proposed structures and site improvements. However, dust emissions would be controlled through standard Best Management Practices (BMPs) dust control measures that would be a condition of the project. For single-family residential uses, construction emissions impacts are less than significant for projects of 114 dwelling units or less. The proposed project involves the construction of single-family residence with a driveway, drainage improvements, and utility services. The proposed residential use would not expose sensitive receptors (such as children, elderly, or people with illness) to substantial pollutant concentrations or involve criteria pollutants emissions. Minimal addition of residences and nominal increase in population would not significantly increase the regional population growth, nor would it cause significant changes in daily vehicle travel.

As such, the proposed development would not conflict with or obstruct implementation of an applicable air quality plan, result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard, expose sensitive receptors to substantial pollutant concentrations, or result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

MITIGATION:

- None required

D. BIOLOGICAL RESOURCES							
	IMPACT						
WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies	Source
a) 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 California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐	☐	☐	7, 17b, 17o
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☒	☐	☐	☐	☐	3,7, 17b, 17e, 17o, 22d, 22e, 32, 33
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐	☐	☐	3,7, 17b, 17e, 17o, 22d, 22e, 32, 33
d) Have a substantial adverse effect on oak woodland habitat as defined by Oak Woodlands Conservation Law (conversion/loss of oak woodlands) – Public Resource Code 21083.4?	☐	☐	☐	☒	☐	☐	3, 32, 17
e) 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?	☐	☐	☐	☒	☐	☐	3,7, 17b, 17e, 17o, 22d, 22e, 32, 33
f) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒	☐	☐	33
g) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan?	☐	☐	☐	☒	☐	☐	3,4, 17l

SETTING:

Los Trancos Creek runs along the western property boundary. The proposed building site takes access to Alpine Road over an existing permitted free-span bridge (Santa Clara County Building Permit number 57816), which runs over Los Trancos Creek, connecting the building site to an existing driveway (constructed within a 30-foot wide easement). According to the Biological Resources Evaluation Report prepared by MIG in December 2020 (source 32), Los Trancos Creek is un-channelized and free flowing in the area adjacent to the proposed development.

The Creek contains a riparian corridor and is designated as habitat for the following special status species:

1) Central California Coast steelhead,
2) Western Pond Turtle (WPT),
3) California Red Legged Frog (CRLF), and
4) San Francisco dusky-footed woodrat.

Additionally, the Townsend's big-eared bat and western red bat, are considered to have a high potential to occur within the riparian habitat of Los Trancos Creek, and white-tailed kite is considered to have a high potential to nest within the project footprint. The special status plant, 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 performed by MIG biologist David Gallagher on September 1, 2018.

The proposed development is located 20-feet away from Los Trancos Creek top-of-bank, pursuant to the Santa Clara County Water Collaborative bank stability setback for structures built near streams.

Site improvements include the following:

- 263 cubic yards of cut and 192 cubic yards of fill for the proposed firetruck turnaround,
- 175 cubic yards of cut for the proposed residence,
- Installation of an approximately 112-foot-long pier stich wall to the north of the proposed building site, approximately 14.4 feet from Los Trancos Creek top-of-bank, constructed to prevent creek erosion from reaching the proposed residence,
- Installation of a drainage system to the south, east, and north of the residence which routes stormwater run-off to a proposed outfall with rock slope protection (pursuant to Santa Clara Valley Water District Design Guidelines and Standards - VI.B.3) into Los Trancos Creek, and
- Installation of water, sewer, electric and gas connections from the Alpine Road right-of-way, through an existing 30-foot wide easement, underneath the existing bridge to the proposed building site.

DISCUSSION:
The summary below is based on findings identified in the Biological Resources Evaluation Report prepared by MIG in December 2020 (source 32).

d, e, f, & g) No Impact – The subject property does not contain oak woodland habitat as defined by Oak Woodlands Conservation Law (sources 32 and 17). Therefore the project has no substantial adverse effect on oak woodland habitat.

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 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.

The proposed project does not conflict with the Santa Clara County General Plan and Zoning Ordinance. Single-family residential uses are allowed on properties with a Hillside General Plan designation. Additionally, the proposed residence meets all Hillside zoning development standards required in the County Zoning Ordinance.

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.

a, b, & c) Less Than Significant with Mitigation Incorporated – Steelhead (a USFWS threatened species) is assumed to be present in Los Trancos Creek. The project could result in temporary impacts during construction to steelhead by increasing sediment and erosion, thereby impacting water quality and spawning substrate in the creek. However, the project includes recommended measures which mitigate impacts to the creek by conducting an environmental awareness training for construction personnel (**BIO-MIT 2**), implementing Best Management Practices (BMPs) (**BIO-MIT 1**), and limiting construction activities during the dry season (April 15 through October 31) (**BIO-MIT 26**), if feasible. Therefore, with the implementation of these mitigation measures, the impacts from the project would be less than significant.

CRLF and WPT have the potential to move through the project site. Direct impacts to CRLF and WPT could occur during construction if the species move into work areas and become trapped or crushed. In addition, the project could result in temporary impacts during construction to these species by increasing sediment and erosion in the creek. However, with the implementation of recommended measures to mitigate these impacts, such as conducting an environmental awareness training for construction personnel (**BIO-MIT 2**), implementing Best Management Practices (BMPs) (**BIO-MIT 1**), installation of a wildlife exclusion fence (**BIO-MIT 6**), and a pre-construction surveys for CRLF and WPT (**BIO-MIT 4**), impacts from the project would be less than significant.

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 houses occur 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. However, with the implementation of recommended measures to mitigate these impacts, such as mapping and clearly marking existing wood rat houses and establishing suitable buffers around them (**BIO-MIT 17**), the impacts from the project would be less than significant.

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 recommended measures to mitigate these impacts, such as a pre-construction bat survey and consultation with CDFW if a maternity or colony roost is detected (**BIO-MIT 19**), the impacts from the project would be less than significant.

Nesting birds, including raptors, protected under the U.S. Migratory Bird Treaty Act (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 recommended measures to mitigate these impacts, such as a pre-construction nesting bird survey if construction is scheduled during the breeding season (**BIO-MIT 20**), consultation with CDFW if an active nest is discovered (**BIO-MIT 21**), 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) (**BIO-MIT 21**), the impacts from the project would be less than significant.

Sensitive vegetation communities are defined as 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. The proposed project includes the installation of a stormwater outfall within the riparian habitat of Los Trancos Creek. Most of the storm drain system, including trunk lines, mains, junction chambers, and catch basins will be installed outside riparian habitat. The only component of the system that will be installed within riparian habitat is a small biofiltration basin (approximately 30 feet long by 3 feet wide and 6 inches deep) constructed from biodegradable coir mat that will be planted with native riparian vegetation. However, no riparian vegetation, trees, or dense vegetation will be removed for the remainder of the proposed project and construction will be limited to the existing access road and project footprint, which has no existing vegetation. Therefore, with the implementation of recommended measures to delineate the limits of riparian vegetation in the field (**BIO-MIT 22**), utilize a certified arborist for any tree pruning (**BIO-MIT 23**), and restore any temporary riparian impacts (**BIO-MIT 24**), the overall impacts from the project would be less than significant.

Since the coir mat outfall is constructed within the Los Trancos riparian corridor, the project requires a Lake and Streambed Alteration Agreement (LSAA) from the CDFW with mitigation measures incorporated into the building permit to meet the LSAA permit conditions. These additional measures further reduces 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 2019). However, with the implementation of recommended measures to mitigate these impacts, such as hand digging within Tree Protection Zones (TPZ) and regular construction monitoring from a qualified arborist, the impacts from the project would be less than significant (**BIO-MIT 5**).

The proposed project does not involve disturbance or placement of fill in Los Trancos Creek (a jurisdictional water) below the ordinary high-water mark; therefore, a Section 404/401 CWA permit from the USACE and the RWQCB is not likely required. However, the outfall will convey stormwater into Los Trancos Creek, a general permit from the RWQCB is required. The project will likely be permitted under the State Water Resources Control Board Water Quality Order No. 2004-0004-DWQ Statewide General Waste Discharge Requirements for Dredged or Fill Discharges for Waters Deemed by the U.S. Army Corps of Engineers to be Outside of Federal Jurisdiction (General WDRS). Construction activities, such as grading and other soil disturbances could cause the degradation of surface or ground water quality in Los Trancos Creek due to erosion and transport of fine sediments or unintentional release of contaminants, thereby negatively impacting riparian and wetland habitats, and contributing to significant water quality impacts, which could adversely affect fish and wildlife species associated with these habitats. However, with the implementation of recommended measures to avoid aquatic habitat by using onsite fencing during construction (**BIO-MIT 25**) and the construction of the biofiltration system during the dry season (June 15 to October 15) (**BIO-MIT 26**), the impacts from the project would be less than significant.

Additional mitigation measures **BIO- MIT 3, 7 - 16, and 18** have been included to ensure that are no impacts as a result of the project.

MITIGATION:

- **BIO-MIT 1:** Erosion and Sedimentation Control. During construction, the project is required to employ standard construction best management practices (BMPs) to treat and minimize runoff including the following **which shall be included in the project plans prior to grading or building permit issuance**.
    - Store, handle, and dispose of construction materials and wastes properly, so as to prevent their contact with stormwater.
    - 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. Perform clearing and earth moving activities during dry weather to the maximum extent practical.
    - Remove spoils promptly and avoid stockpiling of fill materials when rain is forecast.
    - Cover soil stockpiles and other materials with a tarp or other waterproof material during
    - qualifying rain events.
    - Fueling, washing, and maintenance of vehicles will occur in developed habitat, away from the riparian habitat and stream channel. Equipment shall be regularly maintained to avoid fluid leaks. Any leaks will be captured in containers until equipment is moved to a repair location. Hazardous materials will be stored only within the developed habitat.
    - Containment and cleanup plans will be prepared and put in place for immediate cleanup of fluid or hazardous materials spills.
    - Vehicles and equipment may only be driven within established roads and crossings.
    - Routes and boundaries will be clearly marked and will be located outside of driplines of preserved trees.

- Equipment staging and parking of vehicles shall occur on established access roads and flat surfaces.
- No heavy equipment shall operate in the portion of the stream bed where flowing water is present.
- The integrity and effectiveness of construction fencing, and erosion control measures shall be inspected on a daily basis. Corrective actions and repairs shall be carried out immediately for fence breaches and ineffective BMPs.
- Prior to re-watering the site, all concrete installed during the course of project activities shall be allowed to fully dry and cure to maintain water quality and reduce the possibility of project failure.
- All litter and construction debris will be disposed of off-site in accordance with state and local regulations. All trash and debris within the work area will be placed in containers with secure lids before the end of work each day in order to reduce the likelihood of predators being attracted to the site by discarded food wrappers and other rubbish that may be left on-site. If containers meeting these criteria are not available, all rubbish will be removed from the project site at the end of each workday.
- Absorbent materials designated for spill containment and clean-up activities shall be available on site for use in an accidental spill.
- In the event of rain, all grading work is to cease immediately.
- Inlet protection will be installed at open inlets to prevent sediment from entering the storm drain system.
- Straw rolls will be placed along the perimeter of the project area.
- Silt fencing shall 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 barrier to minimize the amount of fencing installed within the project footprint (see Mitigation Measure below). 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.

- **BIO-MIT 2:** Worker Environmental Awareness Program. All construction personnel will participate in a worker environmental awareness program. These personnel will be informed about the possible presence of all special-status species and the habitats associated with these species and that unlawful take of the animal or destruction of its habitat is a violation of FESA and other applicable laws. Prior to construction activities, a qualified biologist is required instruct all construction personnel about (1) the description and status of the species; (2) the importance of their associated habitats; and (3) a list of measures being taken to reduce impacts on these species during project construction and implementation. A fact sheet conveying this information shall be prepared for distribution to the construction crew and anyone else who enters the project site. **Applicant shall provide a copy of the fact sheet to the County Planning Division to verify that the Worker Environmental Awareness Program was implemented prior to construction activities**.

- **BIO-MIT 3:** Receive Agency Approval of Qualified Biologist. The qualifications of a biological monitor(s) experienced with the California red-legged frog, San Francisco garter snake, and other special-status species that have the potential to occur in the project site shall be submitted to the USFWS and CDFW for review and written approval at least 30 calendar days prior to the start of project activities. **Provide a copy of USFWS and CDFW's approval to the County Planning Division to verify agency approval was obtained prior to commencement of construction**.

- **BIO-MIT 4**: Conduct Preconstruction Survey. No more than 24 hours prior to the date of initial ground disturbance, a pre-construction survey for California red-legged frog, San Francisco garter snake, and other special-status species with the potential to occur in the project site shall be conducted within the impact area by the agency-approved qualified biologist (see BIO-MIT 3). The survey shall consist of walking the limits of impact to ascertain the possible presence of the species. The qualified biologist shall investigate all potential areas that could be used by California red-legged frog and San Francisco garter snake for feeding, sheltering, movement, and other essential behaviors. **The applicant is required to provide a copy of the preconstruction survey results to the County Planning Division to verify California red-legged frog, San Francisco garter snake, and other special-status species prior to the start of construction**.

- **BIO-MIT 5:** Vegetation Removal**.** All vegetation that requires removal in the project site shall be completely removed by hand in case special-status species are present. The qualified biologist shall monitor the vegetation removal**.**

- **BIO-MIT 6:** Install Wildlife Exclusion Barrier. Prior to any ground disturbance in the project site, a temporary wildlife exclusion barrier shall be installed along the limits of disturbance. A qualified biologist will inspect the area prior to installation of the barrier. The barrier shall be designed to allow the California red-legged frog and San Francisco garter snake to leave the work area and prevent them from entering the work area. The fence shall remain in place until all development activities have been completed. This barrier shall be inspected daily and maintained and repaired as necessary to ensure that it is functional and is not a hazard to red-legged frogs and garter snakes on the outer side of the barrier. **The applicant and/or qualified biologist shall provide the County Planning Division photos of the wildlife exclusion barrier prior to construction activities**.

- **BIO-MIT 7:** Construction Monitoring. A qualified biologist shall be onsite during all project activities that may result in take of any special-status species. **As required in BIO-MIT 3, said biologist is required to be approved by USFWS and CDFW prior to issuance of any grading or building permits.** The agency-approved biologist shall have oversight over implementation of all the mitigation measures and will have the authority and responsibility to stop project activities if they determine any of the associated requirements are not being fulfilled.

- **BIO- MIT 8:** Relocation of California Red-legged Frog**.** If a California red-legged frog is found during the implementation of mitigation measures above, the qualified biologist shall consult with USFWS to determine if moving any of the individuals is appropriate. In making this determination the USFWS will consider if an appropriate relocation site exists. If the USFWS approves moving animals, the project proponent will ensure the qualified biologist is given sufficient time to move the animals from the impact area before ground disturbance is initiated. Only agency-approved biologists shall capture, handle, and move California red-legged frog. The agency-permitted biologist shall monitor any relocated frog until it is determined that it is not imperiled by predators or other dangers. **If a California red-legged frog is found, the Planning Division shall be notified immediately and any approval provided by the USFWS shall be forward to the Planning Division for record keeping purposes**.

- **BIO – MIT 9:** Monitor San Francisco Garter Snake. The agency-approved biologist shall monitor any individual of the San Francisco garter snake encountered within the impact area but allow it to leave the impact area on its own. If the agency-approved biologist determines that the snake cannot leave on its own then the USFWS and CDFW shall be consulted to determine if the snake can be captured and relocated to appropriate habitat outside of the impact area. **If a San Francisco farter snake is found, the Planning Division shall be notified immediately and any approval provided by the USFWS and CDFW shall be forward to the Planning Division for record keeping purposes**.

- **BIO-MIT 10:** Daytime Restriction. All construction activities shall be in conformance with the Santa Clara County Noise Ordinance Section B11-154 and prohibited between the hours of 7:00 p.m. and 7:00 a.m. on weekdays and Saturdays, or at any time on Sundays for the duration of construction. Additionally, all construction shall be restricted to daylight times and shall not extend after sunset.

- **BIO- MIT 11:** Food and Trash. To eliminate an attraction for the predators of the California red-legged frog and San Francisco garter snake, all food-related trash items such as wrappers, cans, bottles, and food scraps shall be disposed of in solid, closed containers (trash cans) and removed at the end of each working day from the construction site.

- **BIO-MIT 12:** Steep-walled Holes and Trenches. To prevent inadvertent entrapment of the California red-legged frog, San Francisco garter snake, and other special status species, a qualified biologist and/or construction foreman/manager shall ensure that all excavated, steep-walled holes or trenches more than one foot deep are completely covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks and inspected by the qualified biologist. Before such holes or trenches are filled, they shall be thoroughly inspected for trapped animals by a qualified biologist and/or construction foreman/manager. If at any time a trapped California red-legged frog, San Francisco garter snake, or other special-status species is discovered by a qualified biologist or anyone else, the steps in BIO-MIT 8 Relocation of California red-legged frog or BIO-MIT 9 Monitor San Francisco garter snake will be followed.

- **BIO-MIT 13**: Uncovered Pipes. All structures providing cavities such as pipes, all construction pipes, culverts, or similar structures that are stored at a construction site for one or more overnight periods shall be either securely capped prior to storage or thoroughly inspected by a qualified biologist and/or the construction foreman/manager for these animals before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If at any time, a trapped California red-legged frog, San Francisco garter snake, or other special-status species is discovered by a qualified biologist or anyone else, the steps in BIO-MIT 8 Relocation of California red-legged frog or BIO-MIT 9 Monitor San Francisco garter snake shall be followed.

- **BIO-MIT 14**: Prohibition of Plastic Mono-filament Netting. To prevent trapping California red-legged frogs, San Francisco garter snakes, or other species, the use of plastic mono-filament netting (erosion control matting), rolled erosion control products wrapped in netting, or similar material shall not be used at the project site to prevent trapping California redlegged frogs, San Francisco garter snakes, or other species. **Prior to project construction, call the Planning Division to schedule an inspection to verify no plastic mono-filament netting is used**. Staff may determine that photographic evidence may suffice for meeting this requirement.

- **BIO-MIT 15:** Prevent the Spread of Amphibian Diseases. To prevent the introduction and spread of amphibian diseases, especially if an amphibian is handled by a permitted biologist, decontamination methods developed by the Declining Amphibian Populations Task Force shall be followed at all times, available at: https://www.fws.gov/southwest/es/NewMexico/documents/SP/Declining_Amphibian_Task_Force_Fieldwork_Code_of_Practice.pdf.

  Should any such findings occur, documentation shall be submitted to the County Planning Division for review and record keeping purposes.

- **BIO-MIT 16:** Relocation of Western Pond Turtle and California Giant Salamander. If a pond turtle is found during implementation of Mitigation Measures above (see section 6.3 above), an agency-approved biologist shall contact CDFW to determine if moving any of the individuals is appropriate. In making this determination CDFW shall consider if an appropriate relocation site exists. If CDFW approves moving animals, the project proponent shall ensure the agency-approved biologist is given sufficient time to move the animals from the impact area before ground disturbance is initiated. Only agency-approved biologists shall capture, handle, and move the Western pond turtle and California giant salamander. The agency-approved biologist will monitor any relocated turtle or giant salamander until it is determined that it is not imperiled by predators or other dangers. **If a Western Pond Turtle and California Giant Salamander is found, the Planning Division shall be notified immediately, and any approval provided by the CDFW shall be forward to the Planning Division for record keeping purposes**.

- **BIO-MIT 17:** Pre-construction Survey for Woodrat Houses. Within 30 days prior to the start of construction activities, a qualified biologist will map all San Francisco dusky-footed woodrat houses within a 25-foot buffer around the project footprint. Environmentally sensitive habitat fencing will be placed to protect the houses with a minimum 25-foot buffer. If a 25-foot buffer is not feasible, a smaller buffer may be allowable based on advice from a qualified biologist with knowledge of woodrat ecology and behavior, or BIO-MIT 18 may be implemented. **Provide a copy of the preconstruction survey results to the Planning Division to verify San Francisco dusky-footed woodrat were not present on the property prior to construction activities**.

- **BIO – MIT 18:** Relocation of Woodrat Houses. In the unlikely event that one or more woodrat houses are determined to be present and physical disturbance or destruction of the houses cannot be avoided, then the woodrats will be evicted from their houses and the nest material relocated outside of the disturbance area, prior to onset of activities that would disturb the house, to avoid injury or mortality of the woodrats. The reproductive season for San Francisco dusky-footed woodrats typically starts in February or March and breeding activity usually continues to July but can extend into September. Thus, relocation efforts shall be completed in the fall to minimize the potential for impacts on young woodrats in the house. Additionally, the period between the completion of the relocation efforts and the start of construction activities shall be minimized to reduce the potential for woodrats to reconstruct houses in the project footprint prior to the start of construction activities. Relocation generally involves first choosing an alternate location for the house material based on the following criteria: 1) proximity to current nest location; 2) safe buffer distance from planned work; 3) availability of food resources; and 4) availability of cover. An alternate house structure will then be built at the chosen location. Subsequently, during the evening hours (i.e., within 1 hour prior to sunset),

a qualified biologist shall slowly dismantle the existing woodrat house to allow any woodrats to flee and seek cover. All sticks from the nest will be collected and spread over the alternate structure. However, alternative relocation measures can be employed as advised by a qualified wildlife biologist in consultation with CDFW. **If a woodrat house is found, the Planning Division shall be notified immediately and any approval provided by the CDFW shall be forward to the Planning Division for record keeping purposes.**

- **BIO-MIT 19:** Bat Protection. If an occupied maternity or colony roost is detected or evidence of bat occupancy is found, CDFW shall be consulted to determine the appropriate mitigation measures, which may include exclusion prior to removal if the roost cannot be avoided, a buffer zone, seasonal restrictions on construction work, and/or construction noise reduction measures. **If a bat occupied maternity or colony roost is found, the Planning Division shall be notified immediately and any approval provided by the CDFW shall be forward to the Planning Division for record keeping purposes**.

- **BIO-MIT 20:** Avoidance or Pre-Construction/Pre-Disturbance Surveys for Nesting Birds. Construction activities shall be scheduled to avoid the nesting season. If construction activities are scheduled to take place outside the nesting season, all impacts to nesting birds protected under the MBTA and California Fish and Game Code would be avoided. The nesting season for most birds in San Mateo and Santa Clara Counties extends from February 1 through September 15.

  If it is not possible to schedule construction activities between September 15 and January 31, then preconstruction surveys for nesting birds shall be conducted by a qualified biologist to ensure that no nests would be disturbed during project implementation. These surveys shall be conducted no more than five days prior to the initiation of any site disturbance activities and equipment mobilization. If project activities are delayed by more than five days, an additional nesting bird survey will be performed. During this survey, the biologist will inspect all potential nesting habitats (e.g., trees, shrubs, structures, etc.) in and immediately adjacent to the impact area for nests. 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 will be documented. **Provide a copy of the preconstruction survey results to the Planning Division to verify nesting birds were not present on the property prior to construction activities**.

- **BIO-MIT 21:** Nesting Bird Protection. If an active nest is found sufficiently close to work areas to be disturbed by these activities, the biologist, in consultation with CDFW, shall determine the extent of a construction-free buffer zone to be established around the nest (typically up to 1000 feet for raptors and up to 250 feet for other species), to ensure that no nests of species protected by the MBTA and California Fish and Game Code shall be disturbed during project implementation. Within the buffer zone, no site disturbance and mobilization of heavy equipment, including but not limited to equipment staging, fence installation, clearing, grubbing, vegetation removal, demolition, and grading shall be permitted until the chicks have fledged. Monitoring shall be required to ensure compliance with MBTA and relevant California Fish and Game Code requirements. **Monitoring dates and findings shall be documented and provided to the Planning Division prior to construction activities**.

- **BIO-MIT 22:** Avoidance of Riparian Habitat. All riparian habitat to be avoided shall be shown on project design plans and prior to project activities these areas will be clearly delineated in

the field by a CDFW approved biologist. **Provide a copy of the plans to the Planning Division prior to grading or building permit issuance**. The project shall also comply with the project BMPs to prevent increases in peak flow, erosion, or reduction in water quality for downslope waters, which will prevent stream downcutting, riparian bank erosion, or other downstream impacts (See BIO-MIT 1 above). If riparian vegetation is impacted, then BIO-MIT 24 or BIO-MIT 25 will be implemented.

- **BIO-MIT 23**: Pruning of Riparian Trees. If project activities require pruning of riparian trees or shrubs, a certified arborist shall be retained to perform any necessary pruning to minimize harm to vegetation and ensure rapid regeneration. Pruning shall be limited to the minimum area necessary. **Applicant shall not remove any trees without approval from the County.**

- **BIO-MIT 24:** Restoration of Riparian Habitat. Temporary impacts to riparian habitat shall be restored in place at a 1:1 ratio through re-establishment of original contours along banks, decompaction of compacted soils where necessary, and seeding with a native seed mix and native plantings, developed by a qualified restoration ecologist. The native seed mix shall contain grass and forb species that occur in the project vicinity. Temporarily impacted areas will be monitored for a minimum of two years and the criteria for success will be 75% vegetation cover or more compared to pre-project conditions and no more than 5% cover of invasive species rated as moderately or highly invasive by the California Invasive Plant Council (Cal-IPC) (excluding Cal-IPC-rated annual grasses). **The applicant shall provide to the County Planning Division a Riparian Restoration plan prior to issuance of grading or building permits. Additionally, the applicant shall provide to the County Planning Division photos of riparian habitats pre and post construction to verify the riparian habitat is restored**.

- **BIO-MIT 25:** Avoidance of Jurisdictional Waters. All aquatic habitat to be avoided, i.e. Los Trancos Creek, shall be shown on project design plan sets prior to project activities and shall be clearly delineated in the field with stakes or fencing by a CDFW approved biologist. **Provide a copy of the plans to the Planning Division prior to grading and building permit issuance**. The project shall also comply with the project BMPs to prevent increases in peak flow, erosion, or reduction in water quality for downslope waters, which will prevent stream downcutting, riparian bank erosion, or other downstream impacts (See BIO-MIT 1 above). Travel and parking of vehicles and equipment shall be limited to pavement, existing roads, and previously disturbed areas. Ground disturbance and vegetation removal shall not exceed the minimum amount necessary to complete work at the site.

- **BIO-MIT 26**: Seasonal Work Window. The construction of the biofiltration basin shall be restricted to the dry season (June 15 to October 15) to minimize potential impacts on water quality resulting from erosion and sediment mobilization into the live stream channel.

E. CULTURAL RESOURCES							
	IMPACT						
WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies	Source
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5 of the CEQA Guidelines, or the County's Historic Preservation Ordinance (Division C17 of County Ordinance Code) – including relocation, alterations or demolition of historic resources?	☐	☐	☐	☒	☐	☐	3, 4, 16, 19, 40, 41
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5 of the CEQA Guidelines?	☐	☒	☐	☐	☐	☐	3, 4, 19, 40, 41
c) Disturb any human remains including, those interred outside of formal cemeteries?	☐	☒	☐	☐	☐	☐	3, 4, 19, 40, 41

SETTING:

Total grading quantities for the proposed development are 439 cubic yards of cut and 192 cubic yards of fill with a maximum cut depth of 3.8 feet. The majority of the proposed grading is to establish a fire truck turn around, which connects the bridge to the proposed buildings site, and to establish the building foundation beneath the proposed residence. No existing structures are proposed to be demolished.

DISCUSSION:

a) No Impact – Pursuant to the Phase I Cultural Resources Report prepared by MIG, Inc (source 41), dated September 2018, 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 listing on the California Register of Historic Resources (CRHR). The antenna associated with the Bracewell Observatory 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.

Additionally, the project does not include demolition of any existing structures. As such, the proposed project would not cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5 of the CEQA Guidelines, or the County's Historic Preservation Ordinance (Division C17 of County Ordinance Code) – including relocation, alterations or demolition of historic resources.

b & c) Less Then Significant with Mitigation Incorporated – According to Phase 1 Cultural Resources Report prepared by MIG, Inc. (source 41), although no surface archaeological resources were noted during the pedestrian survey, the area immediately surrounding the project site, and along Los Trancos creek likely contains Native American human burials and sites. There is a high potential of discovering Native American archaeological resources during ground moving operations. However, with the implementation of mitigation measures such as monitoring by an archeologist during construction work (**CR-MIT 1**) and immediate notification to the County of Santa Clara Department of Planning and Development, if archeological resources are unearthed (**CR-MIT 2, 3, 4, & 5**), impacts to archeological resources and human remains would be less than significant. As such, the project would not cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5 of the CEQA Guidelines and would not disturb any human remains including, those interred outside of formal cemeteries.

MITIGATION:

- **CR-MIT 1:** Archaeological monitoring is required for all ground disturbing activities. An archaeologist meeting the Secretary of the Interior's Standards for Archaeology shall 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 shall take place if the archaeologist is not present. **The applicant shall provide evidence of contact with an archeologist to conduct monitoring prior to grading and building permit issuance.**

- **CR-MIT 2:** 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 shall cease. The archaeologist shall assess the discovery before any additional ground disturbing work within the 100-foot buffer will be allowed to continue. No further ground disturbing work shall 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 archeological resources are found, the Planning Division shall be notified immediately and any evaluations by the archeologist shall be forward to the Planning Division for record keeping purposes.**

- **CR-MIT 3**: If the newly discovered resources are determined, or suspected to be, Native American in origin, Native American Tribes/Representatives shall be contacted and consulted as directed by the NAHC and Native American construction monitoring shall 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. **If Native American resources are found, the Planning Division shall be notified immediately.**

- **CR-MIT 4**: If unrecorded paleontological resources are encountered during construction, all ground disturbing activities shall 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. **If paleontological resources are found, the Planning Division shall be notified immediately and any evaluations by the paleontologist shall be forward to the Planning Division for record keeping purposes.**

- **CR-MIT 5: 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 shall cease work and immediately contact the County Planning Division**. 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.

F. ENERGY							
	IMPACT						
WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies	Source
a) Result in potentially significant environmental impact do to wasteful, inefficient, or unnecessary construction of energy resources during project consumption or operation?	☐	☐	☐	☒	☐	☐	3, 5
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	☒	☐	☐	5

SETTING:

The proposed project includes construction of a new single-family residence with proposed sewer, water, gas and electric utility connections. No landscaping is proposed as a part of this project; therefore, the Santa Clara County Sustainable Landscaping Ordinance does not apply.

DISCUSSION:

a & b) No Impact – The new single-family residence is a relatively low-impact development and does not propose to utilize energy resources, such as gas, electricity and water, in an inefficient manner during construction or during its use as a residence. Additionally, the proposed residence and its associated energy resources does not conflict with local or state plans for energy efficiency. As such, the proposed project does will not result in potentially significant environmental impact do to wasteful, inefficient, or unnecessary construction of energy resources during project consumption or operation and will not conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

MITIGATION:

- None required

G. GEOLOGY AND SOILS							
	IMPACT						
WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies	Source
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving:							
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒	☐	☐	6, 17c, 42
ii) Strong seismic ground shaking?	☐	☐	☒	☐	☐	☐	6, 17c
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒	☐	☐	6, 17c, 17n, 18b
iv) Landslides	☐	☐	☐	☒	☐	☐	6, 17c, 18b
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☒	☐	☐	6, 14, 23, 24
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐	☐	☐	3, 17c, 23, 24, 42
d) Be located on expansive soil, as defined in the report, *Soils of Santa Clara County*, creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐	☐	☐	14,23, 24,
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒	☐	☐	3,6, 23,24,
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒	☐	☐	3,4,41

SETTING:

A geotechnical engineering study (source 42) was prepared for the project, which identified the subsurface materials on the subject property as older alluvial fan deposits (Pleistocene), and Whiskey Hill Formation (middle and lower Eocene). The evaluation found no faults extending across the site area, locating the nearest fault trace approximately 3½ kilometers (km) southwest of site. The evaluation indicated that the subject site is situated within a seismic hazard zone associated with liquefaction; however, based on site-specific investigation which indicates very dense subsurface conditions immediately underlain by bedrock, the report estimates that the potential for liquefaction is very low to negligible.

Additionally, soils at the project site are moderately to highly expansive surface soils, which could experience large amounts of shrink and swell activity.

DISCUSSION:

a- i, iii, & iv, e & f) No Impact – The evaluation found no known faults located near the project area. As such, the proposed project will not directly or indirectly cause potential substantial adverse effects due to the rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault.

The geotechnical engineering study indicated that the development site is situated within a seismic hazard zone associated with liquefaction; however, based on site-specific investigation which indicates very dense subsurface conditions immediately underlain by bedrock, the report estimates that the potential for liquefaction is very low to negligible. As such, the proposed project will not directly or indirectly cause potential substantial adverse effects due to seismic-related ground failure, including liquefaction.

The subject property is not within a Santa Clara County landslide hazard zone and therefore the proposed project does not directly or indirectly cause potential substantial adverse effects due to landslides. As such, there is no impact.

The subject property cannot accommodate a typical onsite wastewater treatment system (OWTS) due to County Ordinance requirements an OWTS is setback a minimum of 100’ from a creek . Therefore, there is insufficient room for an OWTS at this property since the building site has a width of approximately 130 feet. Thus, the proposed project includes a Minor Sphere Amendment and Annexation to West Bay Sanitation District in order to provide a sewer connection to the site. As such, the proposed project will not have an impact regarding soils and their capability of supporting the use of septic tanks or alternative wastewater disposal systems.

a-ii, b, c, d & f) Less Than Significant Impact – As evaluated in the Geotechnical Engineering Investigation by BAGG Engineers, dated June 2019, the site area is not situated within an Alquist-Priolo Earthquake Zone, and no known faults have been mapped extending across the site area. Other faults are too distant and/or judged incapable of generating ground accelerations large enough to be considered significant threats to this site. As such, the proposed project will have a less than significant impact and will not directly or indirectly cause potential substantial adverse effects due to strong seismic ground shaking.

The proposed project includes minimal amounts of grading to accommodate a firetruck turn around (constructed with base rock) and foundation piers for the single-family residence. Additionally, the

required grading would also be carried out in accordance with the recommendations set forth by the County Grading Ordinance. At the time of construction, all graded areas would be reseeded to ensure that the project minimizes the potential for erosion on the site. All other land use and engineering aspects of this project will be conditioned by the recommendations set forth by the County Land Development Engineering Office, to prevent any impacts due to changes in topography, excavation, and grading for the construction of the access driveways, turnarounds, building pads, and related site improvements. As such, there is a less than significant impact that the project will result in substantial soil erosion or the loss of topsoil, or be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.

Additionally, soils at the project site are moderately to highly expansive surface soils, which could experience large amounts of shrink and swell activity. However, the project proposes to construct the single-family residence drilled pier foundations with an elevated floor slab and deepened grade beams for the proposed residence. Additionally, exterior flat work is proposed to be constructed on a layer of non- expansive fill, in accordance with the Geotechnical Engineering Investigation prepared on June 2019. As such, there is a less than significant impact that the proposed project would create a substantial direct or indirect risk to life or property due to its location on expansive soils.

Compliance with the geotechnical engineering conditions of approval and the County's Grading Ordinance Policies and Standards would reduce any potential impacts to less-than-significant.

MITIGATION:

- None required

H. GREENHOUSE GAS EMMISSIONS							
	IMPACT						
WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies	Source
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☐	☐	☐	☐	5,29, 30
b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☐	☐	☐	5,29, 30

SETTING:

The proposed project includes the construction and use of the property as a single-family residence.

Given the overwhelming scope of global climate change, it is not anticipated that a single development project would have an individually discernible effect on global climate change. It is more appropriate to conclude that the greenhouse gas emissions generated by a proposed project would combine with emissions across the state, nation, and globe to cumulatively contribute to global climate change. The primary GHG associated with a development project is carbon dioxide, which is directly generated by fuel combustion (vehicle trips, use of natural gas for buildings) and indirectly generated by use of electricity.

DISCUSSION:

a & b) No Impact – Due to the relatively small scale of the project (a single-family residence; a firetruck turnaround, drainage improvements and utility connections), and compliance with existing County and State requirements listed below, which will minimize greenhouse gas emissions, it is anticipated that the proposed project will not result in any cumulatively considerable greenhouse gas emissions.

The project is required to comply with the Cal Green, which applies mandatory green building requirements to new single-family dwellings. These measures include higher energy efficiency standards and requirements to minimize water usage and the use of natural resources. Implementation of these measures will act to reduce potential greenhouse gas emissions from the proposed project. The proposed use as a single-family residence would not conflict with any applicable plan, policy or regulation for reducing the emissions of greenhouse gases.

The single-family residence will have minimal greenhouse gas emission impacts and would involve GHG emissions through the operation of construction equipment and from worker/builder supply vehicles, which typically use fossil-based fuels to operate. Project excavation, grading, and construction would be temporary, occurring only over the construction period, and would not result in a permanent increase in GHG emissions. The single-family residence would consume electricity; however, the amount would be minimal, and therefore would not make a cumulatively considerable contribution to the effect of GHG emissions on the environment. As such, the project would have no

impact on greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment, and would not conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

MITIGATION:

- None required

I. HAZARDS & HAZARDOUS MATERIALS							
	IMPACT						
WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies	Source
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	☒	☐	☐	3, 4, 5
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☐	☒	☐	☐	3, 5
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 1/4 mile of an existing or proposed school?	☐	☐	☐	☒	☐	☐	46
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒	☐	☐	47
e) For a project located within an airport land use plan referral area or, where such a plan has not been adopted, within two miles of a public airport or public use airport, or in the vicinity of a private airstrip, would the project result in a safety hazard, or excessive noise for people residing or working in the project area?	☐	☐	☐	☒	☐	☐	3, 22a
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒	☐	☐	5, 48
g) Expose people or structures either directly or indirectly to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☒	☐	☐	☐	4, 17g

SETTING:

The proposed project is located approximately 0.8 miles away from the nearest school which is northwest of the development site. The project site is not listed on the County of Santa Clara

Hazardous Waste and Substance Sites List, it is not located in the County Airport Land Use plan area and is located in the Wild Urban Interface Fire Area (WUI).

DISCUSSION:

a, b, c, d, e, & f) No Impact – The proposed project is residential and would not involve the use or transportation of any hazardous materials, and it is not located on site designated as hazardous under Section 65962.5, as verified on EnviroStor, accessed on December 30, 2019.

The project is located within a residential neighborhood, and would not change the local roadway circulation pattern, access, or otherwise physically interfere with local emergency response plans. The access to the project site is from an existing public road, through a driveway and over an existing bridge. The development plans have been reviewed and conditionally approved by the County Fire Marshal's Office. The proposed project will not impair or physically interfere with any emergency response or evacuation plans.

Due to the project's location outside a ¼ mile from a school, its location outside of the County Airport Land Use plan area, and because its not listed on the Hazardous Waste and Substance Sites List, the proposed project does not have an impact on emitting hazardous substances within a ¼ mile of a school, creating a significant hazard to the public or the environment due to its listing as a hazardous materials site, or create a safety hazard, or excessive noise for people residing or working in the project area due to its proximity to an airport.

g) Less Than Significant Impact – The proposed project is conditioned by the recommendations set forth by the Santa Clara County Fire Marshal's Office, to prevent any impacts due to the proposed single-family residence's location within the Wilde Urban Interface area (WUI). As such, this project will not expose people or structures either directly or indirectly to a significant risk of loss, injury or death involving wildland fires.

MITIGATION:

- None required

J. HYDROLOGY AND WATER QUALITY								
	IMPACT						SOURCE
Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies	
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☐	☒	☐	☐	34, 36, 55
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☐	☒	☐	☐	3, 4
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:							
i) Result in substantial erosion or siltation on- or off-site	☐	☒	☐	☐	☐	☐	3 , 17n, 17p, 54, 55
ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☒	☐	☐	☐	☐	3, 5, 35, 5, 55
iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☒	☐	☐	☐	☐	3, 5, 54, 55
iv) Impede or redirect flood flows?	☐	☒	☐	☐	☐	☐	3, 17p, 18b, 18d, 54, 55
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☒	☐	☐	3, 18b, 18d
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☐	☒	☐	☐	2, 3, 4, 17p, 54, 55

SETTING:

The majority of the proposed development is within FEMA Flood Zone. The proposed development consists of new impervious surface of approximately 5,703 square feet, primarily due to the footprint of the proposed residence. As stated in the Bohley Consulting Hydrology Report (source 54), prepared by Craig Overboin in September of 2019, in order to ensure that the new development does not increase the stormwater runoff from the existing site, all impervious surfaces will drain into an underground drainage system. The entire driveway will drain to a catch basin, and the building downspouts will be spilled onto the landscaping in order to allow that water an opportunity to percolate into the ground. This water is eventually intercepted by earthen swales along the sides and rear of the structure and flows into a catch basin that is a part of the stormwater detention structure. The

hydromodification / detention structure contains a 6" outlet into Los Trancos Creek. This outfall has been designed to be as environmentally responsible as possible, using a coir mat (coconut husk) and hydroseeding to prevent erosion of the creek bank (source 55 – Bholey Consulting Hydrology Report Memorandum, Sept 2020).

The domestic and emergency water would be provided to the site by Cal Water Company (which is a private company and does not need approval from LAFCO), who has provided a will serve letter demonstrating they have adequate water supplies to support this development. A sewer connection is to be constructed to the proposed development by West Bay Sanitation District if the Minor Sphere Amendment is issued by both Santa Clara County and San Mateo County LAFCO's. West Bay Sanitation District provided written correspondence demonstrating they have the capacity to serve the proposed development if the annexation is approved.

DISCUSSION:

a, d, & e) No Impact – The proposed project does not include a traditional septic system, and therefore the project does not impose impacts to groundwater. The proposed project does not include the continuous use of pollutants or hazardous materials. As such, if the project site was to flood, there is minimal risk of a release of pollutants from the area. The proposed project is conditioned to take place during the dry season. Therefore, it is unlikely that pollutants from construction would be released due to flooding. Additionally, the project and all associated improvements have been reviewed and conditioned by County Land Development Engineering, ensuring that drainage improvements have been designed and sized to meet all applicable water quality control plans or sustainable groundwater management plans.

Due to the this, the proposed project does not substantially degrade surface or ground water quality, risk release of pollutants due to project inundation, or conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. As such, the project does not impose impacts to items a, d & e, listed above.

c-i, c-ii, c-iii, c-iv) Less Than Significant with Mitigation Incorporated – The proposed project includes approximately 5,703 square feet of new impervious surface area for a single-family residence, which is relatively small and will not substantially decrease groundwater supplies or interfere substantially with groundwater recharge. Stormwater runoff will drain into an underground drainage system and will eventually be intercepted by earthen swales along the sides and rear of the structure into a catch basin. The drainage system includes a metered release outlet structure that has been sized to match the preconstruction flows for the 10 year storm event and 100-year storm event. The structure is designed to be slightly higher than required, so that storms in excess of the 100 year event are detained, until the stormwater flows over the top of the structure and out through the outlet pipe. As such, based on mitigation measures listed below, the proposed site will not result in substantial erosion or siltation on or off site due to implementation of BMPS (**HYD-MIT 1**). Additionally, the runoff from the proposed site will not exceed the pre-construction flows for the 10 year and 100 year storm events (**HYD-MIT 2**), and in order to avoid downstream flooding, the capacity of Los Trancos Creek will not be negatively impacted and flood flows will not be impeded or redirected (source 55) (**HYD-MIT 3**). Due to the design of the proposed drainage system, and the implementation of the mitigation measures below, the proposed project will have a less than significant impact on items c-i, c-ii, c-iii, c-iv listed above.

MITIGATION:

- **HYD – MIT 1:** Best Management Practices (BMPs). The improvement plans shall include an Erosion and Sediment Control Plan that outlines seasonally appropriate erosion and sediment controls during the construction period). **Include the County's Standard Best Management Practice Plan Sheets BMP-1 and BMP-2 with the Plan Set prior to grading or building permit issuance**.

- **HYD – MIT 2:** Flood Plain Management. The project is in a Special Flood Hazard Area. All project improvements shall be in accordance with the County's Floodplain Management Ordinance (SCC Code C12-800 to C12-826). **County Floodplain compliance shall be included in the Plans Set prior to grading or building permit issuance**.

- **HYD – MIT 3**: Stormwater. The applicant shall include one of the following site design measures in the project design:
    a. direct hardscape and/or roof runoff onto vegetated areas,
    b. collect roof runoff in cisterns or rain barrels for reuse, or
    c. construct hardscape (driveway, walkways, patios, etc.) with permeable surfaces.

  Include one of the design measures listed about in the Plan Set prior to grading or building permit issuance. Though only one site design measure is required, it is encouraged to include multiple site design measures in the project design. For additional information, please refer to the C.3 Stormwater Handbook (June 2016) available at the following website: www.scvurppp.org > Resources > reports and work products > New Development and Redevelopment >C.3 Stormwater Handbook (June 2016).

K. LAND USE							
	IMPACT						SOURCE
WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies	
a) Physically divide an established community?	☐	☐	☒	☐	☐	☐	4
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐	☐	☐	8, 9, 17

SETTING:

The western side of the property is boarded by Los Trancos Creek and is entirelywith the County of Santa Clara. The surrounding land uses are a nursery to the east (within Stanford University), open space with a public trail to the north, south, and west. Single-family residences are located farther west, across Alpine Road, withing the Town of Portola Valley. The development area has a General Plan Designation of Hillsides with a Hillsides zoning district.

DISCUSSION:
a & b) No Impact – The proposed development is over 300 feet from the nearest residence and over 200 feet from Alpine Road. Due the proposed development's distance from existing neighborhoods, the project does not physically divide an established community.

The Hillside's General Plan intent is to support and enhance rural character, protect and promote wise management of natural resources, avoid risks associated with the natural hazards characteristic of those areas, and protect the quality of reservoir watersheds critical to the region's water supply. Allowable land uses within a Hillside General Plan designation includes very low-density residential development, such as the proposed project. Additionally, the proposed project meets the Hillsides development standards detailed under the County Zoning Ordinance. Due to the project's conformance with County General Plan and Zoning policies, the project does not cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

MITIGATION:
- None required

L. MINERAL RESOURCES							
	IMPACT						SOURCE
WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies	
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒	☐	☐	3, 6, 17a
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒	☐	☐	3, 6, 8

SETTING:

The project consists of a single-family residence and does not include utilizing the subject property for mining. No known valuable mineral resources are located on the subject property, which are delineated on a local general plan, specific plan or other land use plan.

DISCUSSION:

a & b) No Impact – Due to the project's use of the property as a single-family residence, and the lack of known valuable mineral resources within the proposed development, the project will not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state, or result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

MITIGATION:

- None required

M. NOISE							
	IMPACTS						
WOULD THE PROJECT RESULT IN:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies	SOURCE
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☐	☒	☐	☐	8, 22a, 45
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☒	☐	☐	45
c) For a project located within the vicinity of a private airstrip or an airport land use plan referral area or, where such a plan has not been adopted, within two miles of a public airport, public use airport, or private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒	☐	☐	5, 22a

SETTING:

The project consists of the development of a new single-family residence and associated improvements including a firetruck turnaround and utility connections. Local ambient noise comes from the nearby residences and minor occasional traffic noise from the nearby public streets. The project is not located in an airport land use plan referral area.

DISCUSSION:

a, b, &c) No Impact – Construction of the proposed single-family residence will temporarily elevate noise levels in the immediate project area from the use of construction equipment. Construction noise could have an impact on the nearest sensitive (residential) uses. Implementation of noise abatement measures described below will reduce potential construction impacts to a less-than-significant level. Noise levels would not exceed standards of the Santa Clara County Noise Ordinance. Noise impacts on the residential uses near the project site would be minimal and temporary.

The County General Plan Noise Element measures noise levels in Day-Night Average Sound Level (DNL), a 24-hour time weighted average, as recommended by the Environmental Protection Agency (EPA) for community noise planning. Noise Compatibility Standards for exterior noise specify three (3) classifications of compatibility between ambient noise levels at the site and various land uses: satisfactory, cautionary, and critical. According to the Noise Element Noise Compatibility Standards for Land Use in Santa Clara County, the satisfactory exterior noise compatibility standard for residential land uses is 55 dB (Ldn value in dBs).

County Noise Ordinance restricts exterior noise limits, for a cumulative period not to exceed more than 30 minutes in any hour, for one- and two- family residential land uses at 45 dBA between 10:00 p.m.

to 7:00 a.m., and 55 dBA between 7:00 a.m. to 10:00 p.m. In addition, specifically prohibited acts include amplified sound, such as musical instruments, radios, and loudspeakers, between 10:00 p.m. to 7:00 a.m., or construction activity during weekdays and Saturday's hours from 7:00 p.m. to 7:00 a.m, or at any time on Sundays or holidays.

The noise levels created during the grading and demolition/construction of this project could create a temporary disturbance. The project is required to conform to the County Noise Ordinance at all times for construction. Construction noise (including noise generated by truck traffic to and from the project site) is regulated by time-of-work restrictions and decibel maximum specified in the County Noise Ordinance. Thus, it is anticipated that short-term noise resulting from the grading and demolition/construction will not present a significant impact to neighboring property owners. Therefore, the project would not create any noise impacts.

MITIGATION:

- None required

N. POPULATION AND HOUSING							
	IMPACT						SOURCE
WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies	
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒	☐	☐	3, 4
b) Displace substantial numbers of existing housing or people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒	☐	☐	3, 4

SETTING:

The proposed project includes the development of a single-family residence on a vacant lot and a Minor Sphere Amendment and Annexation to include the property within the West Bay Sanitation District and Woodside Fire District to provide the residence with a sewer connection and emergency services.

DISCUSSION:

a & b) No Impact – The proposed project is a new single-family residence. No commercial, industrial or institutional uses are proposed. Due to the size of the property and the building sites proximity to Los Trancos Creek, a traditional septic system is not feasible for the proposed residence and a connection West Bay Sanitation District is required in order to develop the property. However, the development of a single-family residence and the annexation of the subject property into applicable sanitation and fire protection districts would not induce excessive population growth or displace existing housing or people. There are no other adjacent or nearby parcels that would be able to access the proposed connections and create an increase in population growth. The eastern portion of the parcel is boarded by Stanford University and the remaining adjacent parcels are located within the Town of Portola Valley and not available for development. As such, the project does not induce substantial unplanned population growth in an area, either directly or indirectly, or displace substantial numbers of existing housing or people, necessitating the construction of replacement housing elsewhere.

MITIGATION:

- None required

O. PUBLIC SERVICES							
	IMPACT						SOURCE
WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies	
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:							
i) Fire Protection?	☐	☐	☐	☒	☐	☐	3, 5
ii) Police Protection?	☐	☐	☐	☒	☐	☐	3, 5
iii) School facilities?	☐	☐	☐	☒	☐	☐	3, 5
iv) Parks?	☐	☐	☐	☒	☐	☐	3, 5, 17h
v) Other public facilities?	☐	☐	☐	☒	☐	☐	3, 5

SETTING:

The project includes a Minor Sphere Amendment and Annexation into West Bay Sanitation District in order to provide the property with a sewer connection, and a Minor Sphere Amendment and Annexation into Woodside Fire District in order to provide the property with appropriate fire emergency services. Emergency calls would first go to the Santa Clara County Sheriff's Office communications. If there is not a unit near the area, then Santa Clara County would then contact San Mateo County Communications to dispatch a San Mateo County unit. Cal Water will provide a water connection to the property. Gas and electric services will be provided by PG&E.

DISCUSSION:

a-i, a-ii, a-iii, a-iv, & a-v) No Impact – The proposed project includes a single-family residence, and no commercial, industrial, or institutional uses are proposed. The proposed single-family residence has a minimal increase in the overall neighborhood population and would not significantly increase the need for additional fire or police protection to the area if the Minor Sphere Amendment and Annexation to Woodside Fire District is approved by both Santa Clara County LAFCO and San Mateo County LAFCO. Other public services, such as those provided by schools or parks, would not be significantly impacted.

MITIGATION:

- None required

P. RECREATION							
	IMPACT						SOURCE
WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies	
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☐	☐	☐	4, 5, 17h
b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☐	☐	☐	3, 4, 5

SETTING:

The project, a single-family residence, is low-density and does not include the use of the project area for recreational purposes.

DISCUSSION:

a & b) No Impact – The proposed project is for a new single-family residence and will not result in an impact to existing parks or recreational facilities due to the minimal increase in population to the neighborhood. As such, the project would not cause a substantial physical deterioration of existing recreational facilities.

Additionally, the proposed single-family residence does not include any recreational uses or structures, nor does the addition of a new-single family residence require an expansion to existing recreational facilities. As such, the project does not have an impact on item b listed above.

MITIGATION:

- None required

Q. TRANSPORTATION							
			IMPACT				SOURCE
WOULD THE PROJECT:	YES					NO	
	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies	
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☐	☒	☐	☐	1, 4, 5, 6, 7, 49, 52
b) Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?[1]	☐	☐	☐	☒	☐	☐	6, 49, 50, 52
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒	☐	☐	3, 5, 6,7, 52
d) Result in inadequate emergency access?	☐	☐	☐	☒	☐	☐	1, 3, 5, 48, 52

SETTING:

The proposed single-family residence takes access from Alpine Road (a public road located within the Town of Portola Valley) by utilizing an existing driveway, which is constructed within a 30-foot wide access easement, across an existing and permitted bridge over Los Trancosa Creek to the proposed development site.

DISCUSSION:

a, b, c, & d) No Impact – The proposed project, consisting of a single-family residence will generate approximately 10 daily vehicle trips, according to the Institute of Traffic Engineers Trip Generation, 10th edition data (10 trips/day). According to the Santa Clara Valley Transportation Authority Transportation Impact Analysis Guidelines, a transportation impact analysis is not required to be performed for projects that would generate fewer than 100 net new weekday (AM or PM peak hour) or weekend peak hour trips, including both inbound and outbound trips. Additionally, the project was reviewed and conditionally approved by the County Fire Marshal's Office to ensure adequate fire safety access is proposed. Therefore, the project will not generate substantial new traffic, impair existing transportation facilities, or result in inadequate emergency access. Construction activities for the proposed structures would involve a small number of vehicle trips related to delivery of material and workers commuting to the site. Because the number of trips would be temporary and small in number, and road use in the vicinity is relatively light, the proposed project would not have impacts on traffic and circulation. Onsite parking for the proposed single-family residence is in conformance with the County parking requirements.

MITIGATION:

- None required

1 The provisions of this section shall apply prospectively as described in section 15007. A lead agency may elect to be governed by the provisions of this section immediately. Beginning on July 1, 2020, the provisions of this section shall apply statewide. The County of Santa Clara has elected not to be governed by the provisions of this section until they become effective statewide on July 1, 2020.

R. TRIBAL CULTURAL RESOURCES							
	IMPACT						SOURCE
WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies	
a) 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(k), or	☐	☐	☐	☒	☐	☐	
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.	☐	☐	☐	☒	☐	☐	41, 52

SETTING:

The subject property is not listed in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k). Additionally, the Phase I Cultural Resources Report prepared by MIG, Inc. in September 2018, submitted by the applicant (source 41), did not indicate that any known and significant Tribal Cultural Resources were located on the subject property.

DISCUSSION:

a-i & a-ii) No Impact – The County has not received any letters from Native American tribes requesting tribal consultation per Public Resources Code, Section 21080.3.1(b) regarding the potential for a Native American tribal cultural resource located on or near the project site. Hence, there is no evidence to indicate the presence of a tribal cultural resource listed or eligible for listing in the California Register of Historical Resources, or of significance pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1.Therefore, the proposed single- family

residence would not cause a substantial adverse change in the significance of a tribal cultural resource, and no mitigation measures would be necessary.

MITIGATION:

- None required.

S. UTILITIES AND SERVICE SYSTEMS							
	IMPACT						
WOULD THE PROJECT:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies	SOURCE
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☒	☐	☐	☐	3,6,70
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years	☐	☐	☐	☒	☐	☐	1, 3, 6,24b
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒	☐	☐	1, 3,6,70
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☐	☒	☐	☐	1, 3, 5,6
e) Be in non-compliance with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☐	☒	☐	☐	3,5, 6

SETTING:

The proposed project, a new single-family residence, includes utility connections to Cal Water (a private water service company) for water, gas and electric connections with PG&E, and a sewer connection with West Bay Sanitation District which will require a Minor Sphere Amendment and Annexation to the West Bay Sanitation District service boundaries through both Santa Clara County and San Mateo County LAFCO's. The proposed utility connection will begin within the Alpine Road right-of-way and will require an encroachment permit with the Town of Portola Valley. The utilizes will then run underground through the existing 30-foot wide easement and be hung on the downstream side of the existing bridge (all utilities will be installed at or above the soffit of the bridge), and will then be connected to the sanitary sewer pump station, as well as water, electric and gas connections at the proposed development site.

DISCUSSION:

a) Less Than Significant Impact – The proposed project includes the connection of existing utilities from Alpine Road right-of-way to the proposed development site. Due to the location of the utility connection running attached to the exiting permitted free-span bridge, over Los Trancos Creek,

minimal environmental impacts to the riparian corridor and the creek are required for the construction of the connections. As such, the expansion of the utilities to connect to the proposed development site is less than significant.

b, c, d, & e) No Impact – Pursuant to a will serve letter submitted by the applicant in September of 2018, Cal Water has the capacity to service the subject property. Additionally (as indicated in an email from West Bay Sanitation District representatives), West Bay Sanitation District also as the capacity to service the subject property with a sewer connection, provide all other approvals are issued, such as the Minor Sphere Amendment and Annexation, as well as encroachment permits from the Town of Portola Valley. As such, there is no impact to items b and c listed above.

As a standard condition of approval for all projects within the County of Santa Clara, property owners are to provide proof of garbage service at the time of final occupancy sign-off. Garbage service in the unincorporated areas of Santa Clara County is mandatory. As such, there is no impact to item d and e listed above.

MITIGATION:

- None required

T. WILDFIRE							
	IMPACT						SOURCE
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies	
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒	☐	☐	3, 6, 44
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☒	☐	☐	☐	3, 6,8a
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☒	☐	☐	4, 5, 17h
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☒	☐	☐	3, 4, 5

SETTING:

The proposed project includes a new single-family residence located on a parcel that is within a Hillside zoning district and a Wild Urban Interface (WUI) fire protection area. The area of the proposed development is relatively flat, with a slope of approximately five percent (5%), and consist of several native trees (Bay Laurels, California Buckeyes, Coast Live Oaks and Valley Oaks) with the location of the proposed residence clear of vegetation.

DISCUSSION:

a, c, & d) No Impact – The project was reviewed and conditionally approved in accordance with the Santa Clara County Fire Marshal's Office. The project includes adequate fire safety access and emergency evacuation, as such the project does not impair an adopted emergency response plan or emergency evacuation plan. The installation of a firetruck turnaround and a water connection to the proposed development site does not exacerbate fire risk that may result in temporary or ongoing impacts to the environment. Additionally, the proposed development is on a relatively flat site and is therefore not at risk of downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes. As such, the project imposes no impact to items a, c and d listed above.

b) Less Than Significant – The proposed project is located within the WUI area and therefore may be at risk of uncontrolled spread of a wildfire. However, due to the project's location to a natural firebreak (Los Trancos Creek) and the installation of appropriate fire safety requirements such as adequate fire

access for emergency services, adequate water connections to hydrants for fire suppression, as well as a residential fire sprinkler system complying with CFMO-SP6 throughout the residence, the proposed project will have a less than significant impact to exposing the project occupants to the spread of wildfire. Additionally, the proposed residence shall have a class "A" roof, a ½ inch spark arrester for the chimney, and remove significant combustible vegetation within 30 feet of the structure to minimize risk of wildfire casualty. The proposed development shall have appropriate separation of vegetative fuels in areas between 30 and 100 feet from the proposed residence.

