City of Cupertino
Community Development Department

21750 Rainbow Drive Project

Initial Study/Mitigated Negative Declaration

September 2021

Prepared by

RANEY PLANNING & MANAGEMENT, INC. | 20 years
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INITIAL STUDY

September 2021

A. BACKGROUND

1. Project Title: 21750 Rainbow Drive Project

2. Lead Agency Name and Address: City of Cupertino
Community Development Department
10300 Torre Avenue
Cupertino, CA 95014

3. Contact Person and Phone Number: Erick Serrano
Senior Planner
(408) 777-3205

4. Project Location: 21750 Rainbow Drive
Cupertino, CA 95014
APN 366-03-064

5. Project Sponsor's Name and Address: Bruce Steakley
21750 Rainbow Drive
Cupertino, CA 95014

6. General Plan Designation: Very Low Density Residential (Res VL ½)

7. Zoning Designation: Residential Hillside (RHS)

8. Potentially Required Approvals from Other Public Agencies:
U.S. Fish and Wildlife Services
California Department of Fish and Wildlife
Regional Water Quality Control Board
United States Army Corps of Engineers

9. Surrounding Land Uses and Setting:

The approximately eight-acre subject property, located at 21750 Rainbow Drive in the City of Cupertino, CA, currently consists of a 3,970-square foot (sf) single-family residential home, paved driveway, vineyard, and small accessory structures. The subject property is located on a hillside, with the single-family residence located at the top of the hill and the vineyard and accessory structures located at the bottom. The average slope of the hillside is approximately 44 percent. The subject property's northern boundary is located within Regnart Creek. Surrounding land uses include large-lot, custom single-family homes to the northeast and east, Fremont Older Open Space to the south, and undeveloped rural land to the west and south. Additionally, an unnamed drainage feature runs through the project site. The City of Cupertino General Plan designates the site Very Low Density Residential (Res VL ½) and the site is zoned Residential Hillside (RHS).

10. Project Description:

    The proposed project would include the construction of a roadway on 0.43-acre of the subject property, northwest of the existing residence, to allow maintenance and access from the residence to the existing vineyard at the bottom of the hill. It should be noted that the term "subject property" refers to the entire eight-acre parcel, while the term "project site" refers to the 0.43-acre area proposed for development of the access road. The proposed 450-foot (ft) long, 12-ft wide access road would begin at the base of the on-site residence's existing driveway, wind down a relatively steep, native hillside with numerous trees, and cross a narrow drainage channel. Due to the existing topography of the site, the proposed project would include the construction of four retaining wall segments that include one to two retaining walls per segment along the access road. The retaining walls also include an open 3'6" railing on the top of the retaining wall. Additionally, the proposed project would require approval of a discretionary (Hillside Exception) Permit.

11. Status of Native American Consultation Pursuant to Public Resources Code Section 21080.3.1:

    The City of Cupertino has not received any formal requests for consultation on the proposed project. As such, formal notification of the proposed project to any tribes is not required.

B. SOURCES

The following documents are referenced information sources used for the purposes of this Initial Study:

1. Bay Area Air Quality Management District. *California Environmental Quality Act Air Quality Guidelines*. May 2017.
2. California Building Standards Commission. *California Green Building Standards Code*. 2019.
3. California Air Resources Board. *The 2017 Climate Change Scoping Plan Update.* January 20, 2017.
4. California Department of Conservation Division of Land Resource Protection. *A Guide to the Farmland Mapping and Monitoring Program* [pg. 6]. 2004.
5. California Department of Forestry and Fire Protection. *Very High Fire Hazard Severity Zones in LRA – Cupertino*. October 9, 2008.
6. California Department of Resources Recycling and Recovery (CalRecycle). *Facility/Site Summary Details: Newby Island Sanitary Landfill (43-AN-0003).* Available at: https://www2.calrecycle.ca.gov/swfacilities/Directory/43-AN-0003/. Accessed January 28, 2020.
7. California Department of Transportation. *Scenic Highways*. Available at: https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways. Accessed February 2020.
8. Caltrans. *Transportation and Construction Vibration Guidance Manual*. April 2020.
9. Caltrans. *Transportation Related Earthborne Vibrations. TAV-02-01-R9601*. February 20, 2002.
10. City of Cupertino. *Emergency Operations Plan, Base Plan*. Adopted June 18, 2019.
11. City of Cupertino. *General Plan Amendment, Housing Element Update, and Associated Rezoning Draft EIR.* June 18, 2014.

12. City of Cupertino. *General Plan: Community Vision 2015 – 2040.* Adopted October 20, 2015.
13. Department of Toxic Substances Control. *Hazardous Waste and Substances Site List (Cortese).* Available at: https://www.envirostor.dtsc.ca.gov/public/. Accessed January 20, 2020.
14. Federal Emergency Management Agency. *Flood Insurance Rate Map 06085C0216H.* Effective May 18, 2009.
15. Federal Highway Administration. *Roadway Construction Noise Model User's Guide.* January 2006.
16. Federal Transit Administration. *Transit Noise and Vibration Impact Assessment Guidelines.* May 2006.
17. GeoForensics, Inc. *Steakley Property, 21750 Rainbow Drive, Cupertino, California, Geotechnical Investigation of Proposed Vineyard Access Road.* August 19, 2019.
18. GeoForensics, Inc. *Steakley Property, 21750 Rainbow Drive, Cupertino, California, Geotechnical Investigation Update for Proposed New Residence.* January 5, 2011.
19. Live Oak Associates. *21750, Technical Biological Report, Cupertino, Santa Clara County, California.* March 10, 2020.
20. Michael L. Bench, Consulting Arborist. *Arborist Report, Mr. and Mrs. Steakley, 21750 Rainbow Drive, Cupertino, California.* December 13, 2018.
21. Native American Heritage Commission. *Re: 21750 Rainbow Drive Project, Santa Clara County.* January 17, 2020.
22. Northwest Information Center. *Records search results for the proposed 21750 Rainbow Drive Project, 21750 Rainbow Drive, Cupertino, Santa Clara County, California.* January 23, 2020.
23. Sacramento Metropolitan Air Quality Management District. *Roadway Construction Emissions Model*. May 2016.

C. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Less Than Significant with Mitigation Incorporated" or as indicated by the checklist on the following pages.

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

D. DETERMINATION

On the basis of this initial study:

☐ 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 applicant. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ 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" 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 attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ 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 pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature	Date
Erick Serrano, Senior Planner	City of Cupertino
Printed Name	For

E. BACKGROUND AND INTRODUCTION

This Initial Study/Mitigated Negative Declaration (IS/MND) provides an environmental analysis pursuant to the California Environmental Quality Act (CEQA) for the proposed project. The applicant has submitted this application to the City of Cupertino, which is the Lead Agency for the purposes of CEQA review. The IS/MND contains an analysis of the environmental effects of construction and operation of the proposed project.

On October 20, 2015, the City of Cupertino adopted an amended General Plan[1] and certified an associated Environmental Impact Report (EIR).[2] The General Plan EIR is a program EIR, prepared pursuant to Section 15168 of the CEQA Guidelines (Title 14, California Code of Regulations, Sections 15000 *et seq*.). The General Plan EIR analyzed full implementation of the General Plan and identified measures to mitigate the significant adverse impacts associated with buildout of the General Plan. The proposed project would be consistent with the General Plan; therefore, in accordance with Section 15152 of the CEQA Guidelines (Section 21083.3 of the Public Resources Code), this IS/MND will tier from the previously certified EIR prepared for the City's General Plan where appropriate.

The mitigation measures prescribed for environmental effects described in this IS/MND would be implemented in conjunction with the project, as required by CEQA, and the mitigation measures would be incorporated into the project. In addition, a project Mitigation Monitoring and Reporting Program (MMRP) would be adopted in conjunction with approval of the project.

F. BASELINE FOR ANALYSIS

According to CEQA Guidelines Section 15125, Environmental Setting, the environmental setting will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant. The purpose of this requirement is to give the public and decision makers the most accurate and understandable picture practically possible of the project's likely near-term and long-term impacts. According to Section 15125(a)(1):

> Generally, the lead agency should describe physical environmental conditions as they exist at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, from both a local and regional perspective.

Establishing the proper environmental baseline can present issues when the project applicant or prior owner has illegally altered the nature of the site. For example, in *Riverwatch v County of San Diego (1999) 76 CA4th 1428, 1451*, the court held that the proper baseline is the existing condition of the site, even if that condition may be the result of prior illegal activity.[3] The court noted that illegal conduct is subject to enforcement action and that it would place an undue burden on EIR preparers to determine the merits of illegal conduct claims. The EIR is not the appropriate forum for determining the nature and consequences of a prior conduct of a project applicant. Similarly, some of the hillside grading for the proposed project was completed prior to applying for a permit to receive the needed approval from the City of Cupertino. As a result, all on-site work has ceased until the appropriate environmental review is completed and necessary permit obtained from the City. Based on the referenced case law and other similar incidents, the baseline for the proposed

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1 City of Cupertino. *General Plan: Community Vision 2015 – 2040.* Adopted October 20, 2015.

2 City of Cupertino. *General Plan Amendment, Housing Element Update, and Associated Rezoning Draft EIR*. June 18, 2014.

3 Stephen L. Kostka and Michael H. Zischke. Practice Under the California Environmental Quality Act, Second Edition (March 2019 Update), Section 12.24, page 12-32.2.

project is hereby determined to be the existing condition of the site, unless otherwise stated in this document.

G. PROJECT DESCRIPTION

The following provides a description of the project site's current location and setting, as well as the proposed project components and the discretionary actions required for the project.

Project Location and Setting

The subject property is located at 21750 Rainbow Drive in the City of Cupertino, CA (see Figure 1). The subject property consists of approximately eight acres, which is currently developed with a 3,970-square foot (sf) single-family residential home, paved driveway, vineyard, and small accessory structures (see Figure 2). The subject property is located on a hillside, with the single-family residence located at the top of the hill and the vineyard and accessory structures located at the bottom. The average slope of the hillside is approximately 44 percent. The subject property's northern boundary is located within Regnart Creek, which runs along the bottom of the hill. Surrounding land uses include large-lot, custom single-family homes to the northeast and east, Fremont Older Open Space to the south, and undeveloped rural land to the west and south. Additionally, a small drainage channel that flows downhill through the project site is present within the oak woodlands of the site. The channel appears to be an ephemeral feature that only flows during and immediately following storm events. Vegetation within the channel is undifferentiated from the surrounding upland oak woodland habitat within the subject property. The City of Cupertino General Plan designates the site Hillside Residential Very Low Density (½ Acre Slope Density Formula and the site is zoned Residential Hillside (RHS).

The main access to the property is from the top of the hill via Rainbow Drive, a private street. Vehicular access is not available to the vineyard from the bottom of the hill at this time. Previously, the applicant had access to the vineyard via a neighbor's property at the bottom of the hill fronting on Regnart Road. Baseline for Analysis, some of the grading for the project was completed prior to receiving the needed approval from the City. While grading was ongoing, the City informed the applicant that permits were needed for the kind of work being performed and all on-site work was ceased until the appropriate environmental review is completed and the necessary permits are obtained from the City. It should be noted that previous unpermitted grading disturbed much of the proposed alignment of the access road, and the graded area is currently covered by tarp to prevent erosion.

Project Components

The proposed project would include the construction of a roadway on 0.43-acre of the subject property (referred to as the project site), northwest of the existing residence, to allow maintenance and access from the residence to the vineyard at the bottom of the hill (see Figure 3). The new 450-ft long, 12-ft wide access road would begin at the base of the home's existing driveway, atop the hill, wind down a relatively steep native hillside with numerous trees and cross a narrow drainage channel. The access road would be comprised of primarily pervious pavement, with the exception of approximately 877 sf of impervious surfaces (e.g., concrete-lined drainage ditches). The pervious pavement would allow stormwater on the site to percolate into underlying soils. Due to the existing topography of the site, the proposed project would include the construction of retaining walls along some portions of the access road. Furthermore, the proposed project would require approval of a Hillside Exception Permit, the need for which is described below.

Figure 1
Regional Project Location

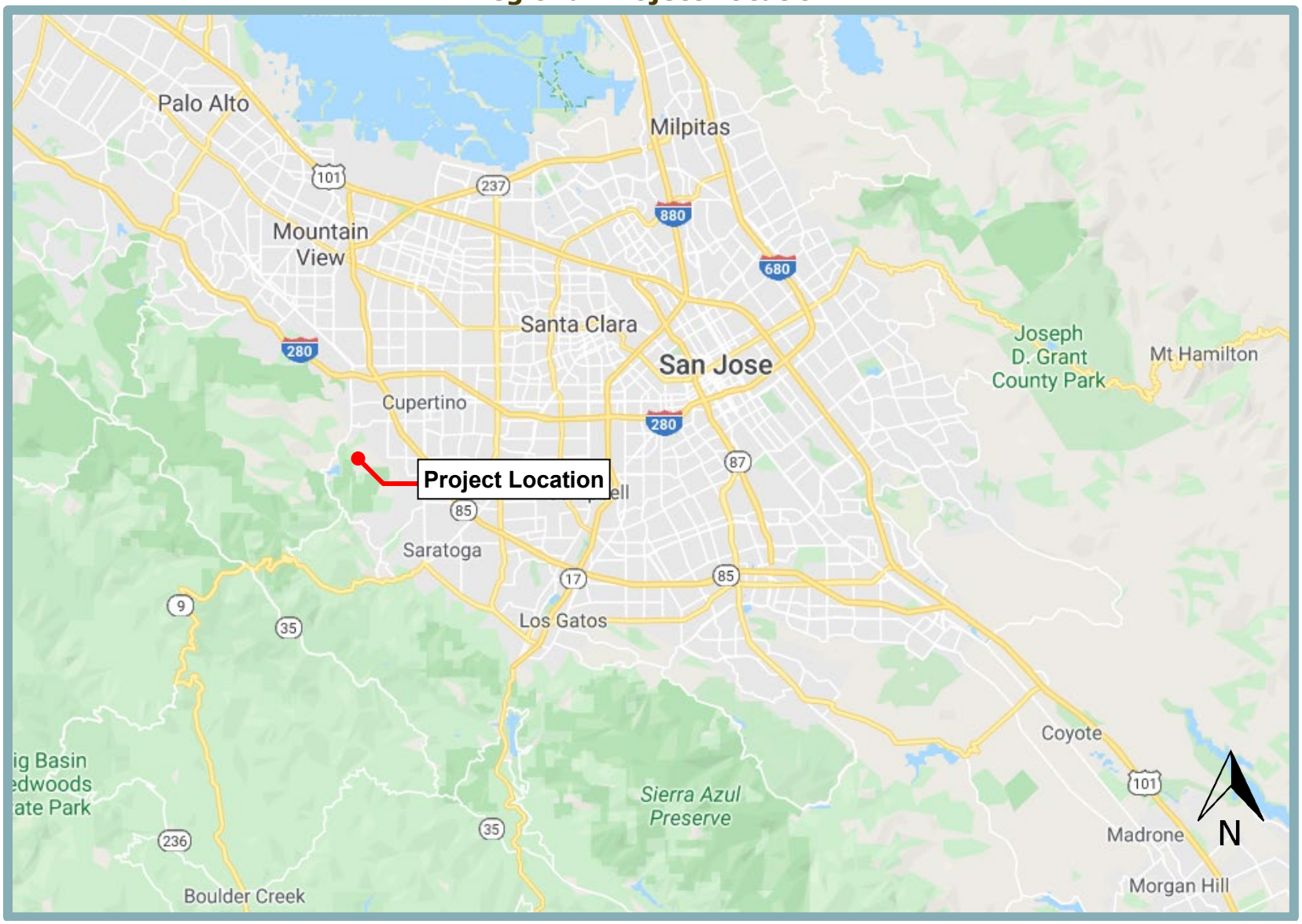
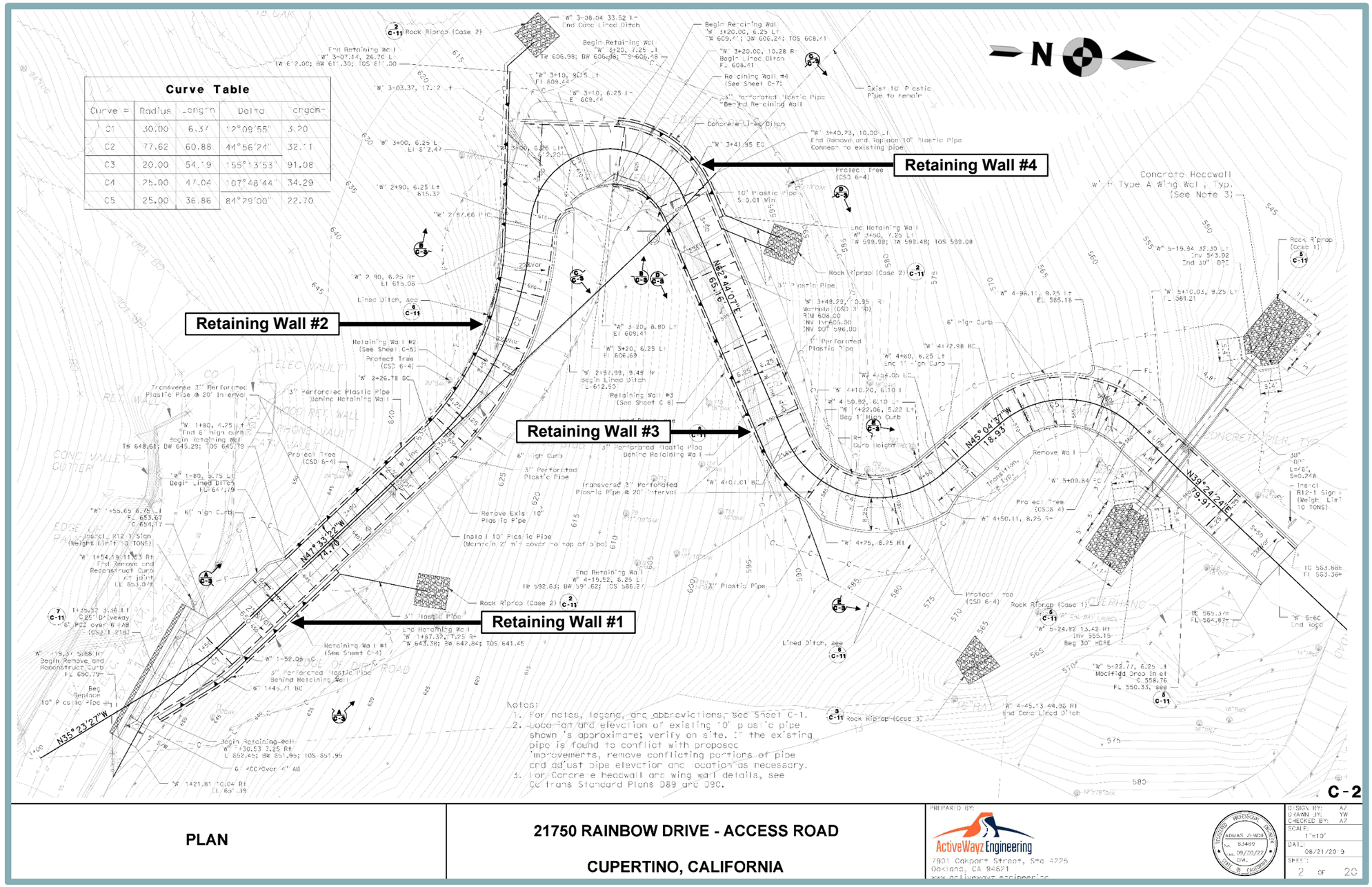