MITIGATION:

- None required

U. MANDATORY FINDING OF SIGNIFICANCE							
			IMPACT				
WOULD THE PROJECT:	YES					NO	SOURCE
	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies	
a) Have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐	☐	☐	1 to 54
b) Have impacts that are individually limited, but cumulatively considerable ("Cumulatively considerable" means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☐	☒	☐	☐	1 to 54
c) Have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☐	☒	☐	☐	1 to 54

DISCUSSION:

a) **Less Than Significant Impact with Mitigation Incorporated.** As discussed in the Biological Resources section, impacts of the proposed project on special status species or habitat would either be less than significant or would be reduced to a less-than-significant level through incorporation of mitigation measures. The proposed project would not have the potential to substantially reduce the habitat of any fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number of, or restrict the range of, a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory.

b) **No Impact.** No past, current, or probable future projects were identified in the project vicinity that, when added to project-related impacts, would result in cumulatively considerable impacts. No

cumulatively considerable impacts would occur with development of the proposed project. As discussed in the analyses provided in this Initial Study, project impacts were found to be less than significant. The incremental effects of the proposed project are not cumulatively significant when viewed in context of the past, current, and/or probable future projects. No cumulative impacts would occur.

c) **No Impact.** The proposed project is a new single-family residence. As described in the environmental topic sections of this Initial Study, the proposed project would not have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly.

Initial Study Source List*

1. **Environmental Information Form**
   https://www.sccgov.org/sites/dpd/DocsForms/Documents/EnvAss_Form.pdf

2. **Field Inspection**

3. **Project Plans**

4. **Working knowledge of site and conditions**

5. **Experience with other Projects of This Size and Nature**

6. **County Expert Sources:**
   Geologist
   https://www.sccgov.org/sites/dpd/PlansOrdinances/GeoHazards/Pages/Geology.aspx
   Fire Marshal
   https://www.sccgov.org/sites/dpd/AboutUs/Fire/Pages/Fire.aspx
   Roads & Airports
   https://www.sccgov.org/sites/rda/Pages/rda.aspx
   Environmental Health
   https://www.sccgov.org/sites/deh/Pages/deh.aspx
   Land Development Engineering
   https://www.sccgov.org/sites/dpd/AboutUs/LDE/Pages/LDE.aspx
   Parks & Recreation
   https://www.sccgov.org/sites/parks/Pages/Welcome-to-Santa-Clara-County-Parks.aspx
   Zoning Administration,
   Comprehensive Planning,
   Architectural & Site Approval Committee Secretary

7. **Agency Sources:**
   Santa Clara Valley Water District
   https://www.valleywater.org/
   Santa Clara Valley Transportation Authority
   http://www.vta.org/
   Midpeninsula Regional Open Space District
   https://openspace.org/
   U.S. Fish & Wildlife Service
   https://www.fws.gov/
   CA Dept. of Fish & Game
   https://www.wildlife.ca.gov/
   Caltrans
   https://dot.ca.gov/
   U.S. Army Corps of Engineers
   https://www.usace.army.mil/
   Regional Water Quality Control Board
   https://www.waterboards.ca.gov/
   Public Works Depts. of individual cities

8. **Planning Depts. of individual cities:**
   Santa Clara County (SCC) General Plan
   https://www.sccgov.org/sites/dpd/PlansOrdinances/GP/Pages/GP.aspx
   The South County Joint Area Plan
   https://www.sccgov.org/sites/dpd/DocsForms/Documents/GP_Book_B.pdf

9. **SCC Zoning Regulations (Ordinance)**
   https://www.sccgov.org/sites/dpd/DocsForms/Documents/ZonOrd.pdf

10. **County Grading Ordinance**
    https://library.municode.com/ca/santa_clara_county/codes/code_of_ordinances?nodeId=TITCCODELAUS_DIVC12SULADE_CHIIIGRDR#TOPTITLE

11. **SCC Guidelines for Architecture and Site Approval**
    https://www.sccgov.org/sites/dpd/DocsForms/Documents/ASA_Guidelines.pdf

12. **SCC Development Guidelines for Design Review**
    https://www.sccgov.org/sites/dpd/DocsForms/Documents/DR_Guidelines.pdf

13. **County Standards and Policies Manual (Vol. I - Land Development)**
    https://www.sccgov.org/sites/dpd/DocsForms/Documents/StandardsPoliciesManual_Vol1.pdf

14. **Table 18-1-B of the Uniform Building Code (expansive soil regulations) [1994 version]**
    http://digitalassets.lib.berkeley.edu/ubc/UBC_1994_v2.pdf

15. **SCC Land Use Database**

16. **Santa Clara County Heritage Resource (including Trees) Inventory [computer database]**

17. **GIS Database**
    a. SCC General Plan Land Use, and Zoning
    b. USFWS Critical Habitat & Riparian Habitat
    c. Geologic Hazards
    d. Archaeological Resources
    e. Water Resources
    f. Viewshed and Scenic Roads
    g. Fire Hazard
    h. Parks, Public Open Space, and Trails
    i. Heritage Resources - Trees
    j. Topography, Contours, Average Slope
    k. Soils
    l. HCP Data (habitat models, land use coverage etc)
    m. Air photos
    n. USGS Topographic
    o. Dept. of Fish & Game, Natural Diversity Data
    p. FEMA Flood Zones
    q. Williamson Act
    r. Farmland monitoring program
    s. Traffic Analysis Zones
    t. Base Map Overlays & Textual Reports (GIS)

18. **Paper Maps**
    a. SCC Zoning
    b. Barclay's Santa Clara County Locaide Street Atlas
    c. Color Air Photos (MPSI)
    d. Santa Clara Valley Water District - Maps of Flood Control Facilities & Limits of 1% Flooding

Initial Study Source List*

e. Soils Overlay Air Photos
f. "Future Width Line" map set

19. 2019 CEQA Statute Guidelines [Current Edition]
http://resources.ca.gov/ceqa/docs/2019_CEQA_Statutes_and_Guidelines.pdf

Area Specific: San Martin, Stanford, and Other Areas

San Martin

20a. San Martin Integrated Design Guidelines
https://www.sccgov.org/sites/dpd/DocsForms/Documents/SanMartin_DesignGuidelines.pdf

20b. San Martin Water Quality Study

20c. Memorandum of Understanding (MOU) between Santa Clara County & Santa Clara Valley Water District

Stanford

21a. Stanford University General Use Permit (GUP), Community Plan (CP), Mitigation and Monitoring Reporting Program (MMRP) and Environmental Impact Report (EIR)
https://www.sccgov.org/sites/dpd/Programs/Stanford/Pages/Docs.aspx

21b. Stanford Protocol and Land Use Policy Agreement
https://www.sccgov.org/sites/dpd/Programs/Stanford/Pages/Docs.aspx

Other Areas

22a. South County Airport Comprehensive Land Use Plan and Palo Alto Airport comprehensive Land Use Plan [November 19, 2008]

22b. Los Gatos Hillsides Specific Area Plan
https://www.sccgov.org/sites/dpd/DocsForms/Documents/GP_Book_B.pdf

22c. County Lexington Basin Ordinance Relating to Sewage Disposal

22d. User Manual Guidelines & Standards for Land Uses Near Streams: A Manual of Tools, Standards and Procedures to Protect Streams and Streamside Resources in Santa Clara County by Valley Water Resources Protection Collaborative, August 2005 – Revised July 2006.
https://www.valleywater.org/contractors/doing-businesses-with-the-district/permits-for-working-on-district-land-or-easement/guidelines-and-standards-for-land-use-near-streams

22e. Guidelines and Standards for Land Use Near Streams: Streamside Review Area – Summary prepared by Santa Clara County Planning Office, September 2007.

22f. Monterey Highway Use Permit Area
https://www.sccgov.org/sites/dpd/DocsForms/Documents/SanMartin_GeneralPlanInformation.pdf

Soils

23. USDA, SCS, "Soils of Santa Clara County

24. USDA, SCS, "Soil Survey of Eastern Santa Clara County"

Agricultural Resources/Open Space

25. Right to Farm Ordinance

26. State Dept. of Conservation, "CA Agricultural Land Evaluation and Site Assessment Model"
https://www.conservation.ca.gov/dlrp/Documents/TOC%20and%20Intro.pdf

27. Open Space Preservation, Report of the Preservation 2020 Task Force, April 1987 [Chapter IV]

28. Williamson Act Ordinance and Guidelines (current version)
https://www.sccgov.org/sites/dpd/Programs/WA/Pages/WA.aspx

Air Quality

29. BAAQMD Clean Air Plan
http://www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf?la=en

30. BAAQMD CEQA Air Quality Guidelines (2017)-
http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en

31. BAAQMD Annual Summary of Contaminant Excesses & BAAQMD, "Air Quality & Urban Development - Guidelines for Assessing Impacts of Projects & Plans" [current version]

Biological Resources/
Water Quality & Hydrological Resources/
Utilities & Service Systems"

32. Site-Specific Biological Report

33. Santa Clara County Tree Preservation Ordinance
https://www.sccgov.org/sites/dpd/DocsForms/Documents/Tree_Ordinance.pdf

Section C16, Santa Clara County Guide to Evaluating Oak Woodlands Impacts
https://www.sccgov.org/sites/dpd/DocsForms/Documents/Oakwoodlands_Guide.pdf

Initial Study Source List*

Santa Clara County Guidelines for Tree Protection and Preservation for Land Use Applications https://www.sccgov.org/sites/dpd/DocsForms/Documents/Brochure_TreePreservation.pdf

33. Clean Water Act, Section 404 https://www.epa.gov/cwa-404/permit-program-under-cwa-section-404

35. CA Regional Water Quality Control Board, Water Quality Control Plan, San Francisco Bay Region [1995]

36. Santa Clara Valley Water District, Private Well Water Testing Program [12-98]

37. SCC Nonpoint Source Pollution Control Program, Urban Runoff Management Plan [1997]

38. County Environmental Health / Septic Tank Sewage Disposal System - Bulletin "A"

39. County Environmental Health Department Tests and Reports

Archaeological Resources

40. Northwest Information Center, Sonoma State University

41. Site Specific Archaeological Reconnaissance Report

Geological Resources

42. Site Specific Geologic Report

43. State Department of Mines and Geology, Special Report #42

44. State Department of Mines and Geology, Special Report #146

Greenhouse Gas Emissions

45. BAAQMD CEQA Air Quality Guidelines (2017)- http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en

Hazards & Hazardous Materials

46. Section 21151.4 of California Public Resources Code

47. State Department of Toxic Substances, Hazardous Waste and Substances Sites List

48. County Office of Emergency Services Emergency Response Plan [1994 version]

Noise

49. County Noise Ordinance https://www.sccgov.org/sites/cpd/programs/NP/Documents/NP_Noise_Ordinance.pdf

Transportation/Traffic

50. Official County Road Book

51. Site-specific Traffic Impact Analysis Report

Tribal Cultural Resources

52. Office of Planning and Research. 2017. Technical Advisory: AB 52 and Tribal Cultural Resources in CEQA

Wildfire

53. Office of Planning and Research. 2020. Fire Hazard Planning Technical Advisory

Additional Sources

54. Bholey Consulting Hydrology Report (September, 2019)

55. Bholey Consulting Hydorlogy Report Memorandum (September, 2020)

***Items listed in bold are the most important sources and should be referred to during the first review of the project, when they are available. The planner should refer to the other sources for a particular environmental factor if the former indicates a potential environmental impact.**

Project Description Continued

The proposed development includes a storm drain system throughout the building site with an outfall constructed with a coir mat to the north of the proposed residence to slow and purify the runoff prior to entering the Los Trancos Creek bed (**Attachment 2** – *Plan Set*). Pursuant to a Hydrology Report prepared by Bohey Consulting in 2020 (**Attachment 7** – *Hydrology Report Memorandum*) the hydromodification of the site will not negatively impact the capacity of Los Trancos Creek, and flood flows will not be impeded or redirected.

Lastly, the development includes a proposal to connect to an existing sewer system operated by West Bay Sanitation District along Alpine Road. The subject property cannot accommodate a traditional septic system due to a 100-foot septic system setback from Los Trancos Creek. In order to provide a sewer connection to the proposed site, the applicant must obtain approvals from both San Mateo County LAFCO and Santa Clara County LAFCO for a Minor Sphere Amendment and Annexation to West Bay Sanitation District prior to building or grading permit issuance. Additionally, to provide the site with adequate fire emergency access, a Minor Sphere Amendment and Annexation to Woodside Fire Protection District is required.

Total grading quantities for the proposed development include 443 cubic yards of cut and 192 cubic yards of fill, with a maximum cut depth of 3.8 feet. The majority of the proposed grading is to establish a fire truck turn around and to establish the pier foundation footings beneath the proposed residence. No trees are proposed for removal.

There is a Conservation Easement on the property held by the Town of Portola Valley (**Attachment 8** – *Conservation Easement*). This easement consists of a 25-foot-wide strip of land, measured from the centerline of Los Trancos Creek, running along the length of Creek (see enclosed easement map). The Easement states approval is required from the Town Council of the Town of Portola Valley if any of the following development takes place within the easement boundaries:

a. Removal of vegetation other than poison oak from more than twenty (20) percent of the are within said conservation easement;
b. Removal of trees with a circumference of over twelve (12) inches measured four (4) feet above the surface of the ground;
c. Excavating or filling or any combination thereof totaling in excess of five (5) cubic yards, providing that such excavating or filling does not result in disturbance of the surface of the ground exceeding twenty (20) percent of the area within the easement;
d. Dumping of refuse; and
e. Erection of barbed wire fences and/or buildings

The proposed project, as submitted on September 17, 2020 does not exceed any of the thresholds cited above (**Attachment 9** – Civil Response Letter).

An encroachment permit is required from the Town of Portola Valley to connect utilities (gas, electric, water and sewer) located in the Alpine Road right-of-way, to the proposed building site. The proposed development requires a Streambed Alteration Agreement with the California Department of Fish and Game (CDFW), a 401 Water Quality Certification from the California

Regional Water Quality Control Board (RWQCB), and a Nationwide Permit from the U.S. Army Corp of Engineers (USACE) due to the proposed outfall with coir mat slope protection within the Los Trancos Creek top-of-bank. All of the aforementioned approvals are required prior to the building and grading permit issuance from the County of Santa Clara.

COUNTY OF SANTA CLARA
General Construction Specifications

GENERAL CONDITIONS

1. ALL CONSTRUCTION WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE SOILS AND/OR GEOTECHNICAL REPORT PREPARED BY BAGG ENGINEERS AND DATED OCTOBER 10, 2018 THIS REPORT IS SUPPLEMENTED BY SUPPLEMENTAL REPORTS FROM BAGG ENGINEERS AND BY: 1) THESE PLANS AND SPECIFICATIONS, 2) THE COUNTY OF SANTA CLARA STANDARD DETAILS. 3) THE COUNTY OF SANTA CLARA STANDARD SPECS, 4) STATE OF CALIFORNIA STANDARD DETAILS, 5) STATE OF CALIFORNIA STANDARD SPECIFICATIONS. IN THE EVENT OF CONFLICT THE FORMER SHALL TAKE PRECEDENCE OVER THE LATTER. THE PERFORMANCE AND COMPLETION OF ALL WORK MUST BE TO THE SATISFACTION OF THE COUNTY.
2. DEVELOPER IS RESPONSIBLE FOR INSTALLATION OF THE IMPROVEMENTS SHOWN ON THESE PLANS AND HE OR HIS SUCCESSOR PROPERTY OWNERS ARE RESPONSIBLE FOR THEIR CONTINUED MAINTENANCE.
3. DEVELOPER SHALL BE RESPONSIBLE FOR CORRECTION OF ANY ERRORS OR OMISSIONS IN THESE PLANS. THE COUNTY SHALL BE AUTHORIZED TO REQUIRE DISCONTINUANCE OF ANY WORK AND SUCH CORRECTION AND MODIFICATION OF PLANS AS MAY BE NECESSARY TO COMPLY WITH COUNTY STANDARDS OR CONDITIONS OF DEVELOPMENT APPROVAL.
4. DEVELOPER SHALL OBTAIN ENCROACHMENT PERMITS AS REQUIRED FROM THE SANTA CLARA VALLEY WATER DISTRICT AND CALIFORNIA DEPARTMENT OF TRANSPORTATION WHERE NEEDED. COPIES OF THESE PERMITS SHALL BE KEPT AT THE JOB SITE FOR REVIEW BY THE COUNTY'S INSPECTOR.
5. DEVELOPER SHALL REMOVE OR TRIM ALL TREES TO PROVIDE AN UNOBSTRUCTED FIFTEEN (15) FOOT VERTICAL CLEARANCE FOR ROADWAY AREA.
6. THIS PLAN AUTHORIZES THE REMOVAL OF ONLY THOSE TREES WITH TRUNK DIAMETERS GREATER THAN 12 INCHES MEASURED 4.5 FEET ABOVE THE GROUND THAT ARE SHOWN TO BE REMOVED UNLESS AN AMENDED PLAN IS APPROVED OR A SEPARATE TREE REMOVAL PERMIT IS OBTAINED FROM THE PLANNING OFFICE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT REMOVAL OF ADDITIONAL TREES HAS BEEN PERMITTED.
7. DEVELOPER SHALL PROVIDE ADEQUATE DUST CONTROL AS REQUIRED BY THE COUNTY INSPECTOR.
8. ALL PERSONS MUST COMPLY WITH SECTION 4442 OF THE PUBLIC RESOURCES CODE AND SECTION 13005 OF THE HEALTH AND SAFETY CODE RELATING TO THE USE OF SPARK ARRESTERS.
9. UPON DISCOVERING OR UNEARTHING ANY BURIAL SITE AS EVIDENCED BY HUMAN SKELETAL REMAINS OR ARTIFACTS, THE PERSON MAKING SUCH DISCOVERY SHALL IMMEDIATELY NOTIFY THE COUNTY CORONER AT (408) 454-2520 AND LAND DEVELOPMENT ENGINEERING OFFICE AT (408) 299-5730. NO FURTHER DISTURBANCE OF THE SITE MAY BE MADE EXCEPT AS AUTHORIZED BY THE LAND DEVELOPMENT OFFICE IN ACCORD WITH PROVISIONS OF THIS ORDINANCE (COUNTY ORDINANCE CODE SECTION B6-18).
10. THESE PLANS ARE FOR THE WORK DESCRIBED IN THE SCOPE OF WORK ONLY. A SEPARATE PERMIT WILL BE REQUIRED FOR THE SEPTIC LINE CONSTRUCTION (IF SEPTIC LINES ARE SHOWN ON PLAN).
11. ANY DEVIATION FROM THESE APPROVED PLANS SHALL BE RE-APPROVED IN WRITING BY THE COUNTY ENGINEER PRIOR TO CONSTRUCTION.

CONSTRUCTION STAKING

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

CONSTRUCTION INSPECTION

1. CONTRACTOR SHALL NOTIFY PERMIT INSPECTION UNIT, SANTA CLARA COUNTY PRIOR TO COMMENCING WORK AND FOR FINAL INSPECTION OF WORK AND SITE.
2. THE COUNTY REQUIRES A MINIMUM OF 24 HOURS ADVANCE NOTICE FOR GENERAL INSPECTION, 48 HOURS FOR ASPHALT CONCRETE INSPECTION.
3. INSPECTION BY SANTA CLARA COUNTY SHALL BE LIMITED TO INSPECTION OF MATERIALS AND PROCESSES OF CONSTRUCTION TO OBSERVE THEIR COMPLIANCE WITH PLANS & SPECIFICATIONS BUT DOES NOT INCLUDE RESPONSIBILITY FOR THE SUPERINTENDENT OF CONSTRUCTION, SITE CONDITIONS, EQUIPMENT OR PERSONNEL. CONTRACTOR SHALL NOTIFY THE COUNTY LAND DEVELOPMENT INSPECTOR AT PHONE (408) 299-6868 AT LEAST 24 HOURS PRIOR TO COMMENCING WORK AND FOR FINAL INSPECTION OF WORK AND SITE.
4. DEVELOPER AND/OR HIS AUTHORIZED REPRESENTATIVE MUST SUBMIT WRITTEN REQUEST FOR FINAL INSPECTION AND ACCEPTANCE. SAID REQUEST SHALL BE DIRECTED TO THE INSPECTION OFFICE NOTED ON THE PERMIT FORM.
5. THE CONTRACTOR SHALL PROVIDE TO THE COUNTY CONSTRUCTION INSPECTOR WITH PAD ELEVATION AND LOCATION CERTIFICATES, PREPARED BY THE PROJECT ENGINEER OR LAND SURVEYOR, PRIOR TO COMMENCEMENT OF THE BUILDING FOUNDATION.

SITE PREPARATION (CLEARING AND GRUBBING)

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

UTILITY LOCATION, TRENCHING & BACKFILL

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

RETAINING WALLS

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

GRADING

1. EXCAVATED MATERIAL SHALL BE PLACED IN THE FILL AREAS DESIGNATED OR SHALL BE HAULED AWAY FROM THE SITE TO A COUNTY APPROVED DISPOSAL SITE. WHERE FILL MATERIAL IS TO BE PLACED ON NATURAL GROUND, IS SHALL BE STRIPPED OF ALL VEGETATION. TO ACHIEVE A PROPER BOND WITH THE FILL MATERIAL, THE SURFACE OF THE GROUND SHALL BE SCARIFIED TO DEPTH OF 6" BEFORE FILL IS PLACED. WHERE NATURAL GROUND IS STEEPER THAN 5:1, IT SHALL BE BENCHED AND THE FILL KEYED IN TO ACHIEVE STABILITY. WHERE NEW FILL IS TO BE PLACED ON EXISTING FILL THE EXISTING FILL SHALL BE REMOVED UNTIL MATERIAL COMPACTED TO 90% RELATIVE COMPACTION IS EXPOSED. THEN THE NEW FILL MATERIAL SHALL BE PLACED AS PER THESE CONSTRUCTION NOTES. FILL MATERIAL SHALL BE PLACED IN UNIFORM LIFTS NOT EXCEEDING 6" IN UNCOMPACTED THICKNESS. BEFORE COMPACTION BEGINS, THE FILL SHALL BE BROUGHT TO A WATER CONTENT THAT WILL PERMIT PROPER COMPACTION BY EITHER 1) AERATING THE FILL IF IT IS TOO WET OR 2) MOISTENING THE FILL WITH WATER IF IT IS TOO DRY. EACH LIFT SHALL BE THOROUGHLY MIXED BEFORE COMPACTION TO ENSURE A UNIFORM DISTRIBUTION OF MOISTURE.
2. EXCESS CUT MATERIAL SHALL NOT BE SPREAD OR STOCKPILED ON THE SITE.
3. SURPLUS EARTH FILL MATERIAL SHALL BE PLACED IN A SINGLE (8" MAX) THICK LAYER COMPACTED TO WITHSTAND WEATHERING IN THE AREA(S) DELINEATED ON THE PLAN.
4. NO ORGANIC MATERIAL SHALL BE PLACED IN ANY FILL. NO TREES SHALL BE REMOVED OUTSIDE OF CUT, FILL OR ROADWAY AREAS.
5. THE UPPER 6" OF SUBGRADE BELOW DRIVEWAY ACCESS ROAD OR PARKING AREA SHALL BE COMPACTED TO 95% OF MAXIMUM DENSITY.
6. MAXIMUM CUT SLOPE SHALL BE 2 HORIZONTAL TO 1 VERTICAL. MAXIMUM FILL SLOPE SHALL BE 2 HORIZONTAL TO 1 VERTICAL.

LOCATION	CUT (C.Y.)	FILL (C.Y.)	VERT. DEPTH
RESIDENCE			
ACCESSORY STRUCTURE			
POOL/HARDSCAPE			
LANDSCAPE			
DRIVEWAY			
OFF SITE IMPROVEMENTS			
TOTAL			

EXCESS MATERIAL SHALL BE OFF HAULED TO A COUNTY APPROVED DUMP SITE.

7. NOTIFY SOILS ENGINEER TWO (2) DAYS PRIOR TO COMMENCEMENT OF ANY GRADING WORK TO COORDINATE THE WORK IN THE FIELD.
8. ALL MATERIALS FOR FILL SHOULD BE APPROVED BY THE SOILS ENGINEER BEFORE IT IS BROUGHT TO THE SITE.
9. THE UPPER 6" OF THE SUBGRADE SOIL SHALL BE SCARIFIED, MOISTURE CONDITIONED AND COMPACTED TO A MINIMUM RELATIVE COMPACTION OF 95%
10. ALL AGGREGATE BASE MATERIAL SHALL BE COMPACTED TO A MINIMUM 95% RELATIVE COMPACTION.
11. THE GEOTECHNICAL PLAN REVIEW LETTER MUST BE REVIEWED AND APPROVED BY THE COUNTY GEOLOGIST PRIOR TO FINAL APPROVAL BY THE COUNTY ENGINEER FOR BUILDING OCCUPANCY.
12. THE PROJECT GEOTECHNICAL ENGINEER SHALL PERFORM COMPACTION TESTING AND PRESENT THE RESULTS TO THE COUNTY ENGINEERING INSPECTOR PRIOR TO THE CONSTRUCTION OF ANY PAVED AREA.
13. GRADING WORK BETWEEN OCTOBER 15TH AND APRIL 15TH IS AT THE DISCRETION OF THE SANTA CLARA COUNTY GRADING OFFICIAL.
14. TOTAL DISTURBED AREA FOR THE PROJECT IS 0.4 ACRES.
15. ~~WDID NO.~~ ______________________.
16. ~~THE INSPECTOR MAY VERIFY THAT A VALID NOTICE OF INTENT (NOI) HAS BEEN ISSUED BY THE STATE AND THAT A CURRENT AND UP TO DATE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) IS AVAILABLE ON SITE.~~

TREE PROTECTION

1. FOR ALL TREES TO BE RETAINED WITH A CANOPY IN THE DEVELOPMENT AREA OR INTERFACES WITH THE LIMITS OF GRADING FOR ALL PROPOSED DEVELOPMENT ON SITE, THE TREES SHALL BE PROTECTED BY THE PLACEMENT OF RIGID TREE PROTECTIVE FENCING, CONSISTENT WITH THE COUNTY INTEGRATED LANDSCAPE GUIDELINES, AND INCLUDE THE FOLLOWING:
   A. FENCING SHOULD BE PLACED ALONG THE OUTSIDE EDGE OF THE DRIPLINE OF THE TREE OR GROVE OF TREES.
   B. THE FENCING SHALL BE MAINTAINED THROUGHOUT THE SITE CONSTRUCTION PERIOD AND SHALL BE INSPECTED PERIODICALLY FOR DAMAGE AND PROPER FUNCTION.
   C. FENCING SHALL BE REPAIRED, AS NECESSARY, TO PROVIDE A PHYSICAL BARRIER FROM CONSTRUCTION ACTIVITIES.
   D. SIGNAGE STATING, "WARNING- THIS FENCING SHALL NOT BE REMOVED WITHOUT PERMISSION FROM THE SANTA CLARA COUNTY PLANNING OFFICE (408) 299-5770. COUNTY OF SANTA CLARA TREE PROTECTION MEASURES MAY BE FOUND AT http://www.sccplanning.gov." SHALL BE PLACED ON THE TREE PROTECTIVE FENCING UNTIL FINAL OCCUPANCY.
2. PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITY, TREE PROTECTIVE FENCING SHALL BE SECURELY IN PLACED AND INSPECTED BY THE LAND DEVELOPMENT ENGINEERING INSPECTOR.
3. SEE EXISTING TREE PROTECTION DETAILS FOR MORE INFORMATION.

ACCESS ROADS AND DRIVEWAYS

1. DRIVEWAY LOCATIONS SHALL BE AS SHOWN ON THE IMPROVEMENT PLANS WITH CENTERLINE STATIONING. THE MINIMUM CONCRETE THICKNESS SHALL BE 6 INCHES THROUGHOUT (WITH A MAXIMUM APPROACH SLOPE OF 1 1/4 INCHES PER FOOT).
2. ALL DRIVEWAY OR COMMON ACCESS ROAD SECTIONS IN EXCESS OF 15 LONGITUDINAL SLOPE MUST BE PAVED WITH A MINIMUM 2-INCH ASPHALT LIFT OR FULL DEPTH CONCRETE LIFT PRIOR TO ANY COMBUSTIBLE FRAMING.
3. THE OWNER AND PRIME CONTRACTOR ARE RESPONSIBLE FOR MAINTAINING PROJECT SITE ACCESS AND NEIGHBORHOOD ACCESS FOR EMERGENCY VEHICLES AND LOCAL RESIDENTS.
4. ROADWAYS DESIGNATED AS NOT COUNTY MAINTAINED ROADS AS SHOWN ON THE PLAN WILL NOT BE ELIGIBLE FOR COUNTY MAINTENANCE UNTIL THE ROADWAYS ARE IMPROVED (AT NO COST TO THE COUNTY) TO THE PUBLIC MAINTENANCE ROAD STANDARDS APPROVED BY THE BOARD OF SUPERVISORS AND IN EFFECT AT SUCH TIME THAT THE ROADWAYS ARE CONSIDERED FOR ACCEPTANCE INTO THE COUNTY'S ROAD SYSTEM.
5. ALL WORK IN THE COUNTY ROAD RIGHT-OF-WAY REQUIRES AN ENCROACHMENT PERMIT FROM THE ROADS AND AIRPORTS DEPARTMENT. EACH INDIVIDUAL ACTIVITY REQUIRES A SEPARATE PERMIT - I.E. CABLE, ELECTRICAL, GAS, SEWER, WATER, RETAINING WALLS, DRIVEWAY APPROACHES, FENCES, LANDSCAPING, TREE REMOVAL, STORM DRAINAGE IMPROVEMENTS, ETC..

STREET LIGHTING

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

SANITARY SEWER

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

PORTLAND CEMENT CONCRETE

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

AIR QUALITY, LANDSCAPING AND EROSION CONTROL

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

STORM DRAINAGE AND STORMWATER MANAGEMENT

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

AS-BUILT PLANS STATEMENT

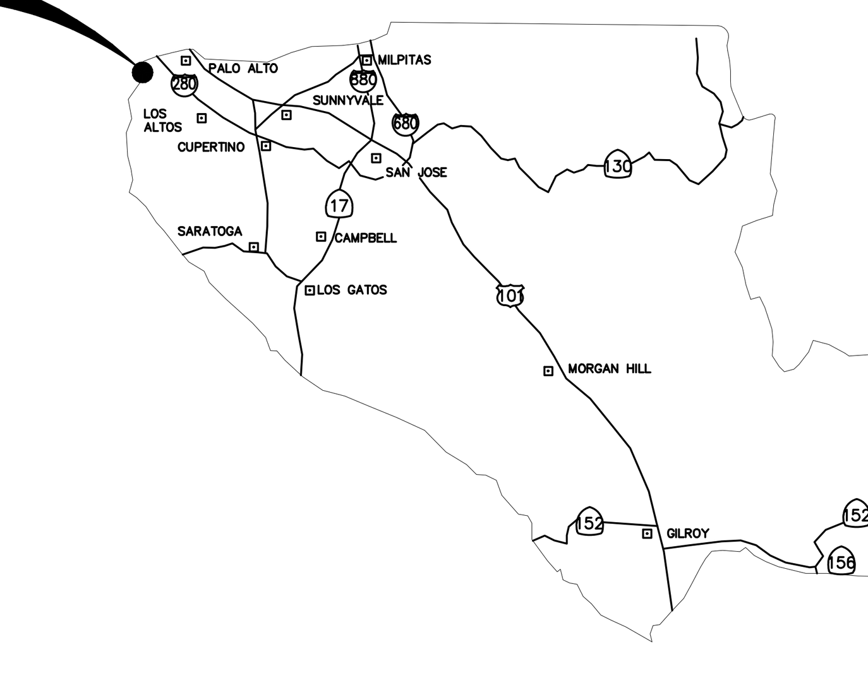
THIS IS A TRUE COPY OF THE AS-BUILT PLANS. THERE (___ WERE) (___ WERE NOT) MINOR FIELD CHANGES - MARKED WITH THE SYMBOL (^). THERE (___WERE) (___ WERE NOT) PLAN REVISIONS INDICATING SIGNIFICANT CHANGES REVIEWED BY THE COUNTY ENGINEER AND MARKED WITH THE SYMBOL △.

DATE ____________ SIGNATURE ____________

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

GEOTECHNICAL ENGINEER OBSERVATION

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



COUNTY LOCATION MAP

SURVEY MONUMENT PRESERVATION

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

GEOTECHNICAL ENGINEER

THESE PLANS HAVE BEEN REVIEWED BY BAGG ENGINEERS AND APPEAR TO BE IN GENERAL CONFORMITY WITH THE RECOMMENDATIONS IN THE "REVISED REPORT; GEOTECHNICAL ENGINEERING INVESTIGATION; PROPOSED CUPAL RESIDENCE; 3343 ALPINE ROAD, PORTOLA VALLEY, CA; APN: 142-15-008" PREPARED BY BAGG ENGINEERS, PROJECT NUMBER CUPCAL-18-01, DATED OCTOBER 10, 2018, THE "PLAN REVIEW; GEOTECHNICAL ENGINEERING CONSULTATION; STITCH PIER WALL" LETTER DATED SEPTEMBER 26, 2019, AND ANY ADDITIONAL SUPPLEMENTAL REPORTS. WE MAKE NO REPRESENTATION AS TO ACCURACY OF DIMENSIONS. MEASUREMENTS, CALCULATIONS, OR ANY PORTION OF THE DESIGN.

BY: ____________ DATE ____________

COUNTY OF SANTA CLARA DEPT. OF ROADS AND AIRPORTS
ISSUED BY: ____________ DATE: ____________
ENCROACHMENT PERMIT NO. ____________

NO WORK SHALL BE DONE IN THE COUNTY'S RIGHT-OF-WAY WITHUOT AN ENCROACHEMENT PERMIT, INCLUDING THE STAGING OF CONSTRUCTION MATERIAL AND THE PLACEMENT OF PORTABLE TOILETS.

ENGINEER'S STATEMENT

I HEREBY STATE THAT THESE PLANS ARE IN COMPLIANCE WITH ADOPTED COUNTY STANDARDS, THE APPROVED TENTATIVE MAP (OR PLAN) AND CONDITIONS OF APPROVAL PERTAINING THERETO DATED FILE(S) NO. ____________

DATE 9/4/2020 ____________ SIGNATURE

60301
R.C.E. NO.

6/30/2022
EXPIRATION DATE

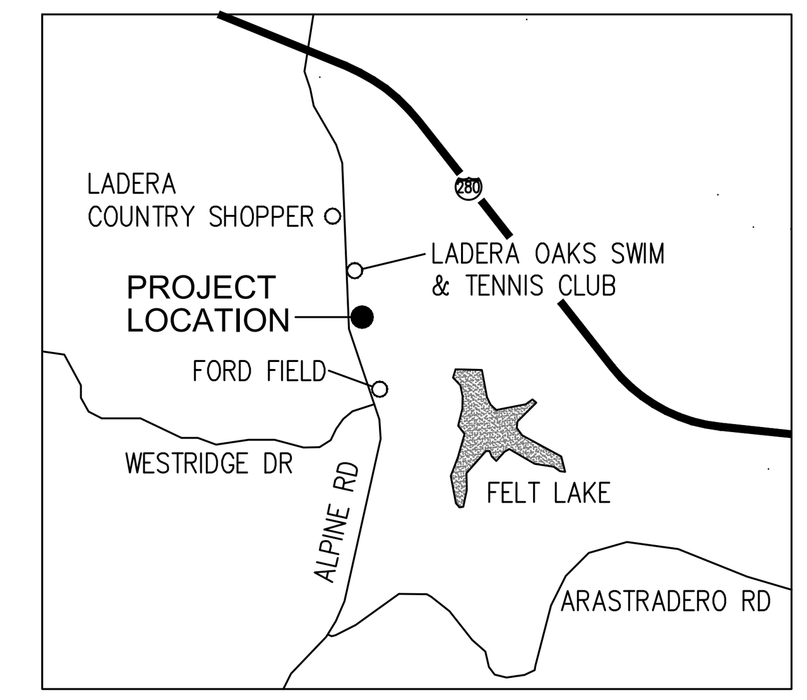
REGISTERED PROFESSIONAL ENGINEER
CRAIG G. OVERBO
RCE 60301
CIVIL
STATE OF CALIFORNIA

COUNTY ENGINEER'S NOTE

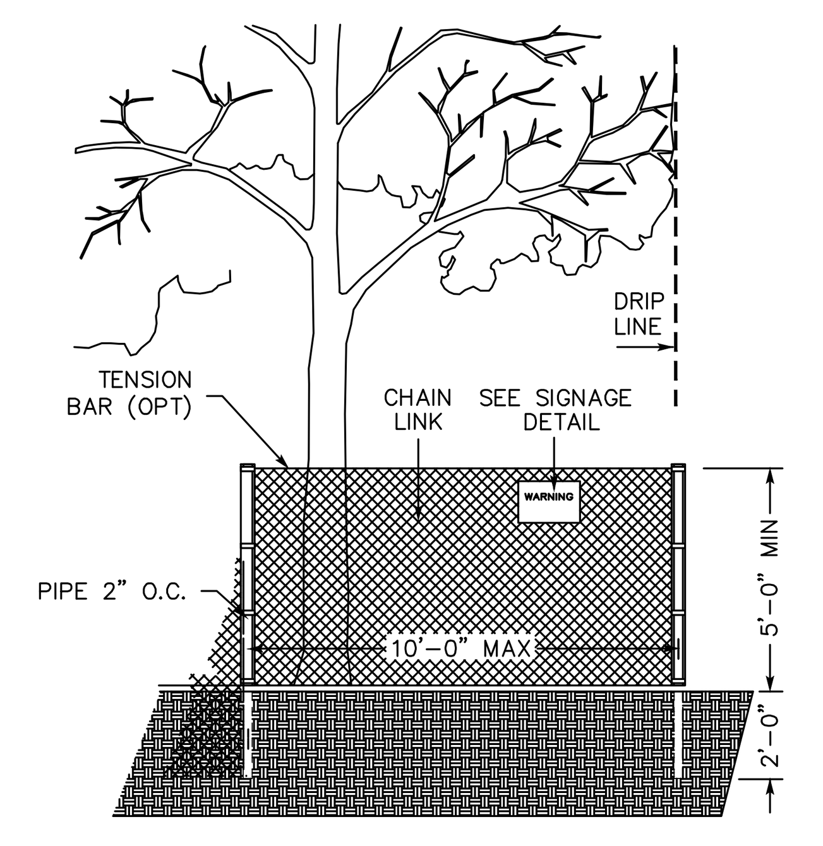
ISSUANCE OF A PERMIT AUTHORIZING CONSTRUCTION DOES NOT RELEASE THE DEVELOPER, PERMITTEE OF ENGINEER FROM RESPONSIBILITY FOR THE CORRECTION OF ERRORS OR OMISSIONS CONTAINED IN THE PLANS. IF, DURING THE COURSE OF CONSTRUCTION, THE PUBLIC INTEREST REQUIRES A MODIFICATION OF (OR DEPARTURE FROM) THE SPECIFICATIONS OF THE PLANS, THE COUNTY SHALL HAVE THE AUTHORITY TO REQUIRE THE SUSPENSION OF WORK, AND THE NECESSARY MODIFICATION OR DEPARTURE AND TO SPECIFY THE MANNER IN WHICH THE SAME IS TO BE MADE.

DATE ____________ ____________

R.C.E. NO. ____________ EXPIRATION DATE ____________



VICINITY MAP



EXISTING TREE PROTECTION DETAILS

1. PRIOR TO THE COMMENCEMENT OF ANY GRADING, TREE PROTECTIVE FENCING SHALL BE IN PLACE IN ACCORDANCE WITH THE TREE PRESERVATION PLAN AND INSPECTED BY A CERTIFIED ARBORIST. THE ARBORIST SHALL MONITOR CONSTRUCTION ACTIVITY TO ENSURE THAT THE TREE PROTECTION MEASURES ARE IMPLEMENTED AND ADHERED TO DURING CONSTRUCTION. THIS CONDITION SHALL BE INCORPORATED INTO THE GRADING PLANS.
2. FENCE SHALL BE MINIMUM 5 FEET TALL CONSTRUCTED OF STURDY MATERIAL (CHAIN-LINK OR EQUIVALENT STRENGTH/ DURABILITY).
3. FENCE SHALL BE SUPPORTED BY VERTICAL POSTS DRIVEN 2 FEET (MIN) INTO THE GROUND AND SPACED NOT MORE THAN 10 FEET APART.
4. TREE FENCING SHALL BE MAINTAINED THROUGHOUT THE SITE DURING THE CONSTRUCTION PERIOD, INSPECTED PERIODICALLY FOR DAMAGE AND PROPER FUNCTION, REPAIRED AS NECESSARY TO PROVIDE A PHYSICAL BARRIER FROM CONSTRUCTION ACTIVITIES, AND REMAIN IN PLACE UNTIL THE FINAL INSPECTION.
5. A SIGN THAT INCLUDES THE WORDS, "WARNING: THIS FENCE SHALL NOT BE REMOVED WITHOUT THE EXPRESSED PERMISSION OF THE SANTA CLARA COUNTY PLANNING OFFICE," SHALL BE SECURELY ATTACHED TO THE FENCE IN A VISUALLY PROMINENT LOCATION.

COUNTY OF SANTA CLARA
LAND DEVELOPMENT ENGINEERING & SURVEYING
GRADING / DRAINAGE PERMIT NO. ____________
ISSUED BY: ____________ DATE: ____________

CUPAL RESIDENCE

SCOPE OF WORK

1. THE DEVELOPER IS RESPONSIBLE FOR THE INSTALLATION OF THE WORK PROPOSED ON THE EROSION CONTROL PLAN. THE ENGINEER OF RECORD IS RESPONSIBLE FOR THE DESIGN OF THE EROSION CONTROL PLANS AND ANY MODIFICATIONS OF THE EROSION CONTROL PLANS TO PREVENT ILLICIT DISCHARGES FROM THE SITE DURING CONSTRUCTION.
2. CONSTRUCTION OF NEW RESIDENCE
3. GRAVEL PARKING AREA
4. STORMWATER FACILITIES AND DETENTION
5. UNDERGROUND UTILITIES TO ALPINE ROAD

SEE SHEET C0.2 FOR ADDITIONAL NOTES, ABBREVIATIONS, AND LEGEND

SHEET INDEX

ENGINEER'S NAME: CRAIG OVERBO
BOHLEY CONSULTING
ADDRESS: 3150 ALMADEN EXPRESSWAY, SUITE 123
SAN JOSE, CA 95118
PHONE NO. (408) 265-1600

GENERAL NOTES

C0.1

Revision 1	Date	APN 142-15-008	Sheet 1 of 15
Revision 2	Date	Co. File	
Revision 3	Date		

APPLICANT: ROAD: COUNTY FILE NO.:

ABBREVIATIONS

ABBREVIATION	DESCRIPTION
AB	AGGREGATE BASE
AC	ASPHALT CONCRETE
AD	AREA DRAIN
APPROX	APPROXIMATE
ARV	AIR RELEASE VALVE
ASB	AGGREGATE SUB-BASE
BC	BEGINNING OF CURVE
BCR	BEGIN CURB RETURN
BF	BLIND FLANGE
BFP	BACKFLOW PREVENTER
BL	BASELINE
BLDG	BUILDING
BM	BENCHMARK
BO	BLOWOFF
BOV	BLOWOFF VALVE
BVC	BEGIN VERTICAL CURVE
BW	BACK OF WALK
CB	CATCH BASIN
C&G	CURB & GUTTER
CI	CURB INLET
CL	CENTERLINE
CMP	CORRUGATED METAL PIPE
CO	CLEANOUT
CONC	CONCRETE
COTG	CLEANOUT TO GRADE
CR	CURB RETURN
DI	DROP INLET; DUCTILE IRON
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DS	DOWNSPOUT
DWG	DRAWING
E	ELECTRIC
(E)	EXISTING, EAST
EC	END OF CURVE
ECR	END OF CURB RETURN
EG	EXISTING GRADE
EG30.25	EXISTING GRADE ELEVATION
EL., ELEV	ELEVATION
ELEC	ELECTRIC
EP	EDGE OF PAVEMENT
EVA	EMERGENCY VEHICLE ACCESS
EX/EXIST.	EXISTING
(F)	FUTURE
FC, F/C	FACE OF CURB
FA	FIRE ALARM
FF	FINISHED FLOOR
FF 30.85	FINISHED FLOOR ELEVATION
FG	FINISHED GRADE
FG30.35	FINISHED GRADE ELEVATION
FH	FIRE HYDRANT
FL	FLOW LINE
FL35.50	FLOWLINE ELEVATION
FT	FEET
G	GROUND; GAS
G27.35	GROUND ELEVATION
GB	GRADE BREAK
GR	GRATE
GR31.25	GRATE ELEVATION
GV	GATE VALVE, GAS VALVE
HB	HOSE BIB
HDPE	HIGH-DENSITY POLYETHYLENE
HGL	HYDRAULIC GRADE LINE
HOR.	HORIZONTAL
HP	HIGH POINT
H&T	HUB & TACK
HV	HIGH VOLTAGE
INV	INVERT
IE	INVERT ELEVATION
IRR	IRRIGATION
JT	JOINT TRENCH
LAT	LATERAL
L	LENGTH
LF	LINEAR FEET
LG	LIP OF GUTTER
LG30.75	LIP OF GUTTER ELEVATION
LOW	LIMIT OF WORK
LP	LOW POINT
LT	LEFT
MAX	MAXIMUM
MH	MANHOLE
MID	MIDDLE
MIN	MINIMUM

ABBREVIATION	DESCRIPTION
M-M	MONUMENT TO MONUMENT
(N)	NORTH; NEW
"NO., #"	NUMBER
NTS	NOT TO SCALE
O.C.E.W.	ON CENTER EACH WAY
P	PAVEMENT
P28.65	PAVEMENT ELEVATION
PVMT	PAVEMENT
PCC	POINT OF COMPOUND CURVE or PORTLAND CEMENT CONCRETE
PERF	PERFORATED PIPE
PG&E	PACIFIC GAS AND ELECTRIC CO.
PL, P/L	PROPERTY LINE
PRC	POINT OF REVERSE CURVE
P.S.E.	PUBLIC SERVICES EASEMENT
PT	POINT
PUE	PUBLIC UTILITY EASEMENT
PVC	POLYVINYL CHLORIDE
PVI	POINT OF VERTICAL INTERSECTION
R29.65	RAMP ELEVATION
R	RADIUS
RCP	REINFORCED CONCRETE PIPE
RE	RIM ELEVATION
RET	CURB RETURN
RET. WALL	RETAINING WALL
RT	RIGHT
RW	RECLAIMED WATER
R/W	RIGHT OF WAY
S	SLOPE
(S)	SOUTH
SD	STORM DRAIN
SDCB	STORM DRAIN CATCH BASIN
SDCO	STORM DRAIN CLEANOUT
SDMH	STORM DRAIN MANHOLE
SDWK	SIDEWALK
SG	SUBGRADE
SG30.25	SUBGRADE ELEVATION
SHT.	SHEET
S.L.P.	SEE LANDSCAPE PLANS
SS	SANITARY SEWER
SSCO	SANITARY SEWER CLEANOUT
SSD	SEE STRUCTURAL DRAWINGS
SSMH	SANITARY SEWER MANHOLE
ST	SYNTHETIC TURF; STREET
ST22.35	TOP OF SYNTHETIC TURF ELEVATION
STA	STATION
STD	STANDARD
(A)	TOTAL
TB	TOP OF BULKHEAD, TOP OF BERM/DIKE
TB29.04	TOP OF BULKHEAD ELEVATION
TC	TOP OF CURB
TC28.95	TOP OF CURB ELEVATION
TD30.23	TOP OF DIKE ELEVATION
TEMP	TEMPORARY
TG	TOP OF GRATE
TP	TOP OF PAVEMENT
TP32.45	TOP OF PAVEMENT ELEVATION
TRW	TOP OF RETAINING WALL
TW	TOP OF WALL
TW36.37	TOP OF WALL ELEVATION
TYP.	TYPICAL
UD, U/D	UNDERDRAIN
U.O.N.	UNLESS OTHERWISE NOTED
VERT.	VERTICAL
VCP	VITRIFIED CLAY PIPE
VIF	VERIFY IN FIELD
W	WATER
(W)	WEST
W/	WITH
WM	WATER METER
WSP	WELDED STEEL PIPE
WV	WATER VALVE
1/2 PT	HALF POINT OF CURB RETURN AT F/C

LEGEND

- BOUNDARY LINE
- EASEMENT AS NOTED
- CENTERLINE
- TOP OF BANK PER STILLWATER SCIENCES REPORT DATED 2/19/2019
- 102 CONTOUR LINE
- W W WATER LINE
- W W W PROPOSED CAL WATER LINE (BY OTHERS)
- SS SS SANITARY SEWER LINE
- STORM DRAIN LINE
- COMM COMM COMMUNICATIONS LINE
- GAS GAS GAS LINE
- E E ELECTRIC LINE
- JT JT JOINT TRENCH LINE
- IRR IRR IRRIGATION LINE
- FENCE
- DAYLIGHT LINE
- FEMA FLOOD ZONE BOUNDARY
- SWALE

WB-6 WEST BAY SANITARY DISTRICT STANDARD DETAIL NUMBER. SEE C1.3

WATER VALVE (1/C1.2)

SD CATCH BASIN OR INLET (1/C1.1)

UTILITY VAULT AS NOTED

EXISTING MANHOLE

FIRE HYDRANT

DIRECTION OF FLOW

UTILITY POLE

I. GENERAL NOTES

1. ALL REVISIONS TO THESE PLANS MUST BE REVIEWED AND APPROVED IN WRITING BY THE DESIGN ENGINEER AND THE COUNTY PRIOR TO CONSTRUCTION OF AFFECTED ITEMS. ALL REVISIONS SHALL BE ACCURATELY SHOWN ON REVISED PLANS AND SIGNED BY THE COUNTY.
2. THE CONTRACTOR SHALL RESTORE ALL WALLS, FENCES, SERVICES, UTILITIES, IMPROVEMENTS OR FEATURES OF WHATEVER NATURE WHICH ARE DAMAGED, DUE TO THE CONTRACTOR'S WORK, TO THEIR PREVIOUS CONDITION.
3. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH THE INSTALLATION OF PG&E, AT&T, AND CABLE TV FACILITIES.
4. NOTIFY UNDERGROUND SERVICE ALERT (NOW 811) AT LEAST THREE (3) WORKING DAYS PRIOR TO ANY EXCAVATION. THE USA AUTHORIZATION NUMBER SHALL BE KEPT AT THE JOB SITE.
5. ALL NEW UTILITY DISTRIBUTION SERVICES SHALL BE PLACED UNDERGROUND.
6. IF CONSTRUCTION OPERATIONS IMPACT ANY PUBLIC STREET INCLUDING SIDEWALKS, THE CONTRACTOR SHALL PREPARE A TRAFFIC AND SAFETY CONTROL PLAN AND OBTAIN APPROVAL FROM THE CITY TRAFFIC ENGINEER AT LEAST 10 DAYS BEFORE COMMENCING WORK. THE CONTRACTOR SHALL PROVIDE FLAGMEN, CONES, OR BARRICADES, AS NECESSARY, TO CONTROL TRAFFIC AND PREVENT HAZARDOUS CONDITIONS PER THE WORK AREA TRAFFIC CONTROL HANDBOOK.
7. EXISTING PEDESTRIAN WALKWAYS, BIKE PATHS, AND HANDICAP ACCESS PATHWAYS SHALL BE MAINTAINED DURING CONSTRUCTION TO THE SATISFACTION OF THE COUNTY.
8. TRENCHES SHALL NOT BE LEFT OPEN OVERNIGHT IN PUBLIC AREAS. CONTRACTOR SHALL BACKFILL TRENCHES, OR PLACE STEEL PLATING AND/OR HOT-MIX ASPHALT AS REQUIRED TO PROTECT OPEN TRENCHES AT THE END OF EVERY WORK DAY.
9. EXCAVATIONS SHALL BE ADEQUATELY SHORED IN CONFORMANCE WITH OSHA, CITY AND COUNTY REQUIREMENTS, AND THE GEOTECHNICAL REPORT SO THAT ALL EXISTING IMPROVEMENTS OF ANY KIND WILL BE FULLY PROTECTED FROM DAMAGE. ANY DAMAGE RESULTING FROM SHORING, BRACING, AND SHEATHING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND HE SHALL COMPLETE NECESSARY REPAIRS OR RECONSTRUCTION AT HIS OWN EXPENSE. WHERE THE EXCAVATION FOR A CONDUIT TRENCH, AND/OR STRUCTURE IS FIVE (5) FEET OR MORE IN DEPTH, THE CONTRACTOR SHALL PROVIDE SHEATHING, SHORING AND BRACING IN CONFORMANCE WITH THE APPLICABLE CONSTRUCTION SAFETY ORDERS OF THE DIVISION OF INDUSTRIAL SAFETY OF THE STATE OF CALIFORNIA. THE CONTRACTOR SHALL COMPLY WITH OSHA REQUIREMENTS AT ALL TIMES.
10. PRIOR TO PLACING CURB, SIDEWALK, ASPHALT CONCRETE, SUBBASE OR BASE MATERIAL, ALL UNDERGROUND FACILITIES WITHIN THE RIGHT-OF-WAY SHALL BE INSTALLED, BACKFILL COMPLETED, AND THE PUBLIC WORKS DEPARTMENT'S CONSTRUCTION DIVISION NOTIFIED BY EACH OF THE UTILITY COMPANIES HAVING FACILITIES WITHIN THE WORK AREA THAT THE UTILITY INSTALLATION HAS SATISFACTORILY PASSED ACCEPTANCE TESTS.
11. THE CONTRACTOR SHALL POST 24 HR EMERGENCY TELEPHONE NUMBERS FOR POLICE, FIRE, AMBULANCE, AND THOSE AGENCIES RESPONSIBLE FOR MAINTENANCE OF UTILITIES IN THE VICINITY OF THE JOB SITE.
12. THE CONTRACTOR IS RESPONSIBLE FOR CONFORMING TO EXISTING STREETS, SURROUNDING LANDSCAPE AND OTHER IMPROVEMENTS WITH A SMOOTH TRANSITION IN PAVING, CURBS, GUTTERS, SIDEWALKS, GRADING (3:1 SLOPE MAXIMUM), ETC. AND TO AVOID ANY ABRUPT OR APPARENT CHANGES IN GRADES OR CROSS SLOPES, LOW SPOTS OR HAZARDOUS CONDITIONS.
13. SHOULD IT APPEAR THAT THE WORK TO BE DONE, OR ANY MATTER RELATIVE THERETO, IS NOT SUFFICIENTLY DETAILED OR EXPLAINED ON THESE PLANS, THE CONTRACTOR SHALL CONTACT THE OWNER'S REPRESENTATIVE FOR SUCH FURTHER EXPLANATIONS AS MAY BE NECESSARY.
14. ORDER OF WORK FOR STREET & PARKING LOT IMPROVEMENTS:
    A. ROUGH GRADING
    B. STORM DRAIN & DRAINAGE STRUCTURES
    C. OTHER UTILITY INSTALLATION
    D. CURB & SIDEWALK
    E. PAVEMENT CONSTRUCTION
    F. REMOVE CONFLICTING STRIPING, PAVEMENT MARKER AND
    G. COMPLETE FINAL STRIPING, PAVEMENT MARKERS AND SIGN INSTALLATION
15. THE CONTRACTOR SHALL DESIGN, CONSTRUCT AND MAINTAIN ALL SAFETY DEVICES, INCLUDING SHORING, AND SHALL BE RESPONSIBLE FOR CONFORMANCE TO ALL LOCAL, STATE, AND FEDERAL SAFETY AND HEALTH STANDARDS, LAWS AND REGULATIONS.
16. THE CONTRACTOR IS REQUIRED BY STATE LAW TO ACTIVELY RESEARCH THE WORK AREA PRIOR TO CONSTRUCTION, AND TO REFERENCE MONUMENTS AND REPLACE THOSE DAMAGED OR REMOVED DURING CONSTRUCTION.
17. GATHER ALL CONSTRUCTION DEBRIS ON A DAILY BASIS AND PLACE IT IN A COVERED DUMPSTER OR OTHER CONTAINER WHICH IS EMPTIED OR REMOVED ON A WEEKLY BASIS. A SECONDARY CONTAINMENT BERM SHALL BE CONSTRUCTED AROUND THE DUMPSTER. WHEN APPROPRIATE, INSTALL TARPS ON THE GROUND TO COLLECT FALLEN DEBRIS OR SPLATTERS THAT COULD CONTRIBUTE TO STORM WATER POLLUTION.
18. REMOVE ALL DEBRIS FROM THE SIDEWALK, STREET, PAVEMENT, AND STORM DRAIN SYSTEM ADJOINING THE PROJECT SITE DAILY OR AS REQUIRED BY THE COUNTY INSPECTOR. DURING WET WEATHER, AVOID DRIVING VEHICLES OFF PAVED AREAS.
19. CREATE A CONTAINED AND COVERED AREA ON THE SITE FOR THE STORAGE OF BAGS OF CEMENT, PAINTS, FLAMMABLE ITEMS, OILS, FERTILIZERS, PESTICIDES OR ANY OTHER MATERIAL USED ON THE PROJECT SITE THAT HAS THE POTENTIAL FOR BEING DISCHARGED TO THE STORM DRAIN SYSTEM.
20. NEVER CLEAN MACHINERY, TOOLS, BRUSHES, ETC. OR RINSE CONTAINERS INTO A STREET, GUTTER, STORM DRAIN OR STREAM.
21. CONCRETE/GUNITE SUPPLY TRUCKS OR CONCRETE/PLASTERS OR SIMILAR FINISHING OPERATIONS SHALL NOT DISCHARGE WASH WATER INTO STREET GUTTERS OR DRAINS OR ON-SITE STORM DRAINAGE SYSTEMS.
22. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTROLLING ANY RODENT, MOSQUITO, OR OTHER PEST PROBLEM DUE TO CONSTRUCTION ACTIVITIES.
23. DURING CONSTRUCTION, NOISE CONTROL AND CONSTRUCTION TRAFFIC MITIGATION MEASURES WITHIN RESIDENTIAL NEIGHBORHOODS OR ON PUBLIC STREETS SHALL BE TAKEN TO REDUCE NOISE & USE OF PUBLIC STREETS BY CONSTRUCTION TRAFFIC AS DIRECTED BY THE CITY.
24. FLAG PERSONS SHALL BE REQUIRED FOR ANY AND ALL CLOSURES OF TRAFFIC LANES. PRIOR TO ANY LANE OR ROAD CLOSURE, 24-HOUR WRITTEN NOTICE AND APPROVAL FROM THE POLICE DEPARTMENT MUST BE OBTAINED. CONTACT PD TRAFFIC UNIT OR WATCH COMMANDER FOR APPROVALS. ANY LANE OR ROAD CLOSURE MUST BE CONDUCTED DURING NON-COMMUTE HOURS (9:00 AM TO 3:00 PM)
25. ALL ASBESTOS CEMENT PIPING ENCOUNTERED SHALL BE BROUGHT TO THE ATTENTION OF THE CONSTRUCTION MANAGER FOR DIRECTION AS TO PROPER DISPOSAL.
26. THE CONTRACTOR SHALL PROVIDE TO THE OWNER'S REPRESENTATIVE VIDEOS AND/OR PHOTOGRAPHS OF THE EXISTING CONDITIONS, PARTICULARLY EDGE CONDITIONS, OF THE PROJECT SITE PRIOR TO ANY WORK BEING PERFORMED IN ORDER TO DOCUMENT ANY POTENTIAL CLAIMS THAT MAY ARISE DURING OR AT THE END OF CONSTRUCTION. UNDOCUMENTED CONDITIONS REQUIRING REPAIR SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CORRECT AT NO ADDITIONAL COST TO THE CONTRACT.
27. NO DEBRIS BOXES OR BUILDING MATERIALS SHALL BE STORED ON THE STREET.

II. LAYOUT NOTES

1. ALL CURB RETURN RADII AND CURB DATA ARE TO TOP OF CURB UNLESS OTHERWISE NOTED.
2. ALL IMPROVEMENTS ARE TO BE STAKED BY A REGISTERED LAND SURVEYOR. COORDINATES ARE TO BE DETERMINED BY THE LAND SURVEYOR USING A DIGITAL COPY OF THE PLANS WHICH SHALL BE PROVIDED TO HIM/HER.