Figure 2
Approximate Project Boundaries Map



Figure 3
Site Plan



The access road would be used for the purposes of routine maintenance and upkeep of the property and existing vineyard. As such, the access road would serve to support existing uses within the site, and would not result in any new on-site uses or changes in operations of the existing residence.

The project site's average slope is approximately 44 percent. Because of the steep slopes, the proposed project would include the construction of four retaining walls, along different segments of the access road (see Figure 3). Retaining Wall #1 would be approximately 59 feet long and Retaining Wall #2 would be a 143 feet long segment (see Figure 4 and Figure 5). Additionally, Retaining Wall #3 would be approximately 94 feet long and Retaining Wall #4 would be approximately 38 feet long (see Figure 6 and Figure 7).

Retaining walls #1 and #4 would range in height from approximately three feet to approximately eight feet tall, while retaining walls #2 and #3 would range in height from approximately three feet to approximately 12 feet tall. A majority of each of the retaining walls would be located underground. The location of each retaining wall is indicated in Figure 3. Three-inch perforated plastic pipes would be used below the access road to redirect water from behind the walls to drainage collection features. Retaining walls #2 and #3 would be constructed with "soldier piles". The piles would be constructed with a drill rig to drill 24-inch holes and then insert the steel piles and filled with concrete. Retaining walls #1 and #4 would not include any piles and would be supported on shallow concrete spread footings.

Two concrete lined drainage ditches would be constructed as part of the proposed retaining walls to capture water from the hill and direct it to designated outfall structures with energy dissipation treatments. One would run along Retaining Wall #2 and the second would run along Retaining Wall #4. A segment of an existing 10-inch storm drain pipe system would be removed and reinstalled at a lower elevation to accommodate the access road profile. The access road will span over an existing narrow channel using a 30-inch pipe culvert. The proposed culvert bridge would include a 30-inch storm pipe, concrete wingwalls, and rock ripraps to adequately convey stormwater and prevent erosion.

Currently, the project site contains 29 trees. Although the proposed project intends to retain all existing trees, some trees may need to be trimmed or removed in order to construct the proposed access road. According to Section 19.040.050(F), Site Development Regulations, of the City's Municipal Code, a landscaping plan must be prepared, and would be required to include native plants to be integrated into the site design to the greatest extent possible. As shown in Figure 8, the proposed project would include landscaping along the proposed access road. The landscaping would include the planting of ground covers/spreading plants, native plants, shrubs, screening trees, and other landscaping features.

Two aquatic features are located in close proximity to the project site: Regnart Creek, as well as an existing drainage channel that flows downhill through the project site. All portions of the proposed access road would be setback in excess of 100 feet from Regnart Creek (see Figure 9). Additionally, as shown in Figure 3 and previously discussed, a culvert would be constructed within the existing drainage channel and would be designed to minimize impacts to the existing drainage channel.

Figure 4
Retaining Wall #1

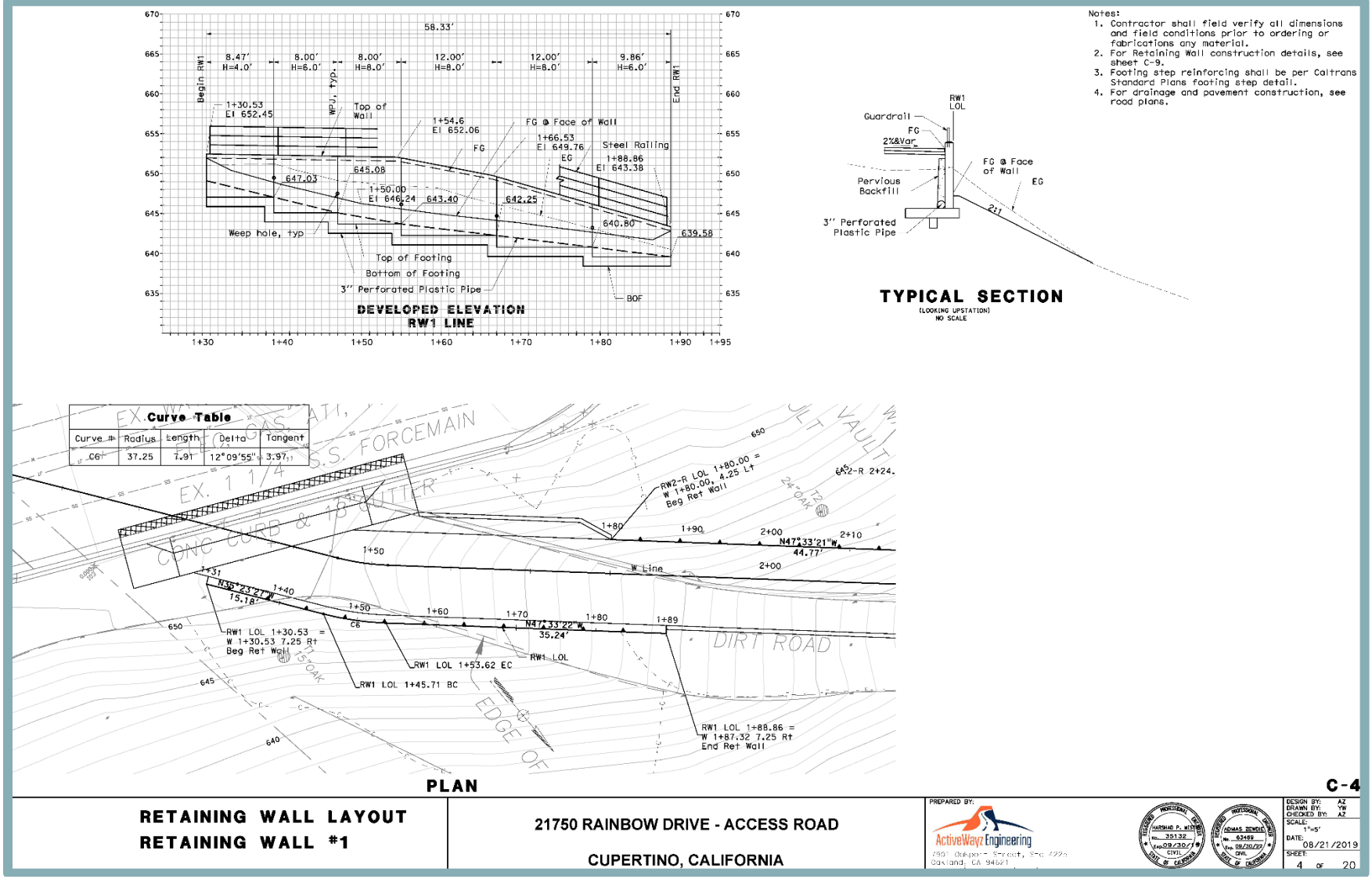


Figure 5
Retaining Wall #2

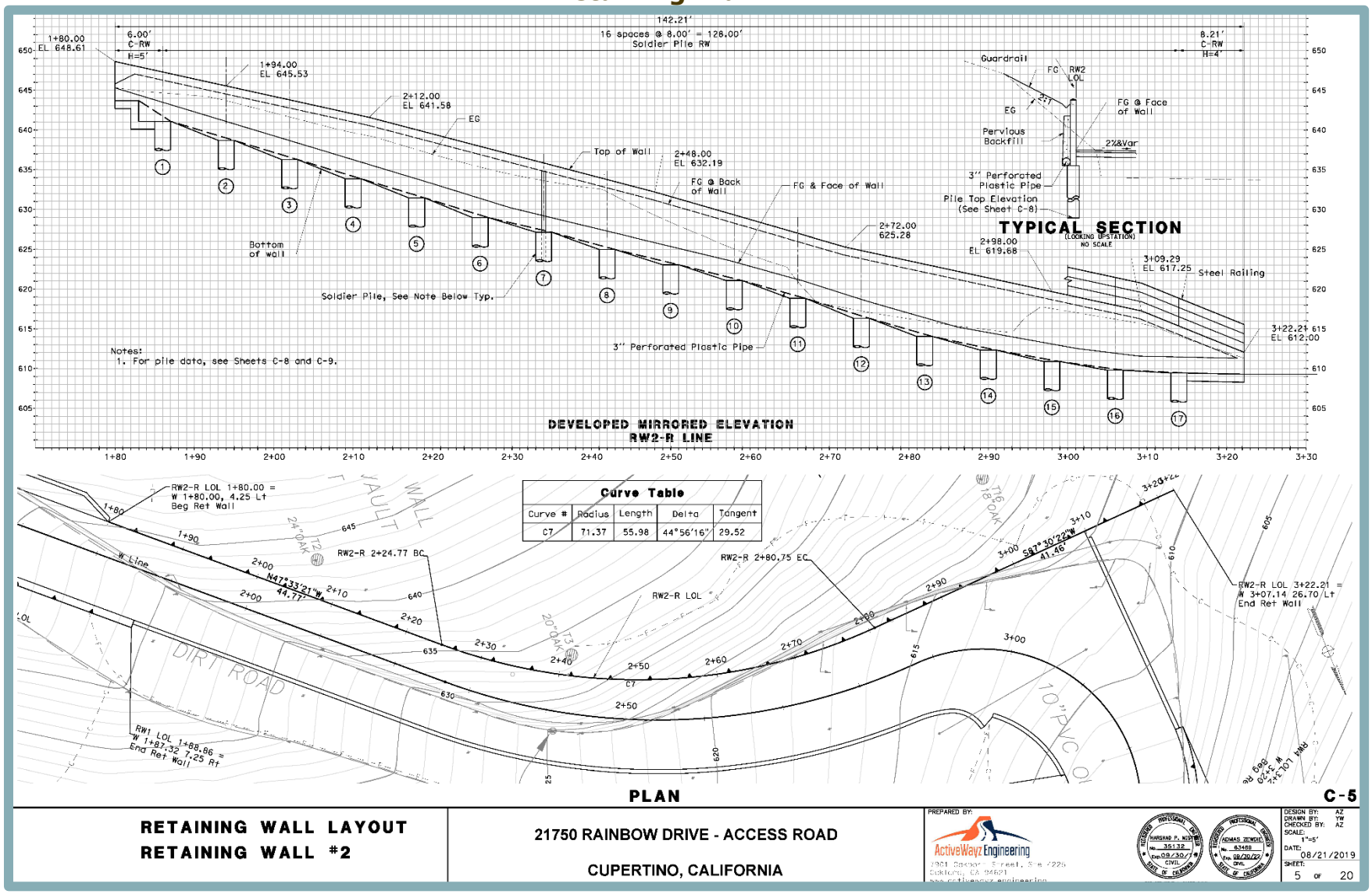


Figure 6
Retaining Wall #3

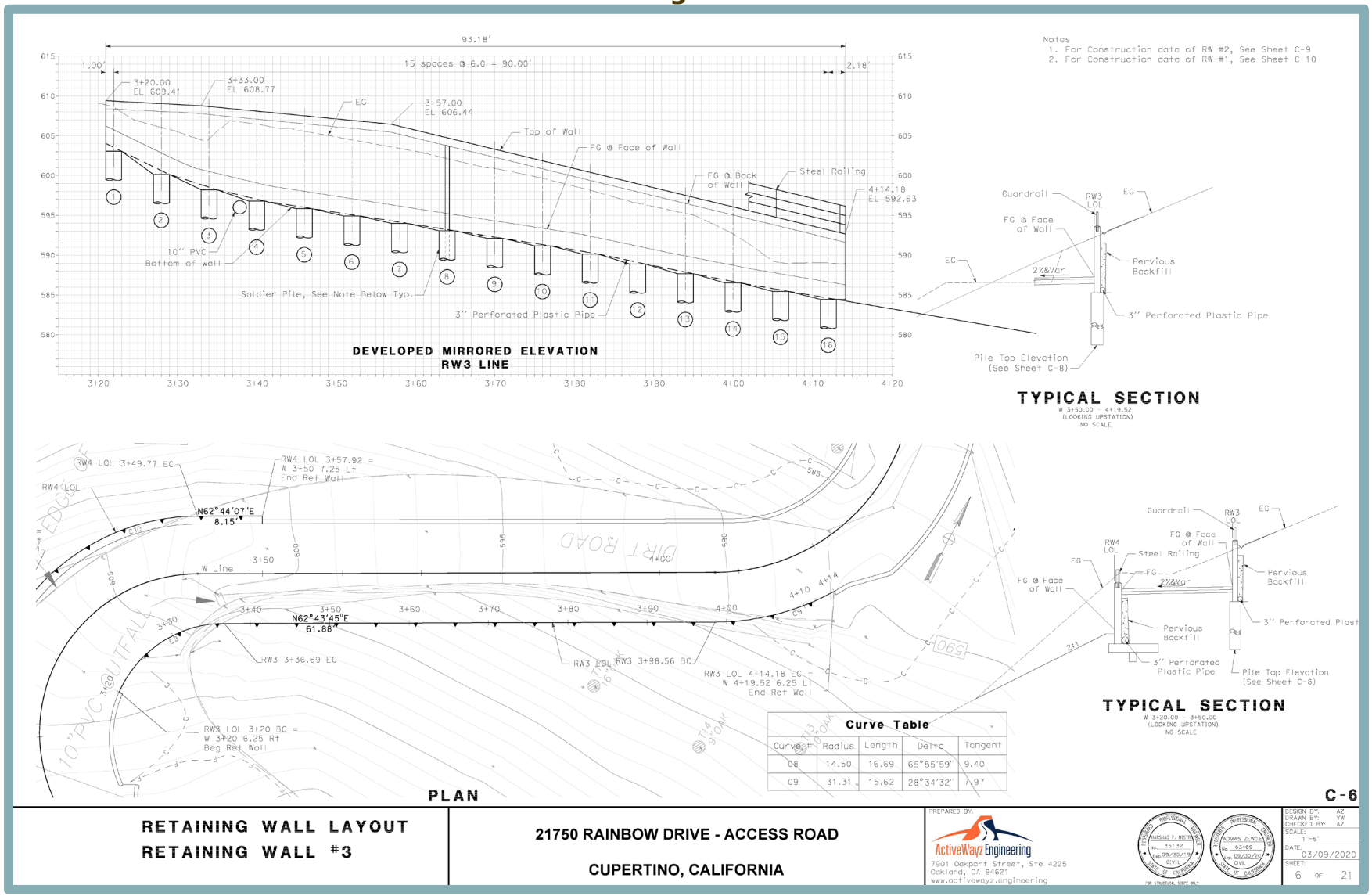


Figure 7
Retaining Wall #4

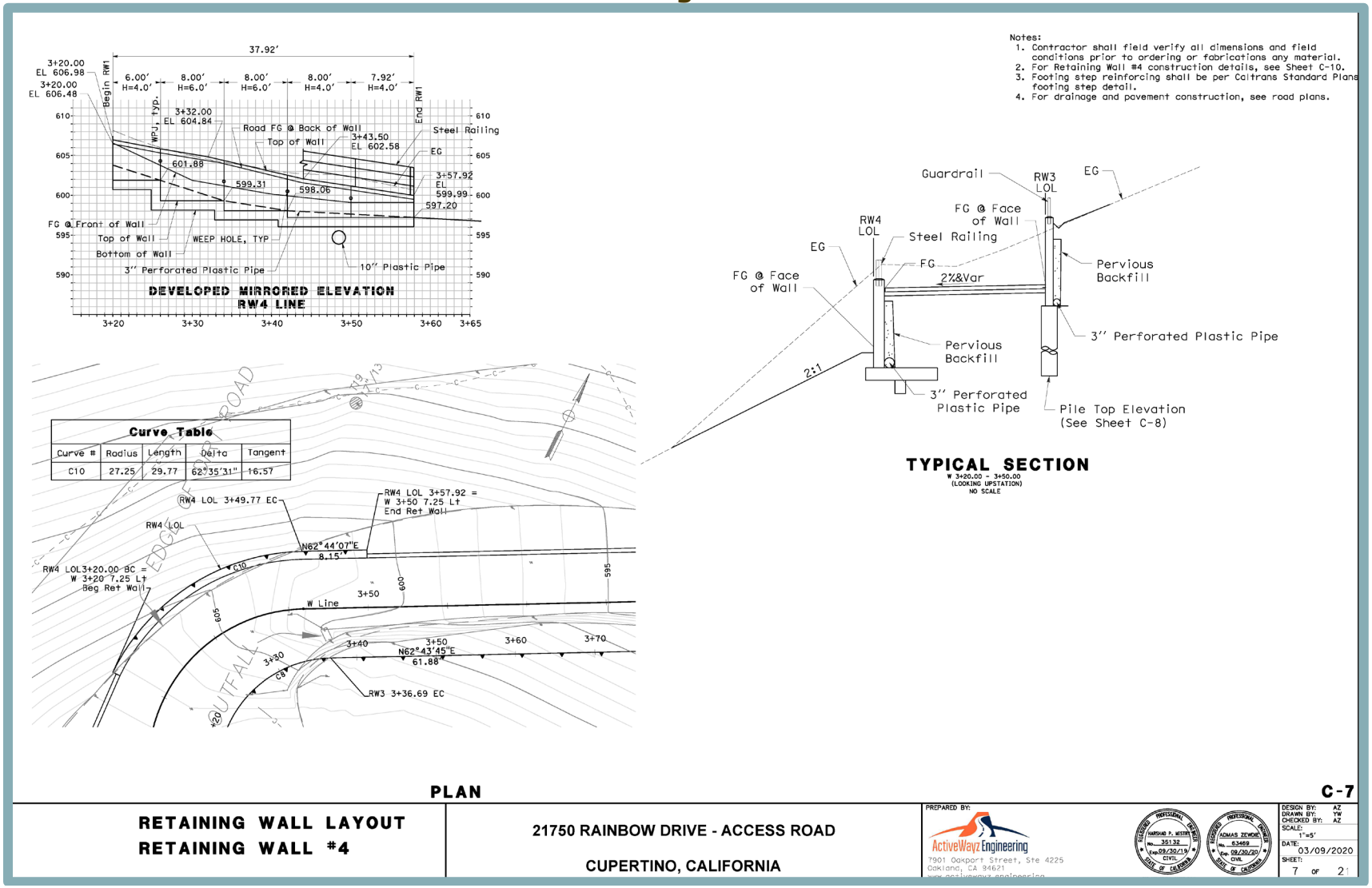


Figure 8
Landscaping Plan

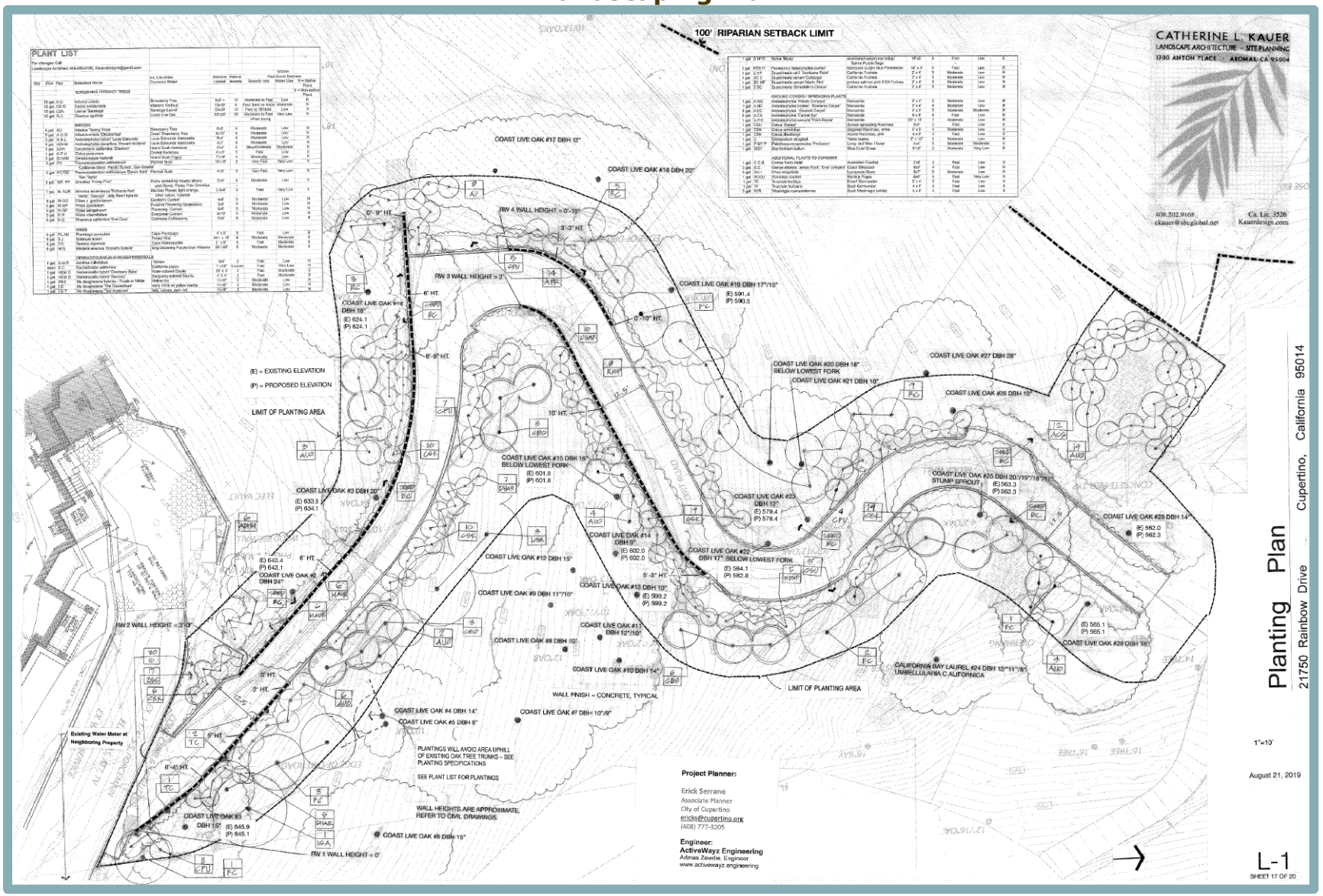
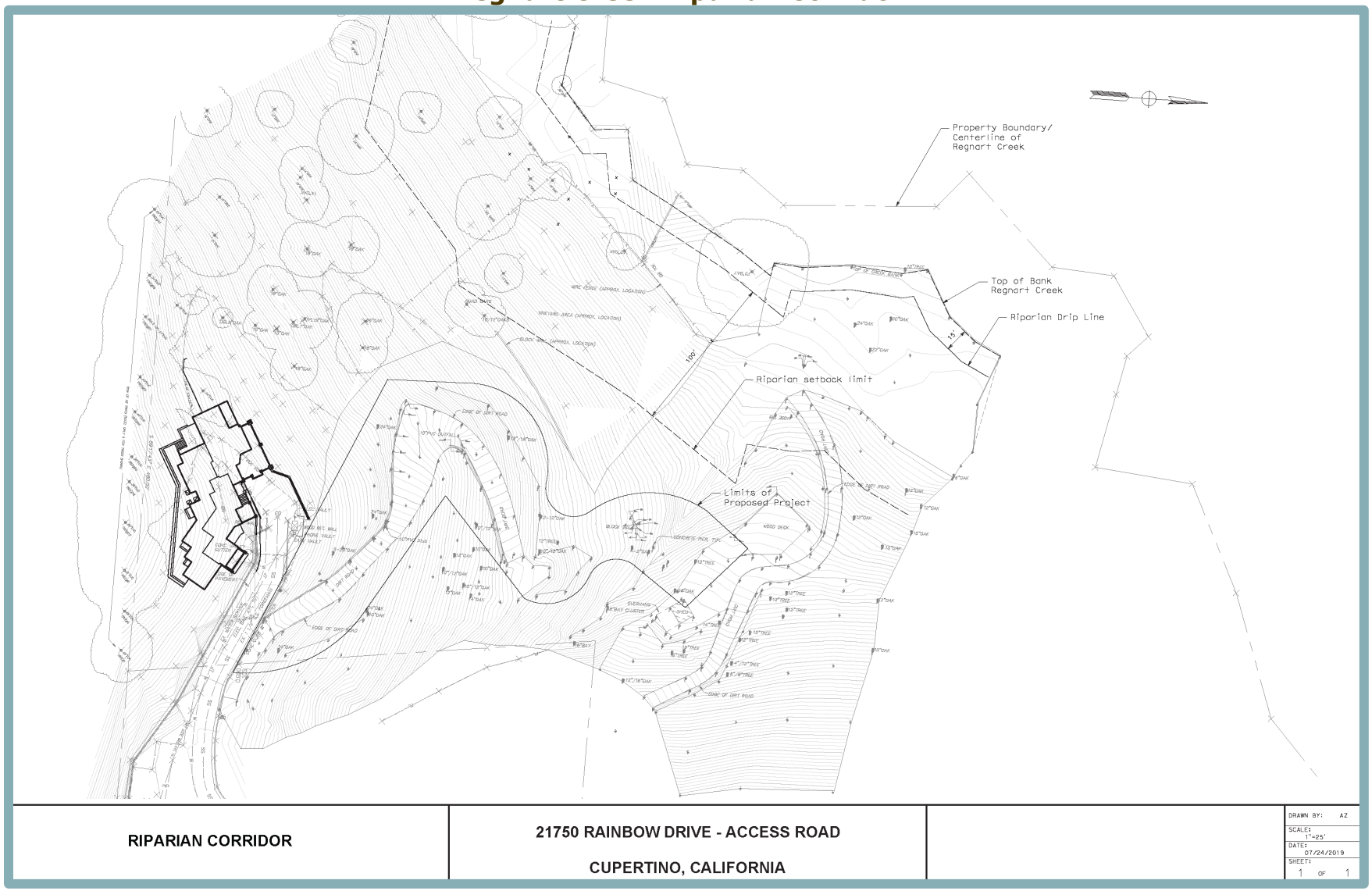


Figure 9
Regnart Creek Riparian Corridor



The proposed project would be consistent with the City's General Plan land use and zoning designations. The required Hillside Exception Permit is discussed in further detail below.

Hillside Exception Permit

According to Section 19.40.050 (I), Site Development Regulations, of the City's Municipal Code, a Hillside Exception Permit is required for projects that involve disturbing an area greater than 500 s.f. on slopes greater than or equal to 30 percent including all grading, structures, and other development. As previously mentioned, the project site's average slope is approximately 44 percent. Additionally, the proposed project would require disturbing an area greater than 500 s.f. with grading and other structures (e.g., retaining walls) within the steep slopes. Therefore, the proposed project would require approval of a Hillside Exception Permit.

Discretionary Actions

The proposed project would require the following approvals from the City of Cupertino:

- Adoption of the IS/MND;
- Adoption of the Mitigation Monitoring and Reporting Plan; and
- Hillside Exception Permit for development on slopes greater than 30 percent that exceed 500 sf.

H. ENVIRONMENTAL CHECKLIST

The following checklist contains the environmental checklist form presented in Appendix G of the CEQA Guidelines. The checklist form is used to describe the impacts of the proposed project. A discussion follows each environmental issue identified in the checklist. For this checklist, the following designations are used:

Potentially Significant Impact: An impact that could be significant, and for which no mitigation has been identified. If any potentially significant impacts are identified, an EIR must be prepared.

Less Than Significant with Mitigation Incorporated: An impact that requires mitigation to reduce the impact to a less-than-significant level.

Less-Than-Significant Impact: Any impact that would not be considered significant under CEQA relative to existing standards.

No Impact: The project would not have any impact.

I. AESTHETICS. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Have a substantial adverse effect on a scenic vista?	☐	☐	✖	☐
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?	☐	☐	✖	☐
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?	☐	☐	✖	☐
d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	✖	☐

Discussion

a, b. Examples of typical scenic vistas include mountain ranges, ridgelines, or bodies of water as viewed from a highway, public space, or other area designated for the express purpose of viewing and sightseeing. In general, a project's impact to a scenic vista would occur if development of the project would substantially change or remove a scenic vista.