III. EXISTING CONDITIONS

1. SITE BOUNDARY AND TOPOGRAPHIC SURVEY PROVIDED BY LEA & BRAZE ENGINEERING, INC., DATED OCTOBER 3, 2017. SUPPLEMENTAL TOPO (EDGE OF PAVEMENT, LANE STRIPING, USA UTILITY MARKINGS) ALONG ALPINE ROAD BY BOHLEY CONSULTING IN NOVEMBER 2017 AND JULY 2018.
2. INFORMATION REGARDING EXISTING SUBSURFACE IMPROVEMENTS AND UTILITIES SHOWN ON THESE PLANS WAS TAKEN FROM THE TOPOGRAPHIC SURVEY AND IS NOT MEANT TO BE A FULL CATALOG OF EXISTING CONDITIONS. CONTRACTOR SHALL CONDUCT FIELD INVESTIGATIONS AS REQUIRED TO VERIFY THE LOCATION AND ELEVATION OF ALL EXISTING SUBSURFACE IMPROVEMENTS AND UTILITIES (WHETHER SHOWN ON THESE PLANS OR NOT) PRIOR TO THE COMMENCEMENT OF WORK. CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY UPON DISCOVERY OF ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS IN THE FIELD AND INFORMATION SHOWN ON THESE PLANS.
3. ELEVATIONS AND LOCATIONS OF ALL EXISTING UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO START OF ANY CONSTRUCTION.

IV. GRADING

1. NO WORK SHALL BE PERFORMED ON SATURDAYS, SUNDAYS, OR HOLIDAYS, OR OUTSIDE THE HOURS OF 7:30 A.M. TO 6:00 P.M., WITHOUT THE SPECIFIC AUTHORIZATION OF THE CITY ENGINEER. ALL GASOLINE POWERED CONSTRUCTION EQUIPMENT SHALL BE EQUIPPED WITH AN OPERATING MUFFLER OR BAFFLING SYSTEM AS ORIGINALLY PROVIDED BY THE MANUFACTURER, AND NO MODIFICATION TO THESE SYSTEMS IS PERMITTED.
2. THE APPLICANT SHALL POST HOURS OF OPERATION AND PHONE NUMBERS FOR NOISE COMPLAINTS. SAID NOTICE SHALL BE VISIBLE FROM ALPINE ROAD.
3. THE GEOTECHNICAL ENGINEER SHALL BE NOTIFIED AT LEAST TWO (2) WORKING DAYS PRIOR TO COMMENCEMENT OF GRADING OPERATIONS.
4. THE GEOTECHNICAL ENGINEER SHALL BE PRESENT AT THE SITE DURING GRADING OPERATIONS AND SHALL PERFORM ALL TESTING DEEMED NECESSARY. THE GEOTECHNICAL ENGINEER SHALL OBSERVE ALL GRADING OPERATIONS AND IDENTIFY THOSE WITH DEFICIENT CONDITIONS WITH RECOMMENDED CORRECTIVE MEASURES TO THE CONTRACTOR AND THE OWNER'S REPRESENTATIVE.
5. ALL GRADING SHALL BE INSPECTED AND TESTED BY A QUALIFIED GEOTECHNICAL ENGINEER OR UNDER THEIR DIRECTION. THE GEOTECHNICAL ENGINEER SHALL INSPECT AND TEST THE EXCAVATION, PLACEMENT OF FILLS, BACKFILLING AND COMPACTION OF TRENCHES. THE GEOTECHNICAL ENGINEER SHALL SUBMIT SOILS REPORTS AS REQUIRED AND WILL DETERMINE THE SUITABILITY OF ANY FILL MATERIAL. UPON COMPLETION OF GRADING OPERATIONS THE GEOTECHNICAL ENGINEER SHALL STATE IN A REPORT TO THE DISTRICT THAT THE INSPECTIONS AND TESTS WERE MADE BY HIM/HER OR UNDER HIS/HER SUPERVISION AND THAT IN HIS/HER OPINION ALL EMBANKMENTS AND EXCAVATIONS WERE CONSTRUCTED IN ACCORDANCE WITH THE APPROVED GRADING PLANS AND APPROVED REVISIONS THERETO AND ALL EMBANKMENTS AND EXCAVATIONS ARE ACCEPTABLE FOR THEIR INTENDED USE.
6. ALL FILL SLOPES SHALL BE OVER BUILT LATERALLY AND EXCAVATED BACK TO DESIGN INCLINATION, PER GEOTECHNICAL RECOMMENDATIONS.
7. SUBGRADE SOIL IN PAVEMENT AREAS, SLABS ON GRADE, AND FOUNDATION FOOTING AREAS SHALL BE SCARIFIED, MOISTURE CONDITIONED, AND COMPACTED PER THE SOILS REPORT.
8. NO LIME TREATMENT OF SOIL SHALL OCCUR WITHIN LANDSCAPED AREAS.
9. PERFORM WATER TESTS TO ENSURE POSITIVE DRAINAGE IN FLATTER AREAS.

V. UTILITIES

1. A MINIMUM OF TWELVE (12) INCHES VERTICAL CLEARANCE SHALL BE PROVIDED BETWEEN CROSSING UTILITY PIPES UNLESS OTHERWISE NOTED OR SHOWN ON THE PLANS. WHEN LESS THAN 12", PLACE A STYROFOAM BLOCK BETWEEN THE UTILITIES.
2. ALL ELECTRIC, GAS, TELEPHONE, CABLE, AND JOINT TRENCH WORK, INCLUDING PADS AND SUBSTRUCTURES, SHALL CONFORM TO AND BE COMPLETED IN ACCORDANCE WITH THE REQUIREMENTS OF THE RESPECTIVE UTILITY COMPANY. CONTRACTOR SHALL NOTIFY THE AFFECTED UTILITY COMPANY AT LEAST TWO (2) WORKING DAYS PRIOR TO COMMENCING SUCH WORK.
3. CONTRACTOR SHALL PROTECT ALL UTILITIES FROM DAMAGE DURING COMPACTION OF ROADWAY OR CONCRETE SUBGRADE AND PRIOR TO PLACEMENT OF THE FINAL PAVEMENT SECTION.
4. ALL UTILITY BOXES IN PAVED AREAS SHALL HAVE H-20 LIDS UNLESS OTHERWISE NOTED. CATCH BASINS IN TRAFFIC AREAS SHALL HAVE H-20 FRAMES AND GRATES. CATCH BASINS IN PEDESTRIAN AREAS MAY BE PEDESTRIAN RATED AND SHALL BE ADA COMPLIANT.
5. CONTRACTOR IS CAUTIONED THAT PVC PIPE DERIVES ITS STRENGTH FROM THE COMPACTED BEDDING MATERIAL BELOW AND BESIDE THE PIPE HAUNCHES. CARE SHOULD BE EXERCISED IN THE PLACEMENT AND COMPACTION OF THIS MATERIAL AND THE INSERTION AND REMOVAL OF SHEET PILING ADJACENT TO IT. CONTRACTOR SHALL USE CAUTION WHEN OPERATING EQUIPMENT ON SUBGRADE NEAR PVC PIPE INSTALLATIONS.
6. STORM MANHOLES OR INLETS OVER 5 FT IN DEPTH SHALL BE PROVIDED W/ POLYPROPYLENE STEPS. THE STEPS SHALL BE INTEGRALLY CAST INTO THE WALLS OF THE MANHOLE OR INLET WHETHER PRECAST OR FIELD CAST. THE STEPS SHALL BE INSTALLED IN ACCORDANCE WITH CALTRANS SPECIFICATIONS.
7. ASBESTOS CEMENT PIPE (ACP) SHALL NOT BE USED IN THE CONSTRUCTION OF ANY STORM DRAINAGE, SANITARY SEWER, OR WATER FACILITIES.
8. A CALIFORNIA DIVISION OF OCCUPATIONAL SAFETY AND HEALTH (CAL OSHA) PERMIT SHALL BE OBTAINED FOR TRENCHES FIVE FEET OR GREATER IN DEPTH. A COPY OF THIS PERMIT SHALL BE SUPPLIED TO THE CITY REPRESENTATIVE. AN ADDITIONAL COPY SHALL BE KEPT AT THE JOB SITE AT ALL TIMES.
9. EXISTING PIPE LINES MAY HAVE CATHODIC PROTECTION. IF CONNECTING APPURTENANCES, IT MUST BE ENSURED THAT ALL PIPELINE APPURTENANCES ASSOCIATED WITH CATHODICALLY PROTECTED PIPELINES ARE ELECTRICALLY COMMON WITH PIPELINE.
11. WATER LINES ON SITE THROUGH 4" SHALL HAVE MINIMUM 2' COVER.
12. ALL SANITARY SEWER WORK SHALL BE PER THE DETAILS AND SPECIFICATIONS OF WEST BAY SANITARY DISTRICT.
13. THRUST BLOCKS TO BE PROVIDED AT ALL WATER LINE AND SANITARY SEWER FORCE MAIN BENDS.
14. WHEN SANITARY SEWER SERVICE CROSSES UNDER A WATER LINE WITH LESS THAN 12" CLEAR SEPARATION, THE SANITARY SEWER SERVICE SHALL BE A CONTINUOUS SECTION OF PVC CLASS 200 (DR14 PER AWWA C900) PVC PIPE, CENTERED ON THE PIPE BEING CROSSED.
15. ALL CATCH BASINS SHALL BE LABELED, "NO DUMPING – FLOWS TO BAY" OR SIMILAR, USING APPROVED METHODS SUCH AS THERMOPLASTIC MATERIAL OR A PLAQUE.
16. ADJUST ALL PROPOSED AND EXISTING UTILITY VAULTS, MANHOLES, ETC. TO FINISHED GRADE WITHIN THE WORK AREA.
17. CONSTRUCT GRAVITY UTILITIES (SANITARY SEWER AND STORM DRAINAGE) BEFORE INSTALLING NON-GRAVITY UTILITIES (WATER, ELECTRIC, ETC.).

VI. RECORD DRAWINGS

1. CONTRACTOR SHALL KEEP ACCURATE RECORD DRAWINGS WHICH SHOW THE FINAL LOCATION, ELEVATION, AND DESCRIPTION OF ALL WORK. CONTRACTOR SHALL ALSO NOTE THE LOCATION AND ELEVATION OF ANY EXISTING IMPROVEMENTS ENCOUNTERED. RECORDS SHALL BE "REDLINED" ON A SET OF PRINTED CONSTRUCTION PLANS OR BY PDF MARKUPS.

VII. STATEMENT OF RESPONSIBILITY

1. CONSTRUCTION CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONSTRUCTION CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY. THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. THE CONSTRUCTION CONTRACTOR FURTHER AGREES TO DEFEND, INDEMNIFY AND HOLD DESIGN PROFESSIONALS HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE DESIGN PROFESSIONALS.

VIII. UNAUTHORIZED CHANGES AND USES

1. THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE FOR, OR LIABLE FOR, UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS.

IX. BENCHMARK AND BASIS OF BEARINGS

1. THE BEARING N70°14'00"E BETWEEN FOUND MONUMENTS LOCATED ON WESTRIDGE DRIVE AS SHOWN ON THAT CERTAIN RECORD OF SURVEY FILED IN BOOK 835 OF MAPS AT PAGE 36, SANTA CLARA COUNTY RECORDS.
2. BENCHMARK: A NAIL IN THE EASTERLY SHOULDER OF ALPINE ROAD, APPROXIMATELY THIRTY FEET NORTH OF THE ENTRANCE TO THE SITE. ELEVATION 283.67 (NGVD29).

X. EROSION CONTROL

1. EROSION CONTROL FACILITIES SHALL BE INSTALLED COMPLETE AND MAINTAINED THROUGHOUT THE PERIOD OF CONSTRUCTION ACTIVITY. THE NAME OF THE PERSON RESPONSIBLE FOR THE DAILY MAINTENANCE OF THESE FACILITIES SHALL BE ON RECORD WITH THE CONSTRUCTION MANAGER ALONG WITH A PHONE NUMBER WHERE HE/SHE CAN BE REACHED 24 HOURS A DAY. THESE FACILITIES SHALL CONTROL AND CONTAIN EROSION CAUSED SILT DEPOSITS AND PROVIDE FOR THE SAFE DISCHARGE OF SILT-FREE STORM WATER INTO EXISTING STORM DRAIN FACILITIES. DESIGN OF THESE FACILITIES MUST BE APPROVED AND UPDATED EACH YEAR PRIOR TO SEPTEMBER 30.

NOTE:

1. CONTRACTOR SHALL CALL UNDERGROUND SERVICES ALERT AT 811 PRIOR TO ANY EXCAVATION.
2. CONTRACTOR SHALL POTHOLE EXISTING UTILITIES TO CONFIRM LOCATION AND ELEVATION FOR ALL UTILITIES TO BE PROTECTED IN PLACE OR INTENDED FOR BEING CONNECTED TO.

BOHLEY CONSULTING
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SAN JOSE, CA 95118 (408) 265-1600
WWW.BOHLEYCONSULTING.COM

CUPAL RESIDENCE

3343 ALPINE ROAD
PORTOLA VALLEY, CA

Scale	NONE
Drawing	C-TITLE.DWG
Job No	201718

Date	Description
9/4/20	SUBMITTAL

REGISTERED PROFESSIONAL ENGINEER
CRAIG G. OVERBEEK
RCE 60301
CIVIL
STATE OF CALIFORNIA

GENERAL NOTES

C0.2

BOHLEY CONSULTING
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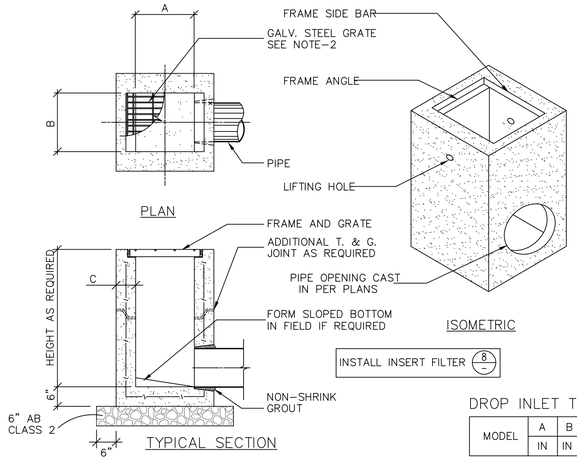


DROP INLET TABLE

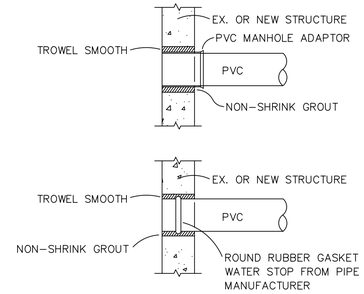
MODEL	A	B	C
	IN	IN	IN
CB1212	12	12	4
CB2424	24	24	5
CB3636	36	36	6

NOTES:

1. FRAME AND GRATE IN DRIVEWAY SHALL BE H20 LOADING AND BICYCLE PROOF. FRAMES AND GRATES IN LANDSCAPING SHALL BE PEDESTRIAN LOADING. OPTIONAL GRATE LOCKING DEVICE AVAILABLE ON REQUEST. SEE DRAWING "LOCK" ON PAGE 1–7. CLOSED–MESH GRATES OR CAST IRON FRAME AND GRATES ARE AVAILABLE ON REQUEST.
2. FOR SURFACE AND DISCHARGE OPTIONS AVAILABLE SEE DRAWING NO. 'DI–SO' PAGE 1–4, 1–6 AND 'DI–DO' PAGE 1–5.
3. FRAMES AND GRATES DETAILS SEE PAGES 1–8, 1–9, AND 1–10. CASTING 1–13, DROP–IN 1–14.
4. WALL THICKNESS ON SOME D.I.'S CAN BE CHANGED UPON REQUEST. CALL TO VERIFY REQUIRED THICKNESS.
5. 18" WIDE D.I.'S REPLACE THE OLD 16" WIDE BOX BK & 1K.
6. FOR PIPE / HOLE SCHEDULE SEE DWG. DI–HS PAGE 1–16.
7. FOR DROP INLET SURFACE OPTIONS SEE DWG. DI–SO PAGE 1–6.
8. SUBMIT CUT SHEETS PER SPECIFICATIONS.

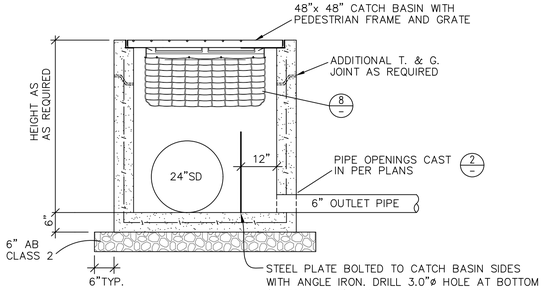
1 OLDCASTLE PRECAST CONCRETE DROP INLETS (SANTA ROSA CATCH BASINS)

N.T.S.



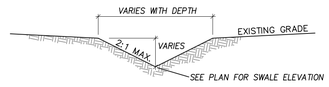
2 PLASTIC PIPE CONNECTION TO DRAINAGE STRUCTURES

N.T.S.



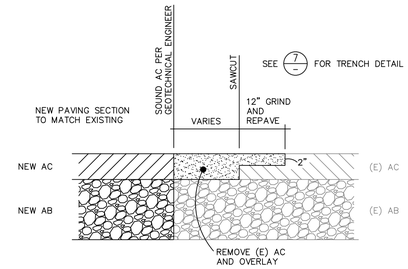
5 METERED RELEASE OUTLET STRUCTURE

N.T.S.



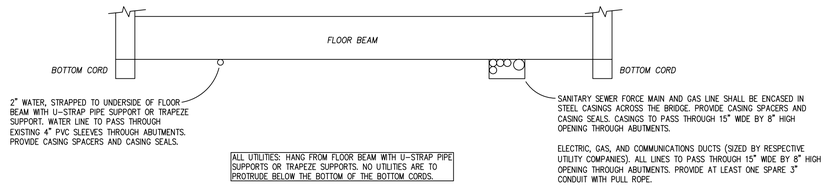
3 SWALE

N.T.S.



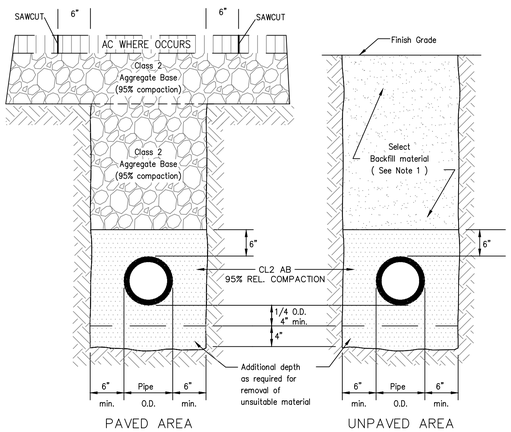
4 SAWCUT AND CONFORM

N.T.S.



6 UTILITIES UNDER BRIDGE

N.T.S.



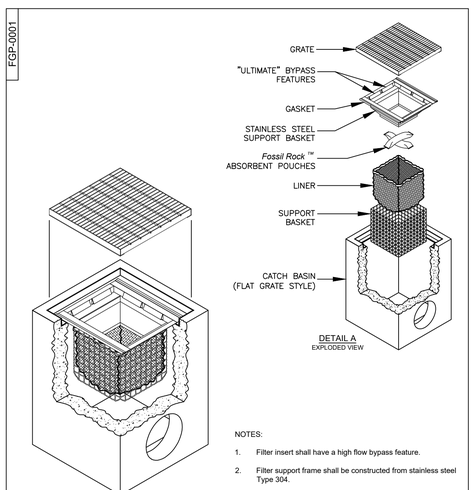
NOTES:

1. Select backfill material – material from excavation, free from stones or lumps exceeding 4" in greatest dimension, vegetable matter, or unsatisfactory material. On–site soil with an organic content less than 3% by weight may be reused as general fill. (See Geotechnical report). Compaction per Geotechnical report.
2. Match ex. AC and AB thickness in kind.
3. See Geotechnical report and structural drawings for requirements where utility lines parallel footings.

7 UTILITY TRENCH DETAIL

N.T.S.

FGP-0001



FloGard® FILTER
-INSTALLED INTO CATCH BASIN-

NOTES:

1. Filter insert shall have a high flow bypass feature.
2. Filter support frame shall be constructed from stainless steel Type 304.
3. Filter medium shall be *Fossil Rock* ™, installed and maintained in accordance with manufacturer specifications.
4. Storage capacity reflects 80% of maximum solids collection prior to impeding filtering bypass.

U.S. PATENT # 6,00,023 & 6,877,029

Inlet Filtration

FloGard®
Catch Basin Insert Filter
Grated Inlet Style

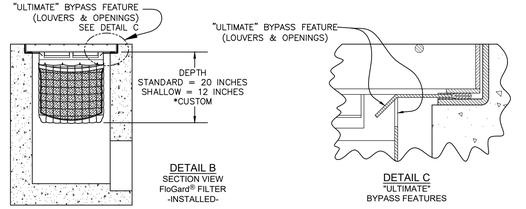
Oldcastle® Stormwater Solutions

7921 Southpark Plaza, Suite 200 | Littleton, CO | 80120 | Ph: 800.579.8819 | oldcastlestormwater.com

DRAWING NO.	REV	ECO	DATE	
FGP-0001	G	ECO–0142 JPR 7/13/16	JPR 11/3/06	SHEET 1 OF 2

FGP-0001

U.S. PATENT # 6,00,023 & 6,877,029



* MANY OTHER STANDARD & CUSTOM SIZES & DEPTHS AVAILABLE UPON REQUEST.

SPECIFIER CHART

MODEL NO. STANDARD DEPTH	STANDARD & SHALLOW DEPTH (Data in these columns is the same for both STANDARD & SHALLOW versions)			STANDARD DEPTH -20 Inches-		MODEL NO. SHALLOW DEPTH	SHALLOW DEPTH -12 Inches-	
	INLET ID Inside Dimension (inch x inch)	GRATE OD Outside Dimension (inch x inch)	TOTAL BYPASS CAPACITY (cu. ft. / sec.)	SOLIDS STORAGE CAPACITY (cu. ft.)	FILTERED FLOW (cu. ft. / sec.)		SOLIDS STORAGE CAPACITY (cu. ft.)	FILTERED FLOW (cu. ft. / sec.)
FGP-12F	12 X 12	12 X 14	2.8	0.3	0.4	FGP-12F8	.15	.25
FGP-16F	16 X 16	16 X 19	4.7	0.8	0.7	FGP-16F8	.45	.4
FGP-18F	18 X 18	18 X 20	4.7	0.8	0.7	FGP-18F8	.45	.4
FGP-1824F	16 X 22	18 X 24	5.0	1.5	1.2	FGP-1824F8	.85	.7
FGP-1836F	18 X 36	18 X 40	6.9	2.3	1.6	FGP-1836F8	1.3	.9
FGP-2024F	18 X 22	20 X 24	5.9	1.2	1.0	FGP-2024F8	.7	.55
FGP-21F	22 X 22	22 X 24	6.1	2.2	1.5	FGP-21F8	1.25	.85
FGP-24F	24 X 24	24 X 27	6.1	2.2	1.5	FGP-24F8	1.25	.85
FGP-2430F	24 X 30	26 X 30	7.0	2.8	1.8	FGP-2430F8	1.6	1.05
FGP-2436F	24 X 36	24 X 40	8.0	3.4	2.0	FGP-2436F8	1.95	1.15
FGP-2448F	24 X 48	26 X 48	9.3	4.4	2.4	FGP-2448F8	2.5	1.35
FGP-28F	28 X 28	32 X 32	6.3	2.2	1.5	FGP-28F8	1.25	.85
FGP-30F	30 X 30	30 X 34	8.1	3.6	2.0	FGP-30F8	2.05	1.15
FGP-36F	36 X 36	36 X 40	9.1	4.6	2.4	FGP-36F8	2.65	1.35
FGP-3648F	36 X 48	40 X 48	11.5	6.8	3.2	FGP-3648F8	3.9	1.85
FGP-48F	48 X 48	48 X 54	13.2	9.5	3.9	FGP-48F8	5.45	2.25
FGP-SD24F	24 X 24	28 X 28	6.1	2.2	1.5	FGP-SD24F8	1.25	.85

Inlet Filtration

FloGard®
Catch Basin Insert Filter
Grated Inlet Style

Oldcastle® Stormwater Solutions

7921 Southpark Plaza, Suite 200 | Littleton, CO | 80120 | Ph: 800.579.8819 | oldcastlestormwater.com

DRAWING NO.	REV	ECO	DATE	
FGP-0001	G	ECO–0142 JPR 7/13/16	JPR 11/3/06	SHEET 2 OF 2

8 CATCH BASIN INSERT FILTER

N.T.S.

9/4/2020 F:\DATA\CAD\20718\CAD\C-DETAILS.DWG

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3150 ALMADEN EXPRESSWAY, SUITE 123
SAN JOSE, CA 95118 (408) 265-1600
WWW.BOHLEYCONSULTING.COM

CUPAL RESIDENCE

3343 ALPINE ROAD
PORTOLA VALLEY, CA

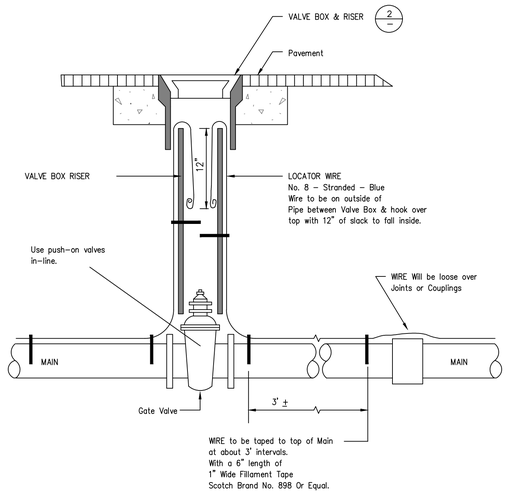
Scale	NONE
Drawing	C–DETAILS.DWG
Job No	201718

Date	Description
9/4/20	SUBMITTAL

REGISTERED PROFESSIONAL ENGINEER
CRAIG G. OVERBOOM
RCE 60301
CIVIL
STATE OF CALIFORNIA

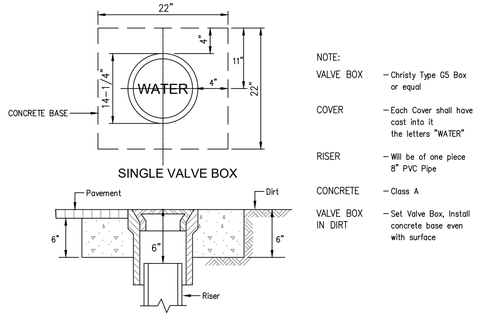
DETAILS

C1.1



1 GATE VALVE

N.T.S.

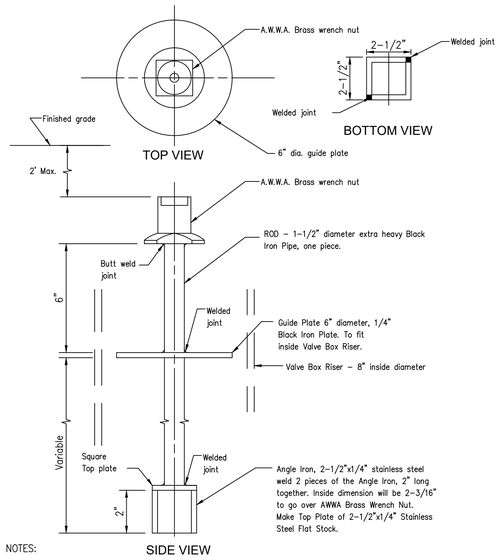


NOTE:

VALVE BOX	– Christy Type G5 Box or equal
COVER	– Each Cover shall have cast into it the letters "WATER"
RISER	– Will be of one piece 8" PVC Pipe
CONCRETE	– Class A
VALVE BOX IN DIRT	– Set Valve Box, Install concrete base even with surface

2 VALVE BOX AND RISER

N.T.S.

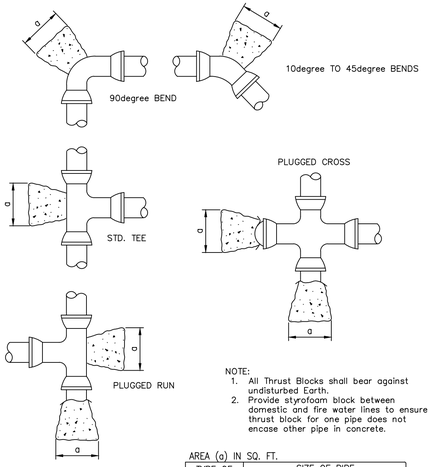


NOTES:

1. Extensions are required for valves extending for more than 4 feet below the surface.

3 VALVE STEM EXTENSION

N.T.S.



NOTE:

1. All Thrust Blocks shall bear against undisturbed Earth.
2. Provide styrofoam block between domestic and fire water lines to ensure thrust block for one pipe does not encase other pipe in concrete.

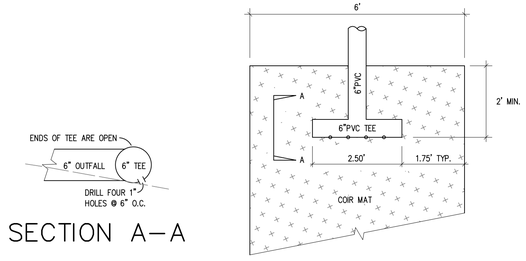
AREA (a) IN SQ. FT.

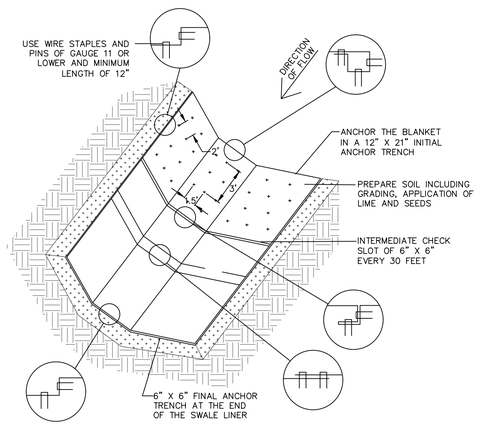
TYPE OF FITTING	SIZE OF PIPE				
	4"	6"	8"	10"	12"
90° ELL	2	5	8	13	18
45° ELL	1	3	5	7	10
22 1/2° ELL	1	2	3	4	5
11 1/4° ELL	1	1	2	2	3
PLUG/TEE	1.5	4	6	9	13

Based on soil bearing value of 2000 lbs. per sq. ft. and water pressure of 225 psi. Form as required to keep concrete off of mechanical joint or flange bolts.

4 THRUST BLOCKS

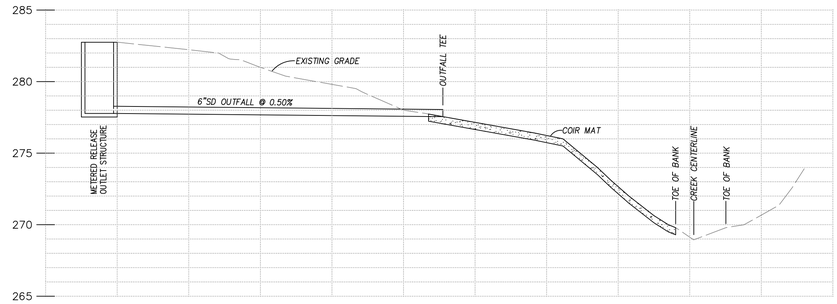
N.T.S.





NOTES:

1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
2. CONTRACTOR'S NOTE: COIR MAT 40 OR APPROVED ALTERNATE.
3. THE AREA WHERE THE MAT WILL BE PLACED SHALL FIRST BE HYDROSEEDED WITH THE NATIVE EROSION CONTROL MIX SHOWN.
4. HYDROSEED ALL DISTURBED AREAS ADJACENT TO THE COIR MAT.



STORM DRAIN OUTFALL PROFILE

HORIZ 1"=10'
VERT 1"=5'

Scientific Name	Common Name	Life Form	Hydroseeding Rate (lbs/acre)1	Percent Composition in Seed Mix
Herbaceous				
Acmispon americanus	American bird's foot trefoil	annual herb	29.0000	2%
Calandrinia menziesii	red maids	annual herb	0.5000	2%
Trifolium albopurpureum	Indian clover	annual herb	8.0000	2%
Graminoids				
Bromus carinatus var. carinatus	California brome	Perennial grass	10.0000	5%
Danthonia californica	California oat grass	Perennial grass	20.0000	15%
Elymus glaucus subsp. glaucus	blue wildrye	Perennial grass	22.6000	10%
Festuca octoflora	sixweeks grass	annual grass	2.6000	14%
Melica californica	California melic	Perennial grass	20.0000	25%
Poa secunda subsp. secunda	one-sided blue grass	Perennial grass	4.0000	25%

5 EROSION CONTROL COIR MAT AND NATIVE EROSION CONTROL HYDROSEED MIX

N.T.S.

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CUPAL RESIDENCE

3343 ALPINE ROAD
PORTOLA VALLEY, CA

Scale	NONE
Drawing	C–DETAILS.DWG
Job No	201718

Date	Description
9/4/20	SUBMITTAL

REGISTERED PROFESSIONAL ENGINEER
CRAIG G. OVERBOEKE
RCE 60301
CIVIL
STATE OF CALIFORNIA

DETAILS

C1.2

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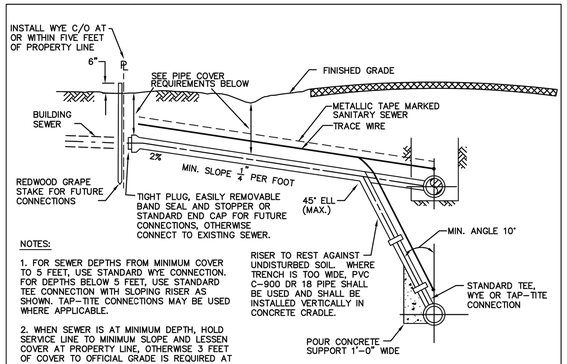
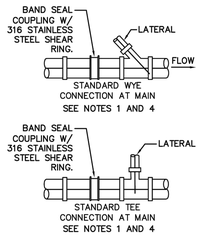


NOTES:

1. FOR SEWER DEPTHS FROM MINIMUM COVER TO 5 FEET, USE STANDARD WYE CONNECTION. FOR DEPTHS BELOW 5 FEET, USE STANDARD TEE CONNECTION WITH SLOPING RISER AS SHOWN. TAP-TITE CONNECTIONS MAY BE USED WHERE APPLICABLE.
2. WHEN SEWER IS AT MINIMUM DEPTH, HOLD SERVICE LINE TO MINIMUM SLOPE AND LESSEN COVER AT PROPERTY LINE, OTHERWISE 3 FEET OF COVER TO OFFICIAL GRADE IS REQUIRED AT PROPERTY LINE.
3. THE LOCATION OF ALL SEWER LATERALS SHALL BE MARKED WITH A LETTER "S" ON TOP OF CURB OR BACK OF WALK.
4. ALL SERVICE TEES OR WYES SHALL BE MANUFACTURER'S STANDARD FITTINGS. CONNECTION CLOSURE SHALL BE BY STANDARD BAND SEAL COUPLINGS WITH 316 STAINLESS STEEL SHEAR RING ON SERVICE ADDITIONS. NO PIPE BREAKING AND CONCRETE PATCHING WILL BE PERMITTED, ONLY NEATLY SNAPPED OR SAWCUT LENGTHS WILL BE ALLOWED.
5. 8 GAUGE COPPER WIRE OR COATED COPPER WIRE FOR TRACING PURPOSES SHALL BE PLACED ON ALL NEW LATERALS AND REPLACEMENT LATERALS WHEN EXCAVATION IS FROM MAIN LINE TO THE PROPERTY LINE CLEANOUT. WIRE TO BE BROUGHT TO RISER WITH TWO FEET COILED INSIDE BOX.
6. TAP-TITE AND TEE CONNECTIONS ARE NOT ALLOWED IN TERMINATING SEWER MAINS (MOST UPSTREAM LINE).
7. CONTRACTOR SHALL PLACE ROOT CONTROL FABRIC OVER ALL JOINTS AS SHOWN ON WEST BAY SANITARY DISTRICT DETAIL NO. 13.
8. CONTRACTOR SHALL INSTALL BEDDING AND BACKFILL MATERIAL AS SHOWN ON WEST BAY SANITARY DISTRICT DETAIL NO. 8.
9. PIPE MATERIAL FOR LATERALS SHALL BE DIP CLASS 50 OR 51, OR PVC C900 DR18.

DEEP SEWER – GREATER THAN 10'

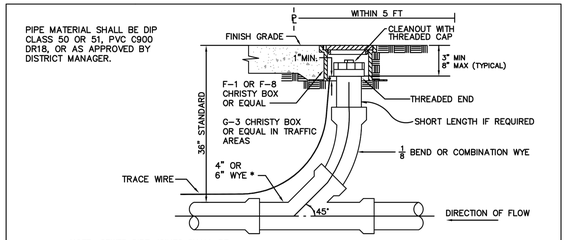


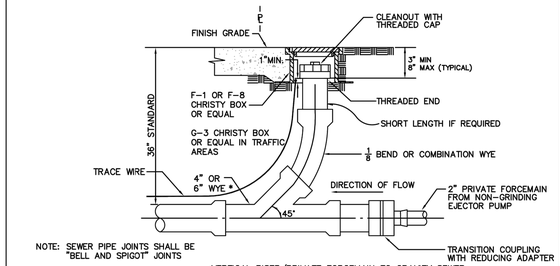
WEST BAY
SANITARY DISTRICT

SANITARY SEWER LATERAL CONNECTIONS

APPROVED BY: /S/ – PHIL SCOTT — DISTRICT MANAGER — DATE: 06-24-15

6





NOTES:

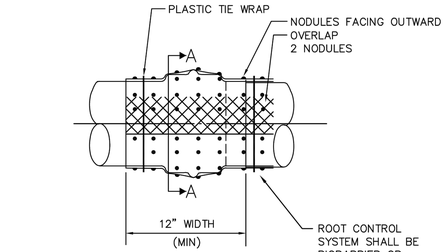
1) THE CLEAN OUT ASSEMBLY SHALL BE THE SAME SIZE AS THE LATERAL SEWER IT SERVICES.
2) COVERS SHALL BE C.I. FOR STREETS, ALLEYS OR DRIVES, OTHERWISE FIBRELYTE OR CONCRETE FOR NON-TRAFFIC USE.
3) #8 GAUGE SOLID AND COATED COPPER WIRE FOR TRACING PURPOSES SHALL BE PLACED ON ALL NEW LATERALS AND REPLACEMENT LATERALS WHEN EXCAVATION IS FROM MAIN LINE TO THE PROPERTY LINE CLEANOUT. WIRE TO BE BROUGHT TO RISER WITH TWO FEET COILED INSIDE BOX.
4) ALL CLEAN OUT BOX LIDS SHALL BE MARKED WITH A LETTER "S" OR THE WORD "SEWER".
5) WYE SHALL BE INSTALLED AT OR WITHIN 5 FEET OF PROPERTY LINE.
6) CONTRACTOR SHALL PLACE ROOT CONTROL FABRIC OVER ALL JOINTS AS SHOWN ON WEST BAY SANITARY DISTRICT DETAIL NO. 13.
7) CONTRACTOR SHALL INSTALL BEDDING AND BACKFILL MATERIAL AS SHOWN ON WEST BAY SANITARY DISTRICT DETAIL NO. 8.

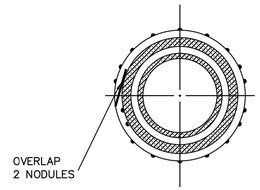
WEST BAY
SANITARY DISTRICT

SERVICE LATERAL CLEANOUT

APPROVED BY: /S/ – PHIL SCOTT — DISTRICT MANAGER — DATE: 06-24-15

7





SECTION A–A

APPLICATION (ALL JOINTS):

1) ALL NEW MAIN SEWER PROJECTS.
2) ALL NEW OR REPLACEMENT SANITARY SEWER LATERAL CONNECTIONS.
3) SANITARY SEWER LATERAL REPAIRS.

WEST BAY
SANITARY DISTRICT

ROOT CONTROL SYSTEM

APPROVED BY: /S/ – PHIL SCOTT — DISTRICT MANAGER — DATE: 06-24-15

13

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SAN JOSE, CA 95118 (408) 265-1600
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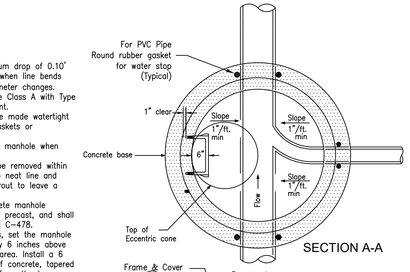
CUPAL RESIDENCE

3343 ALPINE ROAD
PORTOLA VALLEY, CA

Scale	NONE
Drawing	C-DETAILS.DWG
Job No	201718

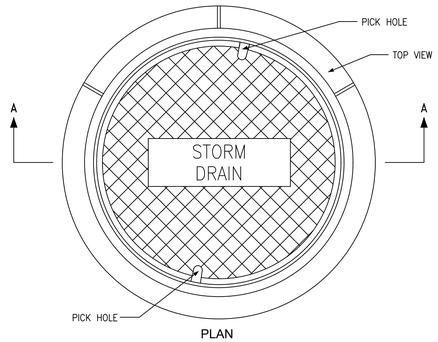
Date	Description
9/4/20	SUBMITTAL



NOTES:

1. Provide a minimum drop of 0.10' across manhole when line bends and/or pipe diameter changes.
2. Concrete shall be Class A with Type II modified cement.
3. All joints shall be made watertight with neoprene gaskets or Ram-Neck.
4. Lay pipe through manhole when possible.
5. Top of pipe to be removed within manhole. Trim to neat line and finish off with grout to leave a smooth finish.
6. Reinforced concrete manhole sections shall be precast, and shall conform to ASTM C-478.
7. In unpaved areas, set the manhole rim approximately 6 inches above the surrounding area. Install a 6 inch thick ring of concrete, tapered at a 3:1 slope, from the top, outside edge of the collar to the existing ground surface.

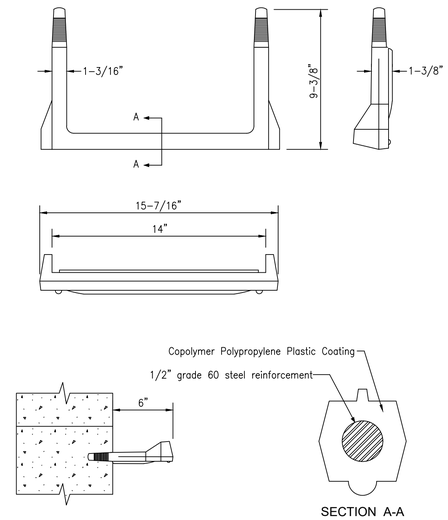
1 MANHOLE
N.T.S.



NOTES:

1. ALL MATERIAL USED IN MANUFACTURING SHALL CONFORM TO A.S.T.M. A48, CLASS 30.
2. ALL CASTINGS TO BE COMPLETELY CLEANED AND PAINTED WITH ASPHALTIC VARNISH AFTER MANUFACTURING.
3. US PHOENIX P-1090, D&L SUPPLY A-1024, OR EQUAL.

2 MANHOLE FRAME AND COVER
N.T.S.



NOTES:

1. Steps to be cast in place during manufacture of precast pipe rings.
2. Insert steps through formwork prior to pouring cast-in-place structures.
3. Steps are as manufactured by M.A. INDUSTRIES, INC. or equal.

3 MANHOLE STEP FOR PRECAST MANHOLE
N.T.S.

REGISTERED PROFESSIONAL ENGINEER
CRAIG G. OVERBURY
RCE 60301
CIVIL
STATE OF CALIFORNIA

DETAILS

C1.3

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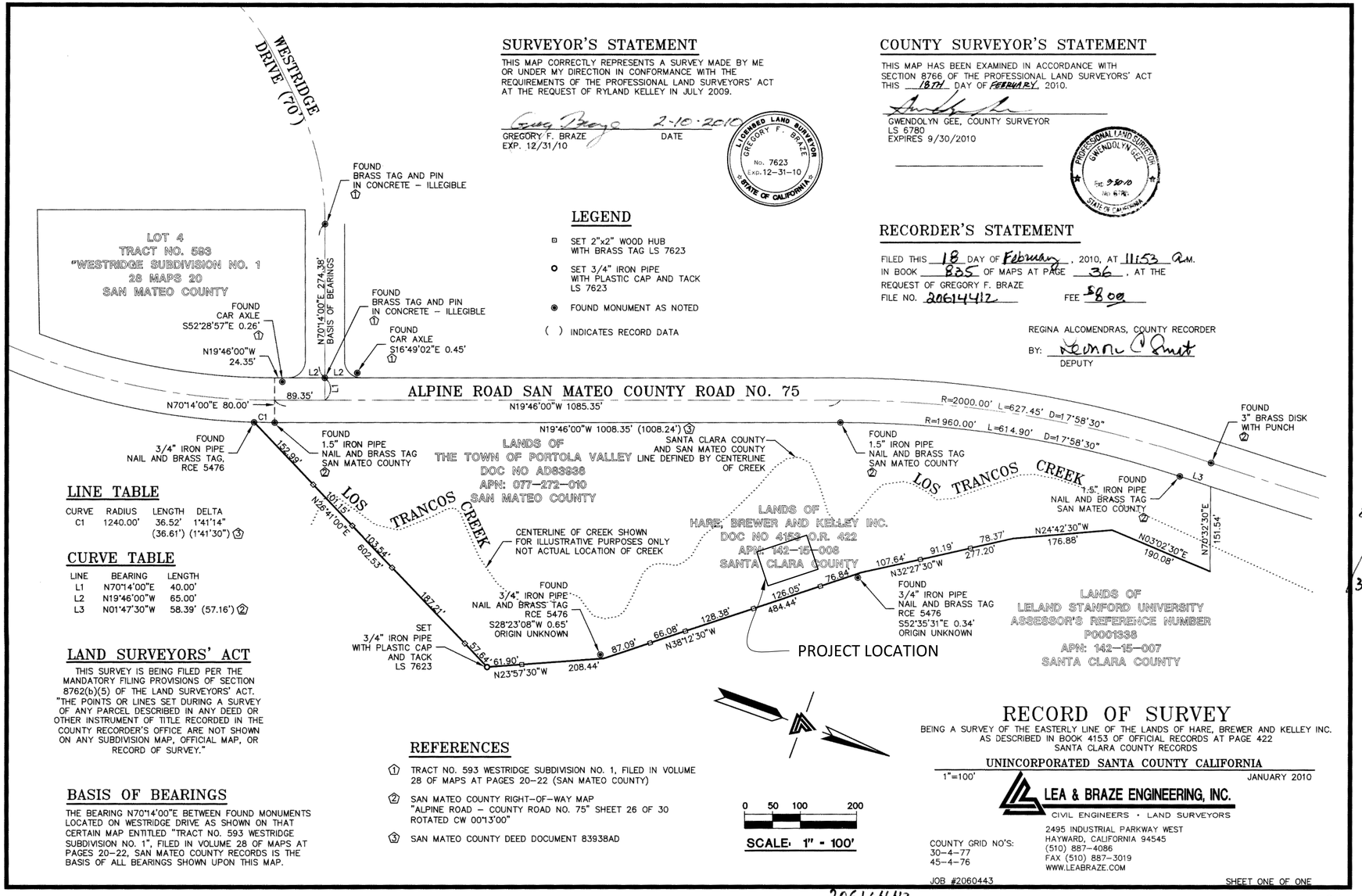

SURVEYOR'S STATEMENT

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

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 No. 6780 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: Regina Alcomendras
DEPUTY

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

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

0 50 100 200
SCALE: 1" = 100'

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

36

9/4/2020 F:\DATA\CAD\2017\18\CAD\C-BASE.DWG

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SAN JOSE, CA 95118 (408) 265-1600
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CUPAL RESIDENCE

3343 ALPINE ROAD
PORTOLA VALLEY, CA

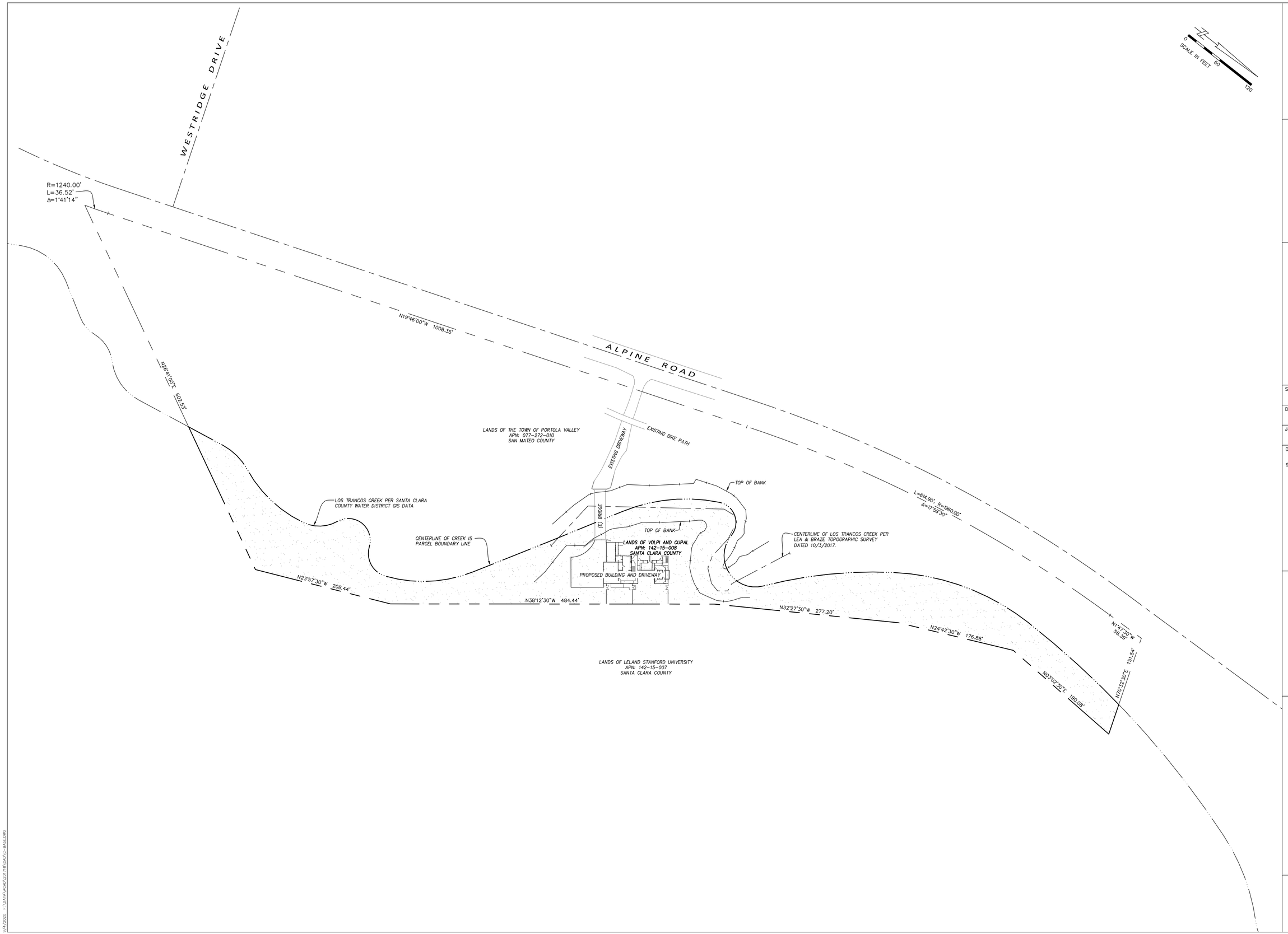
Scale	NONE
Drawing	C–BASE.DWG
Job No	201718

Date	Description
9/4/20	SUBMITTAL

REGISTERED PROFESSIONAL ENGINEER CRAIG G. OVERBEY RCE 60301 CIVIL STATE OF CALIFORNIA

RECORD OF SURVEY

C2.1



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CUPAL RESIDENCE

3343 ALPINE ROAD
PORTOLA VALLEY, CA

Scale	1"=60'
Drawing	C-BASE.DWG
Job No	201718

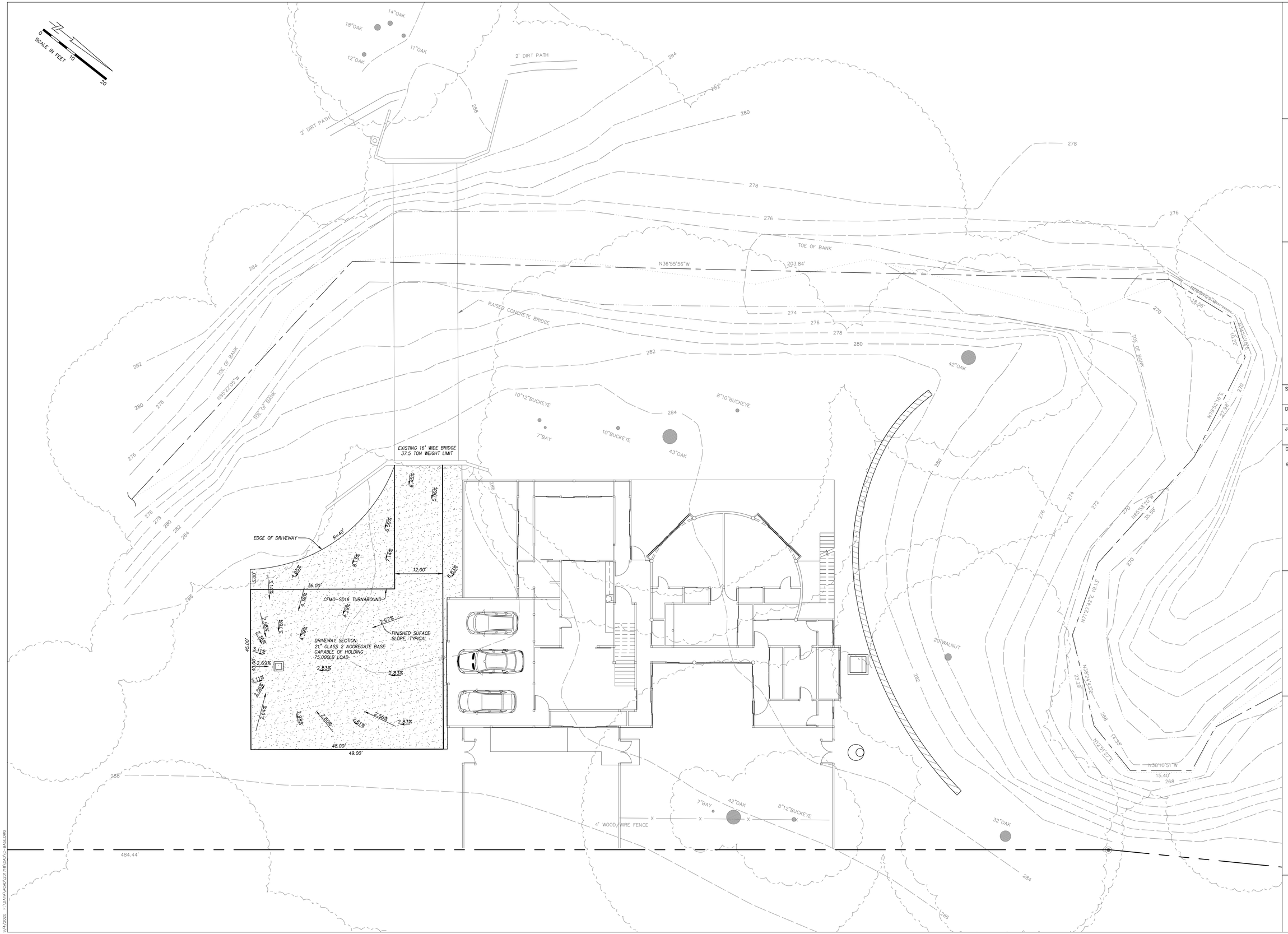
Date	Description
9/4/20	SUBMITTAL

REGISTERED PROFESSIONAL ENGINEER
CRAIG G. OVERBAY
RCE 60301
CIVIL
STATE OF CALIFORNIA

OVERALL SITE PLAN

C2.2

9/4/2020 F:\DATA\CAD\201718\CAD\C-BASE.DWG



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CUPAL RESIDENCE

3343 ALPINE ROAD
PORTOLA VALLEY, CA

Scale	1"=10'
Drawing	C-BASE.DWG
Job No	201718

Date	Description
9/4/20	SUBMITTAL

REGISTERED PROFESSIONAL ENGINEER
CRAIG G. OVERBOOM
RCE 60301
CIVIL
STATE OF CALIFORNIA

FIRE TRUCK TURNAROUND

C2.3

9/4/2020 F:\DATA\ACAD\2017\ENG\CAD\C-BASE.DWG

NOTES:

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. PANELS 06085C0015H (EFFECTIVE DATE 5/18/2009) AND 06081C0314E (EFFECTIVE DATE 10/16/2012). LINEWORK SHOWN IS FEMA GIS DATA.
ZONE A: SPECIAL FLOOD HAZARD AREA, WITHOUT BASE FLOOD ELEVATION.
ZONE D: AREA OF UNDETERMINED FLOOD HAZARD.
ZONE X: AREA OF MINIMAL FLOOD HAZARD.