The City's General Plan designates the mountains and foothills as irreplaceable resources and provides policies to ensure their protection as scenic elements. Considering that the project site is located in an area of the City which contains prominent ridgelines and sloping terrain, views of scenic resources are available from the project site. However, the proposed project would not include the development of any structures that would obstruct or impair existing views of such resources. Furthermore, as shown in Figure 2, the previous grading activities on the project site are currently covered by black tarp. Paving of the access road could reasonably be anticipated to ultimately improve views of the hillside by including removal of the existing black tarp and installation of landscaping, including the planting of ground covers/spreading plants, native plants, shrubs, screening trees, and other landscaping features. As such, the proposed project would not have a substantial adverse effect on a scenic vista.

According to the California Scenic Highway Mapping System, the project site is not located within the vicinity of an officially designated State Scenic Highway.[4] The nearest officially designated State Scenic Highway is the portion of Interstate-280 (I-280), beginning west of Stanford University and north of Highway 85, which is located over 10 miles away and is not visible from the project site. Therefore, the proposed project would not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway.

Based on the above, development of the proposed project would not have a substantial adverse effect on a scenic vista and would not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State Scenic Highway. Thus, a ***less-than-significant*** impact would occur.

[4] California Department of Transportation. *Scenic Highways*. Available at: https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways. Accessed February 2020.

c. Currently, the site is vacant and consists of the partially graded hillside and black tarping. Surrounding uses include large-lot, custom single-family homes in the hills to the northeast and east, Fremont Older Open Space to the south, and undeveloped rural land to the west and south. The project site and the surrounding area is currently designated Hillside Residential Very Low Density ½ Acre Slope Density Formula, which is intended to be used as a semi-rural residential property. Given the undeveloped nature of the hillside and surrounding area, this analysis focuses on the project's potential impacts on the existing visual character of the site and its surroundings.

Scenic views of the site and the surrounding area are available from both public and private spaces (see Figure 10). As shown in Figure 11, views of the project site are available from Regnart Canyon Drive (a private street) and some of the private residences located along Regnart Canyon Drive. With respect to private residences, CEQA (Pub. Resources Code, § 21000 et seq.) case law has established that only public views, not private views, are protected under CEQA.[5] Nonetheless, in order to provide a conservative analysis of potential impacts to aesthetic resources, views from both public and private roadways in the vicinity have been taken into consideration.

As shown in Figure 11, views of the site from Regnart Canyon Drive, a private road, primarily consists of the existing residence and the black tarping from previous grading activities. Due to the existing tarping that currently exists, the proposed project could be reasonably anticipated to enhance the existing visual character of the site by removing the temporary tarping and adding landscaping to include the planting of ground covers/spreading plants, native plants, shrubs, screening trees, and other landscaping features. Figure 12 demonstrates a public viewpoint from Regnart Road. Similar to the views from nearby private residences, black tarping is currently visible on the hillside of the project site. As noted above, the proposed project could be reasonably anticipated to enhance the existing visual character of the site, due to removal of the existing tarping and added native landscaping. Additionally, the overall subject property is not otherwise devoid of development, given the relatively large existing home that is located on the subject property, which is visible from Regnart Road.

Developing the site with the access road would be an addition to such development and would not result in a substantially different visual appearance of the project site from what currently exists. Moreover, although some tree trimming and pruning would be necessary for completion of the roadway, the hillside and the majority of the proposed access road would remain partially obscured by the existing vegetation. The existence of vegetation would reduce the visibility of the proposed access road from public and private viewpoints.

[5] It is important to distinguish between public and private views. Private views are views seen from privately-owned land and are typically viewed by individual viewers, including views from private residences. Public views are experienced by the collective public. These include views of significant landscape features and along scenic roads. California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.) case law has established that only public views, not private views, are protected under CEQA. For example, in *Association for Protection etc. Values v. City of Ukiah* (1991) 2 Cal.App.4th 720 [3 Cal. Rptr.2d 488] the court determined that "we must differentiate between adverse impacts upon particular persons and adverse impacts upon the environment of persons in general. As recognized by the court in *Topanga Beach Renters Assn. v. Department of General Services* (1976) 58 Cal.App.3d 188 [129 Cal.Rptr. 739]: '[A]ll government activity has some direct or indirect adverse effect on some persons. The issue is not whether [the project] will adversely affect particular persons but whether [the project] will adversely affect the environment of persons in general.'" Therefore, it is appropriate to focus the aesthetic impact analysis on potential impacts to public views.

Figure 10
Overview Map of Picture Locations

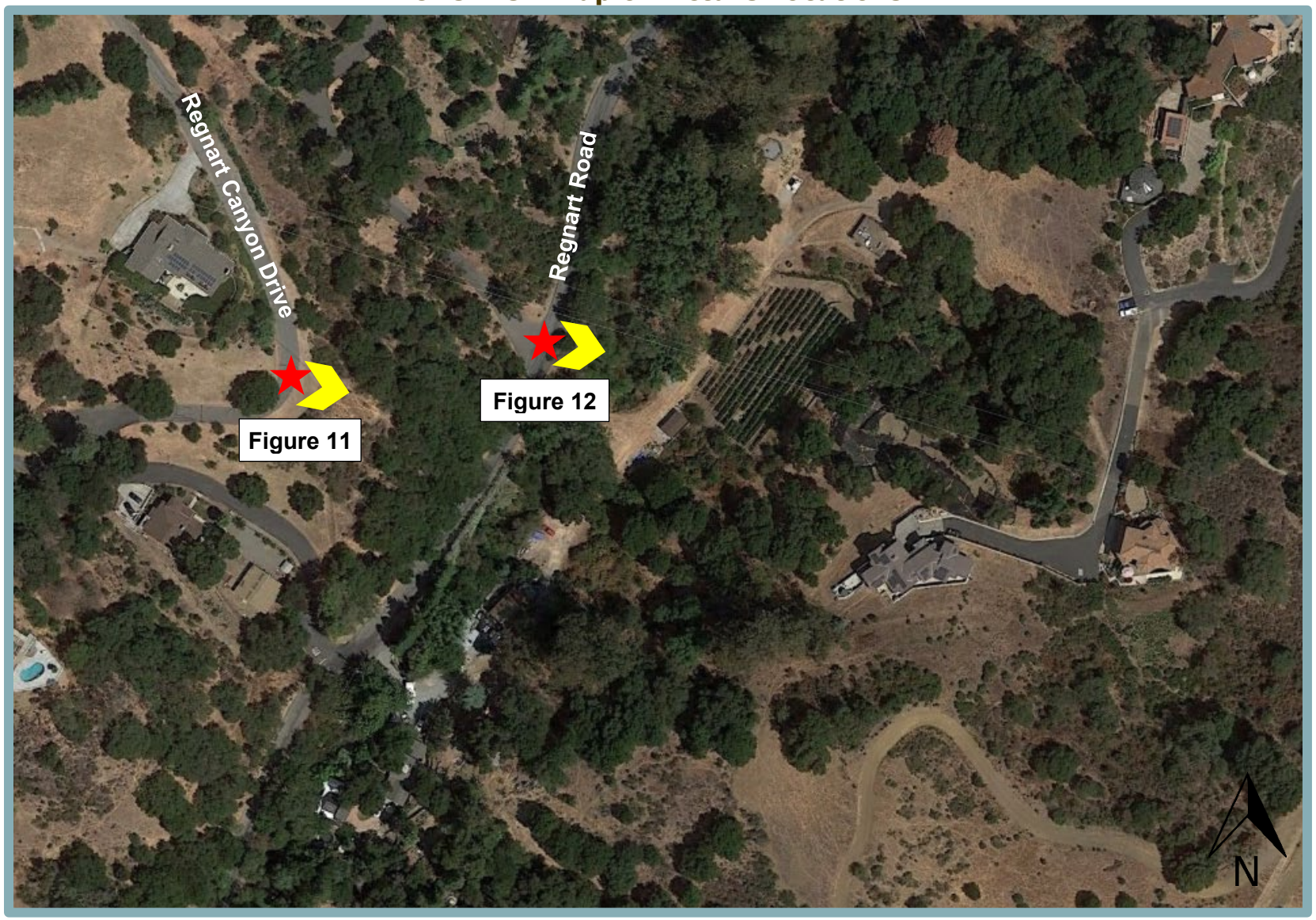


Figure 11
View of the Site from Regnart Canyon Drive



Figure 12
View of the Site from Regnart Road



According to Section 19.040.050(F), Site Development Regulations, of the City's Municipal Code, a landscaping plan must be prepared, and would be required to include native plants to be integrated into the site design to the greatest extent possible. As shown in Figure 8, the proposed project would include landscaping along the proposed access road. The landscaping would include the planting of ground covers/spreading plants, native plants, shrubs, screening trees, and other landscaping features within the project site. In addition, per Section 19.4050(E), Site Grading, of the City's Municipal Code, a licensed landscaped architect shall review grading plans and shall, in consultation with the applicant and the City Engineer, submit a plan to prevent soil erosion and screen cut fill slopes.

Given that the proposed project would include landscaping with screening features and an Erosion Control Plan, the proposed project would comply with the aforementioned sections of the Municipal Code. Compliance with the City's Municipal Code would ensure that private views of the site would not substantially degrade the existing visual character or quality of the site or its surroundings and public views of the project site would be temporary, occurring only as motorists, pedestrians, and cyclists pass by the site.

Based on the above, the project site is in a non-urbanized area and the proposed project would not substantially degrade the existing visual character or quality of public views of the site and its surroundings, resulting in a ***less-than-significant*** impact.

d. The project area primarily includes large lot residential properties, which contribute to the existing sources of light and glare in the project area. Additionally, existing sources of light in the project vicinity include light associated with vehicles traveling on the local public and private roadways.

While construction of the proposed project could include installation of new lighting fixtures along the roadway, such lighting would likely not be more substantial than what currently occurs at nearby residences, and would be limited to the proposed roadway alignment. Any such lighting would be partially shielded by the existing vegetation, which would reduce the likelihood that any light would trespass outside of the project site.

Should the access road include the installation of new lighting fixtures, such fixtures would be required to comply with Sections 19.40.060 and 19.102.040 of the City's Municipal Code, related to outdoor lighting standards. In addition, the proposed roadway is intended for use by the residents of the project site; thus, the total number of vehicles using the roadway would be extremely limited, and vehicle headlights would not constitute a substantial new source of nighttime lighting. Furthermore, the intended purpose of the access road is to allow the residents access to maintain the vineyard and haul any materials back up the hill. As such, the access road would be primarily used during the day and would not involve any substantial vehicle usage that could adversely affect nighttime views. Construction equipment used on-site would primarily operate during the daytime hours (7:00 AM to 8:00 PM on weekdays and 9:00 AM to 6:00 PM on weekends), and the overall construction period would be limited. Accordingly, construction equipment is not anticipated to represent a substantial source of new nighttime lighting.

Given the proposed project's limited sources of new light that would occur as a result of the project, implementation of the project would result in a ***less-than-significant*** impact with respect to creating a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

II. AGRICULTURE AND FOREST RESOURCES. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	✖
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	✖
c. 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))?	☐	☐	☐	✖
d. Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	✖
e. 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?	☐	☐	☐	✖

Discussion

a, e. Per the California Department of Conservation Farmland Mapping and Monitoring Program (FMMP), the project site is characterized as "Other Land". Other Land is not included in any other mapping category. Common examples include low density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing.[6] Furthermore, the site is not located adjacent to Prime Farmland, Unique Farmland, or Farmland of Statewide Importance.

Given the designation of the site as Other Land, development of the proposed project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to a non-agricultural use, or otherwise result in the loss of Farmland to non-agricultural use. Therefore, ***no impact*** would occur as a result of the proposed project.

b. The project site is not under a Williamson Act contract and is not zoned for agricultural uses. The site is currently zoned RHS. Therefore, buildout of the proposed project would not conflict with an agricultural use or a Williamson Act contract, and ***no impact*** would occur.

c, d. The project site is not considered forest land (as defined in Public Resources Code Section 12220[g]), timberland (as defined by Public Resources Code Section 4526), and is not zoned Timberland Production (as defined by Government Code Section 51104[g]). Therefore, the proposed project would have ***no impact*** with regard to conversion of forest land or any potential conflict with forest land, timberland, or Timberland Production zoning.

[6] California Department of Conservation Division of Land Resource Protection. *A Guide to the Farmland Mapping and Monitoring Program* [pg. 6]. 2004.

III. AIR QUALITY. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	✖	☐
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?	☐	☐	✖	☐
c. Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	✖	☐
d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	✖	☐

Discussion

a, b. The City of Cupertino is located in the San Francisco Bay Area Air Basin (SFBAAB), which is under the jurisdiction of the Bay Area Air Quality Management District (BAAQMD). The SFBAAB area is currently designated as a nonattainment area for the State and federal ozone, State and federal fine particulate matter 2.5 microns in diameter ($PM_{2.5}$), and State respirable particulate matter 10 microns in diameter (PM_{10}) ambient air quality standards (AAQS). The SFBAAB is designated attainment or unclassified for all other AAQS. It should be noted that on January 9, 2013, the U.S. Environmental Protection Agency (USEPA) issued a final rule to determine that the Bay Area has attained the 24-hour $PM_{2.5}$ federal AAQS. Nonetheless, the Bay Area must continue to be designated as nonattainment for the federal $PM_{2.5}$ AAQS until such time as the BAAQMD submits a redesignation request and a maintenance plan to the USEPA, and the USEPA approves the proposed redesignation.

In compliance with regulations, due to the nonattainment designations of the area, the BAAQMD periodically prepares and updates air quality plans that provide emission reduction strategies to achieve attainment of the AAQS, including control strategies to reduce air pollutant emissions through regulations, incentive programs, public education, and partnerships with other agencies. The current air quality plans are prepared in cooperation with the Metropolitan Transportation Commission and the Association of Bay Area Governments (ABAG).

The most recent federal ozone plan is the 2001 Ozone Attainment Plan, which was adopted on October 24, 2001 and approved by the California Air Resources Board (CARB) on November 1, 2001. The plan was submitted to the USEPA on November 30, 2001 for review and approval. The most recent State ozone plan is the 2017 Clean Air Plan, adopted on April 19, 2017. The 2017 Clean Air Plan was developed as a multi-pollutant plan that provides an integrated control strategy to reduce ozone, PM, toxic air contaminants (TACs), and greenhouse gases (GHGs). Although a plan for achieving the State PM_{10} standard is not required, the BAAQMD has prioritized measures to reduce PM in developing the control strategy for the 2017 Clean Air Plan. The control strategy serves as the backbone of the BAAQMD's current PM control program.

The aforementioned air quality plans contain mobile source controls, stationary source controls, and transportation control measures to be implemented in the region to attain the State and federal AAQS within the SFBAAB. Adopted BAAQMD rules and regulations, as well as the thresholds of significance, have been developed with the intent to ensure continued attainment of AAQS, or to work towards attainment of AAQS for which the area

is currently designated nonattainment, consistent with applicable air quality plans. The BAAQMD's established significance thresholds associated with development projects for emissions of the ozone precursors reactive organic gases (ROG) and oxides of nitrogen (NO_X), as well as for PM_{10} and $PM_{2.5}$, expressed in pounds per day (lbs/day) and tons per year (tons/yr), are listed in Table 1. Thus, by exceeding the BAAQMD's mass emission thresholds for operational emissions of ROG, NO_X, PM_{10}, or $PM_{2.5}$, a project would be considered to conflict with or obstruct implementation of the BAAQMD's air quality planning efforts.

Table 1
BAAQMD Thresholds of Significance

Pollutant	Construction	Operational	
	Average Daily Emissions (lbs/day)	Average Daily Emissions (lbs/day)	Maximum Annual Emissions (tons/year)
ROG	54	54	10
NO_x	54	54	10
PM_{10} (exhaust)	82	82	15
$PM_{2.5}$ (exhaust)	54	54	10

Source: BAAQMD, CEQA Guidelines, May 2017.

Typical development projects include sources of both short-term and long-term emissions. Common sources of short-term emissions include those related to construction activity, such as off-road construction equipment, off-gassing from pavement, and emissions associated with electricity consumed at the project site. Typical long-term emissions sources are tied to the type of development being proposed, and can include a wide range of sources such as, vehicle trips to and from a site, energy consumption at the site, stationary sources of emissions (i.e., emergency generators or industrial processes), and the use of consumer products including deodorants and cleaning supplies.

The proposed project is construction of an access road that will be used to support property maintenance activities, including maintenance of the existing on-site vineyard, within the project site. The access road would not facilitate through traffic and the project would not include features that would represent substantial on-going sources of emissions. As a result, only emissions related to construction have been analyzed within this document.

The BAAQMD does not have an emissions model that includes linear projects, such as the construction of new roads. However, the Sacramento Metropolitan Air Quality Management District (SMAQMD) recommends the use of their Roadway Construction Emissions Model (RoadMod)[7] for linear projects, including the construction of new roads. Therefore, SMAQMD's RoadMod has been used to analyze emissions associated with construction of the proposed project. Project-specific information input into RoadMod includes the following:

- Length of roadway: approximately 450 feet;
- Total area disturbed during project implementation: 0.43 acres;
- Total of material exported and imported during project grading: 760 cubic yards;
- Length of construction: approximately 55 days; and

[7] Sacramento Metropolitan Air Quality Management District. *Roadway Construction Emissions Model*. May 2016.

- List of construction equipment that would be used during construction: Provided by applicant.

All air quality modeling prepared for the project is included as Appendix A to this IS/MND.

It should be noted that although construction of the proposed roadway was previously initiated and ordered to cease, the emissions modeling prepared for the proposed project reflects construction of the entire roadway, without consideration of the work already completed. Analyzing the entirety of the project represents a conservative approach to analysis. In actuality, the remaining work needed to finish the roadway would likely result in emissions below the levels presented and analyzed in this document.

According to the RoadMod results, the proposed project would result in maximum unmitigated construction criteria air pollutant emissions as shown in Table 2. As shown in the table, the proposed project's construction emissions would be below the applicable thresholds of significance for ROG, NO_x, PM_{10}, and $PM_{2.5}$.

Table 2
Maximum Unmitigated Construction Emissions (lbs/day)

Pollutant	Proposed Project Emissions	Threshold of Significance	Exceeds Threshold?
ROG	4.00	54	**NO**
NO_X	41.95	54	**NO**
PM_{10} (exhaust)	2.08	82	**NO**
PM_{10} (fugitive)	8.60	None	**N/A**
$PM_{2.5}$ (exhaust)	1.88	54	**NO**
$PM_{2.5}$ (fugitive)	1.79	None	**N/A**

Source: RoadMod, June 2021 (see Appendix A).

In compliance with the City's General Plan EIR mitigation measures, all projects under the jurisdiction of the BAAQMD, including those in Cupertino, are required to implement all of the BAAQMD's Basic Construction Mitigation Measures, which include the following:

1. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
2. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
3. All vehicle speeds on unpaved roads shall be limited to 15 mph.
4. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
5. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.
6. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator.

7. Post a publicly 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 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

The proposed project's required implementation of the BAAQMD's Basic Construction Mitigation Measures listed above, as a condition of approval of the project, would help to further minimize construction-related emissions below the levels presented in Table 2. In particular, implementation of the foregoing measures would reduce fugitive dust emissions resulting from project construction. Even without consideration of BAAQMD's Basic Construction Mitigation Measures, as shown in Table 2, construction of the proposed project would result in emissions of criteria air pollutants below BAAQMD's thresholds of significance. Consequently, the proposed project would not conflict with or obstruct implementation of the applicable air quality plans during project construction.

Cumulative Emissions

Past, present, and future development projects contribute to the region's adverse air quality impacts on a cumulative basis. By nature, air pollution is largely a cumulative impact. A single project is not sufficient in size to, by itself, result in nonattainment of AAQS. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's contribution to the cumulative impact is considerable, then the project's impact on air quality would be considered significant. In developing thresholds of significance for air pollutants, BAAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. The thresholds of significance presented in Table 1 represent the levels at which a project's individual emissions of criteria air pollutants or precursors would result in a cumulatively considerable contribution to the SFBAAB's existing air quality conditions.[8] If a project exceeds the significance thresholds presented in Table 1, that project's emissions would be cumulatively considerable, resulting in significant adverse cumulative air quality impacts to the region's existing air quality conditions.

As presented above, the proposed project would be below all applicable thresholds for criteria pollutants during construction. Furthermore, the proposed project would not include any features that would result in on-going or operational emissions that would contribute to cumulative air quality emissions within the SFBAAB. Thus, the project would not result in a cumulatively considerable contribution to the region's existing air quality conditions.

Conclusion

As stated previously, the applicable regional air quality plans include the 2001 Ozone Attainment Plan and the 2017 Clean Air Plan. Because the proposed project would not result in construction-related emissions of criteria air pollutants in excess of BAAQMD's thresholds of significance, conflicts with or obstruction of implementation of the applicable regional air quality plans would not occur. In addition, the project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or State AAQS. Thus, a ***less-than-significant*** impact would result.

1. Bay Area Air Quality Management District. *California Environmental Quality Act Air Quality Guidelines* [pg. 2-1]. May 2017.

c. Some land uses are considered more sensitive to air pollution than others, due to the types of population groups or activities involved. Heightened sensitivity may be caused by health problems, proximity to the emissions source, and/or duration of exposure to air pollutants. Children, pregnant women, the elderly, and those with existing health problems are especially vulnerable to the effects of air pollution. Sensitive receptors are typically defined as facilities where sensitive receptor population groups (i.e., children, the elderly, the acutely ill, and the chronically ill) are likely to be located. Accordingly, land uses that are typically considered to be sensitive receptors include residences, schools, playgrounds, childcare centers, retirement homes, convalescent homes, hospitals, and medical clinics. Several residences exist within the project area; the nearest residence outside of the parcel containing the project site is located approximately 350 feet away from the proposed access road.

The major pollutant concentrations of concern are localized carbon monoxide (CO) emissions and toxic air contaminant (TAC) emissions, which are addressed in further detail below.

Localized CO Emissions

Localized concentrations of CO are related to the levels of traffic and congestion along streets and at intersections. High levels of localized CO concentrations are only expected where background levels are high, and traffic volumes and congestion levels are high. Emissions of CO are of potential concern, as the pollutant is a toxic gas that results from the incomplete combustion of carbon-containing fuels such as gasoline or wood.

In order to provide a conservative indication of whether a project would result in localized CO emissions that would exceed the applicable threshold of significance, the BAAQMD has established screening criteria for localized CO emissions. According to BAAQMD, a proposed project would result in a less-than-significant impact related to localized CO emission concentrations if all of the following conditions are true for the project:

- The project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, regional transportation plan, and local congestion management agency plans;
- The project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour; and
- The project traffic would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, underpass, etc.).

The proposed project would not include any long-term operational uses that would increase vehicle congestion within the project vicinity. Although construction of the proposed project would result in construction workers traveling to and from the project site, the scope of the project is limited and the overall number of construction-related vehicles traveling along local roadways would not be sufficient to result in excess emissions of CO. Consequently, the proposed project would result in a less-than-significant impact related to localized CO emissions concentrations and would not expose sensitive receptors to substantial concentrations of localized CO.

TAC Emissions

Another category of environmental concern is TACs. The CARB's *Air Quality and Land Use Handbook: A Community Health Perspective* (Handbook) provides recommended setback distances for sensitive land uses from major sources of TACs, including, but not limited to, freeways and high traffic roads, distribution centers, and rail yards. The CARB has identified diesel particulate matter (DPM) from diesel-fueled engines as a TAC; thus, high volume freeways, stationary diesel engines, and facilities attracting heavy and constant diesel vehicle traffic are identified as having the highest associated health risks from DPM. Health risks associated with TACs are a function of both the concentration of emissions and the duration of exposure, where the higher the concentration and/or the longer the period of time that a sensitive receptor is exposed to pollutant concentrations would correlate to a higher health risk.

As discussed previously, the proposed roadway would not involve any operations that would be considered major sources of TACs, including DPM. As such, the project would not generate any substantial pollutant concentrations during operations. However, short-term, construction-related activities could result in the generation of TACs, specifically DPM, from on-road haul trucks and off-road equipment exhaust emissions. Construction is temporary and occurs over a short duration. Health risks are typically associated with exposure to high concentrations of TACs over extended periods of time (e.g., 30 years or greater), whereas the construction period associated with the proposed project would likely be limited to 55 days. In addition, the overall scope of the project is relatively limited, and the amount of construction equipment operating within the site over the construction period would not represent a substantial source of DPM emissions.

All construction equipment and operation thereof would be regulated per the In-Use Off-Road Diesel Vehicle Regulation, which is intended to help reduce emissions associated with off-road diesel vehicles and equipment, including DPM. Project construction would also be required to comply with all applicable BAAQMD rules and regulations, particularly associated with permitting of air pollutant sources.

Considering the short-term nature of construction activities, the regulated and intermittent nature of the operation of construction equipment, and the highly dispersive nature of DPM, the likelihood that any one sensitive receptor would be exposed to high concentrations of DPM for any extended period of time would be low. For the aforementioned reasons, project construction would not be expected to expose sensitive receptors to substantial pollutant concentrations.

Furthermore, recent research has indicated that vegetation can have a positive effect on air quality by reducing airborne pollutants and particles, especially in proximity to high volume roadways. Although neither project operations nor construction activity are anticipated to represent a substantial source of TAC emissions, construction equipment operated on-site would likely be diesel-powered and would release some DPM during operations. Existing foliage within the project site and in close proximity to the project site could act to reduce the trespass of DPM emissions off the project site, in much the same way that vegetation can reduce trespass of pollution from roadways. Principally, plants and vegetated areas with dense foliage can reduce air flow, and provide ample surfaces for pollutants to agglomerate on to.[9] The existing oak woodland within the project site

[9] Sacramento Metropolitan Air Quality Management District. *Landscaping Guidance for Improving Air Quality near Roadways.* February 2017.

provides a dense canopy. Thus, DPM emitted during project construction could remain below the canopy, or agglomerate on leaves, both of which would reduce the potential for project-related emissions to reach nearby residences and expose existing sensitive receptors. Therefore, construction of the proposed project would not be expected to expose any sensitive receptors to substantial pollutant concentrations.

Conclusion

Based on the above, the proposed project would not expose any sensitive receptors to substantial concentrations of localized CO or TACs during construction or operation. Therefore, the proposed project would result in a ***less-than-significant*** impact related to the exposure of sensitive receptors to substantial pollutant concentrations.

d. Emissions of concern include those leading to odors, emission of dust, or emissions considered to constitute air pollutants. Air pollutants have been discussed in sections "a" through "d" above. Therefore, the following discussion focuses on emissions of odors.

Per the BAAQMD CEQA Guidelines, odors are generally regarded as an annoyance rather than a health hazard.[10] Manifestations of a person's reaction to odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache). The presence of an odor impact is dependent on a number of variables including: the nature of the odor source; the frequency of odor generation; the intensity of odor; the distance of odor source to sensitive receptors; wind direction; and sensitivity of the receptor.

Due to the subjective nature of odor impacts, the number of variables that can influence the potential for an odor impact, and the variety of odor sources, quantitative analysis to determine the presence of a significant odor impact is difficult. Typical odor-generating land uses include, but are not limited to, wastewater treatment plants, landfills, and composting facilities. The proposed project would not introduce any such land uses.

Construction activities often include diesel-fueled equipment and heavy-duty trucks, which could create odors associated with diesel fumes that may be considered objectionable. However, construction activities would be temporary, occurring over a course of 55 days, and the hours of operation for construction equipment would be restricted per Section 10.48.053 of the City's Municipal Code. Project construction would also be required to comply with all applicable BAAQMD rules and regulations, particularly associated with permitting of air pollutant sources. The aforementioned regulations would help to minimize emissions, including emissions leading to odors. Accordingly, substantial objectionable odors would not be expected to occur during construction activities.

For the aforementioned reasons, construction and operation of the proposed project would not result in emissions (such as those leading to odors) adversely affecting a substantial number of people, and a ***less-than-significant*** impact would result.

[10] Bay Area Air Quality Management District. *California Environmental Quality Act Air Quality Guidelines* [pg. 7-1. May 2017.

IV. BIOLOGICAL RESOURCES. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
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 Wildlife 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, and regulations or by the California Department of Fish and Wildlife or US 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 resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors, or impede the use of 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, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	✖	☐

Discussion

a. The following discussion is based primarily on a Technical Biological Report prepared for the proposed project by Live Oak Associates, Inc. (see Appendix B).[11]

Currently, the approximately eight-acre subject property, consists of a 3,970-sf single-family residential home, paved driveway, vineyard, and small accessory structures. The subject property's northern boundary is located within Regnart Creek. Surrounding land uses include single-family homes to the northeast and east, Fremont Older Open Space to the south, and undeveloped rural land to the west and south. Additionally, a small drainage channel that flows downhill through the project site is present within the oak woodlands of the site. The channel appears to be an ephemeral feature that only flows during and immediately following storm events. Vegetation within the channel is undifferentiated from the surrounding upland oak woodland habitat within the subject property.

Several species of plants and animals within the State of California have low populations, limited distributions, or both. Such species may be considered "rare" and are vulnerable to extirpation as the state's human population grows and the habitats the species occupy are converted to agricultural and urban uses. State and federal laws have provided the California Department of Fish and Wildlife (CDFW) and the U.S. Fish and Wildlife Service (USFWS) with a mechanism for conserving and protecting the diversity of plant and animal

[11] Live Oak Associates. *21750, Technical Biological Report, Cupertino, Santa Clara County, California.* March 10, 2020.

species native to the state. A sizable number of native plants and animals have been formally designated as threatened or endangered under state and federal endangered species legislation. Others have been designated as "candidates" for such listing. Still others have been designated as "species of special concern" by CDFW. The California Native Plant Society (CNPS) has developed its own set of lists of native plants considered rare, threatened, or endangered. Collectively, these plants and animals are referred to as "special-status species." Although CDFW Species of Special Concern generally do not have special legal status, they are given special consideration under CEQA. In addition to regulations for special-status species, most birds in the U.S., including non-status species, are protected by the Migratory Bird Treaty Act (MBTA) of 1918. Under the MBTA, destroying active nests, eggs, and young is illegal. In addition, plant species on CNPS Lists 1 and 2 are considered special-status plant species and are protected under CEQA.

Live Oak Associates, Inc. conducted a search of the California Natural Diversity Database (CNDDB) for the project site. The intent of the database review was to identify documented occurrences of special-status species in the vicinity of the project area, to determine their locations relative to the project site, and to evaluate whether the site meets the habitat requirements of such species. Based on the results of the CNDDB search, a total of 13 special-status plant species and 27 special-status wildlife species are known to occur within the project region. In addition, a field survey of the project site was undertaken by Live Oak Associates, Inc. on January 8, 2020.

The potential for special-status species to occur on the project site is discussed in further detail below.

Special-Status Plants

Special-status plants generally occur in relatively undisturbed areas within vegetation communities such as vernal pools, marshes and swamps, chenopod scrub, seasonal wetlands, riparian scrub, chaparral, alkali playa, dunes, and areas with unusual soil characteristics.

According to the Technical Biological Report, none of the 13 special-status plant species known to occur within the project region have the potential to occur on the subject property due to the site's history of disturbance and lack of suitable habitat such as serpentine or alkaline soils, vernal pools, etc. See Table 1 of Appendix B to this IS/MND for more detailed descriptions as to why these species are not expected to occur on-site.

Due to the absence of special-status plants within the site, construction activities associated with the proposed project would not result in adverse effects to special-status plant species.