IMPERVIOUS SURFACE (SQUARE FEET)

	EXISTING	PROPOSED
DRIVEWAY	2165	2931
RESIDENCE	0	4713
NET	5479 INCREASE	

EARTHWORK QUANTITIES	CUT (CUBIC YARDS)	FILL (CUBIC YARDS)	NET (CUBIC YARDS)	MAX HEIGHT OF CUT AND FILL
DRIVEWAY CUT AND FILL SLOPES	11	2	9 CUT	CUT 1.5' FILL 1.0'
DRIVEWAY EXCAVATION FOR ROCK SECTION IMPORT OF ROCK SECTION	253	190	63 CUT	CUT 3.3' FILL 1.1'
RESIDENCE CRAWL SPACE = FF–3.0' MIN. NO FILL UNDER RESIDENCE	175	0	175 CUT	CUT 3.8' FILL 0.0'
LANDSCAPING	0	0	0	0
CREEK OUTFALL	4	0	0	CUT 0.5' FILL 0.0'
TOTAL GRADING QUANTITY	443	192	251 CUT	

SEE SHEET C3.2

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CUPAL RESIDENCE

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PORTOLA VALLEY, CA

Scale	1"=10'
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Date	Description
9/4/20	SUBMITTAL

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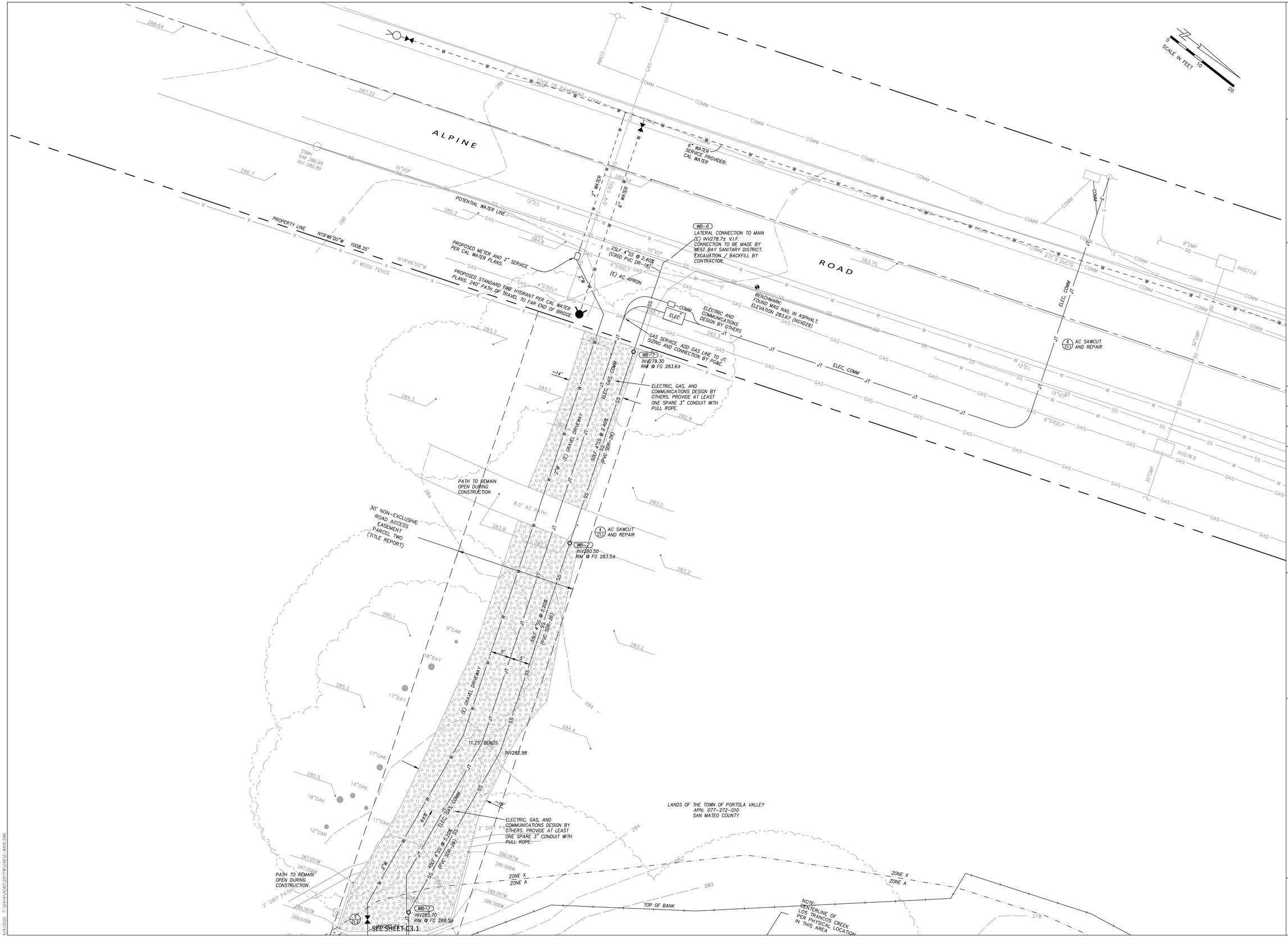
CRAIG G. OVERBEEK
RCE 60301
CIVIL
STATE OF CALIFORNIA

GRADING AND UTILITY PLAN

C3.1

9/4/2020 F:\DATA\ACAD\201718\CAD\C-BASE.DWG



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CUPAL RESIDENCE

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PORTOLA VALLEY, CA

Scale	1"=10'
Drawing	C-BASE.DWG
Job No	201718

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9/4/20	SUBMITTAL

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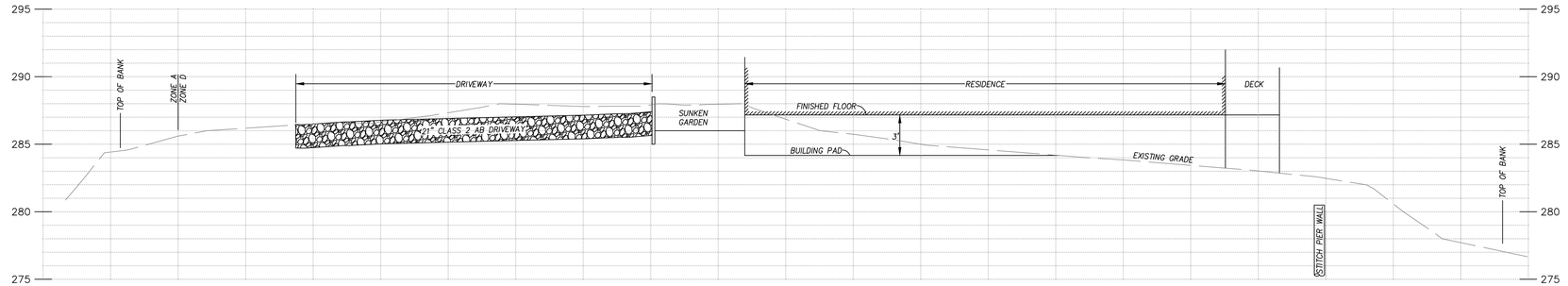
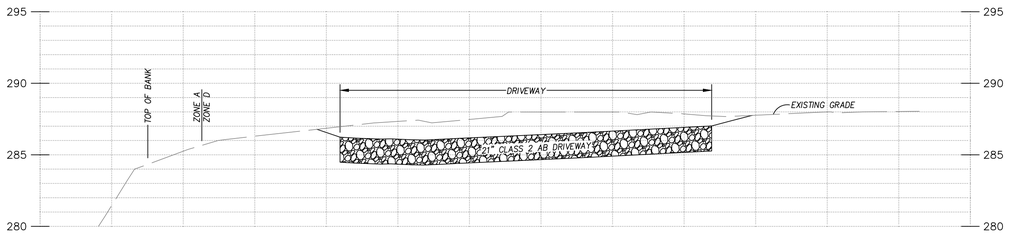
CRAIG G. OVERBEEK
RCE 60301
CIVIL
STATE OF CALIFORNIA

GRADING AND UTILITY PLAN

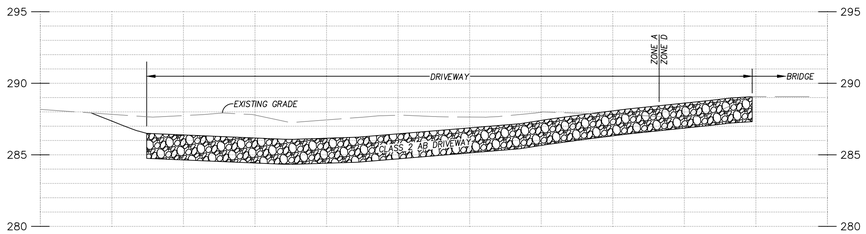
C3.2



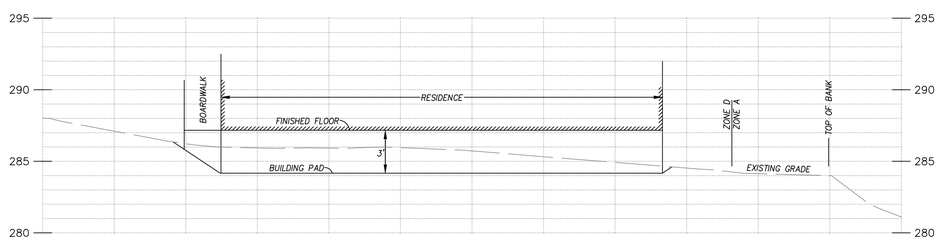
SECTION A–A
HORIZ 1"=10'
VERT 1"=5'



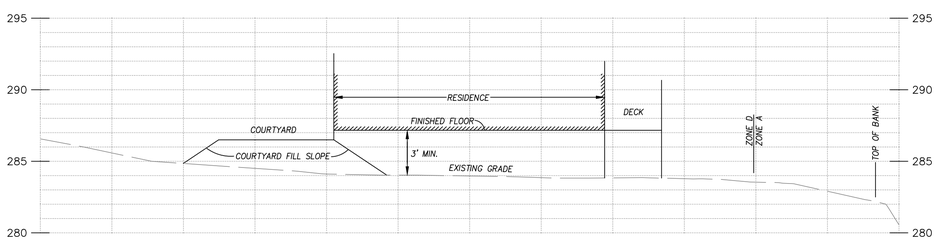
SECTION B–B
HORIZ 1"=10'
VERT 1"=5'



SECTION C–C
HORIZ 1"=10'
VERT 1"=5'



SECTION D–D
HORIZ 1"=10'
VERT 1"=5'



SECTION E–E
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
9/4/20	SUBMITTAL

REGISTERED PROFESSIONAL ENGINEER
CRAIG G. OVERBAUGH
RCE 60301
CIVIL
STATE OF CALIFORNIA

SECTIONS

C3.3

9/4/2020 F:\DATA\CAD\201718\CAD\C-BASE.DWG

SEE SHEET C4.2

11. ALL TRUCK TIRES SHALL BE CLEANED PRIOR TO EXITING THE SITE.

SCALE IN FEET 0 10 20

LEGEND

FIBER ROLL (1/C4.4)

INLET PROTECTION (4/C4.4)

(2/C4.4) CONTRACTOR TO DETERMINE LOCATION FOR TEMPORARY CONCRETE WASHOUT FACILITY ON SITE

LANDS OF THE TOWN OF PORTOLA VALLEY
APN: 077-272-010
SAN MATEO COUNTY

(E) GRAVEL DRIVEWAY

14"OAK
18"OAK
12"OAK
11"OAK

ZONE X
ZONE A

TOP OF BANK

LOS TRANCOS CREEK

SANTA CLARA COUNTY

SANTA CLARA COUNTY AND SAN MATEO COUNTY
LINE DEFINED BY CENTERLINE OF CREEK

SAN MATEO COUNTY

LANDS OF VOLPI AND CUPAL
APN: 142-15-008
SANTA CLARA COUNTY

8"10"BUCKEYE
7"BAY
10"BUCKEYE
43"OAK
42"OAK
8"12"BUCKEYE
30"OAK
20"WALNUT

ZONE A
ZONE D

EXISTING ROCK TURNAROUND TO BE REMOVED.

NEW DRIVEWAY SECTION:
21" CLASS 2 AGGREGATE BASE, 95% RELATIVE COMPACTION

(5/C1.2)

SEE SHEET C4.2 FOR ADDITIONAL NOTES

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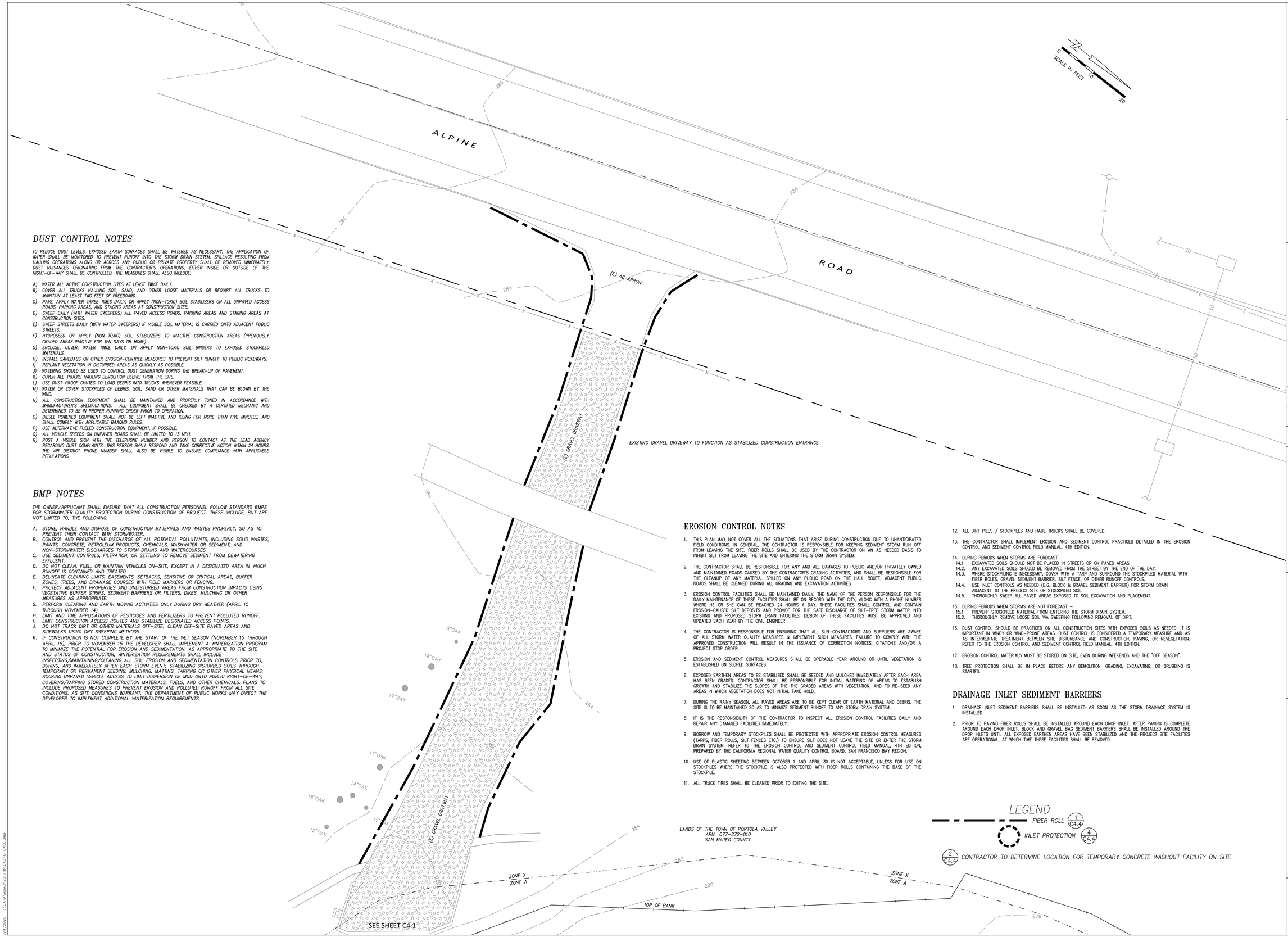
CIVIL
STATE OF CALIFORNIA

EROSION CONTROL PLAN

C4.1

9/4/2020 F:\DATA\ACAD\201718\CAD\C-BASE.DWG



DUST CONTROL NOTES

TO REDUCE DUST LEVELS, EXPOSED EARTH SURFACES SHALL BE WATERED AS NECESSARY. THE APPLICATION OF WATER SHALL BE MONITORED TO PREVENT RUNOFF INTO THE STORM DRAIN SYSTEM. SPILLAGE RESULTING FROM HAULING OPERATIONS ALONG OR ACROSS ANY PUBLIC OR PRIVATE PROPERTY SHALL BE REMOVED IMMEDIATELY. DUST NUISANCES ORIGINATING FROM THE CONTRACTOR'S OPERATIONS, EITHER INSIDE OR OUTSIDE OF THE RIGHT-OF-WAY SHALL BE CONTROLLED. THE MEASURES SHALL ALSO INCLUDE:

A) WATER ALL ACTIVE CONSTRUCTION SITES AT LEAST TWICE DAILY.
B) COVER ALL TRUCKS HAULING SOIL, SAND, AND OTHER LOOSE MATERIALS OR REQUIRE ALL TRUCKS TO MAINTAIN AT LEAST TWO FEET OF FREEBOARD.
C) PAVE, APPLY WATER THREE TIMES DAILY, OR APPLY (NON-TOXIC) SOIL STABILIZERS ON ALL UNPAVED ACCESS ROADS, PARKING AREAS, AND STAGING AREAS AT CONSTRUCTION SITES.
D) SWEEP DAILY (WITH WATER SWEEPERS) ALL PAVED ACCESS ROADS, PARKING AREAS AND STAGING AREAS AT CONSTRUCTION SITES.
E) SWEEP STREETS DAILY (WITH WATER SWEEPERS) IF VISIBLE SOIL MATERIAL IS CARRIED ONTO ADJACENT PUBLIC STREETS.
F) HYDROSEED OR APPLY (NON-TOXIC) SOIL STABILIZERS TO INACTIVE CONSTRUCTION AREAS (PREVIOUSLY GRADED AREAS INACTIVE FOR TEN DAYS OR MORE).
G) ENCLOSE, COVER, WATER TWICE DAILY, OR APPLY NON-TOXIC SOIL BINDERS TO EXPOSED STOCKPILED MATERIALS.
H) INSTALL SANDBAGS OR OTHER EROSION-CONTROL MEASURES TO PREVENT SILT RUNOFF TO PUBLIC ROADWAYS.
I) REPLANT VEGETATION IN DISTURBED AREAS AS QUICKLY AS POSSIBLE.
J) WATERING SHOULD BE USED TO CONTROL DUST GENERATION DURING THE BREAK-UP OF PAVEMENT.
K) COVER ALL TRUCKS HAULING DEMOLITION DEBRIS FROM THE SITE.
L) USE DUST-PROOF CHUTES TO LOAD DEBRIS INTO TRUCKS WHENEVER FEASIBLE.
M) WATER OR COVER STOCKPILES OF DEBRIS, SOIL, SAND OR OTHER MATERIALS THAT CAN BE BLOWN BY THE WIND.
N) ALL CONSTRUCTION EQUIPMENT SHALL BE MAINTAINED AND PROPERLY TUNED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS. ALL EQUIPMENT SHALL BE CHECKED BY A CERTIFIED MECHANIC AND DETERMINED TO BE IN PROPER RUNNING ORDER PRIOR TO OPERATION.
O) DIESEL POWERED EQUIPMENT SHALL NOT BE LEFT INACTIVE AND IDLING FOR MORE THAN FIVE MINUTES, AND SHALL COMPLY WITH APPLICABLE BAAQMD RULES.
P) USE ALTERNATIVE FUELED CONSTRUCTION EQUIPMENT, IF POSSIBLE.
Q) ALL VEHICLE SPEEDS ON UNPAVED ROADS SHALL BE LIMITED TO 15 MPH.
R) POST A VISIBLE SIGN WITH THE TELEPHONE NUMBER AND PERSON TO CONTACT AT THE LEAD AGENCY REGARDING DUST COMPLAINTS. THIS PERSON SHALL RESPOND AND TAKE CORRECTIVE ACTION WITHIN 24 HOURS. THE AIR DISTRICT PHONE NUMBER SHALL ALSO BE VISIBLE TO ENSURE COMPLIANCE WITH APPLICABLE REGULATIONS.

BMP NOTES

THE OWNER/APPLICANT SHALL ENSURE THAT ALL CONSTRUCTION PERSONNEL FOLLOW STANDARD BMPS FOR STORMWATER QUALITY PROTECTION DURING CONSTRUCTION OF PROJECT. THESE INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:

A. STORE, HANDLE AND DISPOSE OF CONSTRUCTION MATERIALS AND WASTES PROPERLY, SO AS TO PREVENT THEIR CONTACT WITH STORMWATER.
B. CONTROL AND PREVENT THE DISCHARGE OF ALL POTENTIAL POLLUTANTS, INCLUDING SOLID WASTES, PAINTS, CONCRETE, PETROLEUM PRODUCTS, CHEMICALS, WASHWATER OR SEDIMENT, AND NON-STORMWATER DISCHARGES TO STORM DRAINS AND WATERCOURSES.
C. USE SEDIMENT CONTROLS, FILTRATION, OR SETTLING TO REMOVE SEDIMENT FROM DEWATERING EFFLUENT.
D. DO NOT CLEAN, FUEL, OR MAINTAIN VEHICLES ON-SITE, EXCEPT IN A DESIGNATED AREA IN WHICH RUNOFF IS CONTAINED AND TREATED.
E. DELINEATE CLEARING LIMITS, EASEMENTS, SETBACKS, SENSITIVE OR CRITICAL AREAS, BUFFER ZONES, TREES, AND DRAINAGE COURSES WITH FIELD MARKERS OR FENCING.
F. PROTECT ADJACENT PROPERTIES AND UNDISTURBED AREAS FROM CONSTRUCTION IMPACTS USING VEGETATIVE BUFFER STRIPS, SEDIMENT BARRIERS OR FILTERS, DIKES, MULCHING OR OTHER MEASURES AS APPROPRIATE.
G. PERFORM CLEARING AND EARTH MOVING ACTIVITIES ONLY DURING DRY WEATHER (APRIL 15 THROUGH NOVEMBER 14).
H. LIMIT AND TIME APPLICATIONS OF PESTICIDES AND FERTILIZERS TO PREVENT POLLUTED RUNOFF.
I. LIMIT CONSTRUCTION ACCESS ROUTES AND STABILIZE DESIGNATED ACCESS POINTS.
J. DO NOT TRACK DIRT OR OTHER MATERIALS OFF-SITE; CLEAN OFF-SITE PAVED AREAS AND SIDEWALKS USING DRY SWEEPING METHODS.
K. IF CONSTRUCTION IS NOT COMPLETE BY THE START OF THE WET SEASON (NOVEMBER 15 THROUGH APRIL 15), PRIOR TO NOVEMBER 15 THE DEVELOPER SHALL IMPLEMENT A WINTERIZATION PROGRAM TO MINIMIZE THE POTENTIAL FOR EROSION AND SEDIMENTATION. AS APPROPRIATE TO THE SITE AND STATUS OF CONSTRUCTION, WINTERIZATION REQUIREMENTS SHALL INCLUDE INSPECTING/MAINTAINING/CLEANING ALL SOIL EROSION AND SEDIMENTATION CONTROLS PRIOR TO, DURING, AND IMMEDIATELY AFTER EACH STORM EVENT; STABILIZING DISTURBED SOILS THROUGH TEMPORARY OR PERMANENT SEEDING, MULCHING, MATTING, TARPING OR OTHER PHYSICAL MEANS; ROCKING UNPAVED VEHICLE ACCESS TO LIMIT DISPERSION OF MUD ONTO PUBLIC RIGHT-OF-WAY; COVERING/TARPING STORED CONSTRUCTION MATERIALS, FUELS, AND OTHER CHEMICALS. PLANS TO INCLUDE PROPOSED MEASURES TO PREVENT EROSION AND POLLUTED RUNOFF FROM ALL SITE CONDITIONS. AS SITE CONDITIONS WARRANT, THE DEPARTMENT OF PUBLIC WORKS MAY DIRECT THE DEVELOPER TO IMPLEMENT ADDITIONAL WINTERIZATION REQUIREMENTS.

EROSION CONTROL NOTES

1. THIS PLAN MAY NOT COVER ALL THE SITUATIONS THAT ARISE DURING CONSTRUCTION DUE TO UNANTICIPATED FIELD CONDITIONS. IN GENERAL, THE CONTRACTOR IS RESPONSIBLE FOR KEEPING SEDIMENT STORM RUN OFF FROM LEAVING THE SITE. FIBER ROLLS SHALL BE USED BY THE CONTRACTOR ON AN AS NEEDED BASIS TO INHIBIT SILT FROM LEAVING THE SITE AND ENTERING THE STORM DRAIN SYSTEM.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL DAMAGES TO PUBLIC AND/OR PRIVATELY OWNED AND MAINTAINED ROADS CAUSED BY THE CONTRACTOR'S GRADING ACTIVITIES, AND SHALL BE RESPONSIBLE FOR THE CLEANUP OF ANY MATERIAL SPILLED ON ANY PUBLIC ROAD ON THE HAUL ROUTE. ADJACENT PUBLIC ROADS SHALL BE CLEANED DURING ALL GRADING AND EXCAVATION ACTIVITIES.
3. EROSION CONTROL FACILITIES SHALL BE MAINTAINED DAILY. THE NAME OF THE PERSON RESPONSIBLE FOR THE DAILY MAINTENANCE OF THESE FACILITIES SHALL BE ON RECORD WITH THE CITY, ALONG WITH A PHONE NUMBER WHERE HE OR SHE CAN BE REACHED 24 HOURS A DAY. THESE FACILITIES SHALL CONTROL AND CONTAIN EROSION-CAUSED SILT DEPOSITS AND PROVIDE FOR THE SAFE DISCHARGE OF SILT-FREE STORM WATER INTO EXISTING AND PROPOSED STORM DRAIN FACILITIES. DESIGN OF THESE FACILITIES MUST BE APPROVED AND UPDATED EACH YEAR BY THE CIVIL ENGINEER.
4. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL SUB-CONTRACTORS AND SUPPLIERS ARE AWARE OF ALL STORM WATER QUALITY MEASURES & IMPLEMENT SUCH MEASURES. FAILURE TO COMPLY WITH THE APPROVED CONSTRUCTION WILL RESULT IN THE ISSUANCE OF CORRECTION NOTICES, CITATIONS AND/OR A PROJECT STOP ORDER.
5. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE OPERABLE YEAR AROUND OR UNTIL VEGETATION IS ESTABLISHED ON SLOPED SURFACES.
6. EXPOSED EARTHEN AREAS TO BE STABILIZED SHALL BE SEEDED AND MULCHED IMMEDIATELY AFTER EACH AREA HAS BEEN GRADED. CONTRACTOR SHALL BE RESPONSIBLE FOR INITIAL WATERING OF AREAS TO ESTABLISH GROWTH AND STABILIZE THE SLOPES OF THE THE GRADED AREAS WITH VEGETATION, AND TO RE-SEED ANY AREAS IN WHICH VEGETATION DOES NOT INITIAL TAKE HOLD.
7. DURING THE RAINY SEASON, ALL PAVED AREAS ARE TO BE KEPT CLEAR OF EARTH MATERIAL AND DEBRIS. THE SITE IS TO BE MAINTAINED SO AS TO MINIMIZE SEDIMENT RUNOFF TO ANY STORM DRAIN SYSTEM.
8. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INSPECT ALL EROSION CONTROL FACILITIES DAILY AND REPAIR ANY DAMAGED FACILITIES IMMEDIATELY.
9. BORROW AND TEMPORARY STOCKPILES SHALL BE PROTECTED WITH APPROPRIATE EROSION CONTROL MEASURES (TARPS, FIBER ROLLS, SILT FENCES ETC.) TO ENSURE SILT DOES NOT LEAVE THE SITE OR ENTER THE STORM DRAIN SYSTEM. REFER TO THE EROSION CONTROL AND SEDIMENT CONTROL FIELD MANUAL, 4TH EDITION, PREPARED BY THE CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD, SAN FRANCISCO BAY REGION.
10. USE OF PLASTIC SHEETING BETWEEN OCTOBER 1 AND APRIL 30 IS NOT ACCEPTABLE, UNLESS FOR USE ON STOCKPILES WHERE THE STOCKPILE IS ALSO PROTECTED WITH FIBER ROLLS CONTAINING THE BASE OF THE STOCKPILE.
11. ALL TRUCK TIRES SHALL BE CLEANED PRIOR TO EXITING THE SITE.
12. ALL DIRT PILES / STOCKPILES AND HAUL TRUCKS SHALL BE COVERED.
13. THE CONTRACTOR SHALL IMPLEMENT EROSION AND SEDIMENT CONTROL PRACTICES DETAILED IN THE EROSION CONTROL AND SEDIMENT CONTROL FIELD MANUAL, 4TH EDITION.
14. DURING PERIODS WHEN STORMS ARE FORECAST –
    14.1. EXCAVATED SOILS SHOULD NOT BE PLACED IN STREETS OR ON PAVED AREAS.
    14.2. ANY EXCAVATED SOILS SHOULD BE REMOVED FROM THE STREET BY THE END OF THE DAY.
    14.3. WHERE STOCKPILING IS NECESSARY, COVER WITH A TARP AND SURROUND THE STOCKPILED MATERIAL WITH FIBER ROLES, GRAVEL SEDIMENT BARRIER, SILT FENCE, OR OTHER RUNOFF CONTROLS.
    14.4. USE INLET CONTROLS AS NEEDED (E.G. BLOCK & GRAVEL SEDIMENT BARRIER) FOR STORM DRAIN ADJACENT TO THE PROJECT SITE OR STOCKPILED SOIL.
    14.5. THOROUGHLY SWEEP ALL PAVED AREAS EXPOSED TO SOIL EXCAVATION AND PLACEMENT.
15. DURING PERIODS WHEN STORMS ARE NOT FORECAST –
    15.1. PREVENT STOCKPILED MATERIAL FROM ENTERING THE STORM DRAIN SYSTEM.
    15.2. THOROUGHLY REMOVE LOOSE SOIL VIA SWEEPING FOLLOWING REMOVAL OF DIRT.
16. DUST CONTROL SHOULD BE PRACTICED ON ALL CONSTRUCTION SITES WITH EXPOSED SOILS AS NEEDED. IT IS IMPORTANT IN WINDY OR WIND-PRONE AREAS. DUST CONTROL IS CONSIDERED A TEMPORARY MEASURE AND AS AS INTERMEDIATE TREATMENT BETWEEN SITE DISTURBANCE AND CONSTRUCTION, PAVING, OR REVEGETATION. REFER TO THE EROSION CONTROL AND SEDIMENT CONTROL FIELD MANUAL, 4TH EDITION.
17. EROSION CONTROL MATERIALS MUST BE STORED ON SITE, EVEN DURING WEEKENDS AND THE "OFF SEASON".
18. TREE PROTECTION SHALL BE IN PLACE BEFORE ANY DEMOLITION, GRADING, EXCAVATING, OR GRUBBING IS STARTED.

DRAINAGE INLET SEDIMENT BARRIERS

1. DRAINAGE INLET SEDIMENT BARRIERS SHALL BE INSTALLED AS SOON AS THE STORM DRAINAGE SYSTEM IS INSTALLED.
2. PRIOR TO PAVING FIBER ROLLS SHALL BE INSTALLED AROUND EACH DROP INLET. AFTER PAVING IS COMPLETE AROUND EACH DROP INLET, BLOCK AND GRAVEL BAG SEDIMENT BARRIERS SHALL BE INSTALLED AROUND THE DROP INLETS UNTIL ALL EXPOSED EARTHEN AREAS HAVE BEEN STABILIZED AND THE PROJECT SITE FACILITIES ARE OPERATIONAL, AT WHICH TIME THESE FACILITIES SHALL BE REMOVED.

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CUPAL RESIDENCE

3343 ALPINE ROAD
PORTOLA VALLEY, CA

Scale	1"=10'
Drawing	C-BASE.DWG
Job No	201718

Date	Description
9/4/20	SUBMITTAL

REGISTERED PROFESSIONAL ENGINEER
CRAIG G. OVERBEY
RCE 60301
CIVIL
STATE OF CALIFORNIA

EROSION CONTROL PLAN

C4.2

9/4/2020 F:\DATA\CAD\201718\CAD\C-BASE.DWG

R. KELLEY BRIDGE

ABBREVIATIONS

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

SYMBOLS LEGEND

- SECTION NO. / DWG. NO.
- ELEVATION NO. / DWG. NO.
- DETAIL NO. / DWG. NO.
- DOOR TYPE / HARDWARE GROUP
- WINDOW TYPE
- DIMENSIONS TO FACE OF STUD OR WALL
- DIMENSION TO CENTERLINE
- REVISION
- ELEVATION
- LEVEL LINE CONTROL POINT ON DATUM
- MATCH LINE
- KEYNOTES

MATERIALS LEGEND

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

PROJECT TEAM

ARCHITECT: CJW ARCHITECTURE
130 PORTOLA ROAD, SUITE A
PORTOLA VALLEY, CA 94028
ATT.: Carter Warr
T: 650-851-9335 F: 650-851-9337
E-MAIL: carter@cjwarchitecture.com

CIVIL ENGINEER: LEA & BRAZE ENGINEERING, INC.
CIVIL ENGINEERS - LAND SURVEYORS
2495 INDUSTRIAL PKWY WEST
HAYWARD, CA 94545
ATT.: JIM TOBY
T: 510-887-4086 F: 510-887-3019
E-MAIL: jtoby@leabraze.com

STRUCTURAL ENGINEER: BCA STRUCTURAL ENGINEERING, INC.
1300 INDUSTRIAL WAY, SUITE 1
SAN CARLOS, CA 94070
ATT.: GEOFF CLIFFORD
T: 650-508-2500 F: 650-617-5932
E-MAIL: geoff@bcaeng.net

BRIDGE ENGINEER: VECTOR ENGINEERS
9138 S. STATE ST., SUITE 101
SANDY, UTAH 84070
T: 801-990-1775 F: 801-990-1776

DRAWING INDEX

SHEETS	
T-0.1	Title Sheet
A-1.1	Site Plan
C-1	Title Sheet
C-2	Grading, Drainage Plan & Profile
C-3	Grading Specifications
C-4	Details
C-5	Details
C-6	Details
ER-1	Erosion Control Plan
ER-2	Erosion Control Details
EX-1	Base Floodplain Elevation Development
1	Bridge Design
2	Bridge Details
S1	Bridge Abutment Plan, Elevation, General Notes
S2	Bridge Abutment Section
S3	Bridge Wing Wall

BPS 8/16

GENERAL NOTES

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

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

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

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

2c. Geotechnical Engineer and Civil Engineer shall coordinate sanitary and other utility system(s) piping and approve before backfilling. Drainage and positive flow of entire system(s) shall be tested prior to backfill.

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

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

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

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

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

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

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

5c. General Contractor shall review all Contract and Construction Documents and all schedules prior to pouring concrete. Coordinate locations of utility conduits and piping with locations of foundations and other construction.

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

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

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

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

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

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

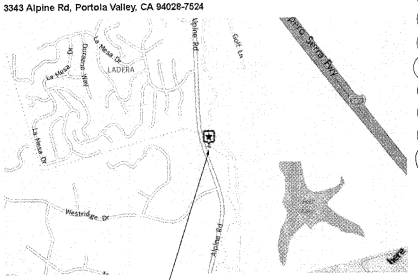
COUNTY OF SANTA CLARA
BUILDING INSPECTION OFFICE
PLANS APPROVED FOR PERMIT
SHEET NO. 1 OF 7 SHEETS
BY [signature] DATE 6/26/15
PLANS MUST BE ON JOB SITE
CORRECTIONS

The bottom of the bridge to be min two ft. above BFE. see C-5

PC 432837

SITE LOCATION MAP

3343 Alpine Rd, Portola Valley, CA 94028-7524



PLAN MUST BE POSTED ON JOB FOR FINAL APPROVAL

VERIFY PROPERTY LINES
Misrepresentation of property lines, right-of-way locations, or setback dimensions may invalidate this permit.

VICINITY MAP

N.T.S.

PROJECT DATA

CJW Job No.	2010.0100
PROJECT ADDRESS:	3343 Alpine Road, Portola Valley, CA
ASSESSOR'S PARCEL No.	0142-16-008

APPLICABLE CODES

ALL CONSTRUCTION SHALL CONFORM TO THE:
2010 CALIFORNIA BUILDING CODE
2010 CALIFORNIA RESIDENTIAL CODE
2010 CALIFORNIA PLUMBING CODE
2010 CALIFORNIA MECHANICAL CODE
2010 CALIFORNIA ELECTRICAL CODE
2010 CALIFORNIA ENERGY CODE

ALL WORK IN THE COUNTY ROAD RIGHT OF WAY REQUIRES AN ENCROACHMENT PERMIT FROM THE ROADS AND AIRPORTS DEPARTMENT. EACH INDIVIDUAL ACTIVITY REQUIRES A SEPARATE PERMIT - i.e. CABLE, ELECTRIC, GAS, SEWER, WATER, RETAINING WALLS, DRIVEWAY APPROACHES, FENCES, LANDSCAPING, ETC.

PROPOSED WORK:

NEW BRIDGE TO SPAN ACROSS CREEK TO PROVIDE PROPERTY ACCESS FROM LEGAL, DEDICATED EASEMENT.

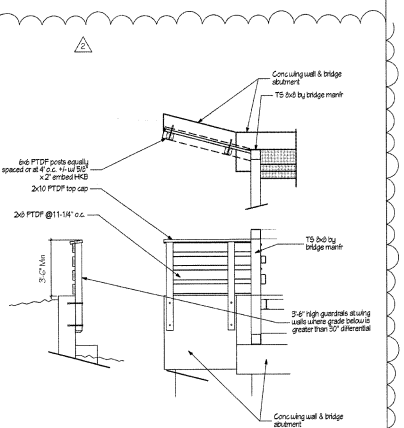
THE WORK INCLUDES:
1. TREE REMOVAL AS REQUIRED FOR BRIDGE INSTALLATION.
2. GRADING & BASE ROCK INSTALLTION FOR THE DRIVEWAY.
3. CONCRETE ABUTMENT AND WING WALL INSTALLATION
4. BRIDGE INSTALLATION

THERE ARE NO BUILDINGS OR OTHER IMPROVEMENTS PROPOSED AT THIS TIME

RESTAMP

PLANNING OFFICE REVIEW
Zoning HS
Setbacks: Front ____ Sides per plan Rear ____
Max. Height n/a
APNs 142-15-008
This project conforms to current zoning requirements.
By [signature] Date 6/26/15
(N) 74-foot long residential bridge

NO ENCROACHMENT WITHIN ANY EASEMENT OR RIGHT-OF-WAY IS APPROVED



GUARDRAIL AT WING WALLS

N.T.S.

LICENSED ARCHITECT
CARTER JENSEN WARR
NO. C-19397
REN. 6-30-15
STATE OF CALIFORNIA

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

• PROJECT •

R. Kelley Bridge
3343 Alpine Road
APN: 0142-15-008
Portola Valley, CA 94028

• SHEET TITLE •

Title Sheet

• REVISIONS •

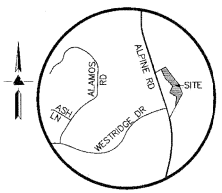
No.	Date	Notes
1	11/27/13	PC response
2	5/14/14	PC response

• JOB: 2010.0100

• DATE: 9/16/2013

• SHEET: T-0.1

ALPINE ROAD (80')



VICINITY MAP
NO SCALE

LEGEND

- BOUNDARY LINE
- EASEMENT LINE
- PROPERTY LINE
- FLOW LINE
- FENCE LINE
- BENCHMARK
- MH MANHOLE
- SET HUB AND TACK
- XXX.XX SPOTGRADE
- ASPHALT
- DRIPLINE TREE: TYPE AND SIZE AS NOTED

BOUNDARY NOTE

CONTROLLING GRANT DEED DOCUMENTS THAT BORDER LOS TRANCOS CREEK IDENTIFY THE PROPERTY LINE AS THE CENTERLINE OF THE EXISTING CREEK. PROPERTY LINE SHOWN ON THIS SURVEY HOLDS TO THE EXISTING AVERAGE CENTERLINE OF LOS TRANCOS CREEK.

NOTES

ALL DISTANCES AND DIMENSIONS ARE IN FEET AND DECIMALS OF A FOOT.

UNDERGROUND UTILITY LOCATION IS BASED ON SURFACE EVIDENCE.

BENCHMARK

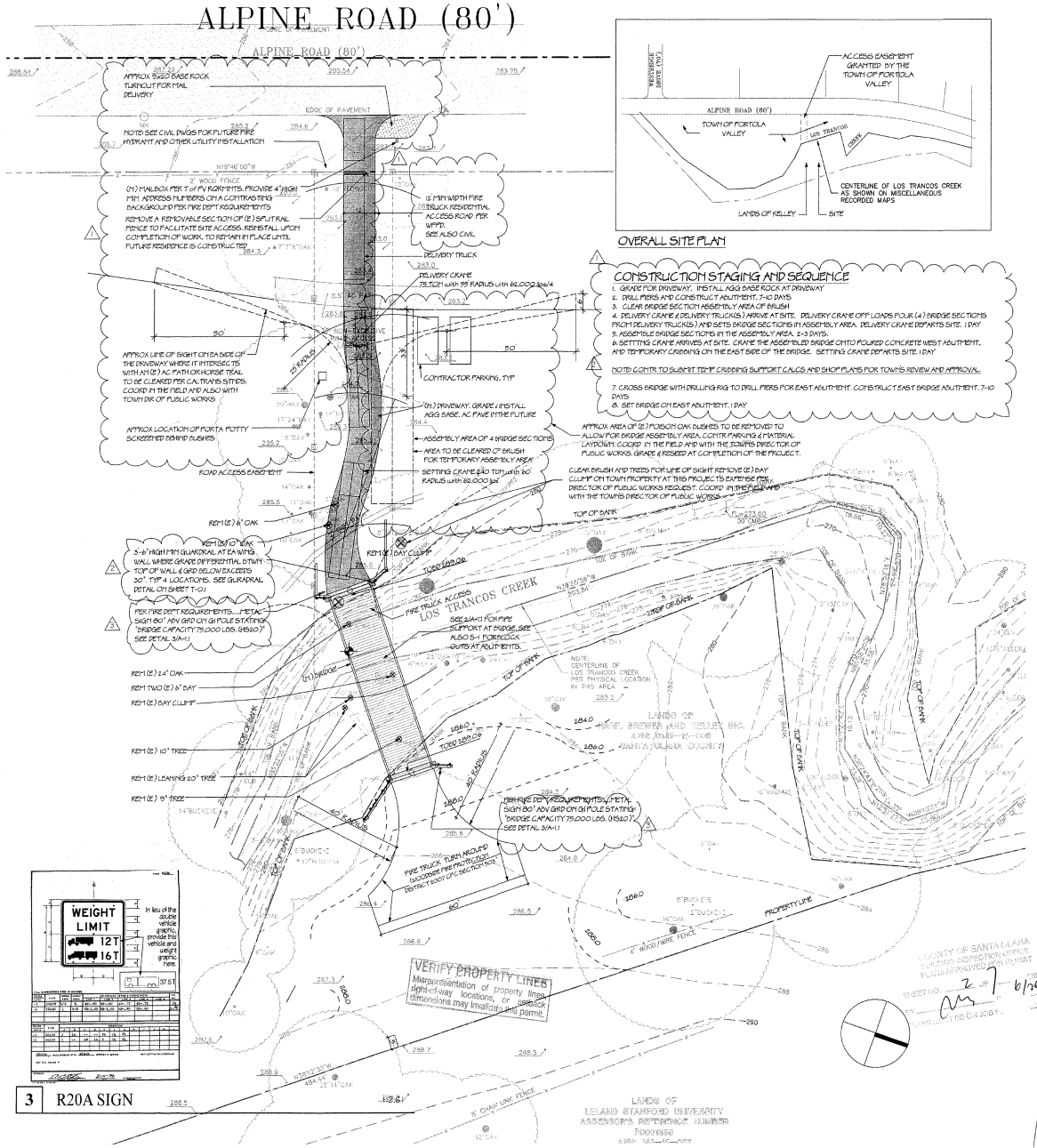
TOWN OF PORTOLA VALLEY BENCHMARK
BENCH MARK PV01
3.5" BRASS DISK IN MONUMENT WELL
STAMPED "PV-01"
ELEVATION = 304.79'

EASEMENT NOTE

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

SITE BENCHMARK

SURVEY CONTROL POINT
MAG AND SHINER SET IN ASPHALT
ELEVATION = 283.67'



1 Site Plan 1" = 20'

3 R20A SIGN

OVERALL SITE PLAN

CONSTRUCTION STAGING AND SEQUENCE

1. GRADE FOR DRIVEWAY. INSTALL AGG BASE ROCK AT DRIVEWAY
2. DRILL PIERS AND CONSTRUCT ABUTMENT. 7-10 DAYS
3. CLEAR BRIDGE SECTION ASSEMBLY AREA OF BRUSH
4. DELIVERY CRANE & DELIVERY TRUCK(S) ARRIVE AT SITE. DELIVERY CRANE OFF LOADS FOUR (4) BRIDGE SECTIONS FROM DELIVERY TRUCK(S) AND SETS BRIDGE SECTIONS IN ASSEMBLY AREA. DELIVERY CRANE DEPARTS SITE. 1 DAY
5. ASSEMBLE BRIDGE SECTIONS IN THE ASSEMBLY AREA. 2-3 DAYS.
6. SETTING CRANE ARRIVES AT SITE. CRANE THE ASSEMBLED BRIDGE ONTO POURED CONCRETE WEST ABUTMENT. AND TEMPORARY GRADING ON THE EAST SIDE OF THE BRIDGE. SETTING CRANE DEPARTS SITE. 1 DAY

NOTE: CONTR TO SUBMIT TEMP GRADING SUPPORT CALCS AND SHOP PLANS FOR TOWN'S REVIEW AND APPROVAL.

7. CROSS BRIDGE WITH DRILLING RIG TO DRILL PIERS FOR EAST ABUTMENT. CONSTRUCT EAST BRIDGE ABUTMENT. 7-10 DAYS
8. SET BRIDGE ON EAST ABUTMENT. 1 DAY

APPROX AREA OF (E) POISON OAK BUSHES TO BE REMOVED TO ALLOW FOR BRIDGE ASSEMBLY AREA, CONTR PARKING & MATERIAL LAYDOWN. COORD IN THE FIELD AND WITH THE TOWN'S DIRECTOR OF PUBLIC WORKS. GRADE & RESEED AT COMPLETION OF THE PROJECT.

CLEAR BRUSH AND TREES FOR LINE OF SIGHT REMOVE (E) BAY CLUMP ON TOWN PROPERTY AT THIS PROJECT'S EXPENSE PER DIRECTOR OF PUBLIC WORKS REQUEST. COORD IN THE FIELD AND WITH THE TOWN'S DIRECTOR OF PUBLIC WORKS

PROPOSED NEW FLOOR AREA

LOT SIZE (GROSS): 4.1 ACRES

ZONING: HS

NEW BUILDING AREA	NONE AT THIS TIME
NEW DRIVEWAY SAN MATEO SIDE:	1,287.6 +/- SF

SIGNIFICANT TREES TO BE REMOVED

1 - 24" COAST LIVE OAK, LOCATED AT DRIVEWAY

UTILITIES

DOMESTIC WATER / FIRE HYDRANT

CAL WATER - FROM ALPINE ROAD

SEWAGE DISPOSAL - PUBLIC

WEST BAY SANITARY DISTRICT

POWER/GAS

PG&E - UNDERGROUND FROM ALPINE ROAD

TELEPHONE/CABLE/COMMUNICATION

ATT/COMCAST - UNDERGROUND FROM ALPINE ROAD

ALL UTILITIES WILL COME TO THE SITE FROM ALPINE ROAD VIA THE ACCESS EASEMENT UNDERGROUND (CROSSING LOS TRANCOS CREEK VIA THE PROPOSED 75 FOOT H-20 PRE-ENGINEERED BRIDGE CONSTRUCTED ALONE THE FEMA FLOOD PLAIN WITH ALL FOOTINGS OUTSIDE THE CREEK DEFINED TOP OF BANK

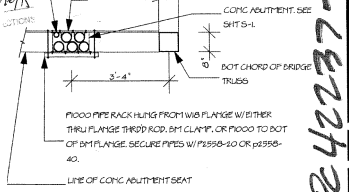
GRADING QUANTITIES (CUBIC YARDS)

	CUT	FILL	
DRIVEWAY FROM ALPINE RD	60 CY	134 CY	SAN MATEO COUNTY SIDE
TRENCH	73 CY	50 CY	
TOTAL	133 CY	184 CY	
DRIVEWAY/ FIRE TURN-AROUND	44 CY	44 CY	SANTA CLARA COUNTY SIDE
TOTAL	44 CY	44 CY = 88 CY (150 CY. Therefore, no grading permit reqd per Section C12-406	

SLOPED CALCULATION OF IMPROVEMENT AREA OF SITE

$G = \frac{V}{H} \times 100$ $G = \frac{10.9}{264} \times 100$

G = 4.1% SLOPE



2 Pipe Hanger Detail 1/2" = 1'-0"

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

LICENSED ARCHITECT CARTER JENSEN WEIR NO. C-19997 REN. 6-30-15 STATE OF CALIFORNIA

- PROJECT -

R. Kelley Bridge
3343 Alpine Road
APN: 0142-15-008
Alpine Road
Portola Valley, CA 94028

- SHEET TITLE -

Site Plan

- REVISIONS -

No.	Date	Notes
1	11/27/13	PC response
2	3/14/14	PC response
3	5/29/15	SCCo PC response

- JOB: 2010.0100
- DATE: 9/16/2013
- SHEET: 1 OF 2 SHEETS

RECEIVED JUN 01 2015 BUILDING & PLANNING DIVISION

11-27-13 PC
3-14-14 PC
5-29-15 SCCo PC

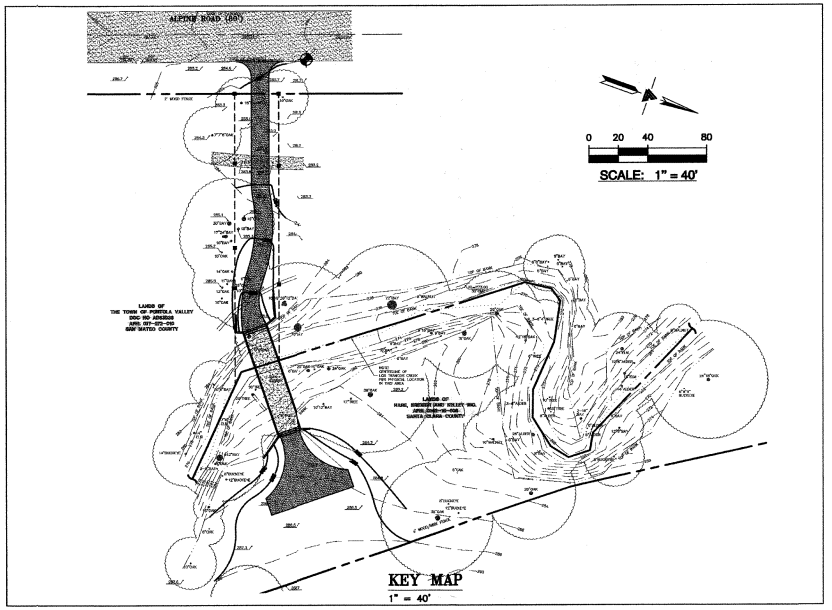
SHEET NO. 2 OF 2 SHEETS 6/16/15

M:\CJW_Job_Files\2010\2010-0100 R. Kelley Residence\Dwg\1 Current\2010-0100 Kelley Residence w constr staging.pln 11:03 AM Friday, May 29, 2015

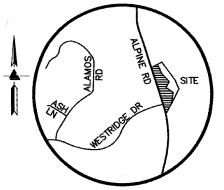
KELLY RESIDENCE
ALPINE ROAD
PORTOLA VALLEY, CALIFORNIA

LEGEND

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



KEY MAP
1" = 40'



VICINITY MAP
NO SCALE

OWNER'S INFORMATION

OWNER:
RYLAND KELLY
314 RAYMUNDO STREET
WOODSIDE CA, 94062

APN: 142-15-008

REFERENCES

THIS GRADING AND DRAINAGE PLAN IS SUPPLEMENTAL TO:

1. TOPOGRAPHIC SURVEY BY LEA & BRAZE ENGINEERING, INC., ENTITLED;
   "TOPOGRAPHIC SURVEY"
   SANTA CLARA COUNTY
   PORTOLA VALLEY, CALIFORNIA
   DATED: 6-21-11
   JOB# : 2060443
2. SITE PLAN BY CJW ARCHITECTURE ENTITLED:
   "R. KELLY RESIDENCE"
   ALPINE ROAD
   PORTOLA VALLEY, CA 94028
3. SOILS REPORT BY JF CONSULTING,INC
   "BRIDGE AT ALPINE ROAD"
   ALPINE ROAD
   PORTOLA VALLEY, CA 94028
4. STRUCTURAL PLANS BY BCA STRUCTURAL ENGINEERS
   "R. KELLEY RESIDENCE
   ALPINE ROAD
   PORTOLA VALLEY, CALIFORNIA
   JOB# 13340

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

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

NOTE:
FOR CONSTRUCTION STAKING SCHEDULING OR QUOTATIONS PLEASE CONTACT GREG BRAZE AT LEA & BRAZE ENGINEERING (510)887-4086 EXT 103. gbraze@leabraze.com

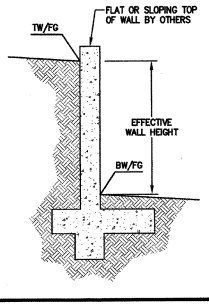
ABBREVIATIONS

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

INSPECTIONS REQUIRED
THE TOWN OF PORTOLA VALLEY REQUIRES LEA & BRAZE ENGINEERING, INC. TO INSPECT ALL STORM DRAINAGE AS IT IS INSTALLED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT LEA & BRAZE ENGINEERING, INC. PRIOR TO START OF CONSTRUCTION TO SET UP A PRE-CONSTRUCTION MEETING, AND TO CALL AT LEAST 48 HOURS IN ADVANCE OF ANY INSPECTIONS. PIPES ARE TO REMAIN UNCOVERED UNTIL AN INSPECTION PERFORMED BY LEA & BRAZE ENGINEERING, INC. OCCURS.
POINT OF CONTACT:
JIM TOBY
LEA & BRAZE ENGINEERING, INC.
(510)887-4086 jtoby@leabraze.com

RETAINING WALL NOTES

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



GEOTECHNICAL NOTES:

ALL EARTHWORK AND SITE DRAINAGE, INCLUDING SITE GRADING, NEW BASEMENT EXCAVATION, RETAINING WALL BACKFILL, DRILLED PIER AND GRADE BEAM EXCAVATIONS, PREPARATION OF SUBGRADE SOILS AND ENGINEERED GRANULAR FILL BENEATH SLABS AND DRIVEWAY, AND FINAL SURFACE DRAINAGE CONTROLS, SHOULD BE COMPLETED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT PREPARED BY JF CONSULTING, INC., DATED MAY 28, 2013. JF CONSULTING, INC. SHOULD BE PROVIDED AT LEAST 48 HOURS ADVANCE NOTIFICATION (408-867-6321) OF ANY EARTHWORK OPERATIONS AND SHOULD BE PRESENT TO OBSERVE AND/OR TEST AS THE EARTHWORK, FOUNDATION, AND DRAINAGE INSTALLATION PHASES OF THE PROJECT.

BOUNDARY NOTE

CONTROLLING GRANT DEED DOCUMENTS THAT BORDER LOS TRANCOS CREEK IDENTIFY THE PROPERTY LINE AS THE CENTERLINE OF THE EXISTING CREEK. PROPERTY LINE SHOWN ON THIS SURVEY HOLDS TO THE EXISTING AVERAGE CENTERLINE OF LOS TRANCOS CREEK.

NOTES

ALL DISTANCES AND DIMENSIONS ARE IN FEET AND DECIMALS OF A FOOT.

UNDERGROUND UTILITY LOCATION IS BASED ON SURFACE EVIDENCE.

BENCHMARK

TOWN OF PORTOLA VALLEY BENCHMARK
BENCH MARK PV01
3.5" BRASS DISK IN MONUMENT WELL
STAMPED "PV-01"
ELEVATION = 304.79'

EASEMENT NOTE

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

SITE BENCHMARK

SURVEY CONTROL POINT
MAG AND SHINER SET IN ASPHALT
ELEVATION = 283.67'

ESTIMATED EARTHWORK QUANTITIES

CUBIC YARDS	WITHIN BUILDING FOOTPRINT	OUTSIDE BUILDING FOOTPRINT	TOTAL CUBIC YARDS
CUT	0	200	200
FILL	0	200	200
EXPORT IMPORT			0

NOTE:
GRADING QUANTITIES REPRESENT BANK YARDAGE. IT DOES NOT INCLUDE ANY SWELLING OR SHRINKAGE FACTORS AND IS INTENDED TO REPRESENT IN-SITU CONDITIONS. QUANTITIES DO NOT INCLUDE OVER-EXCAVATION, TRENCHING, STRUCTURAL FOUNDATIONS OR PIERS, OR POOL EXCAVATION (IF ANY). NOTE ADDITIONAL EARTHWORKS, SUCH AS KEYWAYS OR BENCHING MAY BE REQUIRED BY THE GEOTECHNICAL ENGINEER IN THE FIELD AT TIME OF CONSTRUCTION. CONTRACTOR TO VERIFY QUANTITIES.

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

SHEET INDEX

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CIVIL ENGINEERS • LAND SURVEYORS
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(F) (510) 887-3019

SACRAMENTO REGION
2680 BISHOP DRIVE, SUITE 300
ROSEVILLE, CA 95661
(P) (916)966-1338
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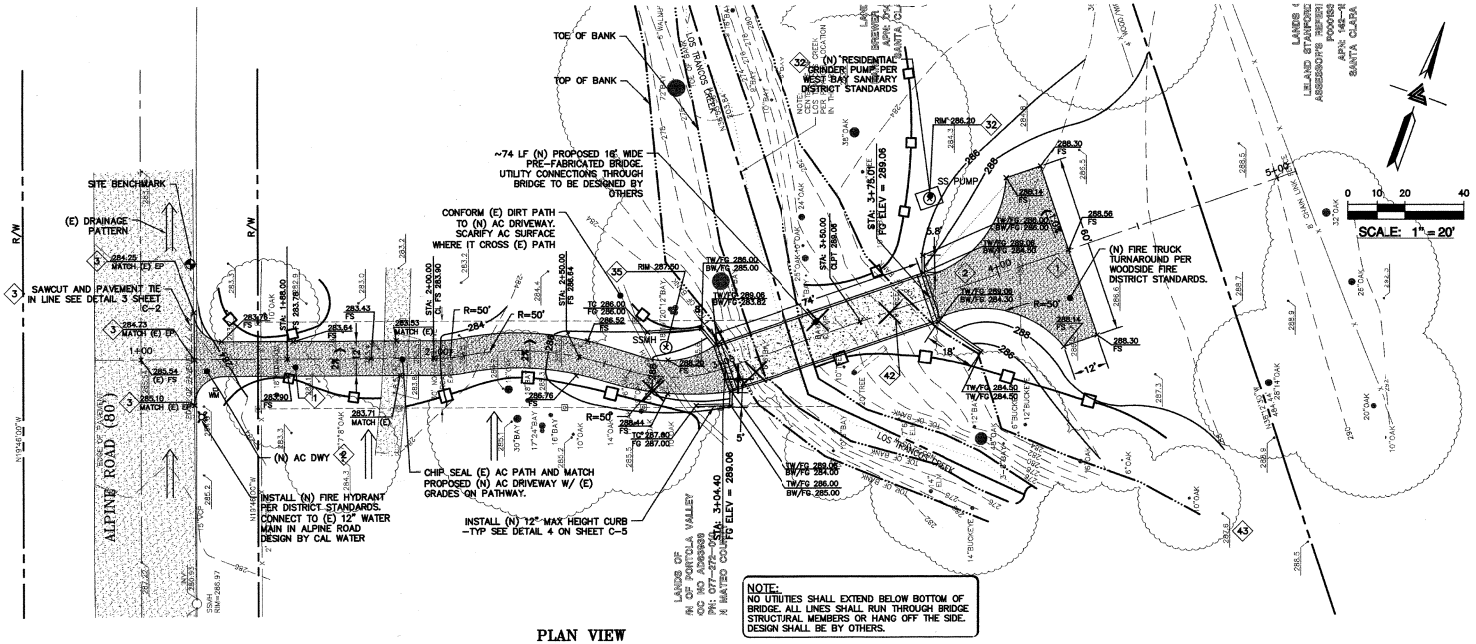
WWW.LEABRAZE.COM

KELLY RESIDENCE
ALPINE ROAD
PORTOLA VALLEY, CALIFORNIA
SANTA CLARA COUNTY APN: 142-15-008

TITLE SHEET

4	PLAN CHECK 4-22-14	AH
3	PLAN CHECK 3-13-14	AH
2	PLAN CHECK 2-12-14	AH
1	PLAN CHECK 11-08-13	AH
	REVISIONS	BY

JOB NO: 2120303
DATE: 10-21-13
SCALE: AS NOTED
DESIGN BY: JT/RC
DRAWN BY: SY
SHEET NO: C-1
1 OF 8 SHEETS

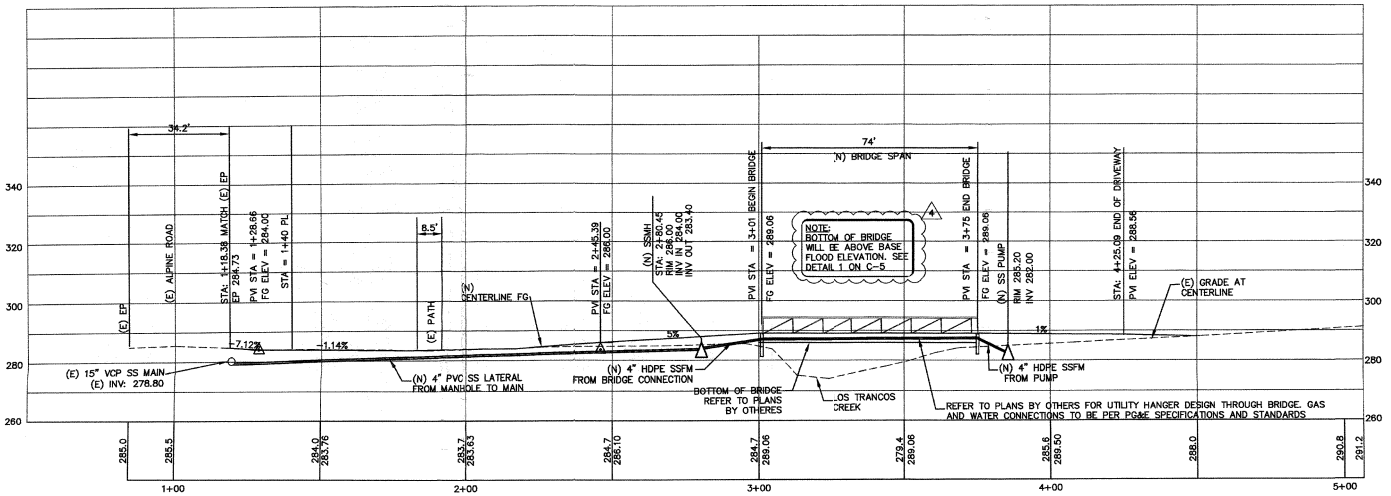


PLAN VIEW
SCALE: 1" = 20'

NOTE:
NO UTILITIES SHALL EXTEND BELOW BOTTOM OF BRIDGE. ALL LINES SHALL RUN THROUGH BRIDGE STRUCTURAL MEMBERS OR HANG OFF THE SIDE. DESIGN SHALL BE BY OTHERS.