Special-Status Wildlife

Of the 27 special-status species, 20 are unlikely to occur within the project site due to a lack of suitable habitat, lack of nearby occurrences, and/or the site's location outside of the species' known habitat range. See Table 1 of Appendix B to this IS/MND for more detailed descriptions as to why these species are not expected to occur on-site. The remaining seven special-status wildlife species include the foothill yellow-legged frog, California red-legged frog, Santa Cruz black salamander, white-tailed kite, Townsend's big-eared bat, pallid bat, and San Francisco dusky-footed woodrat.

Foothill Yellow-Legged Frog and California Red-Legged Frog

Foothill yellow-legged frog (FYLF) and California red-legged frog (CRLF) are known to occur within streams, rivers and creeks with isolated pools. The nearby Regnart Creek supports suitable breeding and dispersal habitat for the CRLF and FYLF, as it is a perennial creek and supports a mature riparian habitat. Records of the CRLF or FYLF do not exist to date within Regnart Creek. Lack of records within the creek could either be due to a lack of surveys for the CRLF and FYLF or actual lack of presence. The site itself does not support suitable stream or wetland habitat for these species; however, should CRLF and/or FYLF occur in the creek, the site would provide potentially suitable upland habitat for the species. Should individuals of these species occur within this creek, they could be expected utilize the site from time to time as upland habitat.

The CRLF is known to occur within two miles to the north (from 2017), west (from 1970s), and south (from 2007) of the site (CDFW 2020). Should CRLF occur within Regnart Creek, they could be expected to utilize the site from time to time as upland habitat. The nearest documented observations of this species are approximately two miles south (from 1958) and 2.5 miles southwest (from 1939) of the site (CDFW 2020).

Therefore, ground-disturbing activities associated with the proposed project could result in a significant impact to FYLF and/or CRLF.

Santa Cruz Black Salamander

Santa Cruz black salamander is known to occur in woodland, coniferous forests, and coastal grasslands around the Santa Cruz Mountains and foothills. The species can also be found under rocks near streams, in talus, under damp logs, rotting wood, and other objects.

Suitable habitat for the Santa Cruz black salamander is marginal on the project site due to the lack of rock piles and debris on the site. This species is known to occur in the Santa Cruz Mountains, with the nearest documented observation of this species being less than 1.5 miles to the west of the site on the other side of Stevens Creek Reservoir in 1955 (CDFW 2020).

Should the species occur on the project site during construction activities, the proposed project could result in a significant impact to Santa Cruz black salamander.

Nesting Raptors, Migratory Birds, and Other Protected Birds

The project site supports oak trees and shrubs providing suitable habitat for nesting raptors, migratory birds, and other protected birds, including the CDFW Fully Protected white-tailed kite. Buildout of the proposed project could occur during the nesting period for migratory birds (typically between February 1 and August 31). Construction activities that adversely affect the nesting success of raptors, migratory birds, or other protected birds (i.e., lead to the abandonment of active nests) or result in mortality of individual birds constitute a violation of State and federal laws. Thus, in the event that such species occur on-site during the breeding season, project construction activities could result in an adverse effect to species protected under the MBTA and/or CDFW. The City of Cupertino has as a mitigation measure adopted requirements for protection of nesting raptors, migratory birds and other protected birds. These are imposed as standard conditions of approval for all projects within the City as follows:

NESTING BIRDS

Nests of raptors and other birds shall be protected when in active use, as required by the federal Migratory Bird Treaty Act and the California Department of Fish and Game Code.

a. Construction and tree removal/pruning activities shall be scheduled to avoid the nesting season to the extent feasible. If feasible, tree removal and/or pruning shall be completed before the start of the nesting season to help preclude nesting. The nesting season for most birds and raptors in the San Francisco Bay area extends from February 1 through August 31. Preconstruction surveys (described below) are not required for tree removal or construction activities outside the nesting period.
b. If construction activities and any required tree removal occur during the nesting season (February 1 and August 31), a qualified ornithologist shall be required to conduct surveys prior to tree removal or construction activities. Preconstruction surveys shall be conducted no more than 14 days prior to the start of tree removal, pruning or construction. Preconstruction surveys shall be repeated at 14-day intervals until construction has been initiated in the area after which surveys can be stopped. During this survey, the ornithologist shall inspect all trees and other possible nesting habitats in and immediately adjacent to the construction areas for nests.
c. If the survey does not identify any nesting birds that would be affected by construction activities, no further mitigation is required. If an active nest containing viable eggs or young birds is found sufficiently close to work areas to be disturbed by these activities, their locations shall be documented and protective measures implemented under the direction of the qualified ornithologist until the nests no longer contain eggs or young birds.
d. Protective measures shall include establishment of clearly delineated exclusion zones (i.e. demarcated by identifiable fencing, such as orange construction fencing or equivalent) around each nest location as determined by the qualified ornithologist, taking into account the species of birds nesting, their tolerance for disturbance and proximity to existing development. In general, exclusion zones shall be a minimum of 300 feet for raptors and 75 feet for passerines and other birds. The active nest within an exclusion zone shall be monitored on a weekly basis throughout the nesting season to identify signs of disturbance and confirm nesting status. The radius of an exclusion zone may be increased by the qualified biologist, if project activities are determined to be adversely affecting the nesting birds. Exclusion zones may be reduced by the qualified biologist only in consultation with California Department of Fish and Wildlife. The protection measures and buffers shall remain in effect until the young have left the nest and are foraging independently or the nest is no longer active.
e. A final report on nesting birds and raptors, including survey methodology, survey date(s), map of identified active nests (if any), and protection measures (if required), shall be submitted to the Planning Manager, through the building permit review process, and be completed to the satisfaction of the Community Development Director prior to the start of grading.

Implementation of this condition of approval will ensure that this will mitigate the impact to nesting raptors, migratory birds, and other protected birds to less than significant.

Townsend's Big-Eared Bat and Pallid Bat

Townsend's big-eared bat is a cave-dwelling bat that can roost in buildings, bridges, rock crevices, and hollow trees. Pallid bat is known to occur in grasslands, chaparral, woodlands, forests, and rocky open areas for roosting. According to the Technical Biological Report, the project site includes potential foraging habitat for both species. However, the nearest documented occurrence of Townsend's big-eared bat is nearly two miles from the site (CDFW 2020); and the nearest documented occurrence of pallid bat is more than three miles from the site (CDFW 2020).

However, foraging habitat is not considered protected under CEQA. Furthermore, the site does not include suitable roosting habitat. Thus, although the project site includes potential foraging habitat, the site does not appear to provide suitable roosting habitat for any special-status bats. Following completion of the proposed roadway, the project site would remain potentially suitable foraging habitat for both species. Therefore, the proposed project would not result in any potential adverse impacts to Townsend's big-eared bat or pallid bat.

San Francisco Dusky-Footed Woodrat

San Francisco dusky-footed woodrat are typically found in hardwood forests and oak riparian and shrub habitats. During Live Oak Associates' field survey, a dusky-footed woodrat nest was found to be present in close proximity and upstream of the proposed culvert/bridge location. Construction activities associated with the proposed project could result in harm, mortality, or nest abandonment and result in a potentially adverse impact to San Francisco dusky-footed woodrat.

Conclusion

Based on the above, the field survey did not identify any special-status species within the project site and the site is considered low-quality habitat. However, due to the presence of suitable habitat, FYLF, CRLF, Santa Cruz black salamander, white-tailed kite, and San Francisco dusky-footed woodrat have the potential to occur within the subject property. Furthermore, while the site contains suitable nest trees for nesting raptors and migratory birds protected by the MBTA, the City's standard conditions of approval will require a nest survey and avoidance measures.

In conclusion, the proposed project could have an adverse effect, either directly or through habitat modifications, on species identified as special-status species in local or regional plans, policies, or regulations, or by the CDFW or the USFWS, and a ***potentially significant*** impact could result.

Mitigation Measure(s)

Implementation of the following mitigation measures would reduce the above potential impact to a *less-than-significant* level.

Foothill Yellow-Legged Frog and California Red-Legged Frog

IV-1 *The project applicant shall retain a qualified biologist, subject to City approval, to conduct pre-construction surveys for foothill yellow-legged frog and California red-legged frog within 48 hours prior to any vegetation removal or ground disturbing activities within the project footprint, and within 50 feet of the project footprint, for presence of the species. Survey results shall be submitted to the Community Development Department. If*

foothill yellow-legged frog and California red-legged frog are not observed during pre-construction surveys, construction may commence.

IV-2 *If foothill yellow-legged frog and/or California red-legged frog are observed during pre-construction surveys, the project contractor shall stop work until such time the frog(s) either move clear of the construction zone on their own or, if authorized by USFWS or CDFW, a USFWS/CDFW-approved biologist shall relocate frog(s) to suitable habitat outside of the work area within the same riparian area or watershed. Any frog(s) that are captured shall be held for the minimum amount of time necessary to release them into the relocation site and out of the work zone. The project biologist shall conduct on-site biological training for all workers on the project site regarding foothill yellow-legged frog and California red-legged frog and what to do if located on the project site during construction activities, including allowing the animal(s) to move off-site.*

Santa Cruz Black Salamander

IV-3 *The project applicant shall retain a qualified biologist, subject to City approval, to conduct pre-construction surveys for Santa Cruz black salamander within 48 hours prior to any vegetation removal or ground disturbing activities within the project footprint and within 50 feet of the project footprint for presence of the species. Survey results shall be submitted to the Community Development Department. If Santa Cruz black salamander are not observed during pre-construction surveys, construction may continue.*

IV-4 *If Santa Cruz black salamander are observed during pre-construction surveys, the project contractor shall stop work until such time the salamander(s) either move clear of the construction zone on their own or, if authorized by USFWS or CDFW, a CDFW-approved biologist shall capture and move individuals to suitable habitat outside of the work area within the same riparian area or watershed. Any salamanders that are captured shall be held for the minimum amount of time necessary to release them into the relocation site and out of the work zone. The project biologist shall conduct on-site biological training for all workers on the project site regarding Santa Cruz black salamander and what to do if located on the project site during construction activities, including allowing the animal(s) to move off-site.*

San Francisco Dusky-Footed Woodrat

IV-5 *A pre-construction survey for San Francisco dusky-footed woodrat shall be conducted by a qualified biologist, subject to City approval, within the project site boundaries, and surrounding lands within 50 feet, not more than 30 days prior to construction activities. Survey results shall be submitted to the Community Development Department. If San Francisco dusky-footed woodrat are not detected within approximately 50 feet of the project site, further mitigation is not required.*

IV-6 *If San Francisco dusky-footed woodrat are detected on or adjacent to the site during the survey, the nests shall be avoided. If avoidance is not*

possible, the nest shall be manually deconstructed when helpless young are not present, which is typically during the non-breeding season (October through January). If it is determined by the qualified biologist that young may be present, a suitable construction-free buffer, ranging from 15-50 feet, shall be established around all active nests. Actual size of buffer would be determined by the project biologist, and would depend on species, topography, and type of activity that would occur in the vicinity of the nest. The buffer shall be established around the nest until the young are independent enough to successfully move from the deconstructed nest.

b, c. As noted above, Regnart Creek is located along the northern boundary of the subject property and a drainage channel traverses the project site. The drainage channel appears to be an ephemeral feature that ultimately flows overland to Regnart Creek during and immediately following storm events. The proposed project would include the construction of a culvert bridge within the bed and bank of the drainage channel located within the project site. Per the Technical Biological Report, the drainage channel does not support wetland or riparian vegetation. Although a formal delineation has not been prepared, the ephemeral drainage feature that would be impacted by the culvert bridge has a defined bed and bank and likely would be considered a jurisdictional tributary water by the United States Army Corps of Engineers (USACE). The drainage feature may also be considered a jurisdictional water under the auspices of the Regional Water Quality Control Board (RWQCB), and may require permitting from the CDFW under its Lake or Streambed Alteration Agreement process.

According to the Biological Report, vegetation within this ephemeral channel is undifferentiated from the surrounding upland oak woodland habitat. Construction of the bridge will have a very small impact on either barren habitat or on upland habitat which is undifferentiated from surrounding oak woodlands. Impacts as a result of the loss of a small amount of ephemeral channel that supports upland habitat would be considered a less-than-significant biological impact under CEQA. This conclusion is appropriate as the relevant CEQA thresholds are not whether permitting from resources agencies would be required for this proposed work activities, but rather, whether the project would have a *substantial adverse effect* on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service, or 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.

Nevertheless, mitigation is required below to ensure the project applicant coordinates with resource agencies to determine, and comply with, appropriate permitting requirements. Impacts to jurisdictional waters of the U.S. and State would require that Clean Water Act Section 404 and 401 permits be obtained from the USACE and RWQCB, respectively, and may require a CDFW Section 1600 Lake or Streambed Alteration Agreement be obtained from the CDFW.

Because the proposed project would include construction of a culvert bridge within the drainage, the proposed project could have a substantial adverse effect on riparian habitat, sensitive natural communities, or federally protected wetlands. Thus, a ***potentially significant*** impact would occur.

Mitigation Measure(s)

Implementation of the following mitigation measures would reduce the above potential impact to a *less-than-significant* level.

IV-7 *Prior to initiation of ground disturbance activities, the project applicant shall submit a Wetland Delineation Report to the United States Army Corps of Engineers (USACE) for verification. If the USACE-verified Delineation Report determines that the on-site drainage is subject to USACE jurisdiction, the project applicant shall apply for a Section 404 permit from the USACE. Any waters of the U.S. that would be lost or disturbed shall be replaced or rehabilitated on a "no net loss" basis in accordance with the USACE mitigation guidelines. On-site replacement/restoration of wetland habitat is preferred to off-site mitigation. Written verification of whether the 404 permit has been obtained, shall be submitted to the Community Development Department; or if a 404 permit is not required, written correspondence from the USACE to this effect shall be provided to the Community Development Department, prior to issuance of a building permit.*

IV-8 *Prior to initiation of any ground disturbance activities, the project applicant shall submit to the San Francisco Bay Regional Water Quality Control Board (SFRWQCB) an application for Clean Water Act Section 401 Water Quality Certification and/or Waste Discharge Requirements for Projects Involving Discharge of Dredged and/or Fill Material to Waters of the State. The project proponent shall be responsible for conducting all project activities in accordance with the permit provisions outlined in the applicable SFRWQCB permit. Written verification of the 401 Water Quality Certification; or if a 401 Water Quality Certification is not required, written correspondence from SFRWQCB to this effect, shall be provided to the Community Development Department, prior to issuance of a building permit.*

IV-9 *The CDFW maintains jurisdiction over the bed and bank of the bed, channel, and banks of any river, stream, or lake (Fish and Game Code Section 1602) and impacts to these areas may require a Lake or Streambed Alteration Agreement. Prior to initiating construction activities, the project shall notify CDFW of the intentions of the project to determine if a Lake or Streambed Alteration Agreement (LSAA) is required. If required, mitigation may include restoration or enhancement of resources on-site. Written verification of the Section 1600 LSAA; or if a LSAA is not required, written correspondence from CDFW to this effect, shall be provided to the Community Development Department, prior to issuance of a building permit.*

d. Wildlife movement corridors are routes that animals regularly use and follow during seasonal migration, dispersal from native ranges, daily travel within home ranges, and inter-population movements. Movement corridors in California are typically associated with valleys, ridgelines, and rivers and creeks supporting riparian vegetation. The subject property is developed with an existing single-family residence and a fenced vineyard, and is located near other existing residential developments. Although an existing drainage channel is located along the eastern portion of the site, the proposed project would

minimize development within the drainage channel, and a culvert would provide continued connectivity to the drainage feature. Additionally, while portions of the site consist of tree-covered areas, similar habitat to that found within the project site is found in the surrounding area and the project would not inhibit the continued use of such habitat. Given the abundance of other suitable habitat for wildlife movement within the project region, wildlife would not be likely to prefer use of the site as a movement corridor. However, following construction of the proposed access road, the site would remain available for wildlife movement as the roadway would not present a substantial barrier to most wildlife, and wildlife could still use other portions of the property for movement. No new fencing would be installed as part of the proposed project.

As such, the project would not interfere substantially with the movement of any resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors, or impede the use of wildlife nursery sites, and a ***less-than-significant*** impact would occur.

e. The following discussion is based on an Arborist Report, prepared for the proposed project by Michael L. Bench, Consulting Arborist.[12] Currently, the project site contains 29 trees, none of which would be removed as part of the proposed project. Of the 29 trees located on the project site, 26 are considered protected trees. The project would not require the removal of any trees; however, some trees would need to be trimmed and/or pruned in order to construct the proposed project.

Chapter 14.18, Protected Trees, of the City's Municipal Code defines protected trees and establishes the requirements governing the removal and preservation of such trees. Pursuant to Section 14.18.160 of the Municipal Code, the City would impose tree replacement standards or in-lieu fees. Furthermore, per Section 14.18.060 of the Municipal Code, the project applicant would be required to adopt a maintenance plan for any protected trees that would be retained as part of the project. Based on the City's Municipal Code Standards, the Arborist Report prepared for the project determined that Trees #22 and #23 would require pruning. Additionally, Tree #25 would have an entire leader removed. Trees that would be located along the access road would require irrigation for a period of two years.

In addition, the proposed project would be required to comply with Section 19.40.050(G)(2), Watercourse Protection, of the City's Municipal Code. The Municipal Code requires improvements to be setback at least 100 feet from the top of the bank of the water courses or from existing riparian vegetation, whichever is greater. As shown in Figure 9, the proposed access road would be setback approximately 100 feet from Regnart Creek, and thus, the proposed project would comply with Section 19.40.050(G)(2) of the City's Municipal Code.

Because the proposed project would comply with Chapter 14.18 of the City's Municipal Code, the proposed project would not conflict with the City's tree preservation policies and ordinances. Therefore, in compliance with Chapter 14.18, the project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance, and a ***less-than-significant*** impact would occur.

[12] Michael L. Bench, Consulting Arborist. *Arborist Report, Mr. and Mrs. Steakley, 21750 Rainbow Drive, Cupertino, California.* December 13, 2018.

f. In 2012, the County of Santa Clara adopted the Santa Clara Valley Habitat Plan (SCVHP), which provides a framework for promoting the protection and recovery of natural resources, including endangered species within unincorporated portions of the County and the cities of Gilroy, Morgan Hill, and San Jose. However, the City of Cupertino is not currently a participant in the SCVHP. Therefore, the project site is not located in an area with an approved Habitat Conservation Plan/Natural Community Conservation Plan (HCP/NCCP), or local, regional, or State habitat conservation plan, and ***no impact*** would occur regarding a conflict with the provisions of such a plan.

V. CULTURAL RESOURCES. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?	☐	✖	☐	☐
b. Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to Section 15064.5?	☐	✖	☐	☐
c. Disturb any human remains, including those interred outside of dedicated cemeteries.	☐	✖	☐	☐

Discussion

a-c. Historical resources are features that are associated with the lives of historically-important persons and/or historically significant events, that embody the distinctive characteristics of a type, period, region or method of construction, or that have yielded, or may be likely to yield, information important to the pre-history or history of the local area, California, or the nation. Examples of typical historical resources include, but are not limited to, buildings, farmsteads, rail lines, bridges, and trash scatters containing objects such as colored glass and ceramics.

Currently, the site is vacant and undeveloped. Thus, the site does not contain any existing structures or other features which would be considered historical. A records search of the California Historic Resources Information System (CHRIS) was performed by the Northwest Information Center (NWIC) for cultural resource site records and survey reports within the project area.[13] The NWIC concluded that the project site does not contain any recorded historic buildings or structures on any lists of historic resources. Additionally, the results indicated that recorded archaeological resources do not exist on the project site.

While a search of the Native American Heritage Commission (NAHC) Sacred Lands File search did not yield any information regarding the presence of Tribal Cultural Resources within the project site or the immediate area,[14] the NWIC determined that the potential for unrecorded tribal cultural resources to occur in the project area is moderate. However, the subject property, including the project site, has been subject to previous disturbance, associated with past grading activities and development of the residence located on the subject property. Previous development of the subject property and disturbance of the project site would have been likely to disturb or remove any resources that were previously present within the site. Thus, the potential of archeological or tribal cultural resources to exist in the area is relatively unlikely.

Nonetheless, the possibility exists that previously undiscovered historical or archaeological resources, including human remains, could be uncovered during ground-disturbing activities associated with construction of the proposed project. Furthermore, given that Native Americans were known to establish sites near waterways, the potential exists for unknown tribal cultural resources to be found near Regnart Creek. Therefore, construction of the proposed project could cause a substantial adverse change in the significance of a historical resource, archaeological resource pursuant to Section 15064.5, or disturb human remains, including those interred outside of dedicated cemeteries. Thus, a ***potentially significant*** impact would occur.

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[13] Northwest Information Center. *Records search results for the proposed 21750 Rainbow Drive Project, 21750 Rainbow Drive, Cupertino, Santa Clara County, California.* January 23, 2020.

[14] Native American Heritage Commission. *Re: 21750 Rainbow Drive Project, Santa Clara County*. January 17, 2020.

Mitigation Measure(s)

Implementation of the following mitigation measures would reduce the above potential impact to a *less-than-significant* level.

V-1 *Prior to grading permit issuance, the developer shall submit plans to the Community Development Department for review and approval which indicate (via notation on the improvement plans) that if historic and/or cultural resources are encountered during site grading or other site work, all such work shall be halted immediately within 100 feet and the developer shall immediately notify the Community Development Department of the discovery. In such case, the developer shall be required, at their own expense, to retain the services of a qualified archaeologist meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeologist for the purpose of recording, protecting, or curating the discovery as appropriate. The archaeologist shall be required to submit to the Community Development Department for review and approval a report of the findings and method of curation or protection of the resources. Further grading or site work within the area of discovery shall not be allowed until the preceding work has occurred.*

V-2 *If human remains, or remains that are potentially human, are found during construction, a professional archeologist shall ensure reasonable protection measures are taken to protect the discovery from disturbance. The archaeologist shall notify the Santa Clara County Coroner (per §7050.5 of the State Health and Safety Code). The provisions of §7050.5 of the California Health and Safety Code, §5097.98 of the California Public Resources Code, and Assembly Bill 2641 will be implemented. If the Coroner determines the remains are Native American and not the result of a crime scene, then the Coroner will notify the Native American Heritage Commission (NAHC), which then will designate a Native American Most Likely Descendant (MLD) for the project (§5097.98 of the Public Resources Code). The designated MLD will have 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains. If the applicant does not agree with the recommendations of the MLD, the NAHC can mediate (§5097.94 of the Public Resources Code). If an agreement is not reached, the qualified archaeologist or most likely descendent must rebury the remains where they will not be further disturbed (§5097.98 of the Public Resources Code). This will also include either recording the site with the NAHC or the appropriate Information Center, using an open space or conservation zoning designation or easement, or recording a reinternment document with the county in which the property is located (AB 2641). Work cannot resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the treatment measures have been completed to their satisfaction.*

VI. ENERGY. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	✖	☐
b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	✖	☐

Discussion

a,b. The main forms of available energy supply are electricity, natural gas, and oil. A description of the 2019 California Green Building Standards Code, with which the proposed project would be required to comply, as well as discussions regarding the proposed project's potential effects related to energy demand during construction and operations, are provided below.

California Green Building Standards Code

The 2019 California Green Building Standards Code, otherwise known as the CALGreen Code (CCR Title 24, Part 11), is a portion of the California Building Standards Code (CBSC), which became effective with the rest of the CBSC on January 1, 2020. The purpose of the CAL Green Code is to improve public health, safety, and general welfare by enhancing the design and construction of buildings through the use of building concepts having a reduced negative impact or positive environmental impact and encouraging sustainable construction practices. The CALGreen standards regulate the method of use, properties, performance, types of materials used in construction, alteration repair, improvement and rehabilitation of a structure or improvement to property. The provisions of the code apply to the planning, design, operation, construction, use, and occupancy of every newly constructed building or structure throughout California. Requirements of the CAL Green Code include, but are not limited to, the following measures:

- Outdoor landscaping must comply with the California Department of Water Resources' Model Water Efficient Landscape Ordinance (MWELO), or a local ordinance, whichever is more stringent, to reduce outdoor water use;
- Diversion of 65 percent of construction and demolition waste from landfills; and
- Mandatory use of low-pollutant emitting interior finish materials such as paints, carpet, vinyl flooring, and particle board.

Design and construction of the proposed roadway would be subject to the CalGreen Code as applicable.

Construction Energy Use

Construction of the proposed project would involve on-site energy demand and consumption related to use of oil in the form of gasoline and diesel fuel for construction worker vehicle trips, hauling and materials delivery truck trips, and operation of off-road construction equipment.

All construction equipment and operation thereof would be regulated per the CARB In-Use Off-Road Diesel Vehicle Regulation. The In-Use Off-Road Diesel Vehicle Regulation is intended to reduce emissions from in-use, off-road, heavy-duty diesel vehicles in California by imposing limits on idling, requiring all vehicles to be reported to CARB,

restricting the addition of older vehicles into fleets, and requiring fleets to reduce emissions by retiring, replacing, or repowering older engines, or installing exhaust retrofits. The In-Use Off-Road Diesel Vehicle Regulation would subsequently help to improve fuel efficiency and reduce GHG emissions. Technological innovations and more stringent standards are being researched, such as multi-function equipment, hybrid equipment, or other design changes, which could help to reduce demand on oil and emissions associated with construction.

The CARB has recently prepared the *2017 Climate Change Scoping Plan Update* (2017 Scoping Plan),[15] which builds upon previous efforts to reduce GHG emissions and is designed to continue to shift the California economy away from dependence on fossil fuels. Appendix B of the 2017 Scoping Plan includes examples of local actions (municipal code changes, zoning changes, policy directions, and mitigation measures) that would support the State's climate goals. The examples provided include, but are not limited to, enforcing idling time restrictions for construction vehicles, utilizing existing grid power for electric energy rather than operating temporary gasoline/diesel-powered generators, and increasing use of electric and renewable fuel-powered construction equipment. The CARB Diesel Vehicle Regulation described above, with which the proposed project must comply, would be consistent with the intention of the 2017 Scoping Plan and the recommended actions included in Appendix B of the 2017 Scoping Plan.

Based on the above, the temporary increase in energy use occurring during construction of the proposed project would not result in a significant increase in peak or base demands or require additional capacity from local or regional energy supplies. In addition, the proposed project would be required to comply with all applicable regulations related to energy conservation and fuel efficiency, which would help to reduce the temporary increase in demand.

Operational Energy Use

Because the proposed project consists of construction of an access road, on-site operational energy use would not occur or be strictly limited to on-site lighting for the roadway. As such, the proposed project would not result in the wasteful, inefficient, or unnecessary consumption of energy resources during operations.

Conclusion

Based on the above, construction and operation of the proposed project would not result in wasteful, inefficient, or unnecessary consumption of energy resources or conflict with or obstruct a State or local plan for renewable energy or energy efficiency. Thus, a ***less-than-significant*** impact would occur.

[15] California Air Resources Board. *The 2017 Climate Change Scoping Plan Update*. January 20, 2017.

VII. GEOLOGY AND SOILS. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
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 based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	✖	☐
ii. Strong seismic ground shaking?	☐	☐	✖	☐
iii. Seismic-related ground failure, including liquefaction?	☐	✖	☐	☐
iv. Landslides?	☐	✖	☐	☐
b. Result in substantial soil erosion or the loss of topsoil?	☐	☐	✖	☐
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?	☐	✖	☐	☐
d. Be located on expansive soil, as defined in Table 18-1B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	✖	☐	☐
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 wastewater?	☐	☐	☐	✖
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	✖	☐	☐

Discussion

a i, a ii. According to the City's General Plan EIR, faults located near the City of Cupertino include the San Andreas Fault, the Berrocal Fault, and the Monte Vista Fault.[16] The San Andreas fault is located approximately 5.0 miles southwest of the site, the Berrocal Fault is located approximately 1.5 miles southwest of the site, and the Monte Vista Fault is located approximately 0.5 miles northeast of the site. Although California is known for seismic activity, the City's General Plan EIR analyzed impacts related ground rupture upon buildout and determined impacts would be less than significant. In addition, the project site is not located within a State-designated Alquist-Priolo Fault Zone. Thus, the potential for fault rupture risk at the project site is relatively low.

An earthquake of moderate magnitude generated by the above faults could cause considerable ground shaking at the project site. However, the proposed project does not include the development of any buildings or structures where people would reside or work. As such, the proposed project would result in a ***less-than-significant*** impact related to risk of loss, injury, or death as a result of seismic surface rupture or strong seismic ground shaking.

[16] City of Cupertino. *General Plan Amendment, Housing Element Update, and Associated Rezoning Draft EIR* [Figure 4.5-1]. June 18, 2014.

a iii, a iv,

c. The following is primarily based on a series of geotechnical reports prepared by GeoForensics, Inc. for the subject property and project site (see Appendix C). The proposed project's potential effects related to liquefaction, landslides, lateral spreading, and subsidence/settlement are discussed in detail below.

Liquefaction

Liquefaction is a phenomenon in which granular material is transformed from a solid state to a liquefied state as a consequence of increased pore-water pressure and reduced effective stress. Increased pore-water pressure is induced by the tendency of granular materials to densify when subjected to cyclic shear stresses associated with earthquakes. Per the Geotechnical Investigations prepared for the single-family residence and roadway located on the subject property, the property soils consist of a thin veneer of soils followed by bedrock.[17] The on-site soils and underlying bedrock are not considered subject to high risks from liquefaction. In addition, the proposed project does not include the development of any structures where individuals would reside or work. Therefore, because the subject property does not consist of soils containing loose and silty sands or a high ground water table, the proposed project would not be subject to risks associated with liquefaction.

Landslides

Seismically-induced landslides are triggered by earthquake ground shaking. The risk of landslide hazard is greatest in areas with steep, unstable slopes. The topography of the project site consists of an average slope of 44 percent and steep terrain. According to a 2019 Geotechnical Memo, the project site's cut and fill slopes associated with previous unpermitted grading exceed the normally acceptable 2:1 (horizontal : vertical) inclination ratio.[18] As a result, GeoForensics recommends that where cut or fill slopes exceed the 2:1 inclination, the slopes taller than three feet must be cut back to a more stable 2:1 inclination, retained with walls, or alternatively, the slopes can be reconstructed at their existing inclinations if the slopes are reinforced with geogrids. In addition, the proposed project would include piles to be constructed under the retaining walls, which would help with stabilization of the walls and prevent landslides. Furthermore, the geotechnical memo provides geotechnical engineering recommendations for retaining walls. The access road design includes four retaining walls, the design of which must comply with these recommendations.

Additionally, the previous cut and fill activities that occurred on the project site without permits would be required to be brought into conformance with City standards included in the Residential Hillside Zone. Pursuant to Section 19.40.080, of the City's Municipal Code, an approval body must make certain findings to issue a Hillside Exception Permit, including, but not limited to, whether a proposed development consists of structures on or near known geological or environmental hazards. The proposed project would not include development of any structures within the site. Ultimately, the City will determine if findings can be made qualifying the proposed project for a Hillside Exception Permit.

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[17] GeoForensics, Inc. *Steakley Property, 21750 Rainbow Drive, Cupertino, California, Geotechnical Investigation Update for Proposed New Residence.* January 5, 2011; GeoForensics, Inc. *Steakley Property, 21750 Rainbow Drive, Cupertino, California, Geotechnical Investigation of Proposed Vineyard Access Road.* August 19, 2019.

[18] GeoForensics, Inc. *Steakley Property, 21750 Rainbow Drive, Cupertino, California, Geotechnical Investigation of Proposed Vineyard Access Road.* August 19, 2019.