NOTE:
SEE SHEET C-3 FOR UTILITY LINES. REFER TO PLANS BY OTHERS FOR UTILITIES THROUGH BRIDGE.

NOTE:
VEGETATION ALONG DRIVEWAY MUST HAVE 13'6" VERTICAL CLEARANCE AND A 12' MINIMUM WIDTH CLEARANCE.



PROFILE
SCALE: 1" =20' HORIZ. & VERT

FLATWORK KEYNOTES 1 TO 3

1. PROVIDE 2% (1% MIN.) SLOPE ACROSS FLAT WORK AND/OR PAVING PER CBC 2304.11.2. SLOPE TOWARDS POSITIVE DRAINAGE AS SHOWN ON PLAN.
2. (N) AC DRIVEWAY. SEE DETAIL 2 SHEET C-5.
3. GRIND AC TO TIE (N) AC INTO (E) AC PAVING. SEE DETAIL 3 SHEET C-5.

UTILITIES KEYNOTES 31 TO 35

31. INSTALL (N) SANITARY SEWER LATERALS. USE 4" PVC (SDR-26) SLOPED AT 2% MINIMUM. CONNECT TO (E) SEWER MAIN AS SHOWN. PROVIDE CLEANOUT TO GRADE AT BUILDING AND BEHIND PROPERTY LINE AND AT MAJOR CHANGES IN DIRECTION AS SHOWN. REUSE (E) LATERAL IF POSSIBLE. CONNECT PER DISTRICT STANDARD DETAIL 6 ON SHEET C-6.
32. INSTALL (N) ENVIRONMENTAL ONE PUMP GRINDER EJECTOR SYSTEM. SEE DETAIL 19 ON SHEET C-6.
33. CONNECT (N) WATER SERVICE PER WATER DISTRICT STANDARDS. UPGRADE (E) WATER METER PER WATER DISTRICT STANDARDS AS APPLICABLE. INSTALL (N) 2" MINIMUM SERVICE LINE TO (N) RESIDENCE OR AS DIRECTED BY FIRE SPRINKLER DESIGNER. CONNECTIONS THROUGH BRIDGE TO BE PER PG&E SPECIFICATIONS AND STANDARDS.
34. INSTALL (N) JOINT TRENCH FOR SERVICES INCLUDING GAS, CATV & ELECTRIC FROM NEAREST POINT OF CONNECTION PER DISTRICT AND PG&E STANDRADS. DESIGN BY OTHERS.
35. INSTALL (N) SANITARY SEWER MANHOLE PER DISTRICT STANDARDS. SEE DETAIL 3 ON SHEET C-6.

DEMOLITION KEYNOTES 41 TO 43

41. DEMOLISH (E) IMPROVEMENTS AS NECESSARY TO ACCOMMODATE (N) CONSTRUCTION. NO DEMOLITION SHALL COMMENCE WITHOUT REQUIRED DEMOLITION PERMITS.
42. REMOVE (E) TREE. CONTRACTOR SHALL OBTAIN THE PROPER TREE REMOVAL PERMITS AS REQUIRED.
43. PROVIDE TREE PROTECTION AROUND DRIP LINES OF (E) TREES. CAUTION SHALL BE TAKEN WHEN TRENCHING NEAR TREES AS TO NOT DAMAGE THE TREE ROOT STRUCTURE. HAND DIGGING MAY BE NECESSARY TO PROTECT TREES. TREE PROTECTION FENCING SHALL REMAIN IN PLACE THROUGHOUT CONSTRUCTION. SEE DETAIL 2 SHEET ER-2.

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1400 EUREKA ROAD, STE 100
ROSEVILLE, CA 95661
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JAMES TOM REGISTERED PROFESSIONAL ENGINEER No. 63107 CIVIL STATE OF CALIFORNIA

KELLY RESIDENCE
ALPINE ROAD
PORTOLA VALLEY, CALIFORNIA
APN: 142-15-008
SANTA CLARA COUNTY

GRADING & DRAINAGE PLAN & PROFILE

	REVISIONS	BY
4	PLAN CHECK 4-22-14	AH
3	PLAN CHECK 3-13-14	AH
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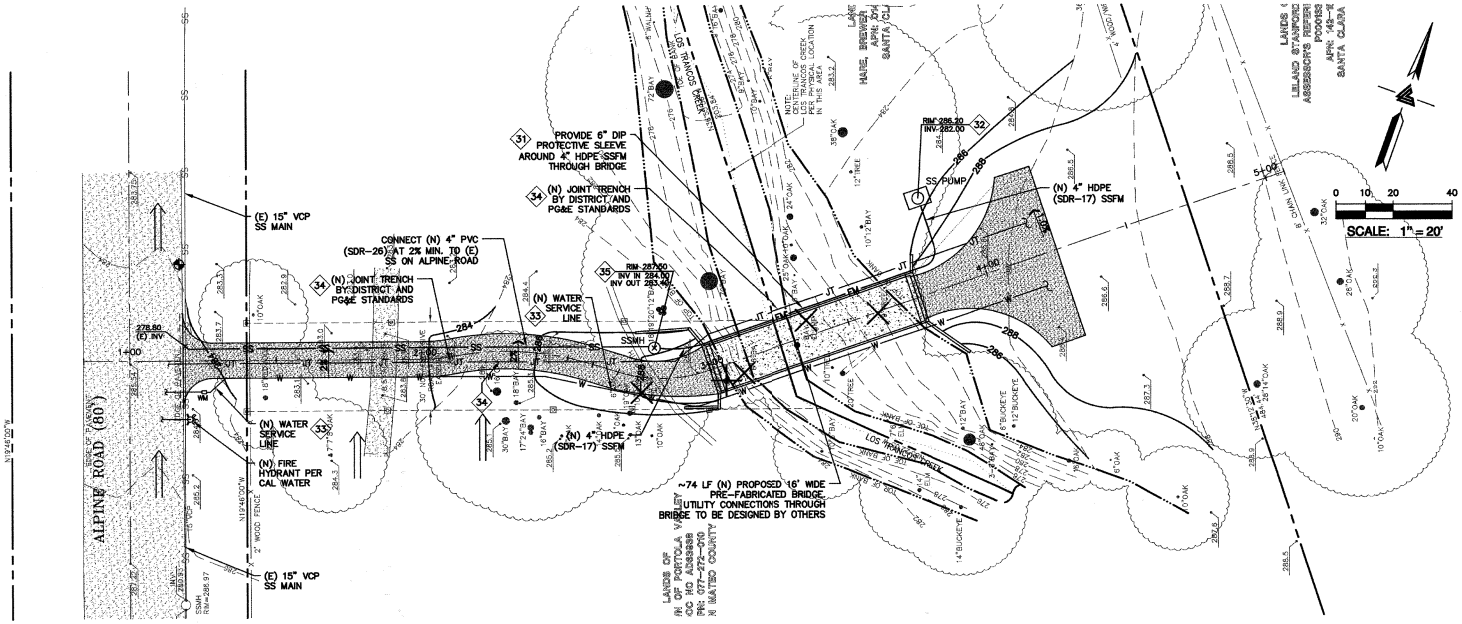
C-2

2 OF 8 SHEETS



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APN: 142-15-008
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UTILITY PLAN

–		–
4	PLAN CHECK 4-22-14	AH
3	PLAN CHECK 3-13-14	AH
2	PLAN CHECK 2-12-14	AH
1	PLAN CHECK 11-08-13	AH
	REVISIONS	BY

JOB NO: 2120303
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SCALE:
DESIGN BY: JT/RC
DRAWN BY: SY
SHEET NO:

C-3

3 OF 8 SHEETS

GENERAL NOTES

ALL GENERAL NOTES, SHEET NOTES, AND LEGEND NOTES FOUND IN THESE DOCUMENTS SHALL APPLY TYPICALLY THROUGHOUT. IF INCONSISTENCIES ARE FOUND IN THE VARIOUS NOTATIONS, NOTIFY THE ENGINEER IMMEDIATELY IN WRITING REQUESTING CLARIFICATION.

THESE DRAWINGS AND THEIR CONTENT ARE AND SHALL REMAIN THE PROPERTY OF LEA AND BRAZE ENGINEERING, INC. WHETHER THE PROJECT FOR WHICH THEY ARE PREPARED IS EXECUTED OR NOT. THEY ARE NOT TO BE USED BY ANY PERSONS ON OTHER PROJECTS OR EXTENSIONS OF THE PROJECT EXCEPT BY AGREEMENT IN WRITING AND WITH APPROPRIATE COMPENSATION TO THE ENGINEER.

ALL WORK SHALL COMPLY WITH APPLICABLE CODES AND TRADE STANDARDS WHICH GOVERN EACH PHASE OF WORK INCLUDING, BUT NOT LIMITED TO, CALIFORNIA MECHANICAL CODE, CALIFORNIA PLUMBING CODE, CALIFORNIA ELECTRICAL CODE, CALIFORNIA FIRE CODE, CALTRANS STANDARDS AND SPECIFICATIONS, AND ALL APPLICABLE STATE AND/OR LOCAL CODES AND/OR LEGISLATION.

IT IS THE RESPONSIBILITY OF THE CONTRACTOR AND ALL SUBCONTRACTORS TO CHECK AND VERIFY ALL CONDITIONS, DIMENSIONS, LINES AND LEVELS INDICATED. PROPER FIT AND ATTACHMENT OF ALL PARTS IS REQUIRED. SHOULD THERE BE ANY DISCREPANCIES, IMMEDIATELY NOTIFY THE ENGINEER FOR CORRECTION OR ADJUSTMENT. IN THE EVENT OF FAILURE TO DO SO, THE CONTRACTOR SHALL BE RESPONSIBLE FOR CORRECTION OF ANY ERROR.

ALL DIMENSIONS AND CONDITIONS SHALL BE CHECKED AND VERIFIED ON THE JOB BY EACH SUBCONTRACTOR BEFORE HE/SHE BEGINS HIS/HER WORK. ANY ERRORS, OMISSION, OR DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER/CONTRACTOR BEFORE CONSTRUCTION BEGINS.

COMMENCEMENT OF WORK BY THE CONTRACTOR AND/OR ANY SUBCONTRACTOR SHALL INDICATE KNOWLEDGE AND ACCEPTANCE OF ALL CONDITIONS DESCRIBED IN THESE CONSTRUCTION DOCUMENTS, OR EXISTING ON SITE, WHICH COULD AFFECT THEIR WORK.

WORK SEQUENCE

IN THE EVENT ANY SPECIAL SEQUENCING OF THE WORK IS REQUIRED BY THE OWNER OR THE CONTRACTOR, THE CONTRACTOR SHALL ARRANGE A CONFERENCE BEFORE ANY SUCH WORK IS BEGUN.

SITE EXAMINATION: THE CONTRACTOR AND ALL SUBCONTRACTORS SHALL THOROUGHLY EXAMINE THE SITE AND FAMILIARIZE HIM/HERSELF WITH THE CONDITIONS UNDER WHICH THE WORK IS TO BE PERFORMED. THE CONTRACTOR SHALL VERIFY AT THE SITE ALL MEASUREMENTS AFFECTING HIS/HER WORK AND SHALL BE RESPONSIBLE FOR THE CORRECTIONS OF THE SAME. NO EXTRA COMPENSATION WILL BE ALLOWED TO THE CONTRACTOR FOR EXPENSES DUE TO HIS/HER NEGLECT TO EXAMINE, OR FAILURE TO DISCOVER, CONDITIONS WHICH AFFECT HIS/HER WORK.

LEA AND BRAZE ENGINEERING, INC. EXPRESSLY RESERVES ITS COMMON LAW COPYRIGHT AND OTHER PROPERTY RIGHTS IN THESE PLANS. THESE PLANS ARE NOT TO BE REPRODUCED, CHANGED OR COPIED IN ANY FORM OR MANNER WHATSOEVER, NOR ARE THEY TO BE ASSIGNED TO A THIRD PARTY WITHOUT FIRST OBTAINING THE WRITTEN PERMISSION AND CONSENT OF LEA AND BRAZE ENGINEERING, INC. IN THE EVENT OF UNAUTHORIZED REUSE OF THESE PLANS BY A THIRD PARTY, THE THIRD PARTY SHALL HOLD HARMLESS LEA AND BRAZE ENGINEERING, INC.

CONSTRUCTION IS ALWAYS LESS THAN PERFECT SINCE PROJECTS REQUIRE THE COORDINATION AND INSTALLATION OF MANY INDIVIDUAL COMPONENTS BY VARIOUS CONSTRUCTION INDUSTRY TRADES. THESE DOCUMENTS CANNOT PORTRAY ALL COMPONENTS OR ASSEMBLIES EXACTLY. IT IS THE INTENTION OF THESE ENGINEERING DOCUMENTS THAT THEY REPRESENT A REASONABLE STANDARD OF CARE IN THEIR CONTENT. IT IS ALSO PRESUMED BY THESE DOCUMENTS THAT CONSTRUCTION REVIEW SERVICES WILL BE PROVIDED BY THE ENGINEER. SHOULD THE OWNER NOT RETAIN THE ENGINEER TO PROVIDE SUCH SERVICES, OR SHOULD HE/SHE RETAIN THE ENGINEER TO PROVIDE ONLY PARTIAL OR LIMITED SERVICES, THEN IT SHALL BE THE OWNER'S AND CONTRACTOR'S RESPONSIBILITY TO FULLY RECOGNIZE AND PROVIDE THAT STANDARD OF CARE.

IF THE OWNER OR CONTRACTOR OBSERVES OR OTHERWISE BECOMES AWARE OF ANY FAULT OR DEFECT IN THE PROJECT OR NONCONFORMANCE WITH THE CONTRACT DOCUMENTS, PROMPT WRITTEN NOTICE THEREOF SHALL BE GIVEN BY THE OWNER AND/OR CONTRACTOR TO THE ENGINEER.

THE ENGINEER SHALL NOT HAVE CONTROL OF OR CHARGE OF AND SHALL NOT BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, OR PROCEDURES, OR FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, FOR THE ACTS OR OMISSIONS OF THE CONTRACTOR, SUBCONTRACTORS, OR ANY OTHER PERSONS PERFORMING ANY OF THE WORK, OR FOR THE FAILURE OF ANY OF THEM TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

SITE PROTECTION

PROTECT ALL LANDSCAPING THAT IS TO REMAIN. ANY DAMAGE OR LOSS RESULTING FROM EXCAVATION, GRADING, OR CONSTRUCTION WORK SHALL BE CORRECTED OR REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION OF ALL EXISTING SITE UTILITIES AND SHALL COORDINATE THEIR REMOVAL OR MODIFICATIONS (IF ANY) TO AVOID ANY INTERRUPTION OF SERVICE TO ADJACENT AREAS. THE GENERAL CONTRACTOR SHALL INFORM HIM/HERSELF OF MUNICIPAL REGULATIONS AND CARRY OUT HIS/HER WORK IN COMPLIANCE WITH ALL FEDERAL AND STATE REQUIREMENTS TO REDUCE FIRE HAZARDS AND INJURIES TO THE PUBLIC.

STORMWATER POLLUTION PREVENTION NOTES

1) STORE, HANDLE, AND DISPOSE OF CONSTRUCTION MATERIALS AND WASTES PROPERLY, SO AS TO PREVENT THEIR CONTACT WITH STORMWATER.

2) 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.

3) USE SEDIMENT CONTROL OR FILTRATION TO REMOVE SEDIMENT FROM DEWATERING EFFLUENT.

4) AVOID CLEANING, FUELING, OR MAINTAINING VEHICLES ON SITE, EXCEPT IN A DESIGNATED AREA IN WHICH RUNOFF IS CONTAINED AND TREATED.

5) DELINEATE CLEARING LIMITS, EASEMENTS, SETBACKS, SENSITIVE OR CRITICAL AREAS, BUFFER ZONES, TREES AND DISCHARGE COURSE WITH FIELD MARKERS.

6) PROTECT ADJACENT PROPERTIES AND UNDISTURBED AREAS FROM CONSTRUCTION IMPACTS USING VEGETATIVE BUFFER STRIPS, SEDIMENT BARRIERS OF FILTERS, DIKES, MULCHING, OR OTHER MEASURES AS APPROPRIATE.

7) PERFORM CLEARING AND EARTH MOVING ACTIVITIES DURING DRY WEATHER TO THE MAXIMUM EXTENT PRACTICAL.

8) LIMIT AND TIME APPLICATIONS OF PESTICIDES AND FERTILIZERS TO PREVENT POLLUTED RUNOFF.

9) LIMIT CONSTRUCTION ACCESS ROUTES AND STABILIZE DESIGNATED ACCESS POINTS.

10) AVOID TRACKING DIRT OR MATERIALS OFF-SITE; CLEAN OFF-SITE PAVED AREAS AND SIDEWALKS USING DRY SWEEPING METHODS TO THE MAXIMUM EXTENT PRACTICAL.

SUPPLEMENTAL MEASURES

A. THE PHRASE "NO DUMPING – DRAINS TO BAY" OR EQUALLY EFFECTIVE PHRASE MUST BE LABELED ON STORM DRAIN INLETS (BY STENCILING, BRANDING, OR PLAQUES) TO ALERT THE PUBLIC TO THE DESTINATION OF STORM WATER AND TO PREVENT DIRECT DISCHARGE OF POLLUTANTS INTO THE STORM DRAIN.

B. USING FILTRATION MATERIALS ON STORM DRAIN COVERS TO REMOVE SEDIMENT FROM DEWATERING EFFLUENT.

C. STABILIZING ALL DENUDED AREAS AND MAINTAINING EROSION CONTROL MEASURES CONTINUOUSLY FROM OCTOBER 15 AND APRIL 15.

D. REMOVING SPOILS PROMPTLY, AND AVOID STOCKPILING OF FILL MATERIALS, WHEN RAIN IS FORECAST. IF RAIN THREATENS, STOCKPILED SOILS AND OTHER MATERIALS SHALL BE COVERED WITH A TARP OR OTHER WATERPROOF MATERIAL.

E. STORING, HANDLING, AND DISPOSING OF CONSTRUCTION MATERIALS AND WASTES SO AS TO AVOID THEIR ENTRY TO THE STORM DRAIN SYSTEMS OR WATER BODY.

F. AVOIDING CLEANING, FUELING, OR MAINTAINING VEHICLES ON-SITE, EXCEPT IN AN AREA DESIGNATED TO CONTAIN AND TREAT RUNOFF.

GRADING & DRAINAGE NOTES:

1. SCOPE OF WORK

THESE SPECIFICATIONS AND APPLICABLE PLANS PERTAIN TO AND INCLUDE ALL SITE GRADING AND EARTHWORK ASSOCIATED WITH THE PROJECT INCLUDING, BUT NOT LIMITED TO THE FURNISHING OF ALL LABOR, TOOLS AND EQUIPMENT NECESSARY FOR SITE CLEARING AND GRUBBING, SITE PREPARATION, DISPOSAL OF EXCESS OR UNSUITABLE MATERIAL, STRIPPING, KEYING, EXCAVATION, OVER EXCAVATION, RECOMPACTION PREPARATION FOR SOIL RECEIVING FILL, PAVEMENT, FOUNDATION OF SLABS, EXCAVATION, IMPORTATION OF ANY REQUIRED FILL MATERIAL, PROCESSING, PLACEMENT AND COMPACTION OF FILL AND SUBSIDIARY WORK NECESSARY TO COMPLETE THE GRADING TO CONFORM TO THE LINES, GRADING AND SLOPE SHOWN ON THE PROJECT GRADING PLANS.

2. GENERAL

A. ALL SITE GRADING AND EARTHWORK SHALL CONFORM TO THE RECOMMENDATIONS OF THESE SPECIFICATIONS, THE SOILS REPORT BY JF CONSULTING INC.; AND THE CITY OF PORTOLA VALLEY .

B. ALL FILL MATERIALS SHALL BE DENSIFIED SO AS TO PRODUCE A DENSITY NOT LESS THAN 90% RELATIVE COMPACTION BASED UPON ASTM TEST DESIGNATION D1557. FIELD DENSITY TEST WILL BE PERFORMED IN ACCORDANCE WITH ASTM TEST DESIGNATION 2922 AND 3017. THE LOCATION AND FREQUENCY OF THE FIELD DENSITY TEST WILL BE AS DETERMINED BY THE SOIL ENGINEER. THE RESULTS OF THESE TEST AND COMPLIANCE WITH THE SPECIFICATIONS WILL BE THE BASIS UPON WHICH SATISFACTORY COMPLETION OF THE WORK WILL BE JUDGED BY THE SOIL ENGINEER. ALL CUT AND FILL SLOPES SHALL BE CONSTRUCTED AS SHOWN ON PLANS, BUT NO STEEPER THAN TWO (2) HORIZONTAL TO ONE (1) VERTICAL.

C. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SATISFACTORY COMPLETION OF ALL THE EARTHWORK IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS. NO DEVIATION FROM THESE SPECIFICATIONS SHALL BE MADE EXCEPT UPON WRITTEN APPROVAL BY THE SOILS ENGINEER. BOTH CUT AND FILL AREAS SHALL BE SURFACE COMPLETED TO THE SATISFACTION OF THE SOILS ENGINEER AT THE CONCLUSION OF ALL GRADING OPERATIONS AND PRIOR TO FINAL ACCEPTANCE. THE CONTRACTOR SHALL NOTIFY THE SOILS ENGINEER AT LEAST TWO (2) WORKING DAYS PRIOR TO DOING ANY SITE GRADING AND EARTHWORK INCLUDING CLEARING.

3. CLEARING AND GRUBBING

A. THE CONTRACTOR SHALL ACCEPT THE SITE IN ITS PRESENT CONDITION. ALL EXISTING PUBLIC IMPROVEMENTS SHALL BE PROTECTED. ANY IMPROVEMENTS DAMAGED SHALL BE REPLACED BY THE CONTRACTOR AS DIRECTED BY THE LOCAL JURISDICTION WITH NO EXTRA COMPENSATION.

B. ALL ABANDONED BUILDINGS AND FOUNDATIONS, TREE (EXCEPT THOSE SPECIFIED TO REMAIN FOR LANDSCAPING PURPOSES), FENCES, VEGETATION AND ANY SURFACE DEBRIS SHALL BE REMOVED AND DISPOSED OF OFF THE SITE BY THE CONTRACTOR.

C. ALL ABANDONED SEPTIC TANKS AND ANY OTHER SUBSURFACE STRUCTURES EXISTING IN PROPOSED DEVELOPMENT AREAS SHALL BE REMOVED PRIOR TO ANY GRADING OR FILL OPERATION. ALL APPURTENANT DRAIN FIELDS AND OTHER CONNECTING LINES MUST ALSO BE TOTALLY REMOVED.

D. ALL ABANDONED UNDERGROUND IRRIGATION OR UTILITY LINES SHALL BE REMOVED OR DEMOLISHED. THE APPROPRIATE FINAL DISPOSITION OF SUCH LINES DEPEND UPON THEIR DEPTH AND LOCATION AND THE METHOD OF REMOVAL OR DEMOLITION SHALL BE DETERMINED BY THE SOILS ENGINEER. ONE OF THE FOLLOWING METHODS WILL BE USED:

(1) EXCAVATE AND TOTALLY REMOVE THE UTILITY LINE FROM THE TRENCH.

(2) EXCAVATE AND CRUSH THE UTILITY LINE IN THE TRENCH.

(3) CAP THE ENDS OF THE UTILITY LINE WITH CONCRETE TO PREVENT THE ENTRANCE OF WATER. THE LOCATIONS AT WHICH THE UTILITY LINE WILL BE CAPPED WILL BE DETERMINED BY THE UTILITY DISTRICT ENGINEER. THE LENGTH OF THE CAP SHALL NOT BE LESS THAN FIVE FEET, AND THE CONCRETED MIX EMPLOYED SHALL HAVE MINIMUM SHRINKAGE.

4. SITE PREPARATION AND STRIPPING

A. ALL SURFACE ORGANICS SHALL BE STRIPPED AND REMOVED FROM BUILDING PADS, AREAS TO RECEIVE COMPACTED FILL AND PAVEMENT AREAS.

B. UPON THE COMPLETION OF THE ORGANIC STRIPPING OPERATION, THE GROUND SURFACE (NATIVE SOIL SUBGRADE) OVER THE ENTIRE AREA OF ALL BUILDING PADS, STREET AND PAVEMENT AREAS AND ALL AREAS TO RECEIVE COMPACTED FILL SHALL BE PLOWED OR SCARIFIED UNTIL THE SURFACE IS FREE OF RUTS, HUMMOCKS OR OTHER UNEVEN FEATURES WHICH MAY INHIBIT UNIFORM SOIL COMPACTION. THE GROUND SURFACE SHALL THEN BE DISCED OR BLADED TO A DEPTH OF AT LEAST 6 INCHES. UPON ENGINEER'S SATISFACTION, THE NEW SURFACE SHALL BE WATER CONDITIONED AND RECOMPACTED PER REQUIREMENTS FOR COMPACTING FILL MATERIAL.

5. EXCAVATION

A. UPON COMPLETION OF THE CLEARING AND GRUBBING, SITE PREPARATION AND STRIPPING, THE CONTRACTOR SHALL MAKE EXCAVATIONS TO LINES AND GRADES NOTED ON THE PLAN. WHERE REQUIRED BY THE SOILS ENGINEER, UNACCEPTABLE NATIVE SOILS OR UNENGINEERED FILL SHALL BE OVER EXCAVATED BELOW THE DESIGN GRADE. SEE PROJECT SOILS REPORT FOR DISCUSSION OF OVER EXCAVATION OF THE UNACCEPTABLE MATERIAL. RESULTING GROUND LINE SHALL BE SCARIFIED, MOISTURE-CONDITIONED AND RECOMPACTED AS SPECIFIED IN SECTION 4 OF THESE SPECIFICATIONS. COMPACTED FILL MATERIAL SHALL BE PLACED TO BRING GROUND LEVEL BACK TO DESIGN GRADE.

B. EXCAVATED MATERIALS SUITABLE FOR COMPACTED FILL MATERIAL SHALL BE UTILIZED IN MAKING THE REQUIRED COMPACTED FILLS. THOSE NATIVE MATERIALS CONSIDERED UNSUITABLE BY THE SOILS ENGINEER SHALL BE DISPOSED OF OFF THE SITE BY THE CONTRACTOR.

6. PLACING, SPREADING AND COMPACTING FILL MATERIAL

A. FILL MATERIALS

THE MATERIALS PROPOSED FOR USE AS COMPACTED FILL SHALL BE APPROVED BY THE SOILS ENGINEER BEFORE COMMENCEMENT OF GRADING OPERATIONS. THE NATIVE MATERIAL IS CONSIDERED SUITABLE FOR FILL; HOWEVER, ANY NATIVE MATERIAL DESIGNATED UNSUITABLE BY THE SOILS ENGINEER SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR. ANY IMPORTED MATERIAL SHALL BE APPROVED FOR USE BY THE SOILS ENGINEER, IN WRITING, BEFORE BEING IMPORTED TO THE SITE AND SHALL POSSESS SUFFICIENT FINES TO PROVIDE A COMPETENT SOIL MATRIX AND SHALL BE FREE OF VEGETATIVE AND ORGANIC MATTER AND OTHER DELETERIOUS MATERIALS. ALL FILL VOIDS SHALL BE FILLED AND PROPERLY COMPACTED. NO ROCKS LARGER THAN THREE INCHES IN DIAMETER SHALL BE PERMITTED.

B. FILL CONSTRUCTION

THE SOILS ENGINEER SHALL APPROVE THE NATIVE SOIL SUBGRADE BEFORE PLACEMENT OF ANY COMPACTED FILL MATERIAL. UNACCEPTABLE NATIVE SOIL SHALL BE REMOVED AS DIRECTED BY THE SOILS ENGINEER. THE RESULTING GROUND LINE SHALL BE SCARIFIED MOISTURE CONDITIONED AND RECOMPACTED AS SPECIFIED IN SECTION 4 OF THESE SPECIFICATIONS. COMPACTED FILL MATERIAL SHALL BE PLACED TO BRING GROUND LEVEL BACK TO DESIGN GRADE. GROUND PREPARATION SHALL BE FOLLOWED CLOSELY BY FILL PLACEMENT TO PREVENT DRYING OUT OF THE SUBSOIL BEFORE PLACEMENT OF THE FILL.

THE APPROVED FILL MATERIALS SHALL BE PLACED IN UNIFORM HORIZONTAL LAYERS NO THICKER THAN 8" IN LOOSE THICKNESS. LAYERS SHALL BE SPREAD EVENLY AND SHALL BE THOROUGHLY BLADE MIXED DURING THE SPREADING TO ENSURE UNIFORMITY OF MATERIAL IN EACH LAYER. THE SCARIFIED SUBGRADE AND FILL MATERIAL SHALL BE MOISTURE CONDITIONED TO AT LEAST OPTIMUM MOISTURE. WHEN THE MOISTURE CONTENT OF THE FILL IS BELOW THAT SPECIFIED, WATER SHALL BE ADDED UNTIL THE MOISTURE DURING THE COMPACTION PROCESS. WHEN THE MOISTURE CONTENT OF THE FILL IS ABOVE THAT SPECIFIED, THE FILL MATERIAL SHALL BE AERATED BY BLADING OR OTHER SATISFACTORY METHODS UNTIL THE MOISTURE CONTENT IS AS SPECIFIED.

AFTER EACH LAYER HAS BEEN PLACED, MIXED, SPREAD EVENLY AND MOISTURE CONDITIONED, IT SHALL BE COMPACTED TO AT LEAST THE SPECIFIED DENSITY.

THE FILL OPERATION SHALL BE CONTINUED IN COMPACTED LAYERS AS SPECIFIED ABOVE UNTIL THE FILL HAS BEEN BROUGHT TO THE FINISHED SLOPES AND GRADES AS SHOWN ON THE PLANS. NO LAYER SHALL BE ALLOWED TO DRY OUT BEFORE SUBSEQUENT LAYERS ARE PLACED.

COMPACTION EQUIPMENT SHALL BE OF SUCH DESIGN THAT IT WILL BE ABLE TO COMPACT THE FILL TO THE SPECIFIED MINIMUM COMPACTION WITHIN THE SPECIFIED MOISTURE CONTENT RANGE. COMPACTION OF EACH LAYER SHALL BE CONTINUOUS OVER ITS ENTIRE AREA UNTIL THE REQUIRED MINIMUM DENSITY HAS BEEN OBTAINED.

7. CUT OR FILL SLOPES

ALL CONSTRUCTED SLOPES, BOTH CUT AND FILL, SHALL BE NO STEEPER THAN 2 TO 1 (HORIZONTAL TO VERTICAL). DURING THE GRADING OPERATION, COMPACTED FILL SLOPES SHALL BE OVERFILLED BY AT LEAST ONE FOOT HORIZONTALLY AT THE COMPLETION OF THE GRADING OPERATIONS, THE EXCESS FILL EXISTING ON THE SLOPES SHALL BE BLADED OFF TO CREATE THE FINISHED SLOPE EMBANKMENT. ALL CUT AND FILL SLOPES SHALL BE TRACK WALKED AFTER BEING BROUGHT TO FINISH GRADE AND THEN BE PLANTED WITH EROSION CONTROL SLOPE PLANTING. THE SOILS ENGINEER SHALL REVIEW ALL CUT SLOPES TO DETERMINE IF ANY ADVERSE GEOLOGIC CONDITIONS ARE EXPOSED. IF SUCH CONDITIONS DO OCCUR, THE SOILS ENGINEER SHALL RECOMMEND THE APPROPRIATE MITIGATION MEASURES AT THE TIME OF THEIR DETECTION.

8. SEASONAL LIMITS AND DRAINAGE CONTROL

FILL MATERIALS SHALL NOT BE PLACED, SPREAD OR COMPACTED WHILE IT IS AT AN UNSUITABLY HIGH MOISTURE CONTENT OR DURING OTHERWISE UNFAVORABLE CONDITIONS. WHEN THE WORK IS INTERRUPTED FOR ANY REASON THE FILL OPERATIONS SHALL NOT BE RESUMED UNTIL FIELD TEST PERFORMED BY THE SOILS ENGINEER INDICATE THAT THE MOISTURE CONDITIONS IN AREAS TO BE FILLED ARE AS PREVIOUSLY SPECIFIED. ALL EARTH MOVING AND WORKING OPERATIONS SHALL BE CONTROLLED TO PREVENT WATER FROM RUNNING INTO EXCAVATED AREAS. ALL EXCESS WATER SHALL BE PROMPTLY REMOVED AND THE SITE KEPT DRY.

9. DUST CONTROL

THE CONTRACTOR SHALL TAKE ALL STEPS NECESSARY FOR THE ALLEVIATION OR PREVENTION OF ANY DUST NUISANCE ON OR ABOUT THE SITE CAUSED BY THE CONTRACTOR'S OPERATION EITHER DURING THE PERFORMANCE OF THE GRADING OR RESULTING FROM THE CONDITION IN WHICH THE CONTRACTOR LEAVES THE SITE. THE CONTRACTOR SHALL ASSUME ALL LIABILITY INCLUDING COURT COST OF CO-DEFENDANTS FOR ALL CLAIMS RELATED TO DUST OR WIND-BLOWN MATERIALS ATTRIBUTABLE TO HIS WORK. COST FOR THIS ITEM OF WORK IS TO BE INCLUDED IN THE EXCAVATION ITEM AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED.

10. INDEMNITY

THE CONTRACTOR WILL HOLD HARMLESS, INDEMNIFY AND DEFEND THE ENGINEER, THE OWNER AND HIS CONSULTANTS AND EACH OF THEIR OFFICERS AND EMPLOYEES AND AGENTS, FROM ANY AND ALL LIABILITY CLAIMS, LOSSES OR DAMAGE ARISING OR ALLEGED TO HEREIN, BUT NOT INCLUDING THE SOLE NEGLIGENCE OF THE OWNER, THE ARCHITECT, THE ENGINEER AND HIS CONSULTANTS AND EACH OF THEIR OFFICERS AND EMPLOYEES AND AGENTS.

11. SAFETY

IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.

THE DUTY OF THE ENGINEERS TO CONDUCT CONSTRUCTION REVIEW OF THE CONTRACTOR'S PERFORMANCE IS NOT INTENDED TO INCLUDE REVIEW OF THE ADEQUACY OF THE CONTRACTOR'S SAFETY MEASURES, IN, ON OR NEAR THE CONSTRUCTION SITE.

12. GUARANTEE

NEITHER THE FINAL PAYMENT, NOR THE PROVISIONS IN THE CONTRACT, NOR PARTIAL, NOR ENTIRE USE OR OCCUPANCY OF THE PREMISES BY THE OWNER SHALL CONSTITUTE AN ACCEPTANCE OF THE WORK NOT DONE IN ACCORDANCE WITH THE CONTRACT OR RELIEVES THE CONTRACTOR OF LIABILITY IN RESPECT TO ANY EXPRESS WARRANTIES OR RESPONSIBILITY FOR FAULTY MATERIAL OR WORKMANSHIP.

THE CONTRACTOR SHALL REMEDY ANY DEFECTS IN WORK AND PAY FOR ANY DAMAGE TO OTHER WORK RESULTING THERE FROM WHICH SHALL APPEAR WITHIN A PERIOD OF ONE (1) CALENDAR YEAR FROM THE DATE OF FINAL ACCEPTANCE OF THE WORK.

13. TRENCH BACKFILL

EITHER THE ON-SITE INORGANIC SOIL OR APPROVED IMPORTED SOIL MAY BE USED AS TRENCH BACKFILL. THE BACKFILL MATERIAL SHALL BE MOISTURE CONDITIONED PER THESE SPECIFICATIONS AND SHALL BE PLACED IN LIFTS OF NOT MORE THAN SIX INCHES IN HORIZONTAL UNCOMPACTED LAYERS AND BE COMPACTED BY MECHANICAL MEANS TO A MINIMUM OF 90% RELATIVE COMPACTION. IMPORTED SAND MAY BE USED FOR TRENCH BACKFILL MATERIAL PROVIDED IT IS COMPACTED TO AT LEAST 90% RELATIVE COMPACTION. WATER JETTING ASSOCIATED WITH COMPACTION USING VIBRATORY EQUIPMENT WILL BE PERMITTED ONLY WITH IMPORTED SAND BACKFILL WITH THE APPROVAL OF THE SOILS ENGINEER. ALL PIPES SHALL BE BEDDED WITH SAND EXTENDING FROM THE TRENCH BOTTOM TO TWELVE INCHES ABOVE THE PIPE. SAND BEDDING IS TO BE COMPACTED AS SPECIFIED ABOVE FOR SAND BACKFILL.

14. EROSION CONTROL

A. ALL GRADING, EROSION AND SEDIMENT CONTROL AND RELATED WORK UNDERTAKEN ON THIS SITE IS SUBJECT TO ALL TERMS AND CONDITIONS OF THE COUNTY GRADING ORDINANCE AND MADE A PART HEREOF BY REFERENCE.

B. THE CONTRACTOR WILL BE LIABLE FOR ANY AND ALL DAMAGES TO ANY PUBLICLY OWNED AND MAINTAINED ROAD CAUSED BY THE AFORESAID CONTRACTOR'S GRADING ACTIVITIES, AND SHALL BE RESPONSIBLE FOR THE CLEANUP OF ANY MATERIAL SPILLED ON ANY PUBLIC ROAD ON THE HAUL ROUTE.

C. THE EROSION CONTROL MEASURES ARE TO BE OPERABLE DURING THE RAINY SEASON, GENERALLY FROM OCTOBER FIRST TO APRIL FIFTEENTH. EROSION CONTROL PLANTING IS TO BE COMPLETED BY OCTOBER FIRST. NO GRADING OR UTILITY TRENCHING SHALL OCCUR BETWEEN OCTOBER FIRST AND APRIL FIFTEENTH UNLESS AUTHORIZED BY THE LOCAL JURISDICTION.

D. ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL DISTURBED AREAS ARE STABILIZED AND CHANGES TO THIS EROSION AND SEDIMENT CONTROL PLAN SHALL BE MADE TO MEET FIELD CONDITIONS ONLY WITH THE APPROVAL OF OR AT THE DIRECTION OF THE SOILS ENGINEER.

E. DURING THE RAINY SEASON, ALL PAVED AREAS SHALL BE KEPT CLEAR OF EARTH MATERIAL AND DEBRIS. THE SITE SHALL BE MAINTAINED SO AS TO MINIMIZE SEDIMENT-LADEN RUNOFF TO ANY STORM DRAINAGE SYSTEM.

F. ALL EROSION CONTROL FACILITIES MUST BE INSPECTED AND REPAIRED AT THE END OF EACH WORKING DAY DURING THE RAINY SEASON.

G. WHEN NO LONGER NECESSARY AND PRIOR TO FINAL ACCEPTANCE OF DEVELOPMENT, SEDIMENT BASINS SHALL BE REMOVED OR OTHERWISE DEACTIVATED AS REQUIRED BY THE LOCAL JURISDICTION.

H. A CONSTRUCTION ENTRANCE SHALL BE PROVIDED AT ANY POINT OF EGRESS FROM THE SITE TO ROADWAY. A CONSTRUCTION ENTRANCE SHOULD BE COMPOSED OF COARSE DRAIN ROCK (2" TO 3") MINIMUM DIAMETER) AT LEAST EIGHT INCHES THICK BY FIFTY (50) FEET LONG BY TWENTY (20) FEET WIDE UNLESS SHOWN OTHERWISE ON PLAN AND SHALL BE MAINTAINED UNTIL THE SITE IS PAVED.

I. ALL AREAS SPECIFIED FOR HYDROSEEDING SHALL BE NOZZLE PLANTED WITH STABILIZATION MATERIAL CONSISTING OF FIBER, SEED, FERTILIZER AND WATER, MIXED AND APPLIED IN THE FOLLOWING PROPORTIONS:

FIBER, 2000 LBS/ACRE
SEED, 200 LBS/ACRE (SEE NOTE J, BELOW)
FERTILIZER (11-8-4), 500 LBS/ACRE
WATER, AS REQUIRED FOR APPLICATION

J. SEED MIX SHALL BE PER CALTRANS STANDARDS.

K. WATER UTILIZED IN THE STABILIZATION MATERIAL SHALL BE OF SUCH QUALITY THAT IT WILL PROMOTE GERMINATION AND STIMULATE GROWTH OF PLANTS. IT SHALL BE FREE OF POLLUTANT MATERIALS AND WEED SEED.

L. HYDROSEEDING SHALL CONFORM TO THE PROVISIONS OF SECTION 20, EROSION CONTROL AND HIGHWAY PLANTING", OF THE STANDARD SPECIFICATIONS OF THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION, AS LAST REVISED.

M. A DISPERSING AGENT MAY BE ADDED TO THE HYDROSEEDING MATERIAL, PROVIDED THAT THE CONTRACTOR FURNISHES SUITABLE EVIDENCE THAT THE ADDITIVE WILL NOT ADVERSELY AFFECT THE PERFORMANCE OF THE SEEDING MIXTURE.

N. STABILIZATION MATERIALS SHALL BE APPLIED AS SOON AS PRACTICABLE AFTER COMPLETION OF GRADING OPERATIONS AND PRIOR TO THE ONSET OF WINTER RAINS, OR AT SUCH OTHER TIME AS DIRECTED BY THE COUNTY ENGINEER. THE MATERIAL SHALL BE APPLIED BEFORE INSTALLATION OF OTHER LANDSCAPING MATERIALS SUCH AS TREES, SHRUBS AND GROUND COVERS.

O. THE STABILIZATION MATERIAL SHALL BE APPLIED WITHIN 4-HOURS AFTER MIXING. MIXED MATERIAL NOT USED WITHIN 4-HOURS SHALL BE REMOVED FROM THE SITE.

P. THE CONTRACTOR SHALL MAINTAIN THE SOIL STABILIZATION MATERIAL AFTER PLACEMENT. THE COUNTY ENGINEER MAY REQUIRE SPRAY APPLICATION OF WATER OR OTHER MAINTENANCE ACTIVITIES TO ASSURE THE EFFECTIVENESS OF THE STABILIZATION PROCESS. APPLICATION OF WATER SHALL BE ACCOMPLISHED USING NOZZLES THAT PRODUCE A SPRAY THAT DOES NOT CONCENTRATE OR WASH AWAY THE STABILIZATION MATERIALS.

15. CLEANUP

THE CONTRACTOR MUST MAINTAIN THE SITE CLEAN, SAFE AND IN USABLE CONDITION. ANY SPILLS OF SOIL, ROCK OR CONSTRUCTION MATERIAL MUST BE REMOVED FROM THE SITE BY THE CONTRACTOR DURING CONSTRUCTION AND UPON COMPLETION OF THE PROJECT. COST FOR THIS ITEM OF WORK SHALL BE INCLUDED IN THE EXCAVATION AND COMPACTION ITEM AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED.

NOTE:
THESE NOTES ARE INTENDED TO BE USED AS A GENERAL GUIDELINE. THE REFERENCED SOILS REPORT FOR THE PROJECT AND GOVERNING AGENCY GRADING ORDINANCE SHALL SUPERSEDE THESE NOTES. THE SOILS ENGINEER MAY MAKE ON-SITE RECOMMENDATIONS DURING GRADING OPERATIONS.

REGISTERED PROFESSIONAL ENGINEER – JAMES TOBY – No. 53127 – CIVIL – STATE OF CALIFORNIA – ORIGINAL SIGNATURES IN BLUE INK

LEA & BRAZE ENGINEERING, INC.
CIVIL ENGINEERS • LAND SURVEYORS
BAY AREA REGION
2495 INDUSTRIAL PKWY WEST
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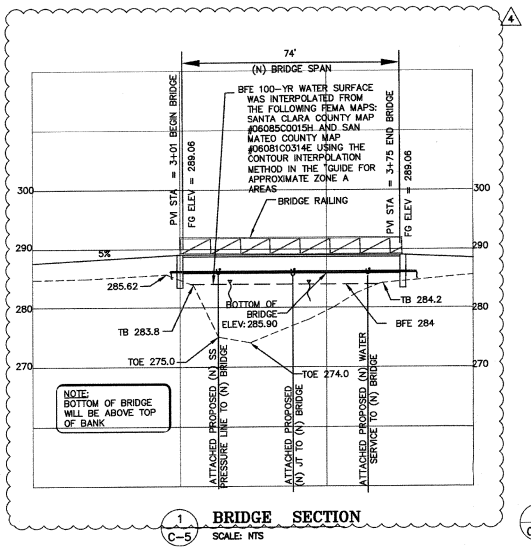
KELLY RESIDENCE
ALPINE ROAD
PORTOLA VALLEY,
CALIFORNIA

SANTA CLARA COUNTY
APN: 142-15-008

GRADING
SPECIFICATIONS

REVISIONS		BY
–		–
4	PLAN CHECK 4-22-14	AH
3	PLAN CHECK 3-13-14	AH
2	PLAN CHECK 2-12-14	AH
1	PLAN CHECK 11-08-13	AH

JOB NO:	2120303
DATE:	10-21-13
SCALE:	AS NOTED
DESIGN BY:	JT/RC
DRAWN BY:	SY
SHEET NO:	C-4



1 C-5 **BRIDGE SECTION**
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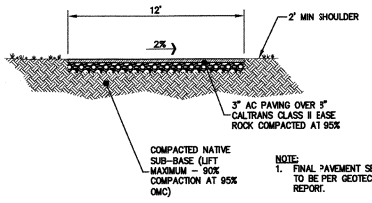

2 C-5 **TYPICAL DRIVEWAY SECTION**
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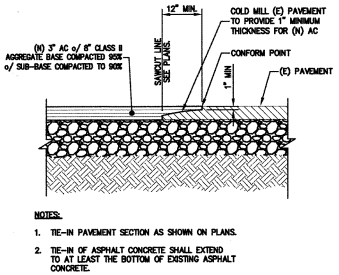
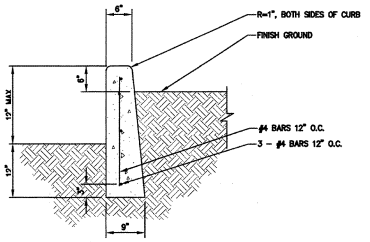


3 C-5 **PAVEMENT TIE-IN**
NTS



4 C-5 **DEEPENED CURB**
NTS

THE Bottom of the bridge to be min. two ft. above MB

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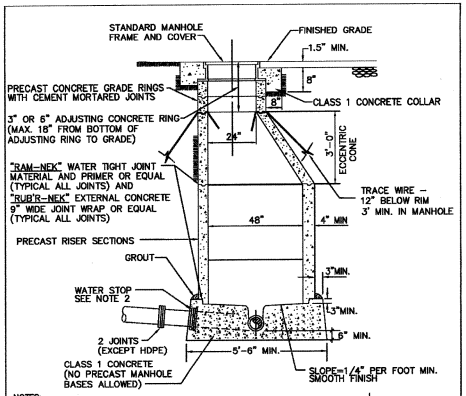
ALPINE ROAD
PORTOLA VALLEY, CALIFORNIA
SANTA CLARA COUNTY
APN: 142-15-008

DETAILS

4	PLAN CHECK 4-22-14	AH
3	PLAN CHECK 3-13-14	AH
2	PLAN CHECK 2-12-14	AH
1	PLAN CHECK 11-08-13	AH
	REVISIONS	BY

JOB NO: 2120303
DATE: 10-21-13
SCALE: AS NOTED
DESIGN BY: JT/RC
DRAWN BY: SY
SHEET NO:
C-5
5 OF 8 SHEETS



NOTES:

1) MANHOLE BASES SHALL BE PLACED ON IMPORTED BEDDING MATERIAL COMPACTED TO 95% RELATIVE COMPACTION.

2) AN APPROVED WATER STOP SHALL BE INSTALLED ON ALL FLEXIBLE PIPE ENTERING OR LEAVING A MANHOLE, AND CENTERED UNDER MANHOLE WALL.

3) INSTALL "RAM-NEK" WATER TIGHT JOINT MATERIAL OR EQUAL BETWEEN EACH JOINT OF CONE AND BARREL SECTIONS TO MAKE A FLEXIBLE WATERTIGHT JOINT. AFTER JOINT IS MADE, TRIM JOINT SMOOTH ON INSIDE OF MANHOLE.

4) STEPS IN MANHOLES ARE NOT ALLOWED.

5) TRACE WIRE SHALL BE PLACED 12" BELOW RIM WITH 3' COILED UP IN MANHOLE.

6) MANHOLES SHALL BE VACUUM TESTED.

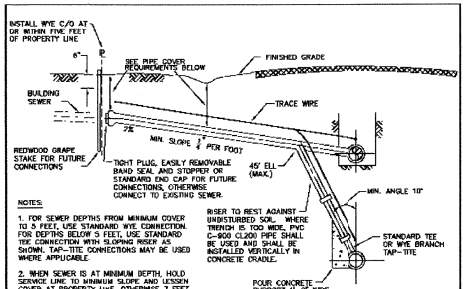
7) ECCENTRIC CONE SHALL BE POSITIONED IN SUCH A MANNER OVER CENTER OF PIPE FOR INSTALLATION OF FLOW METER SENSOR BRACKET.

WEST BAY
SANITARY DISTRICT

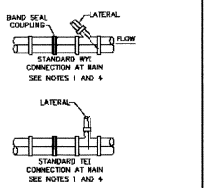
MANHOLE FOR 21" DIAMETER AND SMALLER PIPE

APPROVED BY:
TIMOTHY CLAYTON — DISTRICT MANAGER
4/18/2005 — DATE:

3



DEEP SEWER – GREATER THAN 10'



NOTES:

1. FOR SEWER DEPTHS FROM MINIMUM COVER TO 5 FEET, USE STANDARD WYE CONNECTION. FOR DEPTHS BELOW 5 FEET, USE STANDARD TEE CONNECTION WITH SLOPING RISER AS SHOWN. TAP-TITE CONNECTIONS MAY BE USED WHERE APPLICABLE.

2. WHEN SEWER IS AT MINIMUM DEPTH, HOLD SERVICE LINE TO MINIMUM SLOPE AND LESSEN COVER AT PROPERTY LINE, OTHERWISE 3 FEET OF COVER TO OFFICIAL GRADE IS REQUIRED AT PROPERTY LINE.

3. THE LOCATION OF ALL SEWER LATERALS SHALL BE MARKED WITH A LETTER "S" ON TOP OF CURB OR BACK OF WALK.

4. ALL SERVICE TEES OR WYES SHALL BE MANUFACTURER'S STANDARD FITTINGS. CONNECTION CLOSURE SHALL BE BY STANDARD BAND SEAL COUPLINGS ON SERVICE ADDITIONS. NO PIPE BREAKING AND CONCRETE PATCHING WILL BE PERMITTED, ONLY NEATLY SHAPED OR SAWCUT LENGTHS WILL BE ALLOWED.

5. 8 GAUGE COPPER WIRE FOR TRACING PURPOSES SHALL BE PLACED OR ALL NEW LATERALS AND REPLACEMENT LATERALS WHEN EXCAVATION IS FROM MAIN LINE TO THE PROPERTY LINE CLEANOUT. WIRE TO BE BROUGHT TO RISER WITH TWO FEET COILED INSIDE BOX.

6. TAP-TITE AND TEE CONNECTIONS ARE NOT ALLOWED IN TERMINATING SEWER MAINS (MUST UPSTREAM LINE).

7. CONTRACTOR SHALL PLACE ROOT CONTROL FABRIC OVER ALL JOINTS AS SHOWN ON WEST BAY SANITARY DISTRICT DETAIL NO. 13.

8. CONTRACTOR SHALL INSTALL BEDDING AND BACKFILL MATERIAL AS SHOWN ON WEST BAY SANITARY DISTRICT DETAIL NO. 8.

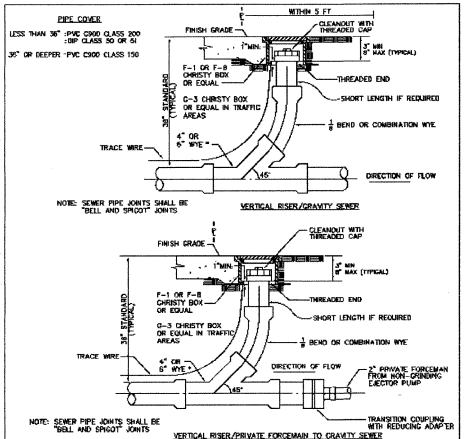
PIPE COVER
LESS THAN 36" – DIP CLASS 50 OR 51
PVC C900 CLASS 200
36" OR DEEPER – PVC C900 CLASS 150

WEST BAY
SANITARY DISTRICT

SANITARY SEWER LATERAL CONNECTIONS

APPROVED BY:
TIMOTHY CLAYTON — DISTRICT MANAGER
4/18/2005 — DATE:

6



NOTES:

1) THE CLEAN OUT ASSEMBLY SHALL BE THE SAME SIZE AS THE LATERAL SEWER IT SERVICES.

2) COVERS SHALL BE C.I. FOR STREETS, ALLEYS OR DRIVES, OTHERWISE FIBERLYTE OR CONCRETE FOR NON-TRAFFIC USE.

3) #8 GAUGE COPPER WIRE FOR TRACING PURPOSES SHALL BE PLACED ON ALL NEW LATERALS AND REPLACEMENT LATERALS WHEN EXCAVATION IS FROM MAIN LINE TO THE PROPERTY LINE CLEANOUT. WIRE TO BE BROUGHT TO RISER WITH TWO FEET COILED INSIDE BOX.

4) ALL CLEAN OUT BOX LIDS SHALL BE MARKED WITH A LETTER "S" OR THE WORD "SEWER".

5) WYE SHALL BE INSTALLED AT OR WITHIN 5 FEET OF PROPERTY LINE.

6) CONTRACTOR SHALL PLACE ROOT CONTROL FABRIC OVER ALL JOINTS AS SHOWN ON WEST BAY SANITARY DISTRICT DETAIL NO. 13.

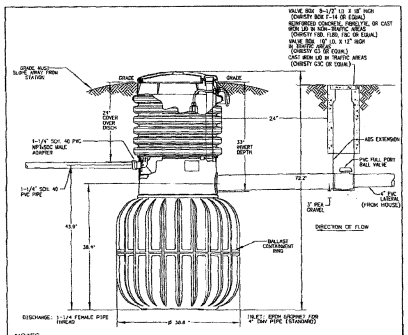
7) CONTRACTOR SHALL INSTALL BEDDING AND BACKFILL MATERIAL AS SHOWN ON WEST BAY SANITARY DISTRICT DETAIL NO. 8.

WEST BAY
SANITARY DISTRICT

SERVICE LATERAL CLEANOUT

APPROVED BY:
TIMOTHY CLAYTON — DISTRICT MANAGER
4/18/2005 — DATE:

7



NOTES:

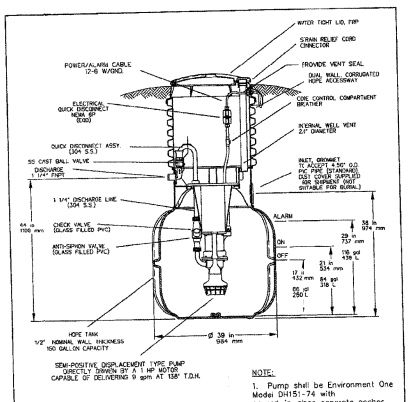
1. Pump shall be Environment One Model DH151-74 with poured-in-place concrete anchor (2773 Balltown Road, Schenectady, NY 12309-1090. (518) 346-6161, Fax (518) 346-6188. Constant Pressure Industries (916) 771-2339 Fax (916) 925-8411).
2. Pump shall be installed per manufacturer's recommendations.
3. See Single Family Grinder Pump Information Detail for pump anchor detail.
4. See 1-1/4 Inch Lateral Check Valve Station Detail for discharge line valve requirements.
5. Contractor shall supply District with handle to turn PVC ball valve.
6. Control Panel (supplied by ISAC (per West Bay Detail #17)).
7. If the homeowner has an on-site pump system that pumps into the grinder pump, the homeowner shall notify the District when applying for permit. Additional requirements specific to the project will be applied.

WEST BAY
SANITARY DISTRICT

SINGLE FAMILY GRINDER PUMP INSTALLATION DETAIL

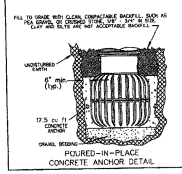
APPROVED BY:
DISTRICT MANAGER — DATE: 9/19/2008

19



NOTE:

1. Pump shall be Environment One Model DH151-74 with poured-in-place concrete anchor. (2773 Balltown Road, Schenectady, NY 12309-1090. (518) 346-6161, Fax (518) 346-6188. Constant Pressure Industries (916) 771-2339, Fax (916) 925-8411).



POURED-IN-PLACE CONCRETE ANCHOR DETAIL

WEST BAY
SANITARY DISTRICT

SINGLE FAMILY GRINDER PUMP INFORMATION DETAIL

APPROVED BY:
DISTRICT MANAGER — DATE: 9/19/2008

20

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KELLY RESIDENCE
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APN: 142-15-008
SANTA CLARA COUNTY

DETAILS

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3	PLAN CHECK 3-13-14	AH
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1	PLAN CHECK 11-08-13	AH
	REVISIONS	BY

JOB NO: 2120303
DATE: 10-21-13
SCALE: AS NOTED
DESIGN BY: JT/RC
DRAWN BY: SY
SHEET NO:

C-6

6 OF 8 SHEETS

PURPOSE:

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

EROSION CONTROL NOTES:

1. IT SHALL BE THE OWNER'S/CONTRACTOR'S RESPONSIBILITY TO MAINTAIN CONTROL OF THE ENTIRE CONSTRUCTION OPERATION AND TO KEEP THE ENTIRE SITE IN COMPLIANCE WITH THIS EROSION CONTROL PLAN.
2. THE INTENTION OF THIS PLAN IS FOR INTERIM EROSION AND SEDIMENT CONTROL ONLY. ALL EROSION CONTROL MEASURES SHALL CONFORM TO CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD'S FIELD MANUAL FOR EROSION AND SEDIMENTATION CONTROL, THE CALIFORNIA STORM WATER QUALITY ASSOCIATION BEST MANAGEMENT PRACTICES HANDBOOK FOR CONSTRUCTION, AND THE LOCAL GOVERNING AGENCY FOR THIS PROJECT.
3. OWNER/CONTRACTOR SHALL BE RESPONSIBLE FOR MONITORING EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO, DURING, AND AFTER STORM EVENTS. PERSON IN CHARGE OF MAINTAINING EROSION CONTROL MEASURES SHOULD WATCH LOCAL WEATHER REPORTS AND ACT APPROPRIATELY TO MAKE SURE ALL NECESSARY MEASURES ARE IN PLACE.
4. SANITARY FACILITIES SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.
5. DURING THE RAINY SEASON, ALL PAVED AREAS SHALL BE KEPT CLEAR OF EARTH MATERIAL AND DEBRIS. THE SITE SHALL BE MAINTAINED SO AS TO MINIMIZE SEDIMENT-LADEN RUNOFF TO ANY STORM DRAINAGE SYSTEM, INCLUDING EXISTING DRAINAGE SWALES AND WATERCOURSES.
6. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER THAT EROSION AND WATER POLLUTION WILL BE MINIMIZED. COMPLIANCE WITH FEDERAL, STATE AND LOCAL LAWS CONCERNING POLLUTION SHALL BE MAINTAINED AT ALL TIMES.
7. CONTRACTOR SHALL PROVIDE DUST CONTROL AS REQUIRED BY THE APPROPRIATE FEDERAL, STATE AND LOCAL AGENCY REQUIREMENTS.
8. ALL MATERIALS NECESSARY FOR THE APPROVED EROSION CONTROL MEASURES SHALL BE IN PLACE BY OCTOBER 15TH.
9. EROSION CONTROL SYSTEMS SHALL BE INSTALLED AND MAINTAINED THROUGHOUT THE RAINY SEASON, OR FROM OCTOBER 15TH THROUGH APRIL 15TH, WHICHEVER IS LONGER.
10. IN THE EVENT OF RAIN, ALL GRADING WORK IS TO CEASE IMMEDIATELY AND THE SITE IS TO BE SEALED IN ACCORDANCE WITH THE APPROVAL EROSION CONTROL MEASURES AND APPROVED EROSION CONTROL PLAN.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING AND REPAIRING EROSION CONTROL SYSTEMS AFTER EACH STORM.
12. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED BY LOCAL JURISDICTION'S ENGINEERING DEPARTMENT OR BUILDING OFFICIALS.
13. MEASURES SHALL BE TAKEN TO COLLECT OR CLEAN ANY ACCUMULATION OR DEPOSIT OF DIRT, MUD, SAND, ROCKS, GRAVEL OR DEBRIS ON THE SURFACE OF ANY STREET, ALLEY OR PUBLIC PLACE OR IN ANY PUBLIC STORM DRAIN SYSTEMS. THE REMOVAL OF AFORESAID SHALL BE DONE BY STREET SWEEPING OR HAND SWEEPING. WATER SHALL NOT BE USED TO WASH SEDIMENTS INTO PUBLIC OR PRIVATE DRAINAGE FACILITIES.
14. EROSION CONTROL MEASURES SHALL BE ON-SITE FROM SEPTEMBER 15TH THRU APRIL 15TH.
15. ALL EROSION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED THROUGHOUT THE RAINY SEASON OR FROM OCTOBER 15 THRU APRIL 15, WHICHEVER IS GREATER.

PERIODIC MAINTENANCE:

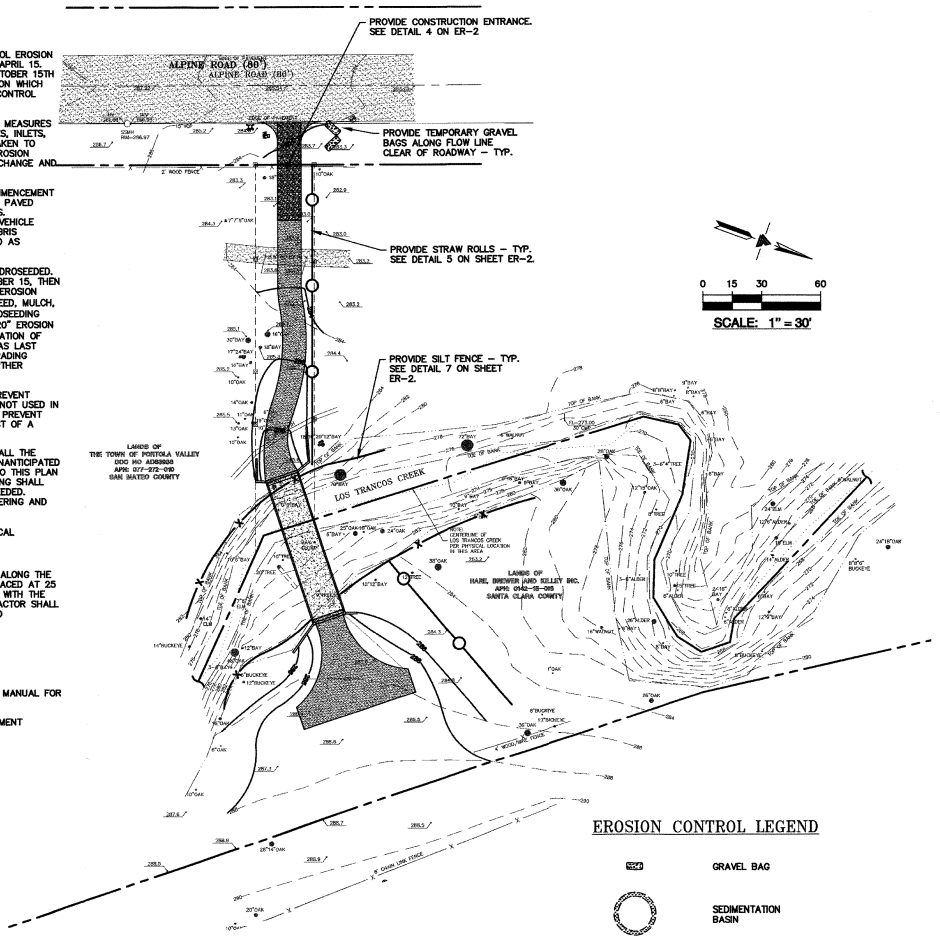
1. MAINTENANCE IS TO BE PERFORMED AS FOLLOWS:
   - A. DAMAGES CAUSED BY SOIL EROSION OR CONSTRUCTION SHALL BE REPAIRED AT THE END OF EACH WORKING DAY.
   - B. SWALES SHALL BE INSPECTED PERIODICALLY AND MAINTAINED AS NEEDED.
   - C. SEDIMENT TRAPS, BERMS, AND SWALES ARE TO BE INSPECTED AFTER EACH STORM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

EROSION CONTROL MEASURES:

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

REFERENCES:

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



EROSION CONTROL LEGEND

- GRAVEL BAG
- SEDIMENTATION BASIN
- INLET PROTECTION
- STRAW ROLL
- SILT FENCE
- CONCRETE WASHOUT
- CONSTRUCTION ENTRANCE
- TREE PROTECTION

NOTE:
SEAL ALL OTHER INLETS NOT INTENDED TO ACCEPT STORM WATER AND DIRECT FLOWS TEMPORARILY TO FUNCTIONAL SEDIMENTATION BASIN INLETS. –TYP

REGISTERED PROFESSIONAL ENGINEER JAMES FORD No. 58127 CIVIL STATE OF CALIFORNIA

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EROSION CONTROL PLAN

4	PLAN CHECK 4-22-14	AH
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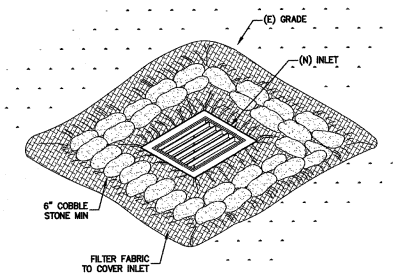
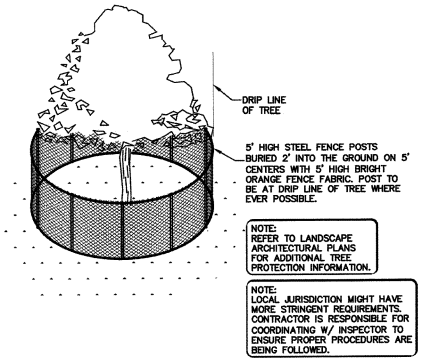
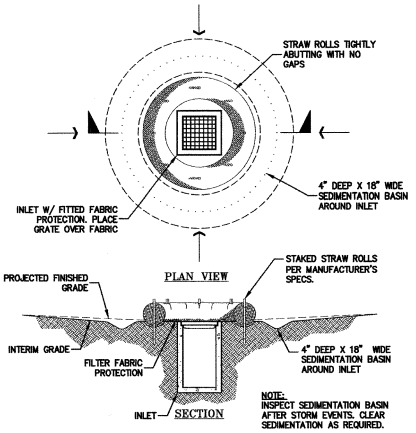
7 OF 8 SHEETS



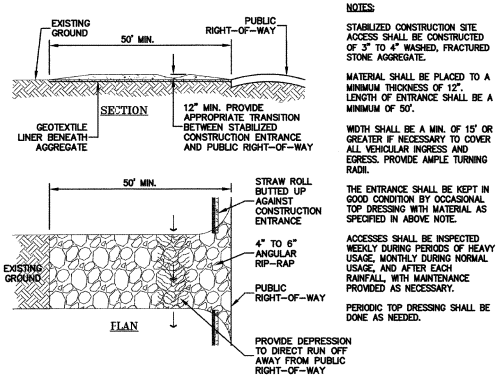
1 ER-2 **INLET PROTECTION**
NTS



2 ER-2 **EXISTING TREE PROTECTION DETAIL**
NTS



3 ER-2 **SEDIMENTATION BASIN**
NTS



NOTES:

STABILIZED CONSTRUCTION SITE ACCESS SHALL BE CONSTRUCTED OF 3" TO 4" WASHED, FRACTURED STONE AGGREGATE.

MATERIAL SHALL BE PLACED TO A MINIMUM THICKNESS OF 12". LENGTH OF ENTRANCE SHALL BE A MINIMUM OF 50'.

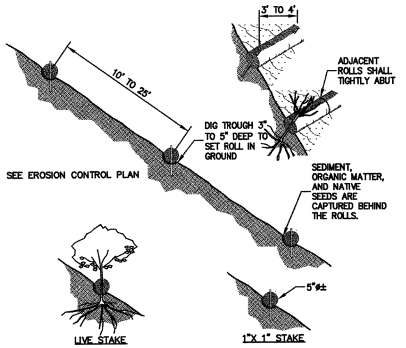
WIDTH SHALL BE A MIN. OF 15' OR GREATER IF NECESSARY TO COVER ALL VEHICULAR INGRESS AND EGRESS. PROVIDE AMPLE TURNING RADII.

THE ENTRANCE SHALL BE KEPT IN GOOD CONDITION BY OCCASIONAL TOP DRESSING WITH MATERIAL AS SPECIFIED IN ABOVE NOTE.

ACCESSES SHALL BE INSPECTED WEEKLY DURING PERIODS OF HEAVY USAGE, MONTHLY DURING NORMAL USAGE, AND AFTER EACH RAINFALL, WITH MAINTENANCE PROVIDED AS NECESSARY.

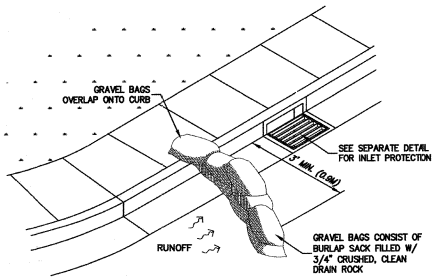
PERIODIC TOP DRESSING SHALL BE DONE AS NEEDED.

4 ER-2 **CONSTRUCTION ENTRANCE**
NTS



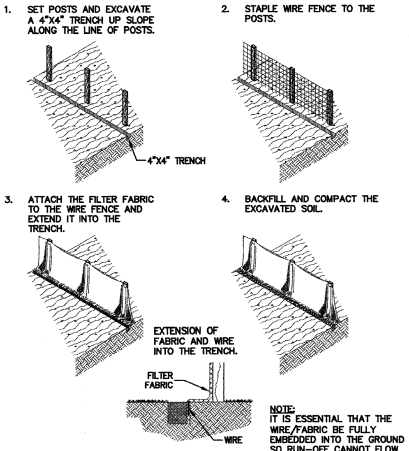
NOTE:
1. STRAW ROLL INSTALLATION REQUIRES THE PLACEMENT AND SECURE STAKING OF THE ROLL IN A TRENCH, 3" TO 5" DEEP, DUG ON CONTOUR. RUNOFF MUST NOT BE ALLOWED TO RUN UNDER OR AROUND ROLL.
2. CONTRACTOR IS RESPONSIBLE FOR REGULAR MAINTENANCE AND INSPECTION. THE SILT SHALL BE CLEANED OUT WHEN IT REACHES HALF THE HEIGHT OF THE ROLL.

5 ER-2 **STRAW ROLLS**
NTS



NOTE:
THREE LAYERS OF GRAVEL BAGS WITH ENDS OVERLAPPED

6 ER-2 **GRAVEL BAG DIKE**
NTS



NOTE:
IT IS ESSENTIAL THAT THE WIRE/FABRIC BE FULLY EMBEDDED INTO THE GROUND SO RUN-OFF CANNOT FLOW FREELY UNDER FENCE.

7 ER-2 **SILT FENCE**
NTS

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EROSION CONTROL DETAILS

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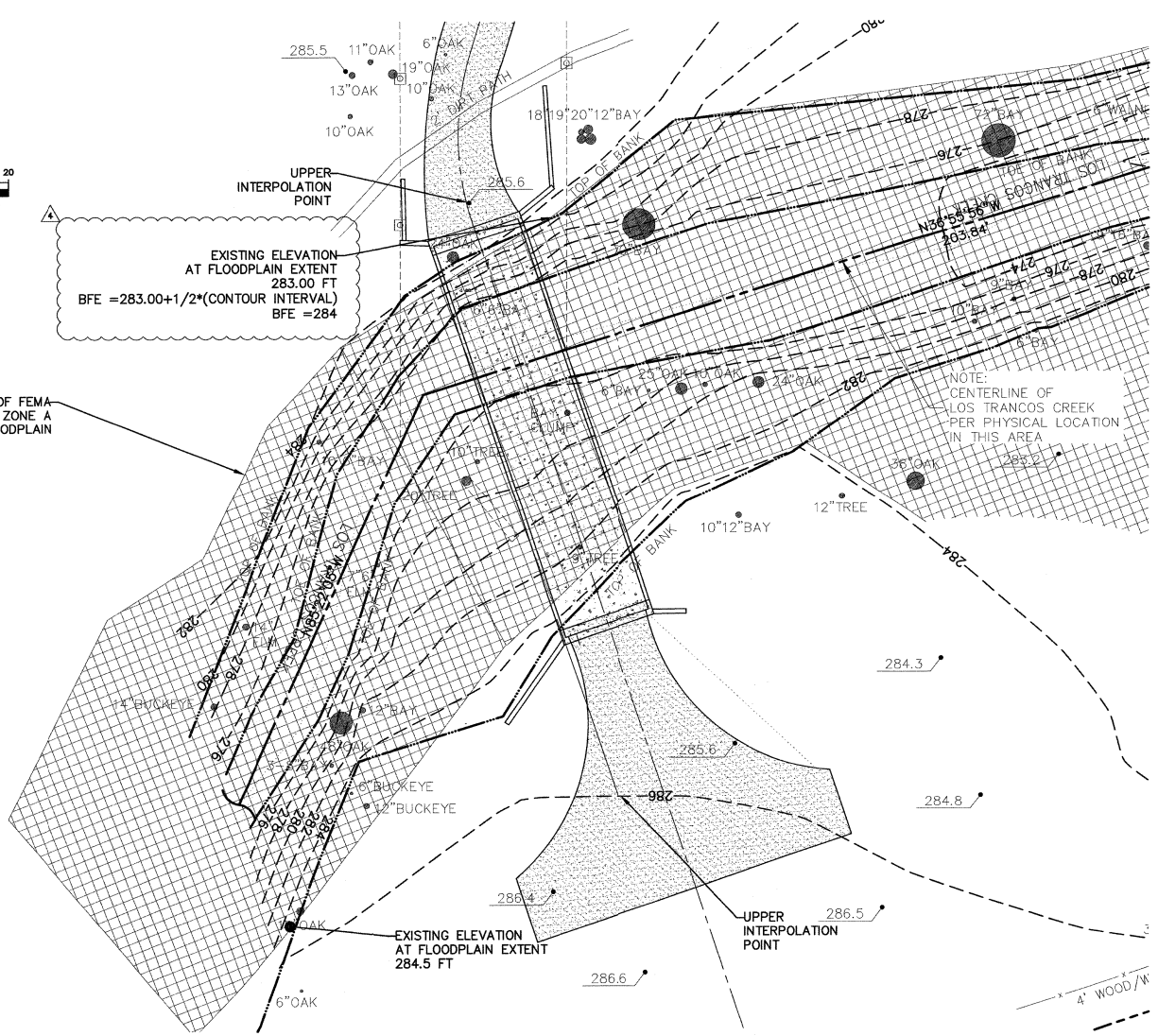
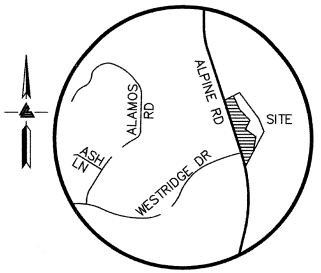
8 OF 8 SHEETS





VICINITY MAP

NO SCALE

BFE DEVELOPMENT

FLOOD LEVEL ELEVATIONS WERE INTERPOLATED FROM THE FOLLOWING FEMA FLOOD MAPS: SANTA CLARA COUNTY MAP #06085C0015H AND SAN MATEO COUNTY MAP #06081C0314E. FOLLOWING THE CONTOUR INTERPOLATION METHOD IN THE "GUIDE FOR APPROXIMATE ZONE A AREAS: DEVELOPING BFES," THE ELEVATIONS OF 283.00 AND 284.5 WERE FOUND AS THE INTERPOLATED WATER SURFACE ELEVATIONS ON WEST BANK AND EAST BANK RESPECTIVELY. THIS QUALIFIES THE USE OF THIS METHOD TO CALCULATE A BFE ON THIS SECTION OF STREAM. THE BFE IS CALCULATED AS 284.00 AFTER ADDING HALF OF THE 2 FT CONTOUR INTERVAL TO THE LOWER INTERPOLATED WATER SURFACE ELEVATION OF 283.00.

NOTE:
SIMPLIFIED ELEVATIONS MAY NOT BE USED BY THE COMMUNITY TO COMPLETE AN ELEVATION CERTIFICATE USED FOR FLOOD INSURANCE RATING. COMMUNITIES MUST USE THE DETAILED METHODOLOGIES DESCRIBED IN SECTION V OF "GUIDE FOR APPROXIMATE ZONE A AREAS."

NOTE:
NO UTILITIES SHALL EXTEND BELOW BOTTOM OF BRIDGE. ALL LINES SHALL RUN THROUGH BRIDGE STRUCTURAL MEMBERS OR HANG OFF THE SIDE. DESIGN SHALL BE BY OTHERS.

NOTE:
FOR CONSTRUCTION STAKING SCHEDULING OR QUOTATIONS PLEASE CONTACT GREG BRAZE AT LEA & BRAZE ENGINEERING (510)887-4086 EXT 103. gbraze@leabraze.com

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

LEA & BRAZE ENGINEERING, INC.
CIVIL ENGINEERS · LAND SURVEYORS
BAY AREA REGION
2495 INDUSTRIAL PKWY WEST
HAYWARD, CALIFORNIA 94545
(P) (510) 887-4086
(F) (510) 887-3019
SACRAMENTO REGION
3017 DOUGLAS BLVD. # 300
ROSEVILLE, CA 95661
(P) (916)986-1338
(F) (916)797-7383
WWW.LEABRAZE.COM

KELLY RESIDENCE
ALPINE ROAD
PORTOLA VALLEY, CALIFORNIA
APN: 142-15-008
SANTA CLARA COUNTY

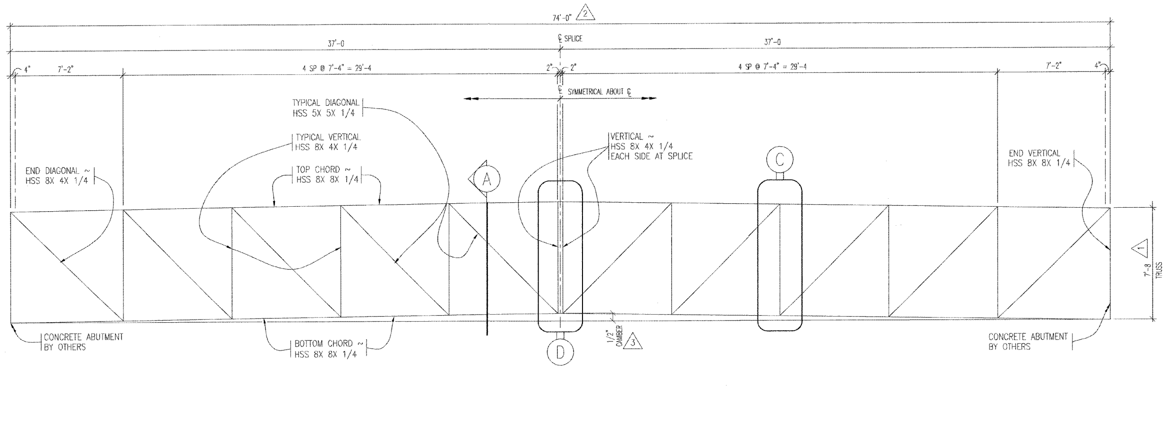
BASE FLOODPLAIN ELEVATION DEVELOPMENT

4	PLAN CHECK 4-22-14	AH
3	PLAN CHECK 3-13-14	AH
2	PLAN CHECK 2-12-14	AH
1	PLAN CHECK 11-08-13	AH
	REVISIONS	BY

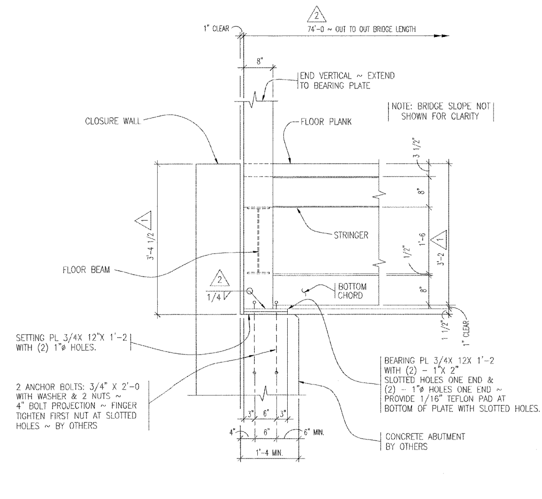
JOB NO: 2120303
DATE: 10-21-13
SCALE:
DESIGN BY: JT/RC
DRAWN BY: SY
SHEET NO:

EX-1

1 OF 1 SHEETS



BRIDGE ELEVATION 1/4" = 1'-0"

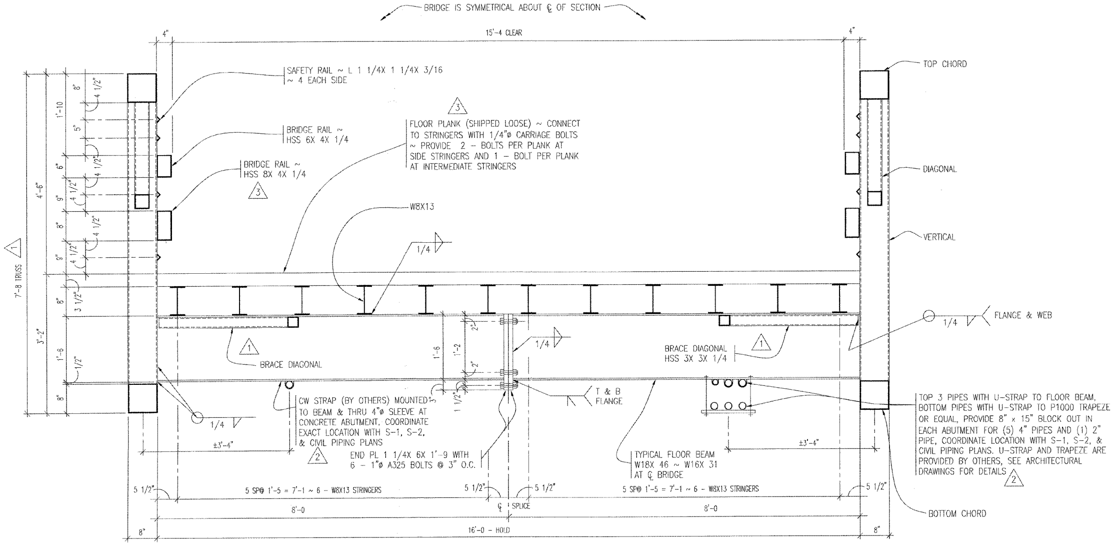


BEARING DETAIL 3/4" = 1'-0"

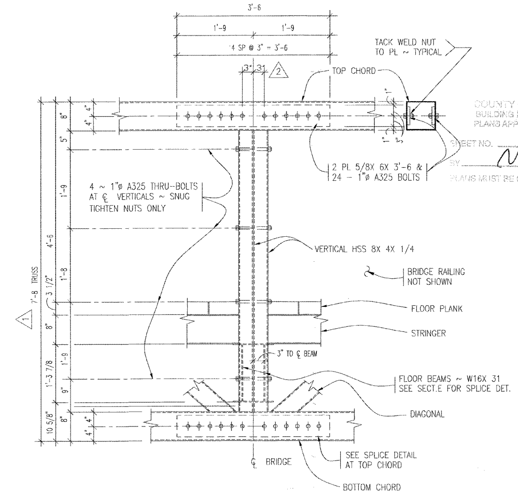
NOTE: WELDED CONNECTIONS SHALL BE FILLET WELDS ALL AROUND OF A SIZE EQUAL TO THE THICKNESS OF THE LIGHTEST GAGE MEMBER OF THE CONNECTION, UNLESS OTHERWISE SHOWN.

TOP & BOTTOM CHORD SHOP SPLICES SHALL BE FULL PENETRATION WELDS USING BACKER PL'S.

BRIDGE IS SYMMETRICAL ABOUT ℄ OF SECTION



BRIDGE SECTION 3/4" = 1'-0"



SPLICE DETAIL 3/4" = 1'-0"
(OUTSIDE ELEVATION)

COUNTY OF SANTA CLARA
BUILDING INSPECTION OFFICE
PLANS APPROVED FOR PERMIT
SHEET NO. 3 OF 7 SHEETS
BY [signature] 6/26/15
PLANS MUST BE ON JOB F... ECTIONS

REGISTERED PROFESSIONAL ENGINEER JACOB S. PROCTOR C78567 CIVIL STATE OF CALIFORNIA
FEB 21 2014

VECTOR ENGINEERS
9138 S. STATE STREET, SUITE 101 (801) 990-1775
SANDY, UTAH 84070 (801) 990-1776 FAX
Project Number: U0009-265-131

MARK	DATE	PURPOSE
3	02/21/14	AFTER REVIEW
2	10/21/13	AFTER REVIEW REVISE SEISMIC LOADS
1	08/14/13	AND CHANGE TRUSS HGT.

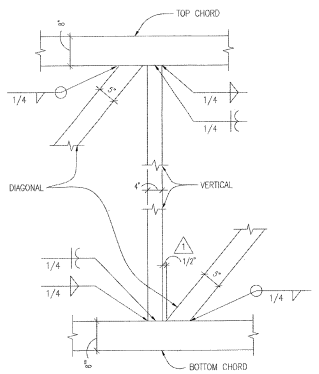
REVISIONS

12001 SHOEMAKER AVE.
SANTA FE SPRINGS, CA. 90670
(562) 944-0701
FAX (562) 944-4025
OUTSIDE CA. (800) 548-0054

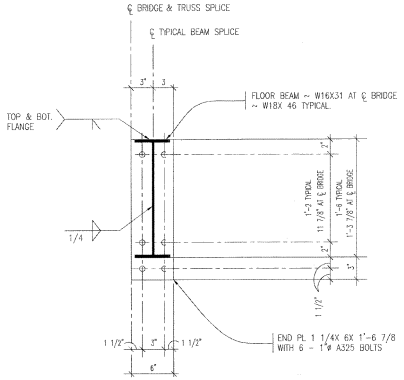
EXCEL
BRIDGE MANUFACTURING CO.

16'-0 WIDE X 75'-0 LONG
VEHICULAR BRIDGE
PORTOLA VALLEY CA.
EXCEL JOB NO. 13B038

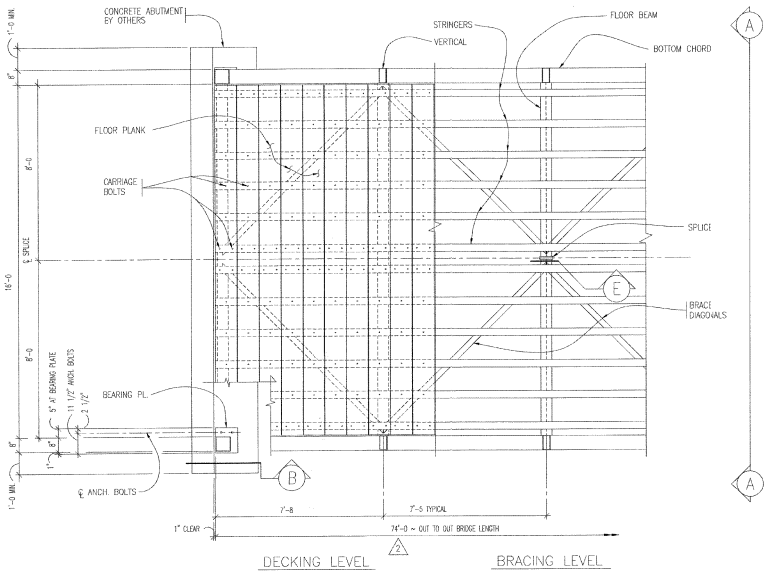
SHEET 1 OF 2



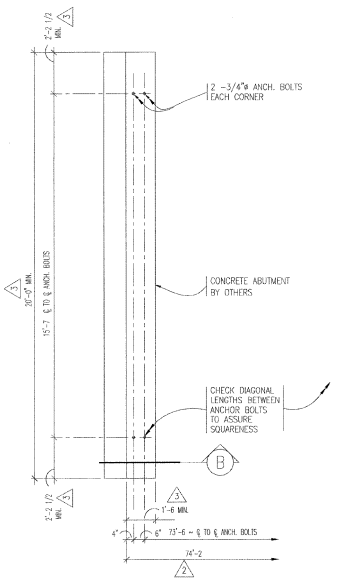
C TRUSS WELDS 3/4" = 1'-0"



E BEAM SPLICE DETAIL 1 1/2" = 1'-0"



BRIDGE PLAN 3/8" = 1'-0"



ABUTMENT PLAN 3/8" = 1'-0"
ANCHOR BOLT SETTING

THESE DRAWINGS AND THE DESIGN ARE THE PROPERTY OF EXCEL BRIDGE MANUFACTURING COMPANY AND ARE NOT TO BE COPIED OR MANUFACTURED WITHOUT THEIR WRITTEN CONSENT.

GENERAL NOTES

1. LIVE LOADS USED IN DESIGN:
   A. Uniform Live Load –
      1. Basic ..... 85 psf.
      2. Truss ..... 65 psf.
   B. Vehicle ..... AASHTO HS20.
   C. Wind ..... 25 psf.
   2 D. Seismic ..... C.B.C., Fa=1.0, Ss=2.50.
2. FOUNDATIONS:
   A. Foundations are to be designed and provided by others.
   B. Foundations shall provide minimum 4000 psi concrete bearing surface.
3. TIMBER:
   A. Wood for bridge decking shall be 4 x 12 treated Douglas Fir/Larch; conforming to "National Design Specification for Wood Construction..." by the National Forest Products Association..
      1. All decking shall be stress graded No. 1, or better.
      2. All decking shall be ACQ treated until refused.
4. METALS:
   A. All steel shall be high strength low alloy (Fy = 50,000 psi), self-weathering and atomospheric corrosion resistant.
      1. All structural steel tube shapes shall conform to ASTM A847.
      2. All other steel shapes and plates shall conform to ASTM A588.
      3. All standard bolts shall conform to ASTM A307. Anchor bolts, washers and nuts shall be galvanized. Carriage bolts, washers and nuts shall be zinc plated.
      4. All high strength bolts shall conform to ASTM A325-Type 3. Bolted splice connections are slip-critical. Bolts shall be installed inaccordance with RCSC Specification for Structural Joints in the AISC Manual for Steel Construction.
   B. Structural steel shall be designed, detailed and fabricated according to the 13th Edition of the AISC Manual of Steel Construction and 1997 AASHTO Guide Specifications for the Design of Pedestrian Bridges.
   C. All steel surfaces shall be cleaned in accordance with Steel Structures Painting Council standard SSPC-SP6-63.
5. WELDED CONNECTIONS:
   A. All structural steel welds shall conform to the latest provisions of the Structural Welding Code ANSI/AWS D1.1.
   B. All welders shall be qualified in accordance with the above AWS Code.
   C. Welding shall be electric arc process using SMAW and/or FCAW.
   D. All welded connections are pre-qualified joints per AWS Code unless otherwise detailed.
   E. All welds of tube shapes shall assure a hermetic connection.
   F. Minimum filler metal strength shall be Fy = 70 ksi. and minimum fillet weld size shall be 1/4", unless noted on plans. Refer to AISC Manual Section J2 for other minimum requirements.
6. EXCEL Bridge Manufacturing Company is certified for major / simple steel bridge construction with AISC and for high strength fabrication under the City of Los Angeles License #1582.
7. Inspection shall be provided by Excel Bridge Manufacturing Company's Quality Control Program to include: review of shop drawings, welding procedures, welder qualifications, verification of bridge dimensions and geometry, and visual inspection of welds.
8. EXCEL Bridge Manufacturing Company is responsible for delivery of the fabricated bridge to the jobsite only. Unloading, erection, and jobsite safety are the responsibility of others.
9. BRIDGE REACTIONS in pounds per base plate (4 per bridge unless noted):

Dead Load		13,700 lbs.
Uniform Live Load		19,500 lbs.
Vehicle Live Load		31,500 lbs. 3
Wind:	vertical	10,900 lbs.
	transverse	3,800 lbs.
2 Seismic:	transverse	9,300 lbs.
	longitudinal (2)	18,600 lbs.

10. BRIDGE LIFTING WEIGHT: 54,500 lbs.
1 11. UNIFORM LIVE LOAD DEFLECTION: L/1380.
3 12. VEHICLE LIVE LOAD DEFLECTION: L/830.

SHIPPING NOTES:

1. Bridges will be shipped on over-the-road trucks. Truck must be unloaded as close as possible to paved streets or roads.
2. Purchaser is responsible for coordinating and supplying unloading cranes, support dunnage, and other necessary items.
3. Standard unloading time is 2 hours per truck. Purchaser will be responsible for all standby time and time over two hours, required by unloading.

SPECIAL INSPECTION:

2 1. All welding shall be performed in an approved fabrication shop.
2. All high strength bolts shall be installed per the Turn of Nut method and shall be continuously special inspected.

COUNTY OF SANTA CLARA
BUILDING INSPECTION DEPT.
PLANS APPROVED FOR PERMIT
PERMIT #
DATE 6/26/15
PLANS MUST BE ON JOB #

REGISTERED PROFESSIONAL ENGINEER
C 70567
CIVIL
STATE OF CALIFORNIA
FEB 21 2014

VECTOR ENGINEERS
9138 S. STATE STREET, SUITE 101 (801) 990-1775 (801) 990-1776 Fax
SANDY, UTAH 84070
Project Number: U009-265-151

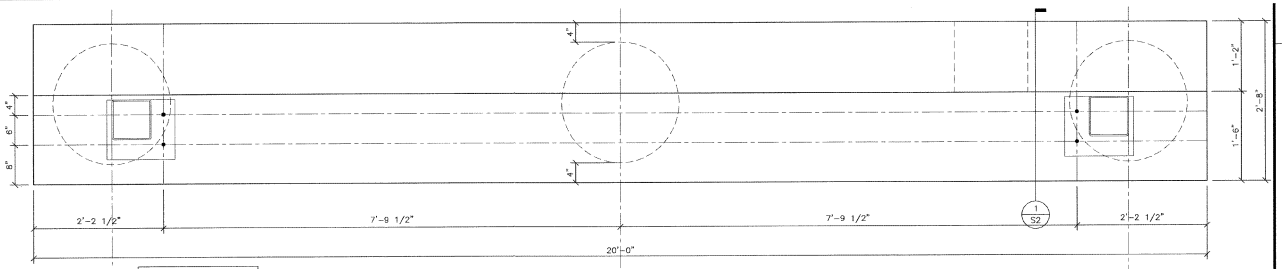
MARK	DATE	PURPOSE
		REVISIONS
2	02/21/14	AFTER REVIEW
1	10/21/13	AFTER REVIEW
	08/14/13	REVISE SEISMIC LOADS AND CHANGE TRUSS MFG.

12001 SHOEMAKER AVE.
SANTA FE SPRINGS, CA 90670
(562) 944-0701
FAX (562) 944-4025
OUTSIDE CA (800) 548-0054

EXCEL
BRIDGE MANUFACTURING CO.

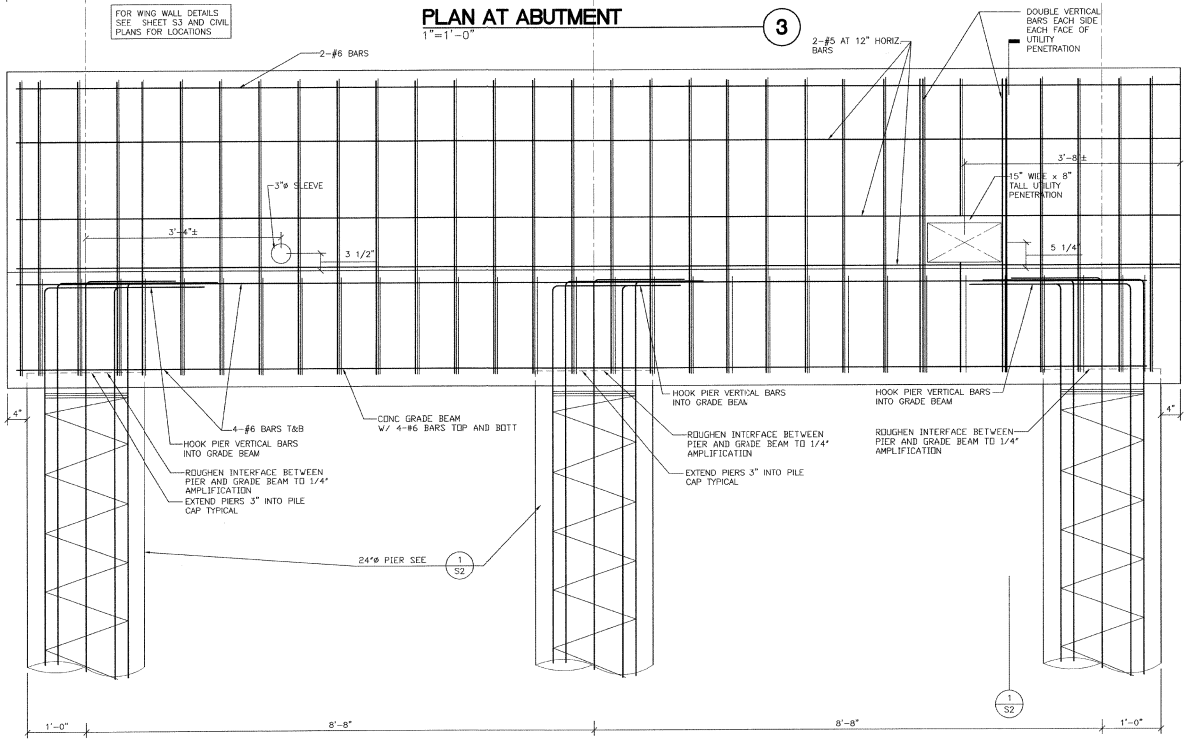
16'-0 WIDE X 75'-0 LONG
VEHICULAR BRIDGE
PORTOLA VALLEY, CA.
EXCEL JOB NO. 130038

SHEET 2 OF 2

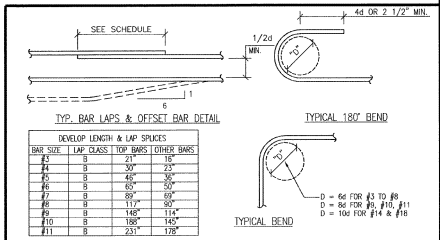


FOR WING WALL DETAILS SEE SHEET S3 AND CIVIL PLANS FOR LOCATIONS

PLAN AT ABUTMENT 3
1"=1'-0"

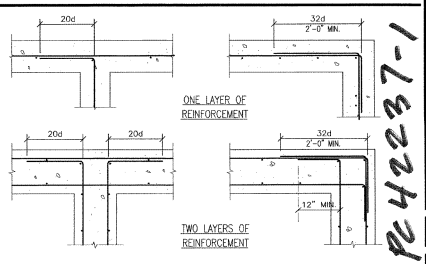


ELEVATION AT ABUTMENT 4
1"=1'-0"



DEVELOP LENGTH & LAP SPLICES			
BAR SIZE	LAP CLASS	TOP BARS	OTHER BARS
#3	B	21"	16"
#4	B	30"	23"
#5	B	45"	35"
#6	B	65"	50"
#7	B	89"	69"
#8	B	117"	90"
#9	B	148"	114"
#10	B	188"	145"
#11	B	231"	178"

TYP. BAR LAPS AND OFFSETS 2
1"=1'-0"



TYPICAL LAP SPLICES - CONC. 1
N.T.S.

GENERAL NOTES

A. GENERAL

1. ALL WORK SHALL CONFORM TO CURRENT CALIFORNIA BUILDING CODES, FEDERAL, STATE AND LOCAL CODE REQUIREMENTS, LAWS AND ORDINANCES.

2. THE CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS AT THE JOB SITE AND SHALL NOTIFY THE ARCHITECT OF ANY DISCREPANCIES BETWEEN ACTUAL CONDITIONS AND WHAT IS SHOWN ON THE DRAWINGS BEFORE PROCEEDING WITH THE WORK.

3. ANY OMISSIONS OR CONFLICTS BETWEEN THE ARCHITECTURAL, STRUCTURAL AND MECHANICAL DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT BEFORE ANY RELATED WORK IS STARTED.

4. SHOP DRAWINGS REQUIRED BY THE SPECIFICATIONS SHALL BE SUBMITTED TO THE ARCHITECT PRIOR TO FABRICATION, AND ALLOW REASONABLE TIME FOR REVIEW AND APPROVAL BY THE STRUCTURAL ENGINEER.

5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF THE BUILDING DURING THE CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ADEQUATE SHORING, BRACING AND GUYS IN ACCORDANCE WITH ALL NATIONAL, STATE AND LOCAL SAFETY ORDINANCES. ANY DEVIATIONS MUST BE APPROVED PRIOR TO ERECTION.

6. MECHANICAL EQUIPMENT MUST BE FIRMLY ATTACHED TO THE STRUCTURE. ALL MECHANICAL EQUIPMENT INTENDED TO BE SUPPORTED ON, OR FROM THE STRUCTURE, UNLESS INDICATED WITHIN STRUCTURAL DRAWINGS, SHALL BE SUBMITTED TO THE ARCHITECT FOR ENGINEER'S APPROVAL PRIOR TO INSTALLATION.

7. ALL CONDITIONS NOT CLEARLY SHOWN OR DETAILED SHALL BE OF THE SAME TYPE AND CHARACTER AS THOSE SHOWN FOR SIMILAR CONDITIONS.

B. FOUNDATION

1. FOUNDATION DESIGN IS BASED ON A REPORT BY JF CONSULTING INC. WITH PROJECT No 1536, ISSUE DATE MAY, 28 2013 DESIGN CRITERIA PIER FOUNDATION SOIL FRICTION = 450 PSF IGNOR THE TOP 6 FEET ACTIVE PRESSURE = 45 PCF AT REST PRESSURE 65 PCF PASSIVE PRESSURE = 350 OVER 1.5 PIER DIAMETERS.

2. PIER DRILLING SHALL BE OBSERVED BY THE GEOTECHNICAL ENGINEER.

3. FOUNDATION EXCAVATIONS SHALL BE EXAMINED AND CERTIFIED BY A GEOTECHNICAL ENGINEER PRIOR TO THE PLACEMENT OF ANY REINFORCING STEEL OR CONCRETE.

C. CONCRETE

1. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS.

2. CONCRETE SHALL BE REGULAR WEIGHT HARD ROCK TYPE (150#/CF). AGGREGATE SHALL CONFORM TO ASTM C33, U.N.O..

3. CEMENT SHALL CONFORM TO ASTM C150, TYPE 1 OR 2.

4. PLACEMENT OF CONCRETE SHALL BE IN CONFORMANCE WITH ACI 318.

5. CONCRETE SHALL BE MACHINE MIXED AND DELIVERED IN ACCORDANCE WITH ASTM C-94. SUBMIT MIX DESIGN TO THE ARCHITECT FOR APPROVAL PRIOR TO PLACING CONCRETE.

6. PROVIDE MINIMUM CLEAR COVER OF CONCRETE OVER REINFORCING AS FOLLOWS:
A) AGAINST EARTH FORM – 3 INCHES
B) EXPOSED TO EARTH BUT POURED AGAINST FORM – 2 INCHES

D. REINFORCING STEEL

1. ALL REINFORCING STEEL SHALL CONFORM TO ASTM SPECIFICATION A615 GRADE 60 FOR # 5 AND LARGER BARS AND GRADE 40 FOR # 3 AND # 4.

2. ALL REINFORCING STEEL SHALL BE LAPPED AS NOTED BELOW. SEE 7/S1.2 UNLESS OTHERWISE NOTED IN PLANS. SPLICES SHALL BE LOCATED AS DETAILED IN THE PLANS. STAGGER ALL LAPS AND SPLICES.

3. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A82 AND A185.

4. ANCHOR BOLTS, DOWELS AND OTHER EMBEDDED ITEMS SHALL BE SECURELY TIED IN PLACE BEFORE CONCRETE IS PLACED, USE CUT THREAD ANCHOR BOLTS ONLY.

SITE INFORMATION

SEISMIC DESIGN CATAGORY = E

Fa = 1 Fv = 1.3

Ss = 2.512 S1 = 1.063

Sms = 2.512 Sds = 1.675 Sd1 = 0.921

SITE CLASS = C

SPECIAL INSPECTION

1. CONCRETE AND REINFORCING
2. INSTALLATION OF CAST-IN-PLACE ANCHORAGE
3. PIER FOUNDATION (DEEP FOUNDATION)

COUNTY OF SANTA CLARA BUILDING INSPECTION OFFICE PLANS APPROVED FOR PERMIT SHEET NO. 5 OF 7 BY [signature] DATE 7/14/15 PLANS MUST BE ON JOB F...

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

BC|A
STRUCTURAL ENGINEERING, INC.
1300 Industrial Road Unit 1
San Carlos, California 94070
[T] 650.508.2500
[F] 650.508.2505
www.BCAeng.net

REGISTERED PROFESSIONAL ENGINEER JEFFREY S. OLSON S3662 Exp : 3/31/2017 STATE OF CALIFORNIA

BCA JOB No. 13340 5/29/2015

• PROJECT •

R. Kelley Residence
APN: 0142-15-008
Alpine Road
Portola Valley, CA 94028
New Driveway & Bridge

• TITLE •

• REVISIONS •

No.	Date	Notes
1.	11-8-13	PC COMMENTS
2.	1-23-14	PC COMMENTS
3.	5-11-15	S.C.C. LOADS

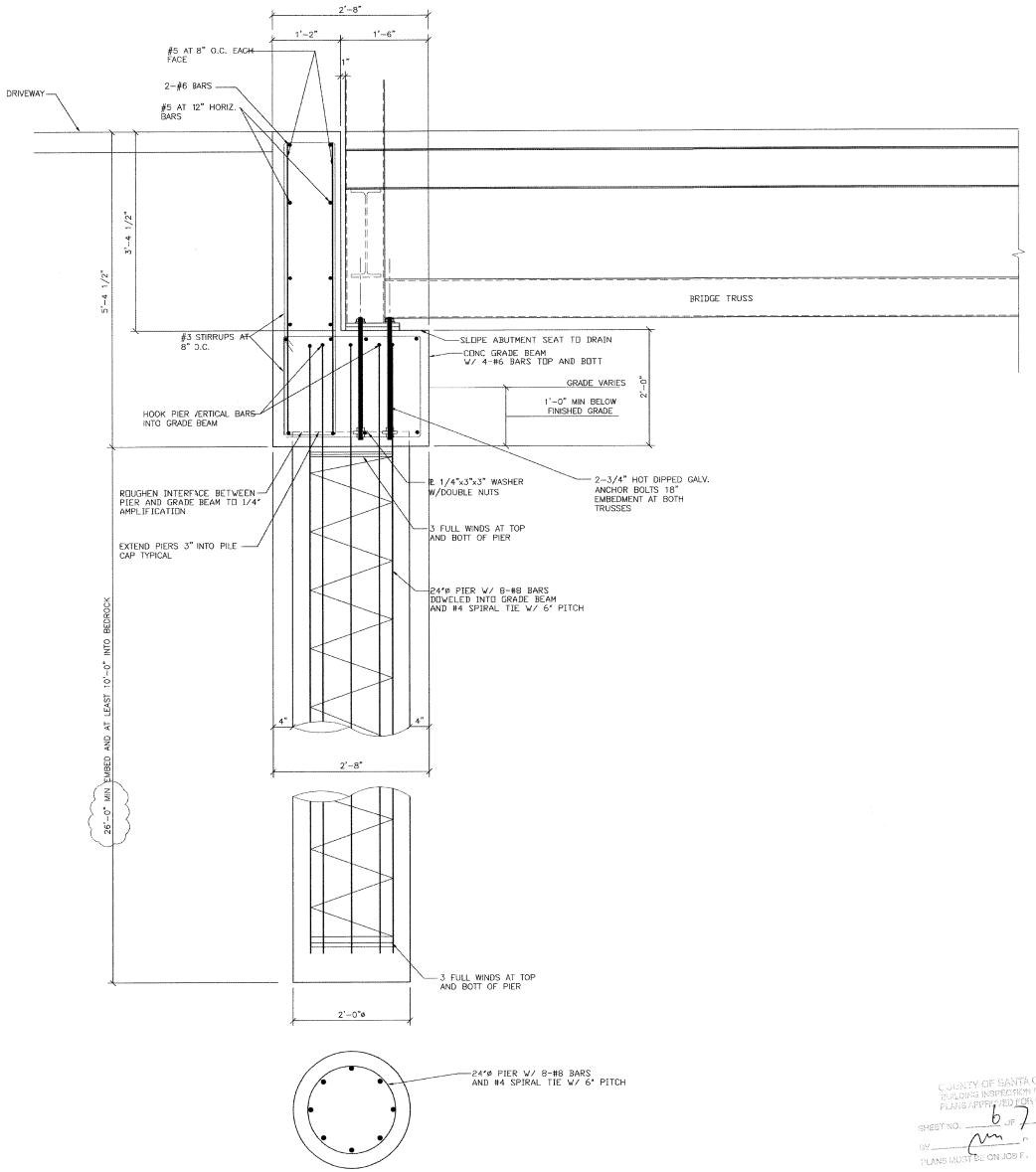
• JOB: 2010.0100

• DATE: 8/29/2013

• DWG #: S1

PZ 42237-1

JUN 01 2015 BUILDING INSPECTION DIV.



SECTION AT ABUTMENT

1"=1'-0"

1

COUNTY OF SANTA CLARA
BUILDING INSPECTION OFFICE
PLANS APPROVED FOR PERMIT
SHEET NO. 6 OF 7 SHEETS
BY [signature] DATE 6/26/17
PLANS MUST BE ON JOB F. SECTIONS

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

BC|A
STRUCTURAL ENGINEERING, INC.
1300 Industrial Road Unit 1
San Carlos, California 94070
[T] 650.508.2500
[F] 650.508.2505
www.BCAeng.net

REGISTERED PROFESSIONAL ENGINEER ROBERT S. CHAMBERLAIN S3662 Exp : 3/31/2017 STRUCTURAL STATE OF CALIFORNIA

BCA Job No. 13340 5/29/2015

• PROJECT •

R. Kelley Residence
APN: 0142-15-008
Alpine Road
Portola Valley, CA 94028
New Driveway & Bridge

• TITLE •

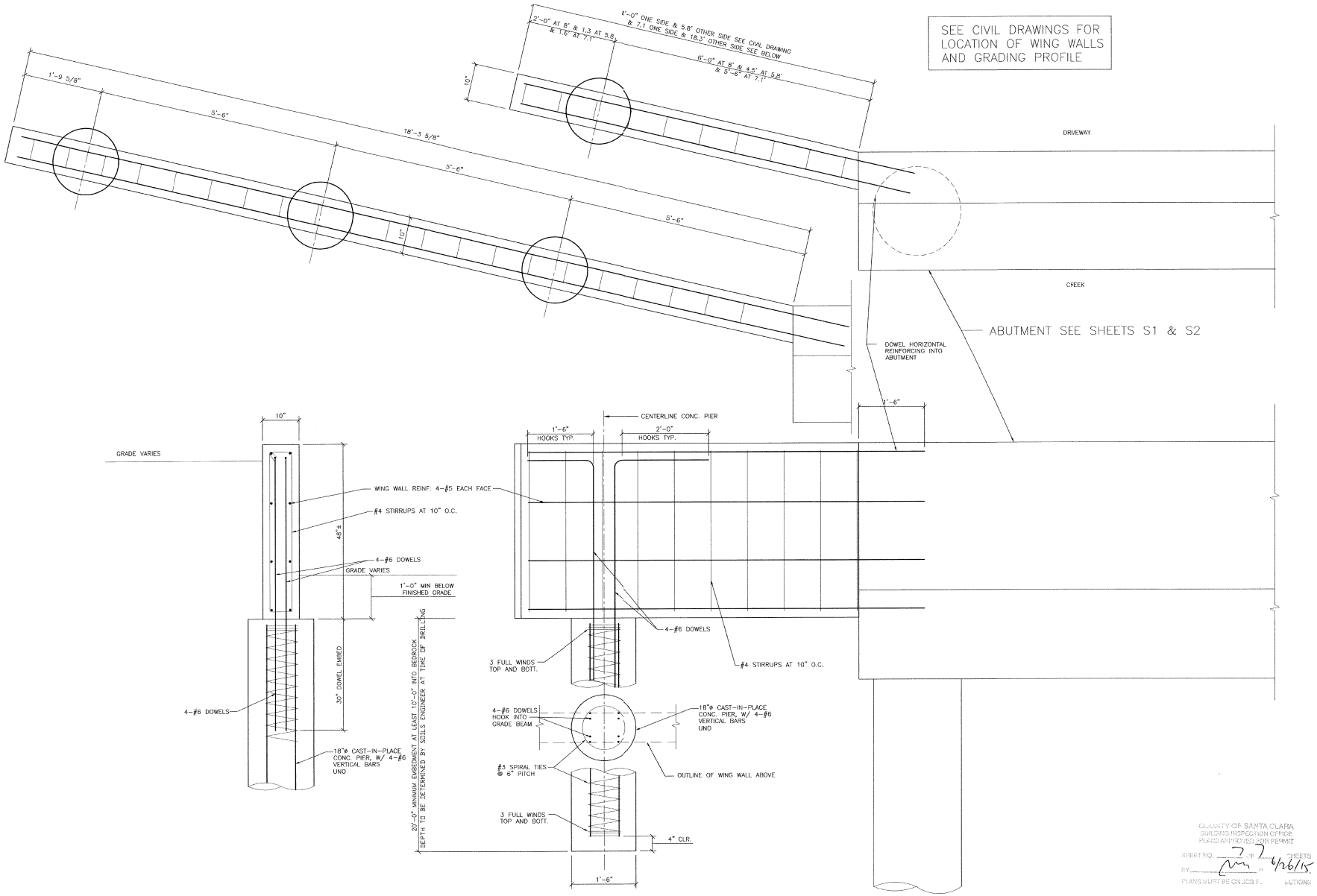
• REVISIONS •

No.	Date	Notes
1.	11-8-13	PC COMMENTS
2.	1-23-14	PC COMMENTS
3.	5-11-15	S.C.C. LOADS

• JOB: 2010.0100

• DATE: 8/29/2013

• DWG #: S2



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

BCA
STRUCTURAL ENGINEERING, INC.
1300 Industrial Road Unit 1
San Carlos, California 94070
[T] 650.506.2500
[F] 650.506.2505
www.BCAeng.net

REGISTERED PROFESSIONAL ENGINEER ROBERT S. CHU S3682 Exp : 3/31/2017 STRUCTURAL STATE OF CALIFORNIA

BCA Job No. 13340 5/29/2015

• PROJECT •

R. Kelley Residence
APN: 0142-15-008
Alpine Road
Portola Valley, CA 94028
New Driveway & Bridge

• TITLE •

• REVISIONS •

No.	Date	Notes
1.	11-8-13	PC COMMENTS
2.	1-23-14	PC COMMENTS
3.	5-11-15	S.C.C. LOADS

• JOB: 2010.0100

• DATE: 8/29/2013

• DWG #: S3

Stillwater Sciences

2855 Telegraph Ave, Suite 400, Berkeley, CA 94705
phone 510.848.8098

TECHNICAL MEMORANDUM

DATE: 5/29/2020

TO: TONI CUPAL

FROM: CHRIS LYLE, FLUVIAL GEOMORPHOLOGIST; STILLWATER SCIENCES

SUBJECT: RESPONSE TO CONCERNS OF ONGOING NATURAL EROSION OF THE CREEK AND POTENTIAL INTERFACE WITH PROPOSED IMPROVEMENTS

At the request of Toni Cupal, Stillwater Sciences has reviewed input regarding the project from Regional Water Quality Control Board (RWQCB), shown in the Building Site Approval and Grading Approval Applications – Additional Information Needed for CEQA Preparation (File # PLN18-1145) received from Santa Clara County Building and Planning Department on May 14, 2020. Specifically, Stillwater Sciences was asked to respond to the following County comment:

"7. The County has received input regarding the project from Regional Water Quality Control Board (RWQCB) staff regarding the project and identified concerns regarding ongoing natural erosion of the Creek and potential interface with the proposed onsite improvements. The RWQCB requested additional analysis of this issue, prepared by a fluvial hydro geomorphologist that addresses the following:

a. Whether or not the ongoing natural erosion of the creek will reach the proposed stitch-pier wall location.
b. If the erosion reaches the stitch-pier wall, how will this impact the geomorphology, hydrology, and biological functions of the creek.
c. If it does have impacts to the Creek, what mitigation measures are appropriate.

8. If the results of the study under #7 indicate that natural erosion of the creek will reach the proposed stich pier wall, provide a report from a Geotechnical Engineer that specifies whether failure of the proposed stitch-pier wall is possible. If failure of the wall is possible, mitigation measures shall be proposed by the Geotechnical Engineer to reduce impacts to a less than significant level if/when failure occurs to: 1) the creek and 2) the residence. This information is required in order to continue processing the environmental assessment."

Stillwater Sciences considered several approaches to quantify the likelihood of stream migration and associated erosion undermining the proposed stich-pier wall. Although bank erosion potential or hydrodynamic modeling could provide results that would either be satisfactory or dismissive of the proposed project, an empirical approach seemed most reasonable given the very low likelihood of the necessary variables to coincide for this to occur.

Based on several years of site observations and an understanding of the channel hydraulics from previous modeling, erosion will be largely concentrated at the left bank, where oversteepening and slumping of bank material (fine-grained clayey sand) is actively occurring. The left bank is owned by the Town of Portola Valley and if left natural and unarmored, Los Trancos Creek will more than likely continue to erode and laterally migrate away from the channel centerline. This has the potential to increase channel capacity and reduce the velocity and shear stresses experienced along the right bank, further minimizing bank erosion potential.

The creek bank in question has erosion protection provided by several large trees along the toe, middle, and top of bank, and a well-established riparian understory (Figure 1). This bank shows no signs of surface failure, toe erosion, or any features indicative of instability.

Figure 1. Area of proposed stitch-pier wall looking upstream from right bank.

Although some continued erosion is expected to occur along the toe of the creek bank and along the face of the slope during storm event flows, "channel forming" 2-year events and above, the channel bed is very stable and no further incision is anticipated to occur under current conditions. Prior to construction of the stitch pier wall enhancement of salmonid habitat by large woody debris (LWD) features will decrease water velocities during high winter flows and increase scour to create pools with cover during summer low-flows. During the winter, the LWD will provide refuge for salmonids so that they are not flushed out of the system. During the summer, some of the LWD will increase the channel complexity with cover to provide summer rearing habitat in the vicinity of winter refuge habitat (aka habitat connectivity).Figure 2 is a representative image of the channel bed composition, which shows a

moderately embedded, coarse substrate that provides resistance to erosion and is largely immobile.

Figure 2. Typical bed composition looking from right bank to left bank along toe of channel.

Stillwater Sciences has reviewed BCA Structural Engineering's stitch pier wall details, as well as BAGG Engineers' Geotechnical reports and all associated calculations. Thereafter, methodology of assessments and final design variables were discussed with BAGG staff via teleconference on May 20th, 2020.

Ultimately, it is highly unlikely that the stitch-pier wall comes into contact with any waters associated with flows in Los Trancos Creek, although the design of the foundation for the stitch-pier wall is more than capable of withstanding expected water velocities and shear stress forces. This is mainly due to the distance of the wall from the creek (approximately 50 linear feet) and that the required sediment flux would take a series of recurrent 100-year flow events. This is beyond any consideration of studies that could be conducted with the knowledge of the system and potential future uses of the watershed.

In the unlikely event that land use downstream and/or upstream of the Project reach changes drastically to allow for Los Trancos Creek to reestablish its high sinuosity channel morphology, then the anticipated impacts should be revaluated.

June 29, 2020
BAGG Project No. CUPAL-18-01

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

Memorandum Review
Geotechnical Engineering Consultation
Stillwater Sciences/ Stitch Pier Wall
3343 Alpine Road
Portola Valley, California

Dear Ms. Cupal:

This letter presents the result of our geotechnical review of the "Technical Memorandum" prepared by Stillwater Sciences with regard to the potential erosion of Los Trancos Creek and stability of the stitch pier wall located at the site of the proposed Cupal residence in Portola Valley, California. As part of our review, we referenced our geotechnical engineering report for the subject project, the project civil and structural drawings, and the noted memorandum, as listed below:

- "Report Revision 2, Geotechnical Engineering Investigation, Proposed Cupal Residence, 3343 Alpine Road, Portola Valley, California," by BAGG Engineers, dated June 28, 2019, BAGG Project No. CUPAL 18-01.

- Preliminary Grading Plans entitled, " Cupal Residence, 3343 Alpine Road, Portola Valley, California," prepared by Bohley Consulting, dated September 25, 2019, revised June 29, 2020. Bohley Job No. 201718

- Structural Drawings entitled, "Site Improvements at the Cupal Residence, Stitch Pier Retaining Wall Details," prepared by BCA Structural Engineer, dated September 9, 2019. BCA Job No. 19337.

- Technical Memorandum, "Response to Concerns of Ongoing Natural Erosion of the Creek and Potential Interface with Proposed Improvements," prepared by Stillwater Sciences, dated May 29, 2020.

Based on our knowledge of the site and our geotechnical review the referenced drawings and the recent Stillwater Sciences Memorandum, BAGG Engineers concurs with Stillwater Sciences' opinion that the erosion potential of the creek channel towards the proposed Cupal Residence and the Stitch Pier Wall is low for the following reasons:

1) The presence of a stable creek channel that bends around and away from the property,
2) The creek channel is rocky and resistant to downcutting by the creek which reduces the chance of under mining the row of drilled piers which form the below ground Stich Pier Wall.

3) The presence of several large trees, which help to stabilize the toe of the creek bank and the slope.

4) The proposed installation of Large Woody Debris (LWD) for fish habitat will slow the creek flow which will reduce erosion potential and the (LWD) will also help protect the creekbank from erosion.

We note that the proposed stich pier wall is located at least 22 feet away from the existing top of creek bank which will allow ample distance and time to monitor any potential erosion of the creek channel. In the unlikely event that significant erosion does occur, there would be ample opportunity to add additional (LWD) that would further enhance fish habitat and provide additional slope protection if needed. Additionally, the proposed drilled pier foundations for the stich pier wall will extend at least 13 feet deep below creek channel bed and into bedrock, so in the unlikely event that the creek channel encroaches on the Stich Pier Wall foundation, the Stich Pier Wall will remain stable.

Based on our review of the Stillwater Memorandum, we concur that the potential for creek bank erosion to advance all the way to the Stitch Pier Wall during the lifetime of the project is very low. Per our June 28, 2019 geotechnical report, the referenced civil and structural drawings show the stitch pier wall set back ample distance (at least 22 feet) from the current top of bank with drilled piers extending at least 13 feet below the creek channel bed and into bedrock. Therefore, from a geotechnical point of view, it is our opinion that the proposed below ground wall, is adequately designed and the current plans are suitable for construction of the Stich Pier wall as proposed.

This review is contingent upon the BAGG Engineers providing full time observation and inspection of the foundation drilling operation and geotechnical observation and testing of all pertinent aspects of the construction, including the site grading, foundation installation, including inspection of rebar, concrete and pertinent earthwork and erosion control installation measures, upon completion of work.

Sincerely,

BAGG Engineers

Alan O'Driscoll
Project Manager

Michael Matusich
Geotechnical Engineer

REGISTERED PROFESSIONAL ENGINEER
MICHAEL MATUSICH
GE 3013
EXP. 12/31/21
GEOTECHNICAL
STATE OF CALIFORNIA

BAGG ENGINEERS

REPORT REVISION 2
GEOTECHNICAL ENGINEERING INVESTIGATION
PROPOSED CUPAL RESIDENCE
3343 ALPINE ROAD
PORTOLA VALLEY, CALIFORNIA

Prepared for:

Toni Cupal

BAYGG ENGINEERS

June 28, 2019
BAGG Job No. CUPAL-18-01

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

REPORT REVISION 2
Geotechnical Engineering Investigation
Proposed Cupal Residence
3343 Alpine Road
Portola Valley, CA
APN: 142-15-008

Dear Ms. Cupal:

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.

The first revision to this report, Dated October 10, 2018, was due to a change in the project plans. This second revision is in response to the County of Santa Clara's review comments, dated May 17, 2019, regarding the stability of the creek bank and the proposed home's impact on the creek. We had expanded Section 8.8, Creek Bank Protections, for added clarity on this matter. Additionally, we have included the County's review comments and our responses in a new section, Section 8.17, at the end of this 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
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EXP. 12/31/19
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Sadek M. Derrega
Certified Engineering Geologist

REPORT REVISION 2
Geotechnical Engineering Investigation
Proposed Cupal Residence
3343 Alpine Road
Portola Valley, CA
APN: 142-15-008

TABLE OF CONTENTS

Attached Plates:

Plate 1	Vicinity Map
Plate 2	Site Plan and Geology
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
Plate 19	Example Stitch-Pier Wall Generalized Sketch

ASFE document titled "Important Information About Your Geotechnical Engineering Report"

REPORT REVISION 2
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 adversely impacting 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 indicated on Plate 3, Idealized Subsurface Profiles, the proposed structures will not threaten the stability of the existing creek banks as the existing creek bank slopes closest to the project are less steep than a 2H:1V (horizontal to vertical) and, with the proposed structures to be set 20 feet or more away from the top of the slope, the creek bank will be well outside the zone of influence of the proposed structure.

However, as the slope itself has demonstrated instability in the past, we are concerned with the slumping, recession, and retreat of the creek bank. Our CEG mapped a relatively thin (less than 10 feet thick) alluvial slump along the southern creek bank immediately to the north of the proposed residence location. The slump occurred in the alluvial soils comprising the entire creek bank in that area and it resulted in decreasing the bank gradient. 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 have a below-grade wall (stitch pile/pier, sheetpile, or other as judged appropriate) be installed between the top of the Los Trancos Creek channel's southern bank and the proposed structure where approximately indicated on the attached Plate 2, Site Plan and Geology.

If rip rap slope protection is not used, a below-grade wall may be installed in its place. The location of the below-grade 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 wall may be terminated about 2 feet below the final grade to prevent interference with daily activities or form obstacles. The wall should be designed to support 10 feet of active material using pressures noted in the "Retaining Walls" section above. If a stitch pier wall is used, piers should be spaced at center to center spacing of 3 diameters and designed using the parameters noted under the "Drilled Pier Foundations" section, and utilize the passive soil resistance as noted the "Lateral Design" section.

Furthermore, an additional southern creek bank section located immediately beyond the mapped alluvial slump to the northeast 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.

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.

8.17 County of Santa Clara Planning Review Comments and BAGG's Responses

Review comments were prepared by the County of Santa Clara are presented below in italics followed by our responses.

Planning Review Comment #2

Pursuant to the Santa Clara County Water Collaborative (SCCWC), stream/creek setbacks for a new single-family residence located near a stream on a lot over 10,000-square feet, as measured from top-of-the bank. Please revise the site plan to reflect the 25-foot setback.

Should you wish to locate the structure closer than 25 feet to the top of bank, please revise the geotechnical report so it clearly addresses:

1) *Whether the location of a proposed structure may threaten bank stability, and*
2) *Whether the bank is in an unstable or potentially unstable condition that may threaten structures and/or potentially cause health and safety hazard.*

BAGG's Response

1) The near-point of the proposed residential structure is located about 20 feet away from the southern top of creek bank, which is situated outside of and beyond the structure's foundations zone of influence. In addition, the location of the planned structure is situated beyond a 2H:1V (Horizontal to Vertical) imaginary line projected up from the southern creek bank towards the structure to the south. Furthermore, a below-grade retention structure separates the residential structure from creek bank and the noted retention structure will be designed to account for surcharge loads that will be applied by the residential structure. Based on this discussion, it is our opinion that the structure does not surcharge the creek bank and it will not adversely impact its stability.

2) The southern creek bank has experienced failure previously and Plate 2 delineates the lateral approximate limits of the slump while Cross Section A-A' on Plate 3 depicts its approximate thickness. As the slump occurred and the toe kicked out, the gradient of the creek bank in that vicinity has decreased in steepness. Since we cannot rule out future erosional episodes that could impact the slump and cause to reactivate, we have recommended a below-grade

structural retention wall that would prevent the bank from encroaching onto the residential structure if it were to reactivate and fail in the future.

In order to allow an encroachment into the 25-foot setback, the geotechnical report must demonstrate that:

1) *The development would not require introduction of hardscape in order to maintain a stable slope, and*
2) *Show how maintenance or repair of the stream could be provided should it become necessary.*

BAGG's Response

1) No hardscape is planned along the southern creek bank to help stabilize the slope. Rock slope protection (rip rap) is considered a viable geotechnical option to line the slope face with in order to decrease the creek's erosion potential and to help buttress the slope against additional future failure. Local, State and Federal agencies may not approve its use, however. We have provided alternative recommendations to construct a below-grade retention system for implementation in lieu of the rip rap. The planned retention structure will not encroach onto the creek bank nor will it be visible above ground.

2) As discussed throughout our report, we have provided a structural mitigation measure that would address the creek bank, if it were to fail in the future, without encroaching onto the actual creek bank. Two additional localized creek bank zones: one to the northeast of the residential structure along the southern creek bank and one to the northwest across the creek channel (colored green on Plate 2) appeared relatively steep and could experience failure in the future since they are situated along prominent bends in the creek channel where the erosive energy is focused and concentrated. Our report recommends that the two noted areas be blanketed with rock rip rap. If rip rap is not deemed acceptable for such use, the two noted areas may be covered with erosion matting that should be selected by the project hydrologist.

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
Plate 19	Example Stitch-Pier Wall Generalized Sketch

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*.

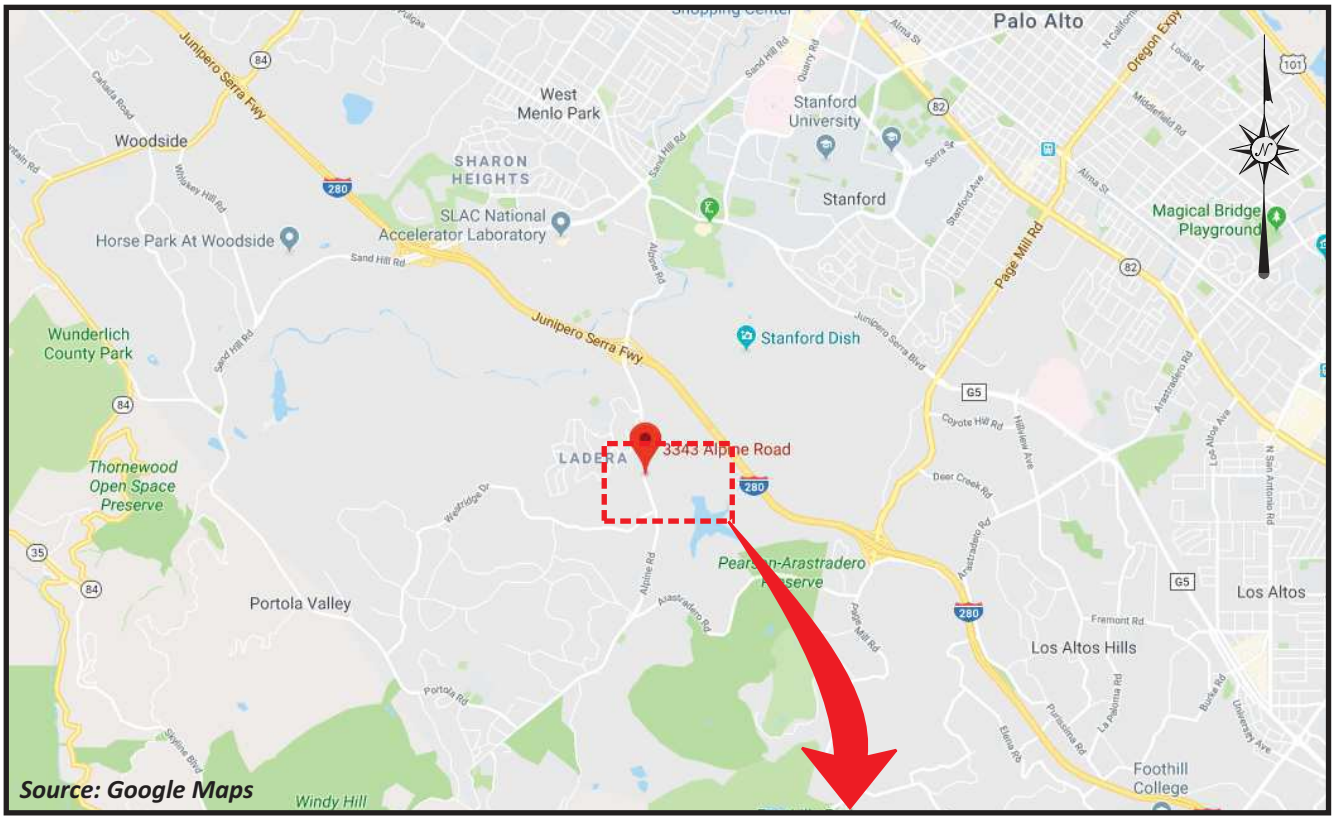
Knudsen, K.L., Sowers, J.M., Witter, R.C., Wentworth, C.M., Helley, E.J., Nicholson, R.S., Wright, H.M., and Brown, K.H., 2000, *Preliminary maps of Quaternary deposits and liquefaction susceptibility, nine-county San Francisco Bay region, California: a digital database: U.S. Geological Survey, Open-File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

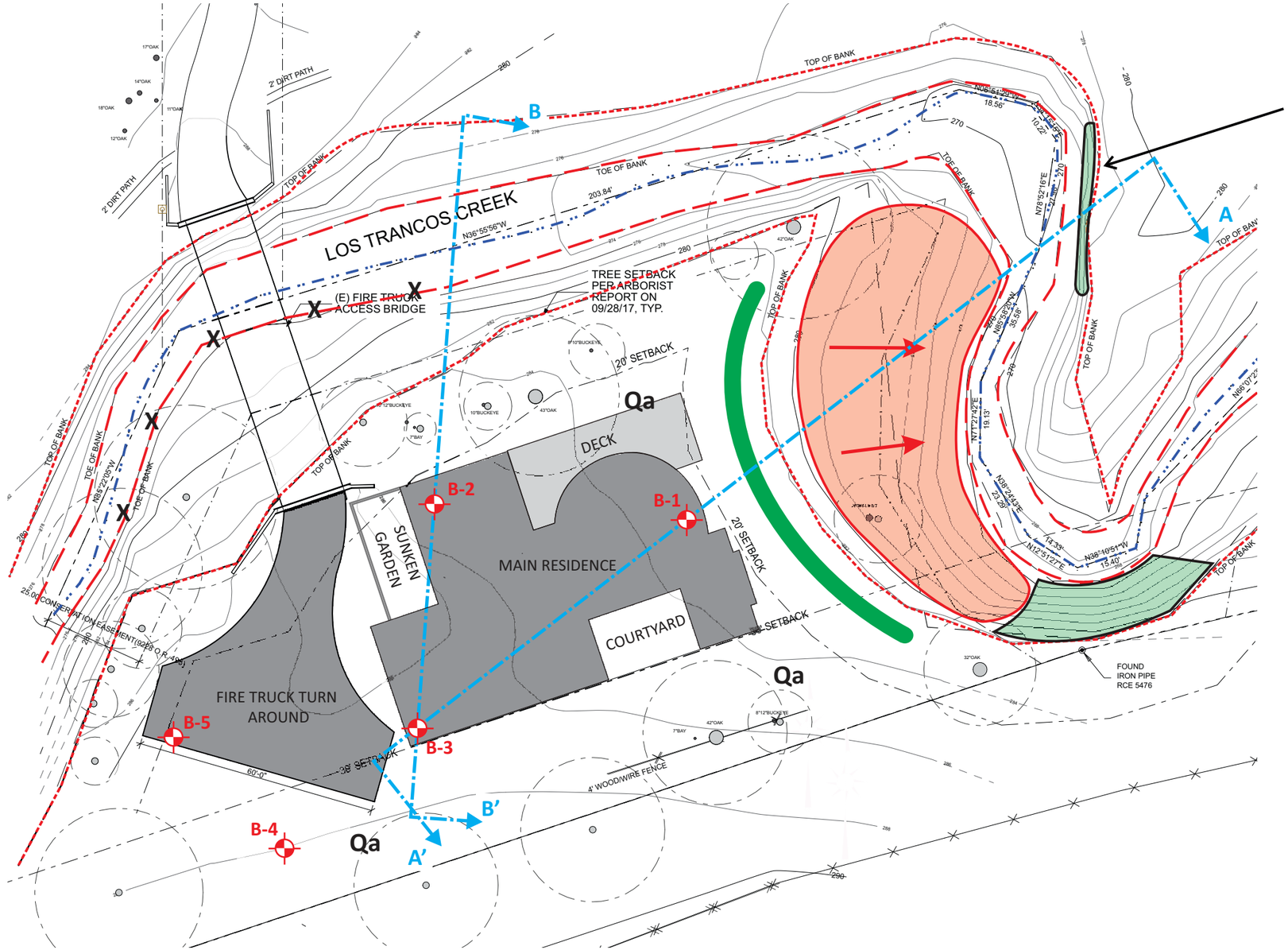


REPORT REVISION 2
GEOTECHNICAL ENGINEERING INVESTIGATION
PROPOSED CUPAL RESIDENCE
3343 ALPINE ROAD
PORTOLA VALLEY, CA

VICINITY MAP

DATE:	JOB NO.:	PLATE:
JUNE 2019	CUPAL-18-01	1

BAGG ENGINEERS



Area of Concern, however, it is part of the Town of Portola Valley and outside of the scope of this project.

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

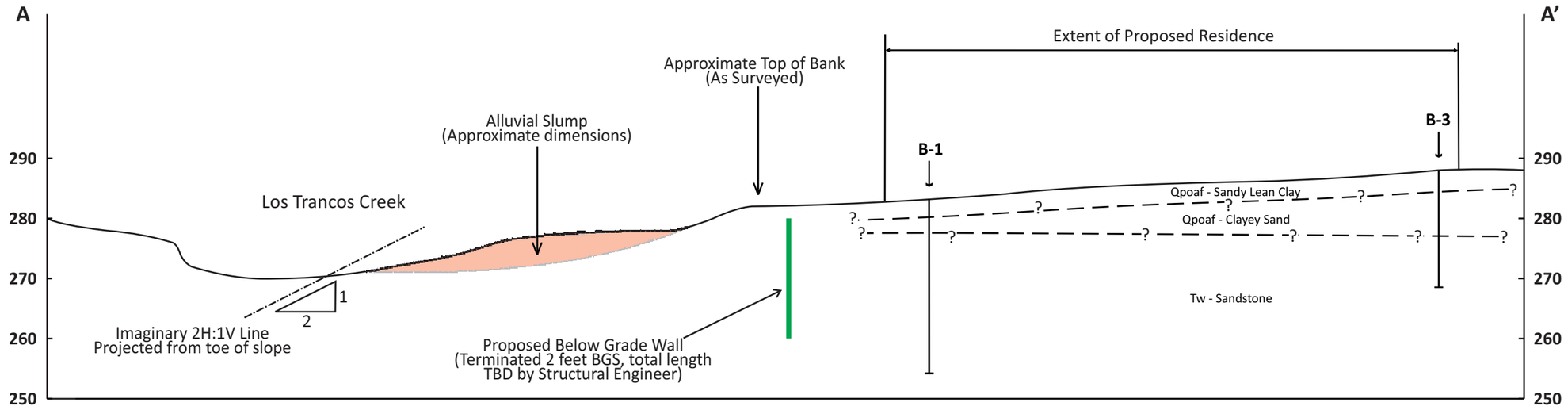
Base Map:
“Cupal Residence,” Prepared by Paul Discoe Design in association with Irongrain, third revision issued September 2018.

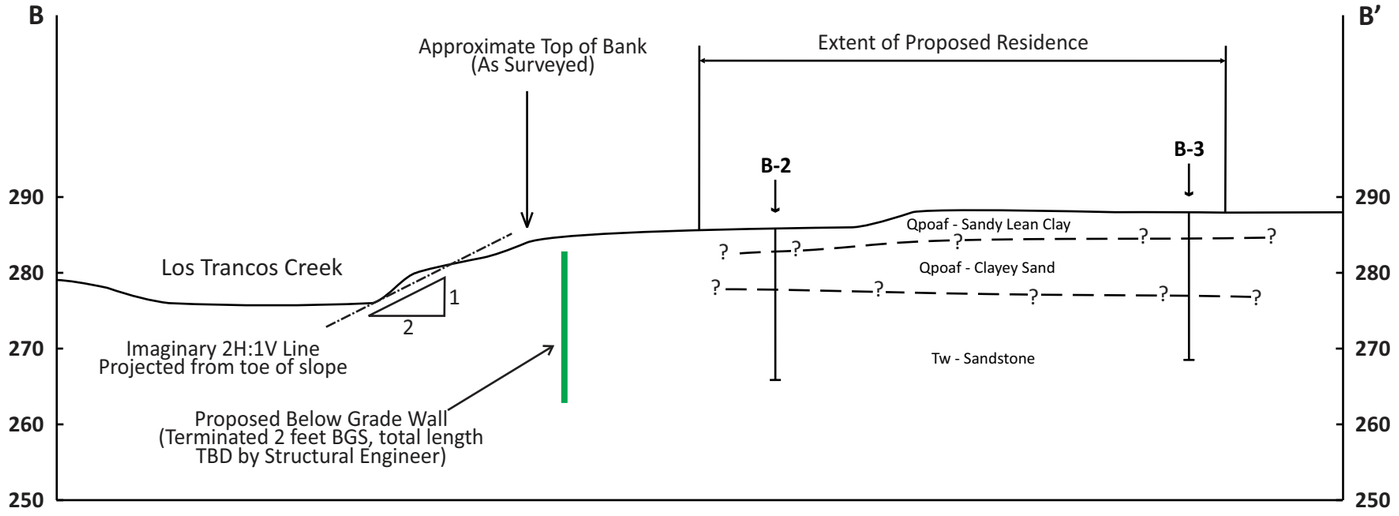
REPORT REVISION 2
GEOTECHNICAL ENGINEERING INVESTIGATION
PROPOSED CUPAL RESIDENCE
3343 ALPINE ROAD
PORTOLA VALLEY, CA

BAYGG ENGINEERS

SITE PLAN & GEOLOGY

DATE:	SCALE:	JOB NO:	PLATE:
JUNE 2019	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)

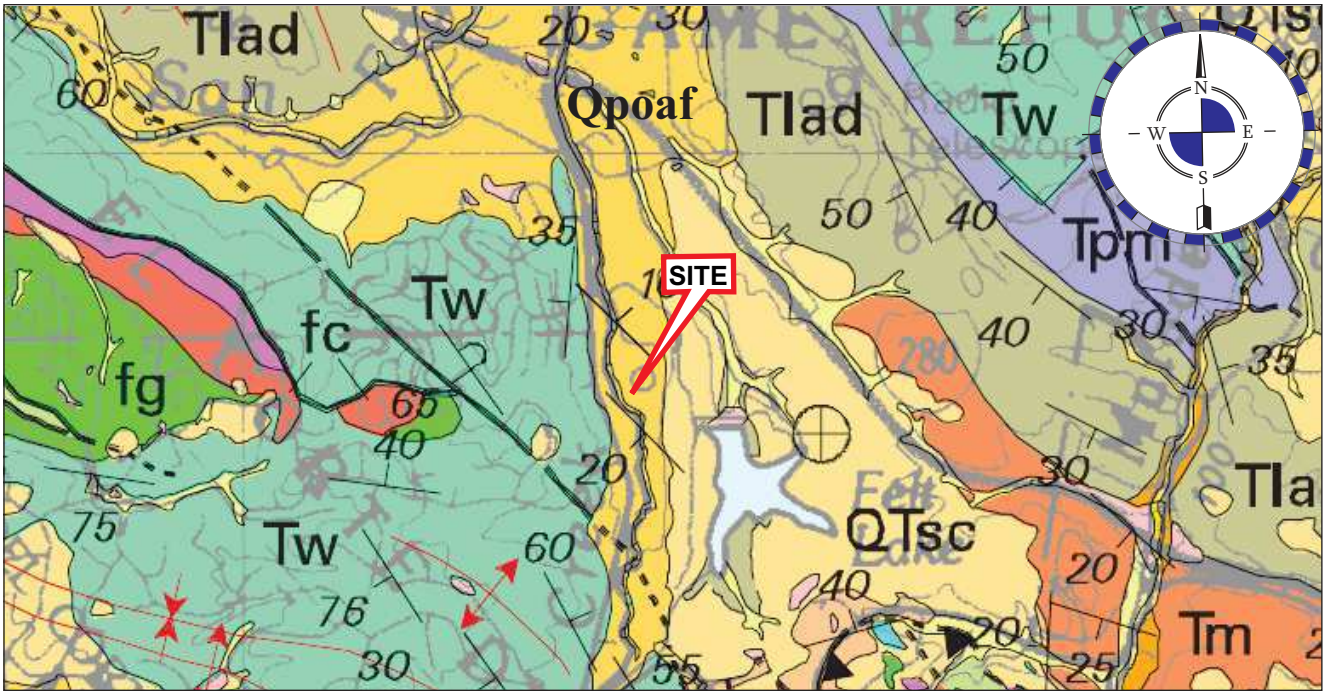
Base Map:
"Healing Cultures Wellness Center," Prepared by Paul Discoe Design in association with Irongrain, issued as preliminary site plan on 11/15/17.

REPORT REVISION 2
GEOTECHNICAL ENGINEERING INVESTIGATION
PROPOSED CUPAL RESIDENCE
3343 ALPINE ROAD
PORTOLA VALLEY, CA

BAGG ENGINEERS

IDEALIZED SUBSURFACE PROFILES

DATE:	SCALE:	JOB NO:	PLATE:
JUNE 2019	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.

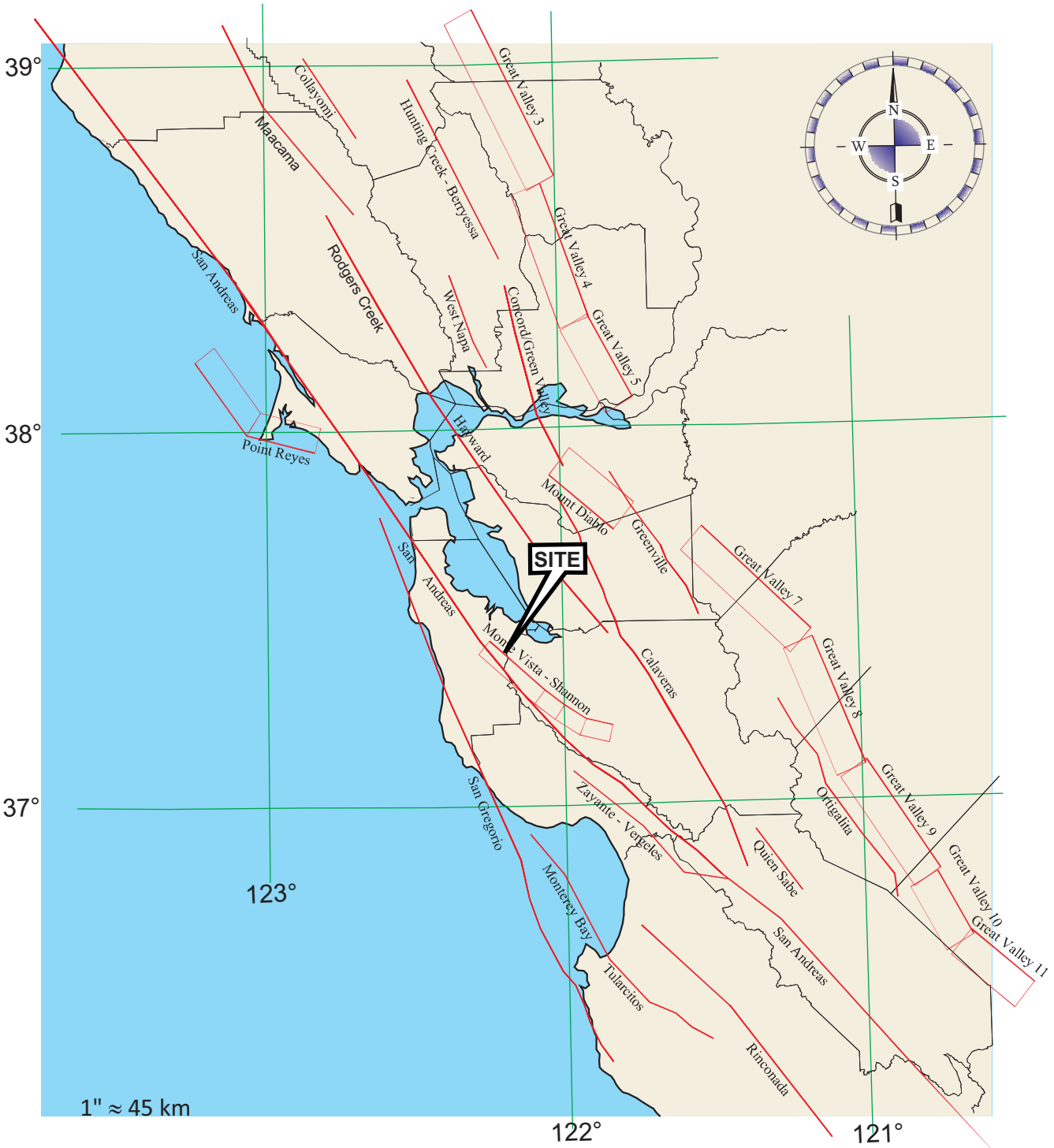
Reference: *"Geologic map and map database of the Palo Alto 30' X 60' quadrangle, California,"* by Brabb et al., 2000.

REPORT REVISION 2
GEOTECHNICAL ENGINEERING INVESTIGATION
PROPOSED CUPAL RESIDENCE
3343 ALPINE ROAD
PORTOLA VALLEY, CA

LOCAL GEOLOGY MAP

DATE:	JOB NUMBER:	PLATE:
JUNE 2019	CUPAL-18-01	4

BAGG ENGINEERS



Reference: Taken from the 2002 California Geological Survey Fault Model

REPORT REVISION 2 **GEOTECHNICAL ENGINEERING INVESTIGATION** **PROPOSED CUPAL RESIDENCE** **3343 ALPINE ROAD** **PORTOLA VALLEY, CA**	**REGIONAL FAULT MAP**		
	DATE: JUNE 2019	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*

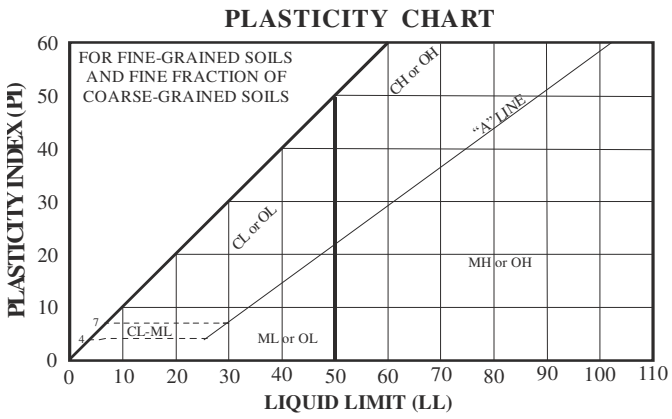
GROUP SYMBOLS	ILLUSTRATIVE GROUP NAMES	MAJOR DIVISIONS
CL	Lean clay Sandy lean clay with gravel	SILTS AND CLAYS liquid limit less than 50
ML	Silt Sandy silt with gravel	
OL	Organic clay Sandy organic clay with gravel	
CH	Fat clay Sandy fat clay with gravel	SILTS AND CLAYS liquid limit more than 50
MH	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).

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

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

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WEATHERING DESCRIPTORS

<u>Fresh</u> No discoloration, not oxidized, no separation, hammer rings when crystalline rocks are struck.

<u>Slight</u> 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.

<u>Moderate</u> 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.

<u>Intense</u> 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.

<u>Decomposed</u> 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*

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

<u>Very Hard</u> Cannot be scratched with knife or sharp pick. Core or fragment breaks with repeated heavy hammer blows.

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

<u>Moderately Hard</u> Can be scratched with knife or sharp pick with light or moderate pressure. Core or fragment breaks with moderate hammer blow.

<u>Moderately Soft</u> 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.

<u>Soft</u> 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.

<u>Very Soft</u> 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"			

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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

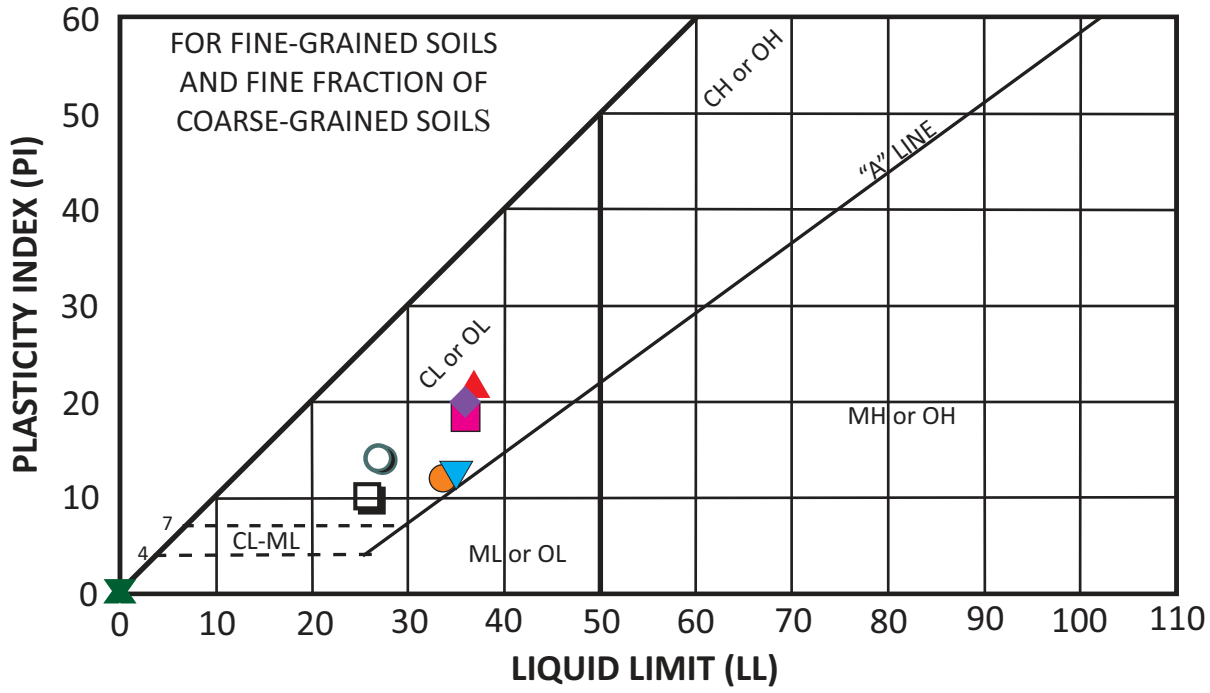
Boring No. B-5
Page 1 of 1

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)

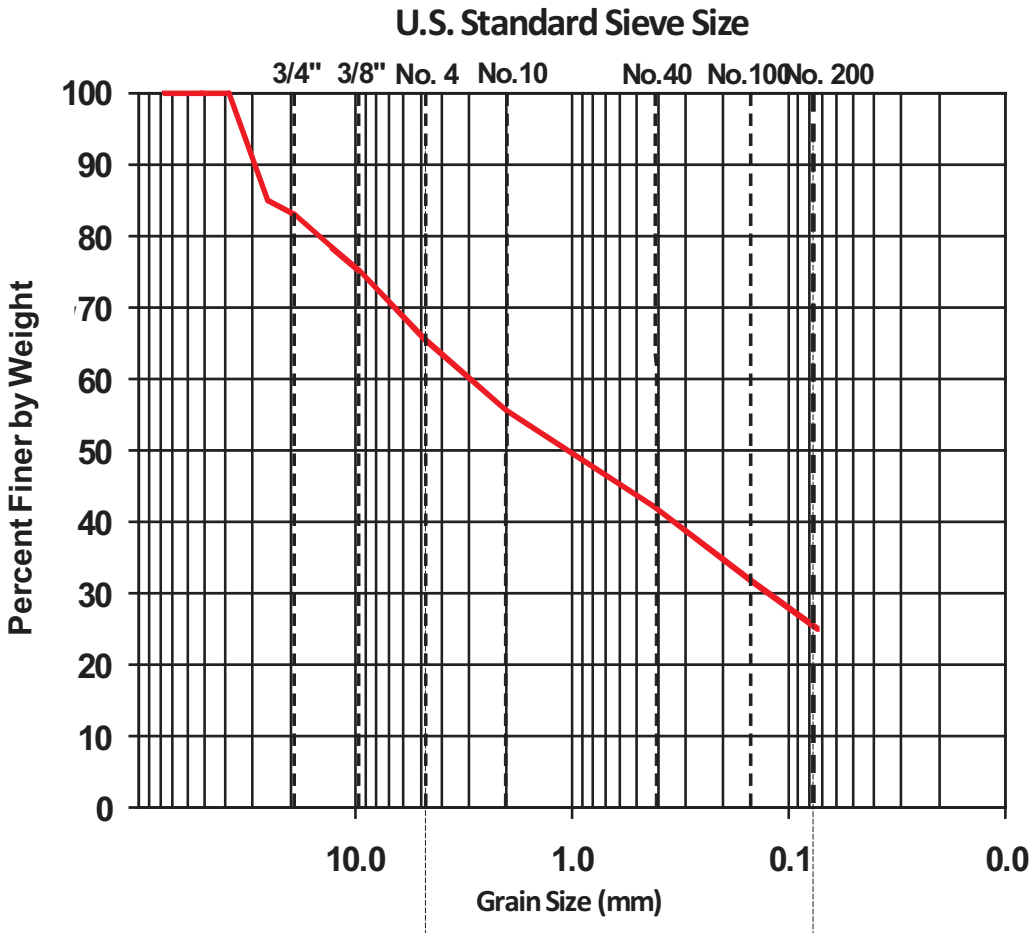
Note: "NP" denotes non-plastic.

REPORT REVISION 2
GEOTECHNICAL ENGINEERING INVESTIGATION
PROPOSED CUPAL RESIDENCE
3343 ALPINE ROAD
PORTOLA VALLEY, CA

PLASTICITY DATA

DATE:	JOB NUMBER:	PLATE
JUNE 2019	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)			

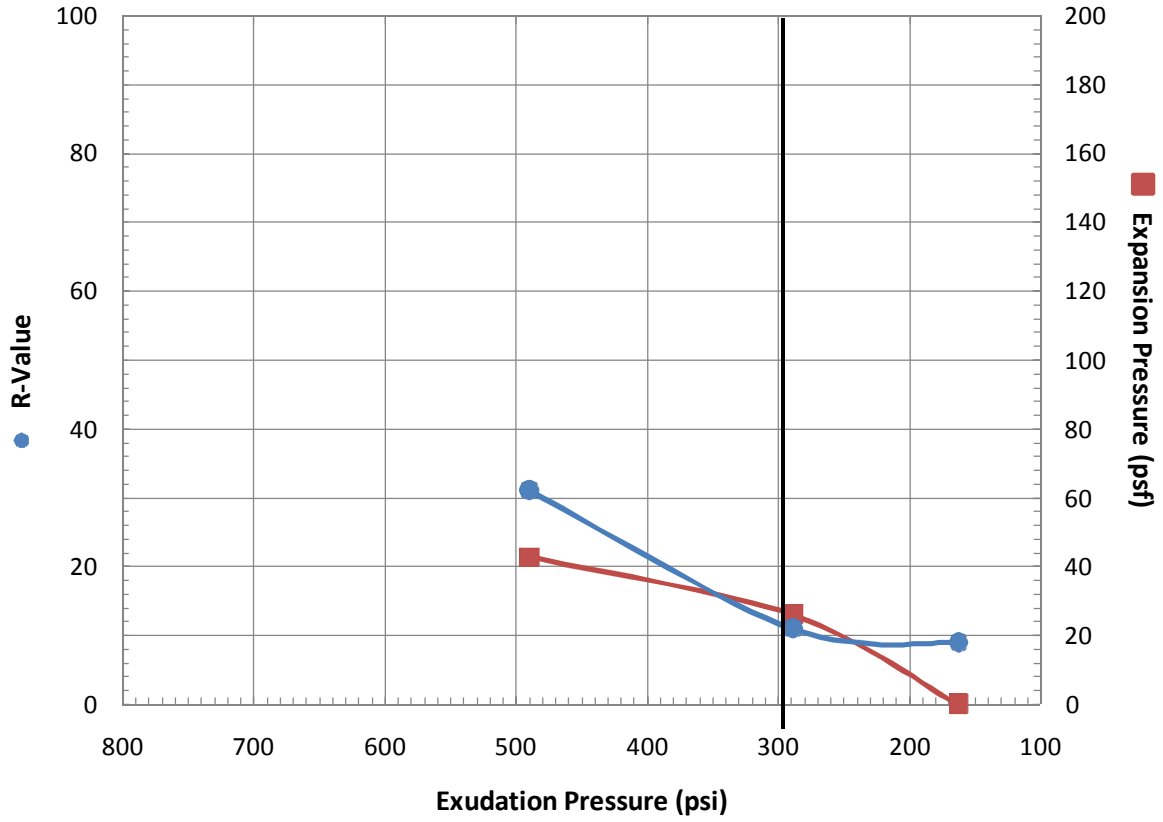
REPORT REVISION 2
GEOTECHNICAL ENGINEERING INVESTIGATION
PROPOSED CUPAL RESIDENCE
3343 ALPINE ROAD
PORTOLA VALLEY, CA

GRADATION TEST DATA

DATE:	JOB NUMBER:	PLATE:
JUNE 2019	CUPAL-18-01	17

BAGG ENGINEERS

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

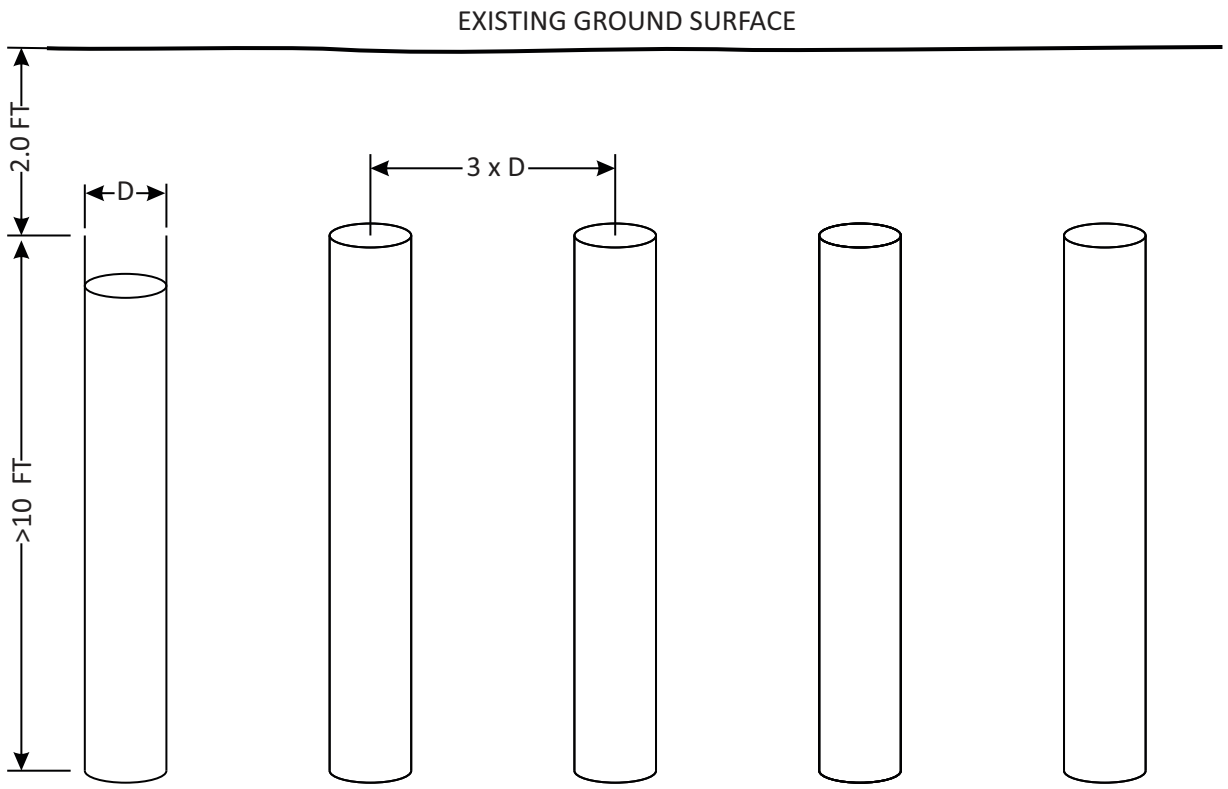
Exp. Pressure at 300 psi exudation pressure = 28

REPORT REVISION 2
GEOTECHNICAL ENGINEERING INVESTIGATION
PROPOSED CUPAL RESIDENCE
3343 ALPINE ROAD
PORTOLA VALLEY, CA

R-VALUE TEST DATA

DATE:	JOB NUMBER:	PLATE
JUNE 2019	CUPAL-18-01	18

BvGG ENGINEERS



Note: The stitch pier wall should be designed to retain at least 10 feet of earth. The wall may be cut-off 2 feet below the existing ground surface to prevent conflicts with surface activities. The diameter of the piles (D) and total length will be determined by the structural engineer using the following design criteria:

Active lateral pressures: 45 lb/ft/ft (Equivalent fluid pressure) + 4 lb/ft/ft for every 5 degrees of retained slope

Allowable passive resistence: 350 or 400 lb/ft/ft (Equivalent fluid pressure), in undisturbed native soil or bedrock, respectively.

Example of a Stitch Pier Wall under construction

REPORT REVISION 2 **GEOTECHNICAL ENGINEERING INVESTIGATION** **PROPOSED CUPAL RESIDENCE** **3343 ALPINE ROAD** **PORTOLA VALLEY, CALIFORNIA**	**EXAMPLE STITCH PIER WALL GENERALIZED SKETCH**		
	DATE: JUNE 2019	JOB NUMBER: CUPAL-18-01	PLATE: 19

BAGG 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

Stillwater Sciences

2855 Telegraph Ave, Suite 400, Berkeley, CA 94705
phone 510.848.8098

TECHNICAL MEMORANDUM

DATE: 5/29/2020

TO: TONI CUPAL

FROM: CHRIS LYLE, FLUVIAL GEOMORPHOLOGIST; STILLWATER SCIENCES

SUBJECT: RESPONSE TO CONCERNS OF ONGOING NATURAL EROSION OF THE CREEK AND POTENTIAL INTERFACE WITH PROPOSED IMPROVEMENTS

At the request of Toni Cupal, Stillwater Sciences has reviewed input regarding the project from Regional Water Quality Control Board (RWQCB), shown in the Building Site Approval and Grading Approval Applications – Additional Information Needed for CEQA Preparation (File # PLN18-1145) received from Santa Clara County Building and Planning Department on May 14, 2020. Specifically, Stillwater Sciences was asked to respond to the following County comment:

"7. The County has received input regarding the project from Regional Water Quality Control Board (RWQCB) staff regarding the project and identified concerns regarding ongoing natural erosion of the Creek and potential interface with the proposed onsite improvements. The RWQCB requested additional analysis of this issue, prepared by a fluvial hydro geomorphologist that addresses the following:

a. Whether or not the ongoing natural erosion of the creek will reach the proposed stitch-pier wall location.
b. If the erosion reaches the stitch-pier wall, how will this impact the geomorphology, hydrology, and biological functions of the creek.
c. If it does have impacts to the Creek, what mitigation measures are appropriate.

8. If the results of the study under #7 indicate that natural erosion of the creek will reach the proposed stich pier wall, provide a report from a Geotechnical Engineer that specifies whether failure of the proposed stitch-pier wall is possible. If failure of the wall is possible, mitigation measures shall be proposed by the Geotechnical Engineer to reduce impacts to a less than significant level if/when failure occurs to: 1) the creek and 2) the residence. This information is required in order to continue processing the environmental assessment."

Stillwater Sciences considered several approaches to quantify the likelihood of stream migration and associated erosion undermining the proposed stich-pier wall. Although bank erosion potential or hydrodynamic modeling could provide results that would either be satisfactory or dismissive of the proposed project, an empirical approach seemed most reasonable given the very low likelihood of the necessary variables to coincide for this to occur.

Based on several years of site observations and an understanding of the channel hydraulics from previous modeling, erosion will be largely concentrated at the left bank, where oversteepening and slumping of bank material (fine-grained clayey sand) is actively occurring. The left bank is owned by the Town of Portola Valley and if left natural and unarmored, Los Trancos Creek will more than likely continue to erode and laterally migrate away from the channel centerline. This has the potential to increase channel capacity and reduce the velocity and shear stresses experienced along the right bank, further minimizing bank erosion potential.

The creek bank in question has erosion protection provided by several large trees along the toe, middle, and top of bank, and a well-established riparian understory (Figure 1). This bank shows no signs of surface failure, toe erosion, or any features indicative of instability.

Figure 1. Area of proposed stitch-pier wall looking upstream from right bank.

Although some continued erosion is expected to occur along the toe of the creek bank and along the face of the slope during storm event flows, "channel forming" 2-year events and above, the channel bed is very stable and no further incision is anticipated to occur under current conditions. Prior to construction of the stitch pier wall enhancement of salmonid habitat by large woody debris (LWD) features will decrease water velocities during high winter flows and increase scour to create pools with cover during summer low-flows. During the winter, the LWD will provide refuge for salmonids so that they are not flushed out of the system. During the summer, some of the LWD will increase the channel complexity with cover to provide summer rearing habitat in the vicinity of winter refuge habitat (aka habitat connectivity).Figure 2 is a representative image of the channel bed composition, which shows a

moderately embedded, coarse substrate that provides resistance to erosion and is largely immobile.

Figure 2. Typical bed composition looking from right bank to left bank along toe of channel.

Stillwater Sciences has reviewed BCA Structural Engineering's stitch pier wall details, as well as BAGG Engineers' Geotechnical reports and all associated calculations. Thereafter, methodology of assessments and final design variables were discussed with BAGG staff via teleconference on May 20th, 2020.

Ultimately, it is highly unlikely that the stitch-pier wall comes into contact with any waters associated with flows in Los Trancos Creek, although the design of the foundation for the stitch-pier wall is more than capable of withstanding expected water velocities and shear stress forces. This is mainly due to the distance of the wall from the creek (approximately 50 linear feet) and that the required sediment flux would take a series of recurrent 100-year flow events. This is beyond any consideration of studies that could be conducted with the knowledge of the system and potential future uses of the watershed.

In the unlikely event that land use downstream and/or upstream of the Project reach changes drastically to allow for Los Trancos Creek to reestablish its high sinuosity channel morphology, then the anticipated impacts should be revaluated.

Memorandum

To: County of Santa Clara

From: Craig Overbo

Subject: Hydrology Report
3433 Alpine Road, Portola Valley, CA

The proposed project at 3433 Alpine Road in Portola Valley consists of a new structure and a gravel driveway and fire apparatus turnaround area. Aside from an existing gravel area on the east side of the existing bridge, the existing site is undeveloped and therefore consists primarily of pervious surface. The proposed development will result in an increased impervious surface of 5,479 square feet. In order to ensure that the new development does not increase the stormwater runoff from the existing site, all impervious surfaces will drain into an underground hydromodification system. The entire driveway will drain to a catch basin, and the building downspouts will be spilled onto the landscaping in order to allow that water an opportunity to percolate into the ground. This water is eventually intercepted by earthen swales along the sides and rear of the structure and flows into a catch basin that is a part of the stormwater detention structure.

Calculations have been prepared (see attached) which show that the stormwater runoff for the 10 year and 100 year storm events do not exceed the pre-construction stormwater flows. This is achieved by detaining the stormwater in a 24" PVC pipe and associated structures. The metered release outlet structure contains a weir with a lower opening that has been sized to match the pre-construction flows for the 10 year storm event. This lower opening also serves as the outlet for the 100-year storm event. The weir is designed to be slightly higher than required, so that storms in excess of the 100 year event are detained, until the stormwater flows over the top of the weir and out through the outlet pipe.

The hydromodification / detention structure contains a 6" outlet into Los Trancos Creek. This outfall has been designed to be as environmentally responsible as possible, using a coir mat (coconut husk) and hydroseeding to prevent erosion of the creek bank.

As a result of the hydromodification steps shown above, the proposed site will not result in substantial erosion or siltation on or off site. The runoff from the proposed site will not exceed the pre-construction flows for the 10 year and 100 year storm events, in order to avoid downstream flooding. As a result of the hydromodification of the site, the capacity of Los Trancos Creek is not negatively impacted, and flood flows will not be impeded or redirected.

Storm Drainage Calculations

3343 Alpine Road, Portola Valley, CA

Prepared by Bohley Consulting

9/1/2020

Mean Annual Precipitation: 24" Figure A-2, Santa Clara County Drainage Manual

Existing Tc

100' @ 6% Figure A-1 (Woodland) → 1.25 ft/sec

Tc= (100ft)/(1.25ft/sec)= 80 sec.

Use Tc = 5 minutes per 3.4.2.1 of the Drainage Manual.

Proposed Tc will also be small; use Tc = 5 minutes

See attached sheets for intensity calculations.

10-year, 5-minute storm: i = 3.02 in/hr
100-year, 5-minute storm: i = 4.27 in/hr

Pre-Development

2165 ft^2 impervious C=0.85
6201 ft^2 pervious C=0.35
Combined C = 0.48
A= 0.19 Acre

Q=CiA

Q_{10} = 0.28 cfs
Q_{100} = 0.39 cfs

Post-Development

4713 ft^2 impervious - house (excludes deck) C=0.85
2931 ft^2 impervious - driveway C=0.85
722 ft^2 pervious C=0.35
Combined C = 0.81
A= 0.19 Acre

Q=CiA

Q_{10} = 0.47 cfs
Q_{100} = 0.66 cfs

Storage Calculations

10-year Storm Event

Q_{10} Pre-development =	0.28	cfs
Release rate from orifice =	0.28	cfs
Post Development Area =	0.19	acres
C_{post} (Post Development) =	0.81	

10-year return period

Duration (minutes)	Intensity (in/hr)	Q (cfs)	Runoff Volume (ft^3)	Release Volume (ft^3)	Initial Storage (ft^3)
5	3.02	0.46	139.28	84.00	55
10	2.07	0.32	190.78	168.00	23
15	1.63	0.25	225.96	252.00	-26
30	1.11	0.17	308.58	504.00	-195
60	0.78	0.12	433.80	1008.00	-574
120	0.59	0.09	654.64	2016.00	-1361
180	0.51	0.08	845.64	3024.00	-2178

Required Storage = **55** ft^3

100-year Storm Event

Q_{100} Pre-development =	0.39	cfs
Release rate from orifice =	0.39	cfs
Post Development Area =	0.19	acres
C_{post} (Post Development) =	0.81	

100-year return period

Duration (minutes)	Intensity (in/hr)	Q (cfs)	Runoff Volume (ft^3)	Release Volume (ft^3)	Initial Storage (ft^3)
5	4.27	0.66	197.19	117.00	80
10	2.94	0.45	271.90	234.00	38
15	2.35	0.36	325.96	351.00	-25
30	1.58	0.24	437.97	702.00	-264
60	1.09	0.17	602.48	1404.00	-802
120	0.80	0.12	887.34	2808.00	-1921
180	0.69	0.11	1143.55	4212.00	-3068

Required Storage = **80** ft^3

Pipeline Storage Provided

SD pipe size	Length	Storage (CF)	
24	26	**82**	(Pipe length includes inside catch basin and manhole)

Orifice Calculations

General equation for flow through an orifice:

$A = Q/(Cd*(2*g*h)^{0.5})$

Where:

Cd = 0.62 (coefficient of contraction)

g = 32.2 ft/s^2(gravational accelleration)

10-year Storm Event

Q = 0.28 cfs (allowable release for 5 minute Tc for 10-year event)
h = 1.35 ft (head at 10-year storage elevation)

A = 0.28/(0.62*(2*32.2*1.35)^0.5)

$A=6.97\ in^2$

Lower orifice diameter = 3.0"

100-year Storm Event

Q = 0.39 cfs (allowable release for 5 minute Tc for 100-year event)
h = 2.00 ft (head at 100-year storage elevation above lower orifice)

Flow through lower orifice at h = 2.00 ft = 0.35cfs

This is close enough to the 0.39cfs allowed that we won't add
an upper orifice. All stormwater will pass through the lower orifice.
We will effectively detain storms larger than the 100 year event, plus we are
making the plate 3" higher than the 100 year storage requirement.
Eventually, very large storms may pass over the top of the weir plate.

Velocity at outfall

10-year event:
Q=0.28 cfs (126GPM)
Velocity = 2.9 ft/sec

100-year event:
Q=0.39cfs (175GPM)
Velocity = 3.1 ft/sec

Velocity in both cases is approximately 2 miles per hour.
(Human walking speed is 3 to 4 miles per hour).

These velocities are further reduced by the perforated tee at the end of the outfall.

Intensity Calculations

$X_{T,D}=A_{T,D}+(B_{T,D}MAP)$

$i_{T,D}=X_{T,D}/D_{hrs}$

MAP= 24

10-year return period

T_C	$A_{T,D}$	$B_{T,D}$	$i_{T,D}$
5	0.201876	0.002063	3.016656
10	0.258682	0.003569	2.066028
15	0.294808	0.004710	1.631392
30	0.367861	0.007879	1.113914
60	0.427723	0.014802	0.782971
120	0.522608	0.027457	0.590788
180	0.591660	0.038944	0.508772
360	0.625054	0.070715	0.387036
720	0.641638	0.111660	0.276790
1440	0.567017	0.162550	0.186176
2880	0.832445	0.221820	0.128253
4320	0.810509	0.265469	0.099747

100-year return period

T_C	$A_{T,D}$	$B_{T,D}$	$i_{T,D}$
5	0.26999	0.00358	4.27096
10	0.31526	0.00731	2.94451
15	0.42136	0.00696	2.35331
30	0.55393	0.00986	1.58100
60	0.62661	0.01920	1.08743
120	0.73294	0.03619	0.80079
180	0.81647	0.05198	0.68801
360	0.77668	0.10105	0.53366
720	0.82186	0.16218	0.39286
1440	0.81405	0.24339	0.27731
2880	1.21090	0.32594	0.18820
4320	1.17500	0.38904	0.14600

3958733 BOOK 9228 PAGE 498

Governmental entity acquiring title
Tax exempt effective November 10, 1969

DH.

CONSERVATION EASEMENT

HARE, BREWER & KELLEY, INC.,

a Corporation organized under the laws of the State of California, does hereby Grant to

THE TOWN OF PORTOLA VALLEY

a Municipal Corporation of the County of San Mateo, State of California

A conservation easement over the real property described in Exhibit "A" attached hereto.

TO HAVE AND TO HOLD that certain real property described in Exhibits "A" and "B", and more particularly described herein, as a Conservation Easement for the purposes of protecting vegetation, terrain, natural waters, drainage and wildlife. In order to serve the purposes for which said easement is dedicated, the following uses of the lands within said easement are prohibited:

(a) Removal of vegetation other than poison oak from more than twenty (20) per cent of the area withing said conservation easement;

(b) Removal of trees with a circumference of over twelve (12) inches measured four (4) feet above the surface of the ground;

(c) Excavating or filling or any combination thereof totaling in excess of five (5) cubic yards, providing that such excavating or filling does not result in disturbance of the surface of the ground exceeding twenty (20) per cent of the area within the easement;

(d) Dumping of refuse; and

(e) Erection of barbed wire fences and/or buildings;

provided, however, that exceptions to the prohibitions stated herein may be granted by the Town Council of the Town of Portola Valley.

83940AD

IN WITNESS WHEREOF, said HARE, BREWER & KELLEY, INC., has caused these presents to be executed this 19th day of February, 1971.

HARE, BREWER & KELLEY, INC.

BY: William K. Kelley
William K. Kelley
Secretary

BY: Ryland Kelley
Ryland Kelley
President

MAR 21, 1926
CALIFORNIA

VOL 5899 PAGE 221
83940AD
RECORDED AT REQUEST OF
SAN MATEO COUNTY TITLE COMPANY
FEB 15 4 31 PM 1971
MARVIN CHURCH, RECORDER
SAN MATEO COUNTY
OFFICIAL RECORDS

COMPARED - STADLER

VOL 5899 PAGE 222

9228

STATE OF CALIFORNIA

COUNTY OF [illegible]

BOOK 9228 PAGE 498 839-10AD

On [illegible], before me, the undersigned, a Notary Public in and for said State, personally appeared [illegible] Sigmund Lilling

known to me to be the [illegible] President, and [illegible]

known to me to be the [illegible] Secretary of the corporation that executed the within instrument, and known to me to be the persons who executed the within instrument on behalf of the corporation therein named, and acknowledged to me that such corporation executed the within instrument pursuant to its by-laws or a resolution of its board of directors.

WITNESS my hand and official seal.

Signature [illegible]

Name (Typed or Printed)

OFFICIAL SEAL
RUTH KING
NOTARY PUBLIC CALIFORNIA
[illegible] COUNTY
[illegible] EXPIRES JUNE 5, 1973

[illegible] Palo Alto, Calif. 94301

(This area for official notarial seal)

Form 3002—(Corporation) First American Title Company

BOOK 9228 PAGE 500

EXHIBIT "A"

A conservation easement over a strip of land 25 feet in width lying contiguous to and measured Easterly from the centerline of Los Trancos Creek and extending Northerly from the Southerly boundary of lands conveyed to Hare-Brewer and Kelley Inc., a corporation by deed recorded August 19, 1958 in volume 4153 of Official Records at Page 422, Santa Clara County Records to the Southerly boundary of lands described in deed to the Ladera Recreation Association recorded October 31, 1958 in Volume 4219 of Official Records at page 104, Santa Clara County Records.

VOL 5899 PAGE 223

BOOK 9228 PAGE 501

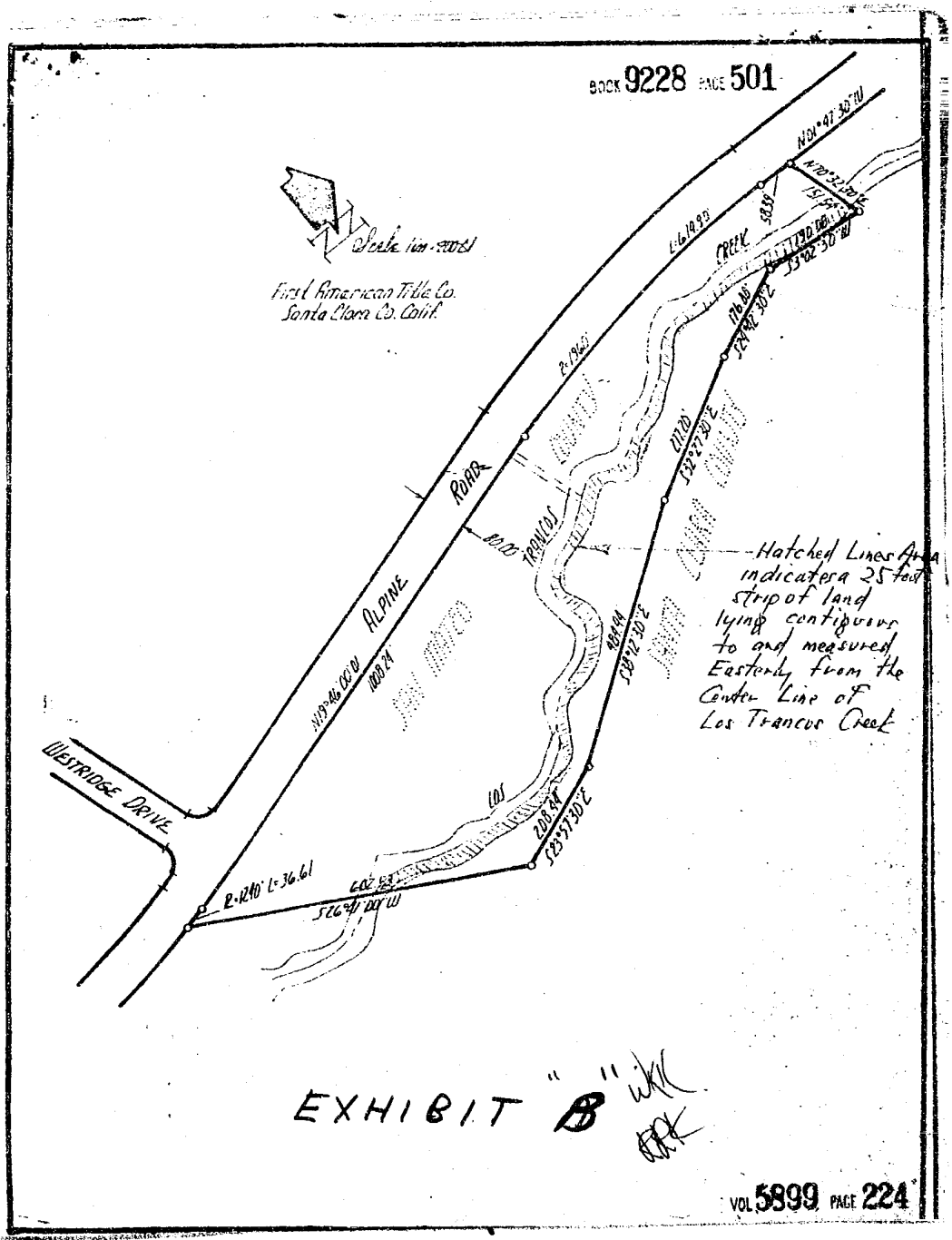


EXHIBIT "B"

VOL 5999 PAGE 224

PA: 18284 SM: 220734

3958733

Return to: First American Title Co.
P. O. Box 168, Palo Alto, Calif.

BOOK 9228 PAGE 502

TOWN of PORTOLA VALLEY

Town Hall and Offices, 4141 Alpine Road, Portola Valley, Calif. 94025 [illegible]

COUNCIL
ELEANOR B. BOUSHEY
Mayor
ROBERT H. ANDERSON
Vice Mayor
ROBERT H. ALWAY
NEVIN K. HIESTER
MILTON F. JOHNSON

TOWN OFFICERS:
Clerk
MILDRED WHITAKER
Attorney
JAMES T. MORTON

CERTIFICATE OF ACCEPTANCE

of Deed or Grant to

The Town of Portola Valley
San Mateo County
California

This is to certify that the interest in real property conveyed by the deed or grant dated February 19 1971 from HARE, BREWER & KELLEY, INC. to the TOWN OF PORTOLA VALLEY, a municipal corporation, is hereby accepted by the undersigned officer of the Town of Portola Valley on behalf of the Town Council, pursuant to authority conferred by Resolution No. 34-1965 of the Town Council, adopted on March 1, 1965, and the Grantee consents to recordation thereof by its duly authorized officer.

Dated: February 19, 1971

TOWN OF PORTOLA VALLEY, a municipal corporation

By Mildred Whitaker
Mildred Whitaker, Town Clerk

3958733

BOOK 9228 PAGE 498

RECORDED AT THE REQUEST OF
First American Title
Guaranty Company
FEB 24 1971 8:00 AM
GEORGE E. FOWLES, Recorder
SANTA CLARA COUNTY, OFFICIAL RECORDS

83940AD

VOL 5899 PAGE 221

Memorandum

To: Joanna Wilk

From: Craig Overbo

Subject: PLN18-1145
3343 Alpine Road (APN: 142-15-008)
Plan check comment responses

Below are our responses to the May 14, 2020 plan check comment letter. Only the Civil-related items are addressed here.

1. Please revise the overall site plan (Sheet C2.2) to correctly show the location of the property boundaries. It has come to Staff's attention while conducting the environmental assessment that property line designations were not accurately/consistently illustrated on the project plans. This information is required to avoid complications with the final published/posted environmental document.

Response: Sheet C2.2 has been revised to more clearly indicate the subject parcel, using hatching, differing line weights, and additional notations.

2. The submitted site plan (Sheet C3.1) shows two different delineations of Flood Zone A and Flood Zone D. One is located along the top-of-bank on the eastern portion of Los Trancos Creek, while the other is located along the western side of Los Trancos Creek, north of the proposed development. Please clarify which delineation shows the correct location of Flood Zone A and Flood Zone D, as this is required to complete the environmental assessment project description and the Hydrology/Water Quality section.

Response: There are three different zones in this area: the creek itself is Zone A, while Zone X is west of the creek, and Zone D is east of the creek. See the attached flood map from FEMA.

4. There is a Conservation Easement on the property held by the Town of Portola Valley (enclosed). This easement consists of a 25-foot-wide strip of land, measured from the centerline of Los Trancos Creek, running along the length of Creek (see enclosed easement map). The Easement states approval is required from the Town Council of the Town of Portola Valley if any of the following development takes place within the easement boundaries:

a) Removal of vegetation other than poison oak from more than twenty (20) percent of the area within said conservation easement;
b) Removal of trees with a circumference of over twelve (12) inches measured four (4) feet above the surface of the ground;
c) Excavating or filling or any combination thereof totaling in excess of five (5) cubic yards, providing that such excavating or filling does not result in disturbance of the surface of the ground exceeding twenty (20) percent of the area within the easement;

d) Dumping of refuse; and
e) Erection of barbed wire fences and/or buildings.

The proposed plan shows improvements within the boundaries of the easement. Please provide documentation which verifies if the proposed improvement exceeds any of the development thresholds listed above.

If the proposed development exceeds the threshold listed above, the owner shall obtain approval from the Town Council of the Town or Portola Valley prior to continuing to process the Initial Study/ environmental assessment.

NOTE: Upon discovery of the Easement, County Staff contacted the Town of Portola Valley, however Staff has not received additional information regarding the easement and this requirement needs to be satisfied by the property owner.

Response:
a) The creek is on the order of 1700 feet long, while the outfall is three feet wide. So if any vegetation does need to be removed, it will be *well* under the 20% limit. As part of the coir mat installation (this is the new outfall, see additional comments below), the disturbed area will be hydroseeded with a native planting mix.
b) No trees will be removed for the construction of the outfall.
c) Installing the 36" wide by 32' long coir mat 6" into the slope results in a cut of just under 2 cubic yards. There is no fill associated with this outfall.
d) No dumping of refuse will take place anywhere on the project site.
e) No fences or buildings will occur within the conservation easement.

5. Page 35 of the geotechnical report submitted by the applicant (dated June 2019) shows the top of bank location outside of the alluvial slump, along contour elevation 282, to the north of the proposed residence. However, the proposed site plan shows the top of bank location within the alluvial slump, along contour elevation 278. Please address this discrepancy as an accurate depiction of the top of bank is necessary to determine the location of the required slope stability protection area.

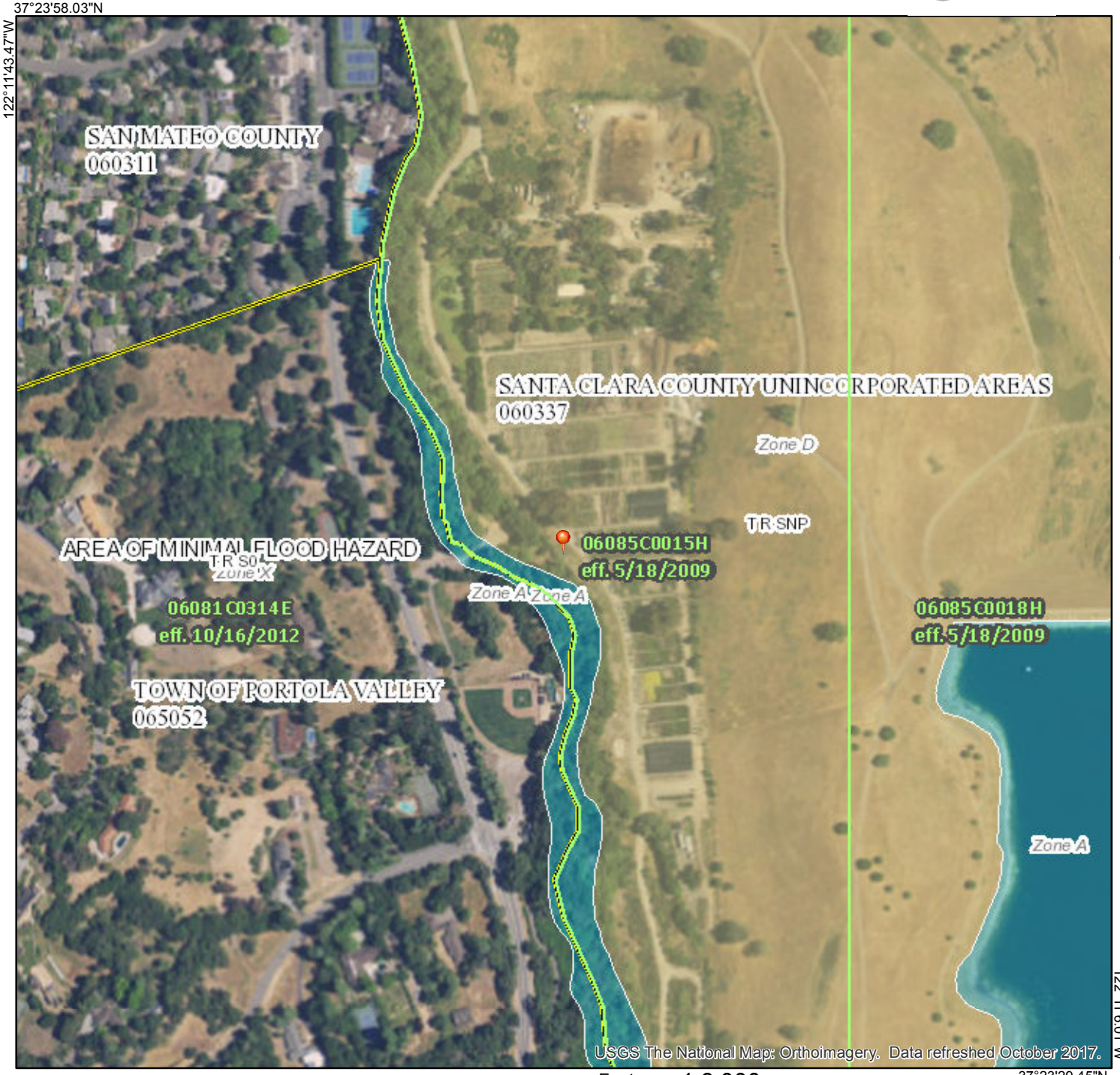
Response: The geotechnical report was initially prepared early in the project timeline (with later updates), and used the top of bank location shown on the topographic survey. Subsequent to that, Stillwater Sciences prepared a Top of Bank Determination report. This report defines the actual top of bank location by incorporating information from their site visit, topographic data, and modeled flood inundation boundaries using USACE's HEC-RAS system and USGS's StreamStats. The top of bank shown on this report has been incorporated into the design plans and should be considered the true top of bank.

9. Please provide a design table for the proposed outfall located in Los Trancos Creek and detail how the riprap will be installed specifically for the site. This information is needed to complete the Hydrology and Water Quality section of the Initial Study, and to determine the steepness of the slope that the outfall emits to. Santa Clara Valley Water District guidelines require a slope no steeper than a 1.5:1 ratio.

Response:
The outfall has been relocated to the west to avoid the steep slope as much as possible. After consultation with Stillwater Sciences, we have also changed the design of the outfall so that we're no longer using rip-rap. The outfall will now consist of a Coir Mat and hydroseeding, and will be using a smaller outlet pipe. This will be much less intrusive for the creek, and will result in a substantial reduction of grading required. The grading quantity for the outfall has been added to the grading table on C3.1, with the result being 2 cubic yards of cut.

National Flood Hazard Layer FIRMette

FEMA



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 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 *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN — Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 — Cross Sections with 1% Annual Chance Water Surface Elevation
- Coastal Transect
- 513 — Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 10/24/2018 at 9:00:57 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

3343 Alpine Road, Portola Valley, CA
Biological Resources Evaluation

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

Prepared by:
MIG
2055 Junction Avenue, Suite 205
San Jose, CA 95131
(650) 327-0429

September 2018 (updated December 2020)

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 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 near the project site and potential impacts to those resources resulting from the project. The project could impact sensitive biological resources. 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
- responses to the California Environmental Quality Act (CEQA) Guidelines Appendix G questions related to biological resources

2 Project Location and Description

The proposed project is the construction of a single-family residence that includes parking area/fire truck hammerhead, a stormwater outfall to Los Trancos Creek, and installation of utilities. The project is on a 0.48-acre area (project footprint) of a 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, San Mateo County, California. 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 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 USFWS enforces MBTA. The MBTA does not protect some birds that are non-native or human-introduced or that belong to families that are not covered by any of the conventions implemented by MBTA. In 2017, the USFWS issued a memorandum stating that the MBTA does not prohibit incidental take; therefore, the MBTA is currently limited to purposeful actions, such as directly and knowingly removing a nest to construct a project, hunting, and poaching.

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 California Migratory Bird Protection Act

Fish & Game Code section 3513 states that Federal authorization of take or possession is no longer lawful under the state Fish & Game Code if the Federal rules or regulations are inconsistent with state law. The California Migratory Bird Protection Act (MBPA) was passed in September 2019 to provide a level of protection to migratory birds in California consistent with the U.S. MBTA prior to the 2017 rule change limiting protection of migratory birds under the U.S. MBTA to purposeful actions (i.e., directly and knowingly removing a nest to construct a project, hunting, and poaching). Thus, under the MBPA protections for migratory birds in California are consistent with rules and regulations adopted by the United States Secretary of the Interior under the U.S. MBTA before January 1, 2017. The MBPA reverts to existing provisions of the U.S. MBTA on January 20, 2025.

3.5.6 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.

3.5.7 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
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, which included 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, 2020)
- 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 west by Los Trancos Creek and a commercial nursery to the east. Undeveloped private property is to the north and south. 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).

5.2.4 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 includes a stormwater outfall to Los Trancos Creek. However, the outfall will not require work below the OHWM of Los Trancos Creek. Most of the storm drain system, including trunk lines, mains, junction chambers, and catch basins will be installed outside riparian corridor of Los Trancos Creek. The only component of the system that will be installed within the riparian corridor is a small biofiltration basin.

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.

5.3 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. The CNDDB database was queried again in September 2020 to update any new occurrences of special-status species in the project area. There were no new occurrences of special-status species in the project vicinity. 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. One special-status species, San Francisco garter snake was determined to a have a low potential to occur in the project site, but is included in this analysis since it is federally listed as endangered, state listed as endangered and fully protected, and the extent of the San Francisco garter snake population in the project region is uncertain, as few focused surveys have been performed in the area.

A list of other 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 plants or animals).

5.3.1 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 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.

5.3.2 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.

5.3.3 Special-Status Amphibians and Reptiles

California giant salamander

California Giant Salamander (*Dicamptodon ensatus*). Federal Listing Status: None; State Listing Status: Species of Special Concern. California giant salamander is one of the largest terrestrial salamanders in North America and can grow up to one foot in length. It is endemic to California, found in two or three isolated regions from Mendocino County to southern Santa Cruz County, and does not occur east of the San Francisco Bay. It occurs in wet coastal forests in or near clear, cold permanent or semi-permanent streams and seepages. The California giant salamander is light reddish brown with copper-colored marbling on the upper body. Larvae are born in the water where they swim using an enlarged tail fin and breathe with filamentous external gills. The aquatic larvae transform into terrestrial four-legged salamanders that breathe air with lungs. They are active on rainy nights and during daylight in wet periods during winter. They will eat other salamanders, small rodents, slugs, and lizards.

California giant salamander have been observed in upper Bear Creek. There is suitable aquatic breeding habitat in Los Trancos Creek and suitable upland habitat in the riparian corridor of the creek. Based on the habitat requirements of California giant salamander and its known occurrence in nearby Bear Creek, it is assumed to be present in Los Trancos Creek. While suitable habitat is limited to the Los Trancos Creek corridor, giant salamander has a low potential to move out of the creek and onto the project parcel, especially during wet weather. No California giant salamander were observed during the field survey.

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.

San Francisco garter snake

San Francisco Garter Snake (*Thamnophis sirtalis tetrataenia*) is federally listed as endangered and state listed as both endangered and fully protected. The San Francisco garter snake was one of the first reptiles to be listed under the FESA by the USFWS in 1967 (USFWS 1967). The San Francisco garter snake also was listed under the CESA in 1971, and it is a fully protected species under the California Fish and Game Code. San Francisco garter snake remains threatened by continued habitat loss and degradation, as well as by illegal collecting. Historically, San Francisco garter snakes occurred in scattered wetlands on the San Francisco Peninsula from approximately the San Francisco County line south along the eastern and western bases of the Santa Cruz Mountains (USFWS 1985). Currently, the species has been reduced to only 13 population complexes in San Mateo County and northern Santa Cruz County (USFWS 2020). Two significant components of San Francisco garter snake habitat are ponds that support California red-legged frogs and Sierran chorus frogs (garter snakes' primary prey items) and surrounding uplands that support burrowing mammals, the burrows of which are important as cover and hibernation sites for garter snakes.

Preferred habitat is vegetated ponds with an open water component near open hillsides where they can sun themselves, feed, and find cover in rodent burrows (USFWS 2020). However, they can occupy a number of aquatic and terrestrial habitats, such as ponds, pools in or next to streams, streams, lakes, and reservoirs. The species prefers a dense cover of vegetation, such as willows (*Salix* spp.), bulrushes (*Schoenoplectus* spp.), and cattails (*Typha* spp). Adults mate during the spring and fall, and young are usually born alive during late July to early August. Snakes also require open, grassy uplands adjacent to aquatic habitat for breeding (USFWS 2020).

The closest CNDDB occurrence is the Woodside Population Complex near Searsville Lake, approximately 4 miles northwest of the project site (CNDDB 2020, USFWS 2020). However, the abundance of garter snakes in that population complex is low although the overall habitat value for that site is classified as high (USFWS 2020). There are no documented occurrences of San Francisco garter snake in Los Trancos Creek. Also, the project site is in an intergrade zone composed of hybrids between the San Francisco garter snake and the non-special-status red-sided garter snake (*Thamnophis sirtalis sirtalis*).

However, the project site contains suitable foraging and dispersal habitat for San Francisco garter snake. Los Trancos Creek provides suitable habitat for garter snake since it supports water year-round and provides dense cover. Further, as described above, suitable habitat for the California red-legged frog, one of the primary prey items for the San Francisco garter snake, is also present, and this species has a high potential to occur on the project site. However, the project site does not support suitable breeding habitat for San Francisco garter snake since the grassy upland areas are highly disturbed from human activities. Based on the lack of known occurrences in the project vicinity and the project site's location in an intergrade zone, San Francisco garter snake is considered to have a low potential to occur in the project site even though suitable foraging and dispersal habitat is present.

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.

5.3.4 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.

5.3.5 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.

6 Biological Impact Assessment and Avoidance Measures

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 site. Each impact discussion includes measures to minimize, or mitigate impacts (also known as avoidance, minimization, and mitigation measures, or AMMs). These AMMs should be implemented during the project to avoid and/or reduce the potential for and/or level of impacts to each resource. With the implementation of AMMs, all impacts to biological resources are anticipated to be reduced to less than significant under CEQA.

The CEQA Guidelines define which impacts are considered significant. The Act defines “significant effect on the environment” as “a substantial adverse change in the physical conditions which exist in the area affected by the proposed project.” Potential impacts to biological resources were determined in accordance with Appendix G of the CEQA Guidelines. Impacts would be considered potentially significant if the proposed project will:

A. "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 California Department of Fish and Game or U.S. Fish and Wildlife Service"
B. "have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service"
C. "have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means”
D. "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"

E. "conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance"
F. "conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan (NCCP), or other approved local, regional, or state habitat conservation plan"

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 would be considered significant due to their protection under California Fish and Game Code. Such impacts will need to be avoided through AMMs incorporated into the project.

6.1 Impacts to Special-Status Plant Species – No Impact

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.

6.2 Impacts to Central California Coast Steelhead – Less than Significant Impact with Mitigation

Steelhead is assumed to be present in Los Trancos Creek. Additionally, Los Trancos Creek is designated as Critical Habitat for steelhead. Since the project will not occur within Los Trancos Creek, direct impacts of construction related activities on steelhead are not expected. However, project activities may result in minor and temporary increases in turbidity or steelhead might be killed or injured as a result of the spill of petrochemicals, hydraulic fluids, or solvents into Los Trancos Creek. Implementation of BMPs will minimize potential impacts on steelhead as a result of increased turbidity and spills of hazardous materials into Los Trancos Creek. Project-related impacts on Critical Habitat or individual steelhead, would be significant under CEQA. However, implementation of Mitigation Measure 1A and 1B will reduce impacts on steelhead to less than significant levels.

Mitigation Measure 1A. Erosion and Sedimentation Control. During construction, the project will employ standard construction best management practices (BMPs) to treat and minimize runoff.

- Store, handle, and dispose of construction materials and wastes properly, so as to prevent their contact with stormwater.
- 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.

- Perform clearing and earth moving activities during dry weather to the maximum extent practical.
- Remove spoils promptly and avoid stockpiling of fill materials when rain is forecast. Cover soil stockpiles and other materials with a tarp or other waterproof material during qualifying rain events.
- Fueling, washing, and maintenance of vehicles will occur in developed habitat, away from the riparian habitat and stream channel. Equipment shall be regularly maintained to avoid fluid leaks. Any leaks will be captured in containers until equipment is moved to a repair location. Hazardous materials will be stored only within the developed habitat. Containment and cleanup plans will be prepared and put in place for immediate cleanup of fluid or hazardous materials spills.
- Vehicles and equipment may only be driven within established roads and crossings. Routes and boundaries will be clearly marked and will be located outside of driplines of preserved trees.
- Equipment staging and parking of vehicles shall occur on established access roads and flat surfaces.
- No heavy equipment shall operate in the portion of the stream bed where flowing water is present.
- The integrity and effectiveness of construction fencing, and erosion control measures shall be inspected on a daily basis. Corrective actions and repairs shall be carried out immediately for fence breaches and ineffective BMPs.
- Prior to re-watering the site, all concrete installed during the course of project activities shall be allowed to fully dry and cure to maintain water quality and reduce the possibility of project failure.
- All litter and construction debris will be disposed of off-site in accordance with state and local regulations. All trash and debris within the work area will be placed in containers with secure lids before the end of work each day in order to reduce the likelihood of predators being attracted to the site by discarded food wrappers and other rubbish that may be left on-site. If containers meeting these criteria are not available, all rubbish will be removed from the project site at the end of each workday.
- Absorbent materials designated for spill containment and clean-up activities shall be available on site for use in an accidental spill.
- In the event of rain, all grading work is to cease immediately.
- Inlet protection will be installed at open inlets to prevent sediment from entering the storm drain system.
- Straw rolls will be placed along the perimeter of the project area.
- Silt fencing shall 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 barrier to minimize the amount of fencing installed within the project footprint (see Mitigation Measure 2B below). 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.

Mitigation Measure 1B. Worker Environmental Awareness Program. All construction personnel will participate in a worker environmental awareness program. These personnel will be informed about the possible presence of all special-status species and the habitats associated with these species and that unlawful take of the animal or destruction of its habitat is a violation of FESA and other applicable laws. Prior to construction activities, a qualified biologist will instruct all construction personnel about (1) the description and status of the species; (2) the importance of their associated habitats; and (3) a list of measures being taken to reduce impacts on these species during project construction and implementation. A fact sheet conveying this information will be prepared for distribution to the construction crew and anyone else who enters the project site.

6.3 Impacts on the California Red-Legged Frog and San Francisco Garter Snake – Less than Significant Impact with Mitigation

California red-legged frog and San Francisco garter snake may be present in Los Trancos Creek and associated riparian habitat. The project will not result in the loss of aquatic or riparian habitat for either species, but red-legged frog and garter snake may move through the project site. Direct impacts to California red-legged frog and San Francisco garter snake 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 Los Trancos Creek. Due to the rarity of both species, project-related impacts on individual California red-legged frogs and San Francisco garter snakes would be significant under CEQA. For example,

- project activities may result in the injury or mortality of individuals as a result of worker foot traffic or equipment use
- disturbance from project activities may disrupt foraging and dispersal behavior of both species
- seasonal movements may be temporarily affected during project activities because of disturbance, and substrate vibrations may cause individuals to move out of refugia, exposing them to a greater risk of predation or desiccation
- petrochemicals, hydraulic fluids, and solvents that are spilled or leaked from construction vehicles or equipment may kill individuals, although BMPs to control releases of such chemicals make this unlikely
- increases in human concentration and activity in the vicinity of suitable habitat may result in an increase in native and non-native predators that would be attracted to trash left at the work site and that would prey opportunistically on California red-legged frog and San Francisco garter snake
- movement of project personnel within the site, and between on-site and off-site areas, could also spread pathogens such as chytrid fungus, which can impair the health of amphibians, including the California red-legged frog

However, the implementation of Mitigation Measures 1A and 1B (see Section 6.2 above), and 2A through 2L will reduce impacts on California red-legged frog and San Francisco garter snake to less than significant levels. These measures will also fully avoid take of San Francisco garter snake, a full protected species.

Mitigation Measure 2A. Receive Agency Approval of Qualified Biologist. The qualifications of a biological monitor(s) experienced with the California red-legged frog, San Francisco garter snake, and other special-status species that have the potential to occur in the project site will be submitted to the USFWS and CDFW for review and written approval at least 30 calendar days prior to the start of project activities.

Mitigation Measure 2B. Conduct Preconstruction Survey. No more than 24 hours prior to the date of initial ground disturbance, a pre-construction survey for California red-legged frog, San Francisco garter snake, and other special-status species with the potential to occur in the project site will be conducted within the impact area by an agency-approved qualified biologist. The survey will consist of walking the limits of impact to ascertain the possible presence of the species. The qualified biologist will investigate all potential areas that could be used by California red-legged frog and San Francisco garter snake for feeding, sheltering, movement, and other essential behaviors.

Mitigation Measure 2C. Vegetation Removal. All vegetation that requires removal in the project site will be completely removed by hand in case special-status species are present. The qualified biologist will monitor the vegetation removal.

Mitigation Measure 2D. Install Wildlife Exclusion Barrier. Prior to any ground disturbance in the project site, a temporary wildlife exclusion barrier will be installed along the limits of disturbance. A qualified biologist will inspect the area prior to installation of the barrier. The barrier will be designed to allow the California red-legged frog and San Francisco garter snake to leave the work area and prevent them from entering the work area. The fence will remain in place until all development activities have been completed. This barrier will be inspected daily and maintained and repaired as necessary to ensure that it is functional and is not a hazard to red-legged frogs and garter snakes on the outer side of the barrier.

Mitigation Measure 2E. Construction Monitoring. A qualified biologist will be onsite during all project activities that may result in take of any special-status species. The agency-approved biologist will be given the authority to freely communicate verbally, by telephone, electronic mail, or in writing at any time with construction personnel, any other person(s) at the project site, otherwise associated with the project, the USFWS, the CDFW, or their designated agents. The agency-approved biologist will have oversight over implementation of all the mitigation measures and will have the authority and responsibility to stop project activities if they determine any of the associated requirements are not being fulfilled.

Mitigation Measure 2F. Relocation of California Red-legged Frog. If a California red-legged frog is found during the implementation of mitigation measures 2B, 2C, 2D, 2E, 2J, and 2K, the qualified biologist will consult with USFWS to determine if moving any of the individuals is

appropriate. In making this determination the USFWS will consider if an appropriate relocation site exists. If the USFWS approves moving animals, the project proponent will ensure the qualified biologist is given sufficient time to move the animals from the impact area before ground disturbance is initiated. Only agency-approved biologists will capture, handle, and move California red-legged frog. The agency-permitted biologist will monitor any relocated frog until it is determined that it is not imperiled by predators or other dangers.

Mitigation Measure 2G. Monitor San Francisco Garter Snake. The agency-approved biologist will monitor any individual of the San Francisco garter snake encountered within the impact area but allow it to leave the impact area on its own. If the agency-approved biologist determines that the snake cannot leave on its own then the USFWS and CDFW will be consulted to determine if the snake can be captured and relocated to appropriate habitat outside of the impact area.

Mitigation Measure 2H. Daytime Restriction. To the maximum extent practicable, nighttime construction will be minimized.

Mitigation Measure 2I. Food and Trash. To eliminate an attraction for the predators of the California red-legged frog and San Francisco garter snake, all food-related trash items such as wrappers, cans, bottles, and food scraps will be disposed of in solid, closed containers (trash cans) and removed at the end of each working day from the construction site.

Mitigation Measure 2J. Steep-walled Holes and Trenches. To prevent inadvertent entrapment of the California red-legged frog, San Francisco garter snake, and other special-status species, a qualified biologist and/or construction foreman/manager will ensure that all excavated, steep-walled holes or trenches more than one foot deep are completely covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks and inspected by the qualified biologist. Before such holes or trenches are filled, they will be thoroughly inspected for trapped animals by a qualified biologist and/or construction foreman/manager. If at any time a trapped California red-legged frog, San Francisco garter snake, or other special-status species is discovered by a qualified biologist or anyone else, the steps in Mitigation Measure 2F Relocation of California red-legged frog or Mitigation Measure 2G Monitor San Francisco garter snake will be followed.

Mitigation Measure 2K. Uncovered Pipes. All structures providing cavities such as pipes, all construction pipes, culverts, or similar structures that are stored at a construction site for one or more overnight periods will be either securely capped prior to storage or thoroughly inspected by a qualified biologist and/or the construction foreman/manager for these animals before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If at any time a trapped California red-legged frog, San Francisco garter snake, or other special-status species is discovered by a qualified biologist or anyone else, the steps in Mitigation Measure 2F Relocation of California red-legged frog or Mitigation Measure 2G Monitor San Francisco garter snake will be followed.

Mitigation Measure 2L. Prohibition of Plastic Mono-filament Netting. To prevent trapping California red-legged frogs, San Francisco garter snakes, or other species, the use of plastic

mono-filament netting (erosion control matting), rolled erosion control products wrapped in netting, or similar material will not be used at the project site to prevent trapping California red-legged frogs, San Francisco garter snakes, or other species.

Mitigation Measure 2M. Prevent the Spread of Amphibian Diseases. To prevent the introduction and spread of amphibian diseases, especially if an amphibian is handled by a permitted biologist, decontamination methods developed by the Declining Amphibian Populations Task Force will be followed at all times, available at https://www.fws.gov/southwest/es/NewMexico/documents/SP/Declining_Amphibian_Task_Force_Fieldwork_Code_of_Practice.pdf

6.4 Impacts on the Western Pond Turtle and California Giant Salamander – Less than Significant Impact with Mitigation

Western pond turtle and California giant salamander may be present in Los Trancos Creek and associated riparian habitat. The project will not result in the loss of aquatic or riparian habitat for either species, but pond turtle and giant salamander may move through the project site. Direct impacts to Western pond turtle and California giant salamander 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 Los Trancos Creek. However, Implementation of Mitigation Measures 1A and 1B (see Section 6.2 above), 2A to 2E, 2H to 2M (see Section 6.3 above), and Mitigation Measure 3A will avoid and minimize impacts on Western pond turtle and California giant salamander and reduce the impact to less than significant levels.

Mitigation Measure 3A. Relocation of Western Pond Turtle and California Giant Salamander. If a pond turtle is found during implementation of Mitigation Measures 2B, 2C, 2D, 2E, 2J, and 2K (see section 6.3 above), an agency-approved biologist will contact CDFW to determine if moving any of the individuals is appropriate. In making this determination CDFW will consider if an appropriate relocation site exists. If CDFW approves moving animals, the project proponent will ensure the agency-approved biologist is given sufficient time to move the animals from the impact area before ground disturbance is initiated. Only agency-approved biologists will capture, handle, and move the Western pond turtle and California giant salamander. The agency-approved biologist will monitor any relocated turtle or giant salamander until it is determined that it is not imperiled by predators or other dangers.

6.5 Impacts to San Francisco Dusky-footed Woodrat – Less than Significant Impact with Mitigation

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 woodrats, including flushing of woodrats from their houses, thereby exposing them to an increased risk from predation or injury/death from construction activities. In addition, indirect impacts could occur as a result of over-crowding

(from individuals in disturbed habitat moving to areas that are already occupied) and in a temporary impact on foraging individuals through the alteration of foraging patterns (e.g., avoidance of work areas because of increased noise and activity levels during project activities).

Project related impacts on San Francisco dusky-footed woodrat and its habitat would be significant under CEQA. However, the Implementation of Mitigation Measures 1B (See Section 6.2 above), 4A, and 4B will avoid and minimize impacts on San Francisco dusky-footed woodrats and their houses and reduce the impact to less than significant levels.

Mitigation Measure 4A. Pre-construction Survey for Woodrat Houses. Within 30 days prior to the start of construction activities, a qualified biologist will map all San Francisco dusky-footed woodrat houses within a 25-foot buffer around the project footprint. Environmentally sensitive habitat fencing will be placed to protect the houses with a minimum 25-foot buffer. If a 25-foot buffer is not feasible, a smaller buffer may be allowable based on advice from a qualified biologist with knowledge of woodrat ecology and behavior, or Mitigation Measure 4B may be implemented.

Mitigation Measure 4B. Relocation of Woodrat Houses. In the unlikely event that one or more woodrat houses are determined to be present and physical disturbance or destruction of the houses cannot be avoided, then the woodrats will be evicted from their houses and the nest material relocated outside of the disturbance area, prior to onset of activities that would disturb the house, to avoid injury or mortality of the woodrats. The reproductive season for San Francisco dusky-footed woodrats typically starts in February or March and breeding activity usually continues to July but can extend into September. Thus, relocation efforts should be completed in the fall to minimize the potential for impacts on young woodrats in the house. Additionally, it is recommended that the period between the completion of the relocation efforts and the start of construction activities be minimized to reduce the potential for woodrats to reconstruct houses in the project footprint prior to the start of construction activities.

Relocation generally involves first choosing an alternate location for the house material based on the following criteria: 1) proximity to current nest location; 2) safe buffer distance from planned work; 3) availability of food resources; and 4) availability of cover. An alternate house structure will then be built at the chosen location. Subsequently, during the evening hours (i.e., within 1 hour prior to sunset), a qualified biologist will slowly dismantle the existing woodrat house to allow any woodrats to flee and seek cover. All sticks from the nest will be collected and spread over the alternate structure. However, alternative relocation measures can be employed as advised by a qualified wildlife biologist in consultation with CDFW.

6.6 Impacts to Roosting Bats – Less than Significant Impact with Mitigation

Cavities in trees adjacent to the project site have the potential to be used as day and/or maternity roosts by bats. Removal or disturbance of roost habitat may result in significant impacts to bat populations if an occupied maternity or colony roost is disturbed or removed.

When trees or structures containing bats are removed, modified, or disturbed, individual bats could be physically injured or killed, or subjected to physiological stress resulting from being disturbed during torpor. Additionally, noise associated with construction equipment and

generators may disturb roosting bats, potentially causing them to avoid foraging or roosting (or to abandon roosts) in areas close to construction activity. Bats flushed during the day could suffer increased predation, resulting in the loss of individuals. Further, the direct loss of individuals in a maternity roost could eliminate an entire colony due to the loss of the pregnant females.

The Implementation of Mitigation Measures 5A and 5B will avoid and minimize impacts on day roosts and maternity colonies and reduce potential impacts to less than significant levels.

Mitigation Measure 5A. Bat Pre-construction Survey. To avoid impacting breeding, roosting, or hibernating bats protected by California Fish and Game Code, pre-construction surveys of potential bat roost habitat for evidence of maternal or colony bat roosts (e.g., guano accumulation, acoustic, or visual detections) will be performed in all trees, buildings, and other structures in the project site and within a 50-foot buffer within 48 hours prior to project disturbance. Potential sites can be identified and checked in advance but should be re-checked within the 48-hour window.

Mitigation Measure 5B. Bat Protection. If an occupied maternity or colony roost is detected or evidence of bat occupancy is found, CDFW will be consulted to determine the appropriate mitigation measures, which may include exclusion prior to removal if the roost cannot be avoided, a buffer zone, seasonal restrictions on construction work, and/or construction noise reduction measures.

6.7 Impacts to Nesting Birds – Less than Significant Impact with Mitigation (including white-tailed kite and long-eared owl)

All migratory bird species and their nests are protected under the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code. Project activities must comply with the provisions of the MBTA and California Fish and Game Code (i.e., avoid take of protected nesting birds).

Nesting birds, including raptors, 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. Construction disturbance during the avian breeding season (February 1 through September 15, for most species) could result in the incidental loss of eggs or nestlings, either directly through the destruction or disturbance of active nests or indirectly by causing the abandonment of nests. In addition, noise and increased construction activity could temporarily affect foraging behavior, and potentially result in the abandonment of nest sites. Thus project-related impacts to nesting birds would be considered significant under CEQA. However, implementation of Mitigation Measures 1B (see Section 6.2 above) and 6A and 6B would avoid impacts on active nests of birds protected by the MBTA or California Fish and Game Code and reduce impacts to a less than significant level.

Mitigation Measure 6A. Avoidance or Pre-Construction/Pre-Disturbance Surveys for Nesting Birds

Avoidance. To the extent feasible, construction activities should be scheduled to avoid the nesting season. If construction activities are scheduled to take place outside the nesting

season, all impacts to nesting birds protected under the MBTA and California Fish and Game Code would be avoided. The nesting season for most birds in San Mateo and Santa Clara Counties extends from February 1 through September 15.

Pre-Construction Surveys. If it is not possible to schedule construction activities between September 15 and January 31, then preconstruction surveys for nesting birds will be conducted by a qualified biologist to ensure that no nests would be disturbed during project implementation. These surveys will be conducted no more than five days prior to the initiation of any site disturbance activities and equipment mobilization. If project activities are delayed by more than five days, an additional nesting bird survey will be performed. During this survey, the biologist will inspect all potential nesting habitats (e.g., trees, shrubs, structures, etc.) in and immediately adjacent to the impact area for nests. 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 will be documented.

Mitigation Measure 6B. Nesting Bird Protection. If an active nest is found sufficiently close to work areas to be disturbed by these activities, the biologist, in consultation with CDFW, will determine the extent of a construction-free buffer zone to be established around the nest (typically up to 1000 feet for raptors and up to 250 feet for other species), to ensure that no nests of species protected by the MBTA and California Fish and Game Code will be disturbed during project implementation. Within the buffer zone, no site disturbance and mobilization of heavy equipment, including but not limited to equipment staging, fence installation, clearing, grubbing, vegetation removal, demolition, and grading will be permitted until the chicks have fledged. Monitoring will be required to ensure compliance with MBTA and relevant California Fish and Game Code requirements. Monitoring dates and findings will be documented.

6.8 Impacts to Sensitive 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 proposed project includes the installation of a stormwater outfall within the riparian habitat of Los Trancos Creek. Most of the storm drain system, including trunk lines, mains, junction chambers, and catch basins will be installed outside riparian habitat. The only component of the system that will be installed within riparian habitat is a small biofiltration basin (approximately 30 feet long by 3 feet wide and 6 inches deep) constructed from biodegradable coir mat that will be planted with native riparian vegetation.

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.

However, no other 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 other direct impact to riparian habitat would take place. However, 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.

Riparian habitats are very important ecologically due to the high biodiversity they support and the ecological functions they perform. Thus, any permanent loss or temporary disturbance of riparian habitat because of the project would be considered significant under CEQA. Additionally, all ecological systems associated with drainages (i.e., riparian habitat) and drainage and stream features with bed and bank topography may be regulated by Sections 1600-1616 of the California Fish and Game Code; therefore, impacts to the riparian habitat along Los Trancos Creek requires an LSAA from CDFW prior to project activities.

However, the project does not require tree removal or grading within riparian habitat. The project may require the removal of a small amount of understory riparian vegetation for defensible space, which may not be considered significant under CEQA. Additionally, the project will result in temporary impacts to riparian habitat from the installation of the biofiltration basin. The implementation of Mitigation Measures 7A to 7C will reduce impacts on riparian habitat to a less than significant level.

Mitigation Measure 7A. Avoidance of Riparian Habitat. All riparian habitat to be avoided will be shown on project design plans and prior to project activities these areas will be clearly delineated in the field by a CDFW approved biologist. The project will also comply with the project BMPs to prevent increases in peak flow, erosion, or reduction in water quality for downslope waters, which will prevent stream downcutting, riparian bank erosion, or other downstream impacts (See Mitigation Measure 1A in Section 6.2 above). If riparian vegetation is impacted, then Mitigation Measure 7Band/or 7C will be implemented.

Mitigation Measure 7B. Pruning of Riparian Trees. If project activities require pruning of riparian trees or shrubs, a certified arborist will be retained to perform any necessary pruning to minimize harm to vegetation and ensure rapid regeneration. Pruning will be limited to the minimum area necessary.

Mitigation Measure 7C. Restoration of Riparian Habitat. Temporary impacts to riparian habitat shall be restored in place at a 1:1 ratio through re-establishment of original contours along banks, decompaction of compacted soils where necessary, and seeding with a native seed mix and native plantings, developed by a qualified restoration ecologist. The native seed mix will contain grass and forb species that occur in the project vicinity. Temporarily impacted areas will be monitored for a minimum of two years and the criteria for success will be 75% vegetation cover or more compared to pre-project conditions and no more than 5% cover of invasive species rated as moderately or highly invasive by the California Invasive Plant Council (Cal-IPC) (excluding Cal-IPC-rated annual grasses).

6.9 Impacts to Jurisdictional Waters – Less than Significant Impact with Mitigation

The proposed project includes the construction of a stormwater outfall that will convey treated stormwater runoff into Los Trancos Creek (see Section 6.8 above). The proposed outfall does

not involve disturbance or placement of fill in Los Trancos Creek below the OHWM; therefore, a Section 404/401 CWA permit from the USACE and the RWQCB is not required. However, since the outfall will convey stormwater into Los Trancos Creek, a WDR permit from the RWQCB will be required. The project will likely be permitted under the State Water Resources Control Board Water Quality Order No. 2004-0004-DWQ Statewide General Waste Discharge Requirements for Dredged or Fill Discharges for Waters Deemed by the U.S. Army Corps of Engineers to be Outside of Federal Jurisdiction (General WDRS).

Construction activities, such as grading and other soil disturbances could cause the degradation of surface or ground water quality in Los Trancos Creek due to erosion and transport of fine sediments or unintentional release of contaminants, thereby negatively impacting riparian and wetland habitats, and contributing to significant water quality impacts, which could adversely affect fish and wildlife species associated with these habitats. Implementation of Mitigation Measures 1A (see Section 6.2 above), 8A, and 8B will avoid and mitigate such impacts to to reduce the impact to less than significant levels.

Mitigation Measure 8A. Avoidance of Jurisdictional Waters. All aquatic habitat to be avoided, i.e. Los Trancos Creek, will be shown on project design plan sets prior to project activities and will be clearly delineated in the field with stakes or fencing by a CDFW approved biologist. The project will also comply with the project BMPs to prevent increases in peak flow, erosion, or reduction in water quality for downslope waters, which will prevent stream downcutting, riparian bank erosion, or other downstream impacts (See Mitigation Measure 1A in Section 6.2 above).

Mitigation Measure 8B. Seasonal Work Window. The construction of the biofiltration basin will be restricted to the dry season (June 15 to October 15) to minimize potential impacts on water quality resulting from erosion and sediment mobilization into the live stream channel.

6.10 Impacts to 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 San 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.

6.11 Impacts due to Conflicts with Local Policies – No Impact

The proposed project does not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

6.12 Impact due to Conflicts with an Adopted Habitat Conservation Plan – No Impact

The proposed project is not within the service area of an adopted Habitat Conservation Plan, and does not conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan. The parcel is outside of the Stanford University Habitat Conservation Plan (HCP). The western boundary of the HCP is approximately 0.6 mile to the east of the parcel.

7 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, 2020. California Natural Diversity Database. Rare Find 5 online map and query application [accessed September 2017 and September 2020].

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. 1967. U.S. Fish and Wildlife Service. Native fish and wildlife: Endangered species. Federal Register 32:4001.

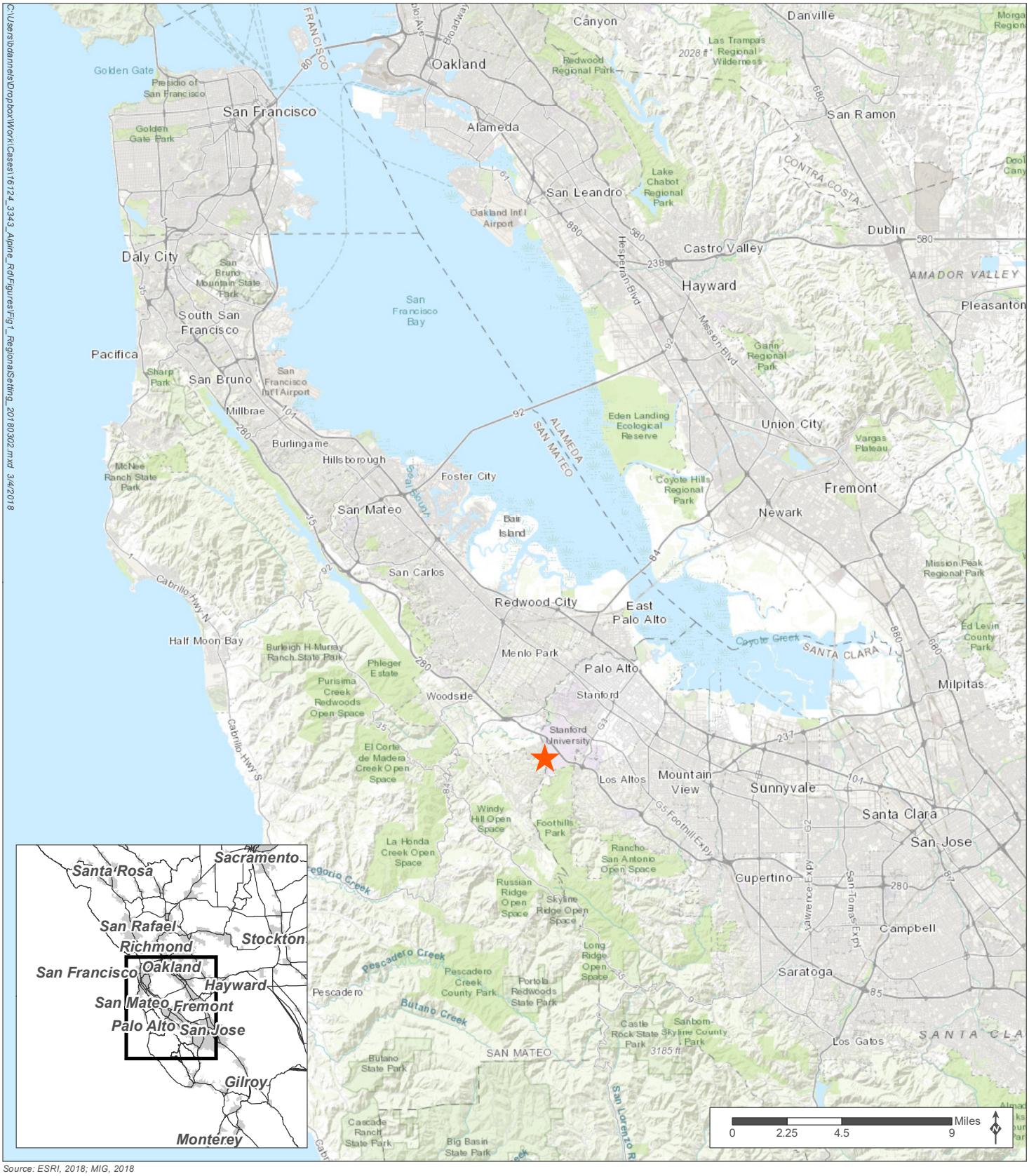
USFWS. 1985. U.S. Fish and Wildlife Service. Recovery Plan for the San Francisco Garter Snake (*Thamnophis sirtalis tetrataenia*). U.S. Fish and Wildlife Service, Portland, Oregon. 77 pp.

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].

USFWS. 2020. U.S. Fish and Wildlife Service. Species Status Assessment for the San Francisco gartersnake (*Thamnophis sirtalis tetrataenia*), Version 1.0. May 2020. Sacramento, California.

Appendix A – Figures



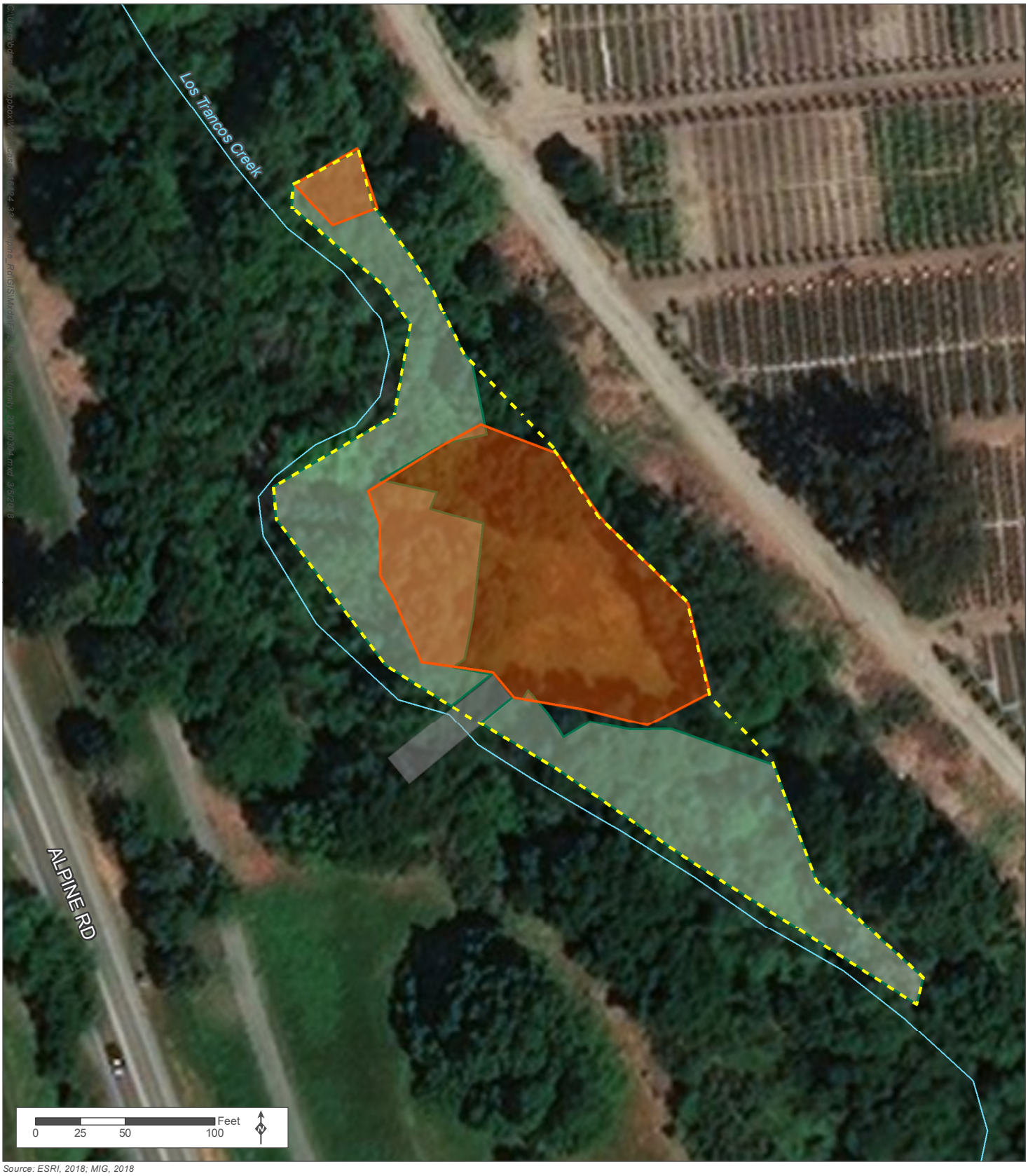
Source: ESRI, 2018; MIG, 2018

★ Project location

Figure 1 Regional Setting

3343 Alpine Road Portola Valley

MIG



Source: ESRI, 2018; MIG, 2018

Project footprint
Parcel limits
Riparian vegetation
Bridge
Los Trancos Creek - Designated as critical habitat for the federal Threatened Central California Coast steelhead (*Oncorhynchus mykiss irideus*) Distinct Population Segment (DPS)

Figure 2 Aerial View of Project Site

3343 Alpine Road Portola Valley

MIG

Appendix B – Photos

Photo 1. Looking northeast from 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.

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 irideu*s)	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; CFP	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.	The closest CNNDB occurrence of San Francisco garter snake is from the Woodside Population Complex near Searsville Lake, approximately 4 miles northwest of the project site. There are no documented occurrences in Los Trancos Creek. Also, the project site is in an intergrade zone composed of hybrids between the San Francisco garter snake and the non-special-status red-sided garter snake. However, since Los Trancos Creek provides suitable foraging and dispersal habitat San Francisco garter snake may be present in Los Trancos Creek and associated riparian corridor. However, the project site lacks suitable breeding 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*)	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.

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

Prepared for:
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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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