Nonetheless, due to the steep slopes that are located within the site and the surrounding area, landslides have the potential to occur on- or off-site as a result of the proposed project.

Lateral Spreading

Lateral spreading is horizontal/lateral ground movement of relatively flat-lying soil deposits towards a free face such as an excavation, channel, or open body of water; typically, lateral spreading is associated with liquefaction of one or more subsurface layers near the bottom of the exposed slope. Lateral spreading may occur when a weak layer of material, such as a sensitive silt or clay, loses shear strength as a result of earthquake shaking. According to the 2011 Geotechnical Investigation, the project site does not feature soils with such conditions, and, thus, the potential for lateral spreading to pose a risk to the proposed project is relatively low.

Subsidence/Settlement

Per the 2011 Geotechnical Investigation, ground subsidence or settlement may occur when poorly consolidated soils densify as a result of earthquake shaking. Because the subject property is underlain at shallow depths by resistant materials, such as bedrock, subsidence/settlement risks would be less than significant.

Conclusion

Based on the above, the proposed project would not be subject to substantial risks related to liquefaction, lateral spreading, or subsidence/settlement. However, due to the sloping topography of the project site, the proposed project could be subject to risks related to landslides. Therefore, the proposed project could result in a ***potentially significant*** impact related to the direct or indirect cause of potential substantial adverse effects, including the risk of loss, injury, or death involving landslides.

Mitigation Measure(s)

Implementation of the following mitigation measure would reduce the above potential impact to a *less-than-significant* level.

VII-1 *All grading and foundation plans for the proposed project shall be designed by a Civil and Structural Engineer and reviewed and approved by the City Engineer, Chief Building Official, and a qualified Geotechnical Engineer prior to issuance of building permit or grading permit, whichever comes first, to ensure that all geotechnical recommendations specified in the geotechnical report prepared for the proposed project by GeoForensics, Inc. are properly incorporated and utilized in the project design.*

b. Issues related to erosion are discussed in Section X, Hydrology and Water Quality, of this Initial Study. As noted therein, the proposed project would not result in substantial soil erosion or the loss of topsoil. Thus, a ***less-than-significant*** impact would occur.

d. Expansive soils can undergo significant volume change with changes in moisture content. Specifically, such soils shrink and harden when dried and expand and soften when wetted. Expansive soils can shrink or swell and cause heaving and cracking of slabs-on-grade, pavements, and structures founded on shallow foundation. Building damage due to volume changes associated with expansive soil can be reduced by a variety of solutions. If structures are underlain by expansive soils, foundation systems must be capable of tolerating or resisting any potentially damaging soil movements, and building foundation

areas must be properly drained. Exposed soils must be kept moist prior to placement of concrete for foundation construction.

Per the 2011 Geotechnical Investigation, the near-surface soils within the subject property were identified as having expansive potential. Given the existence of potentially expansive soils within the project site, a ***potentially significant*** impact could occur related to proposed project being located on expansive soil, as defined in Table 18-1B of the Uniform Building Code, thereby creating substantial direct or indirect risks to life or property.

Mitigation Measure(s)

Implementation of the following mitigation measure would reduce the above potential impact to a *less-than-significant* level.

VII-2 Implement Mitigation Measure VII-1.

e. The construction or operation of septic tanks or other alternative wastewater disposal systems is not included as part of the proposed project. Therefore, ***no impact*** regarding the capability of soil to adequately support the use of septic tanks or alternative wastewater disposal systems would occur.

f. As previously discussed, the subject property includes previous development and the project site has been partially graded. Additionally, buildout of the General Plan and the potential impacts on paleontological resources have been anticipated and previously analyzed in the General Plan EIR. The General Plan EIR concluded that Policy 2-72, Archaeologically Sensitive Areas, would require the City to protect paleontological sensitive areas, through supporting Strategy 2, Code Compliance, which would require the City to ensure that City, State, and federal historic preservations laws, regulations, and codes are enforced. Compliance with City's General Plan and Municipal Code would ensure that the proposed project does not result in the destruction of unique geologic features.

Although the proposed project would not have the potential to result in the destruction of unique geologic features, previously unknown paleontological resources could exist within the project site. Thus, ground-disturbing activity, such as grading, trenching, or excavating associated with implementation of the proposed project, could have the potential to disturb or destroy such resources. Therefore, the proposed project could result in the direct or indirect destruction of a unique paleontological resource, and a ***potentially significant*** impact could occur.

Mitigation Measure(s)

Implementation of the following mitigation measure would reduce the above potential impact to a *less-than-significant* level.

VII-3. Implement Mitigation Measures V-1 and V-2.

VIII. GREENHOUSE GAS EMISSIONS. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	✖	☐
b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gasses?	☐	☐	✖	☐

Discussion

a, b. Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors. Therefore, the cumulative global emissions of GHGs contributing to global climate change can be attributed to every nation, region, and city, and virtually every individual on Earth. An individual project's GHG emissions are at a micro-scale level relative to global emissions and effects to global climate change; however, an individual project could result in a cumulatively considerable incremental contribution to a significant cumulative macro-scale impact. As such, impacts related to emissions of GHG are inherently considered cumulative impacts.

Implementation of the proposed project would cumulatively contribute to increases of GHG emissions. Estimated GHG emissions attributable to future development would be primarily associated with increases of carbon dioxide (CO_2) and, to a lesser extent, other GHG pollutants, such as methane (CH_4) and nitrous oxide (N_2O) associated with area sources, mobile sources or vehicles, utilities (electricity and natural gas), water usage, wastewater generation, and the generation of solid waste. The primary source of GHG emissions for the project would be mobile source emissions. The common unit of measurement for GHG is expressed in terms of annual metric tons of CO_2 equivalents ($MTCO_2e$/yr).

GHG emissions resulting from implementation of the proposed project are analyzed below under the existing standards adopted by BAAQMD and the City of Cupertino separately.

BAAQMD Thresholds

The BAAQMD developed a threshold of significance for project-level GHG emissions in 2009. The District's approach to developing the threshold was to identify a threshold level of GHG emissions for which a project would not be expected to substantially conflict with existing California legislation. At the time that the thresholds were developed, the foremost legislation regarding GHG emissions was AB 32, which established an emissions reductions goal of reducing statewide emissions to 1990 levels by 2020.[19] The GHG emissions threshold of significance recommended by BAAQMD to determine compliance with AB 32 is 1,100 $MTCO_2e$/yr. If a project generates GHG emissions above the BAAQMD's adopted threshold level, the project is considered to generate significant GHG emissions and conflict with AB 32.

It should be noted that the foregoing threshold is intended for use in assessing operational GHG emissions only. Construction of a proposed project would result in GHG emissions

[19] Bay Area Air Quality Management District. *California Environmental Quality Act Guidelines Update: Proposed Thresholds of Significance*. December 7, 2009.

over a short-period of time in comparison to the operational lifetime of the project. BAAQMD has not adopted thresholds that are specifically intended for use with construction-related emissions for proposed projects. As noted throughout this document, the proposed project would support activities within the project site that currently occur. As such, the proposed project would not result in any new activities that would result in substantial long-term operational emissions at the site. Thus, the only potential activities related to the project that could result in substantial amounts of GHG emissions are construction-related activities. Although BAAQMD has not adopted specific emissions thresholds for GHG from construction activities, several nearby air districts have. For instance, the Sacramento Metropolitan Air Quality Management District (SMAQMD) recommends use of a threshold of 1,100 $MTCO_2e$/yr for construction phases of projects. Concurrently, the Placer County Air Pollution Control District recommends a threshold of 10,000 $MTCO_2e$/yr for each construction phase of a project. Considering the BAAQMD's adopted operational thresholds as well as the thresholds used by nearby air districts, and in consideration of the unique nature of the project as primarily a construction project, the City is providing a comparison of the construction-related emissions resulting from implementation of the project to BAAQMD's operational threshold of 1,100 $MTCO_2e$/yr for informational purposes.

GHG emissions related to project construction were estimated using RoadMod, as discussed in the Air Quality section of this IS/MND. As noted in the Air Quality section, emissions modeling for the proposed project included development of the entirety of the proposed access road; therefore, the emissions estimates captured all emissions that occurred during the unpermitted work previously completed within the site. As such, the emissions analysis presented in this section represents a conservative estimate of emissions that includes all potential emissions that could occur due to construction of the proposed access road.

The construction-related emissions that would occur with implementation of the proposed project are presented in Table 3. As shown in Table 3, project-related construction emissions would be far below the BAAQMD's thresholds being applied to the project. Although BAAQMD's thresholds are intended for use to assess the potential for on-going operational emissions to result in significant impacts, the fact that the one-time release of emissions related to project construction would be far below BAAQMD's standards for on-going long-term emissions indicates that construction of the project would not result in substantial emissions of GHGs.

Table 3
Unmitigated Project Construction-Related GHG Emissions ($MTCO_2e$/yr)

	Annual GHG Emissions
Construction-Related GHG Emissions	150.79
BAAQMD Threshold	**1,100**
Exceed Threshold?	**NO**
Source: RoadMod, June 2021 (see Appendix A).	

City of Cupertino Climate Action Plan

In 2014, the City of Cupertino prepared and adopted a Climate Action Plan (CAP), which defined the City's path towards reducing GHG emissions, and promoting a sustainable future for the City. The CAP includes reduction measures intended to be implemented by

the municipal government or the community as a whole. The majority of the emissions reduction measures included in the City's CAP are directed at operational sources of emissions, such as reducing energy use, encouraging alternative transportation, water conservation, and reduced solid waste. The proposed project is a construction project that would not result in any new or substantially different sources of long-term emissions from the project site. Consequently, many of the City's CAP policies do not directly apply to the proposed project. Nevertheless, the applicability of all measures included in the City's CAP have been considered with regard to the proposed project.

Based upon a review of the measures included in the City's CAP, Measure C-W-1 and Measure C-SW-3 are the only measures applicable to the proposed project. The project's consistency with the foregoing measures is analyzed below.

Measure C-W-1 implements Senate Bill-X7-7, which mandates reductions in urban per capita water use by December 2020. The proposed project includes development of an access road, and is required to implement landscaping features along with the proposed access road. The project applicant has prepared a landscaping plan, per the City's requirements, which includes all of the proposed plant species, as well as water use rates of the proposed plants. Based on the landscaping plan, all plants would require moderate, low, or very low water, with the majority (24 out of 31 species) demanding low or very low water. In addition, 21 of the proposed plant species are native plants, which are typically well adapted to the region's precipitation and require little irrigation. The landscaping plans prepared for the project include the City's standard Landscape Water-Efficiency Checklist. Compliance with the City's standard Landscape Water-Efficiency Checklist is achieved through separating the proposed plants into separately irrigated hydrozones, installation of water efficient irrigation infrastructure, and use of a minimum layer of 2-inches of mulch would be applied to all soil surfaces of the planting areas to maximize water retention. Based on the proposed landscaping plan, while the project may result in increased water use compared to the existing setting, such water use would be minimized to the extent possible, and would not impede the implementation of CAP Measure C-W-1.

Measure C-SW-3 requires the continued diversion of construction and demolition waste from landfills. Currently, projects are required to divert 60 percent of construction and demolition waste in order to comply with Measure C-SW-3. Consistent with Section 16.72 of the City's Municipal Code, all construction projects must submit a completed Waste Management Plan demonstrating that a minimum of 65 percent of construction waste has been recycled. The proposed project would be required to comply with the City's Municipal Code, and, in so doing, the project would exceed the waste diversion goal established by C-SW-3. As such, the proposed project would comply with the City's CAP.

Conclusion

Considering the above, the proposed project would comply with applicable reduction measures included in the City's CAP. Furthermore, construction of the project would not be considered to result in substantial GHG emissions during project construction. Thus, the project would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment, and would not conflict with applicable plans, policies, and regulations adopted for the purpose of reducing the emissions of GHGs, resulting in a ***less-than-significant*** impact.

IX. HAZARDS AND HAZARDOUS MATERIALS. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	✖	☐
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment?	☐	☐	✖	☐
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	✖
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?	☐	☐	☐	✖
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	✖
f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	✖
g. Expose people or structures, either directly or indirectly, to the risk of loss, injury or death involving wildland fires?	☐	☐	✖	☐

Discussion

a, b. The proposed project would only include construction of an access road on the project site. During operations, the proposed access road would be used to facilitate site access and would not include the routine use of chemicals nor would the road represent a substantial risk to public health or the environment.

Construction activities associated with the proposed project would involve the use of heavy equipment, which would contain fuels and oils, and various other products such as concrete, paints, and adhesives. Small quantities of potentially toxic substances (e.g., petroleum and other chemicals used to operate and maintain construction equipment) would be used at the project site and transported to and from the site during construction. However, the project contractor would be required to comply with all California Health and Safety Codes and local City ordinances regulating the handling, storage, and transportation of hazardous and toxic materials. In addition, the project site consists of an existing hillside that has not been subject to previous uses associated with any hazardous materials. Accordingly, contaminated soils or other hazardous materials are not anticipated to be encountered during construction activities associated with the proposed project.

With respect to post-construction use of hazardous materials, the only potential consideration would be the use of household pesticides and/or herbicides within new landscaping. Such use would be limited and done in accordance with label directions. The label directions are written to minimize the risk of problems and to define the legal uses for the product.

Thus, construction and operation of the proposed project would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment.

Based on the above, development of the proposed project would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment, and a ***less-than-significant*** impact would occur.

c. The nearest school relative to the project site is John F. Kennedy Middle School, located approximately 0.83-mile north of the site. Therefore, the proposed project would have ***no impact*** related to hazardous emissions or the handling of hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

d. According to the Department of Toxic Substances Control, the project site is not located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.[20] Thus, the proposed project would not create a significant hazard to the public or the environment, and ***no impact*** would occur.

e. The nearest airport to the project site is the San Jose International Airport, located approximately eight miles northeast of the site. The site is not covered by an airport land use plan. Therefore, ***no impact*** would occur related to a safety hazard or excessive noise for people residing or working in the project area.

f. The City of Cupertino Office of Emergency Services is responsible for coordinating agency response to disasters or other large-scale emergencies in the City of Cupertino, with assistance from the Santa Clara County Office of Emergency Services and the Santa Clara County Fire Department (SCCFD). The City of Cupertino adopted the *City of Cupertino Emergency Operations Plan* on June 18, 2019.[21] The plan establishes policy direction for emergency planning, mitigation, response, and recovery activities within the City. Because the proposed access road would only be designed to grant greater access within the project site and would not connect to any roadways outside of the subject parcel, the project would not alter the existing circulation system in the surrounding area. As a result, the project would have ***no impact*** with respect to impairing the implementation of or physically interfering with an adopted emergency response plan or emergency evacuation plan.

g. Issues related to wildfire hazards are discussed in Section XX, Wildfire, of this IS/MND. As noted therein, the project site is not located within a Very High Fire Hazard Severity Zone (VHFHSZ).[22] The project site is located near a VHFHSZ to the south; however, the proposed project does not include the development of any buildings or structures that would expose people to risks of wildland fires. Thus, the proposed project would not expose people or structures to the risk of loss, injury or death involving wildland fires, and a ***less-than-significant*** impact would occur.

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[20] Department of Toxic Substances Control. *Hazardous Waste and Substances Site List (Cortese).* Available at: https://www.envirostor.dtsc.ca.gov/public/. Accessed January 20, 2020.

[21] City of Cupertino. *Emergency Operations Plan, Base Plan*. Adopted June 18, 2019.

[22] California Department of Forestry and Fire Protection. *Very High Fire Hazard Severity Zones in LRA – Cupertino*. October 9, 2008.

X. HYDROLOGY AND WATER QUALITY. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	✖	☐
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	✖	☐
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;	☐	☐	✖	☐
ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	✖	☐
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	☐	☐	✖	☐
iv. Impede or redirect flood flows?	☐	☐	☐	✖
d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	✖
e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	✖	☐

Discussion

a, c i. The following section describes the project's consistency with applicable water quality standards and waste discharge requirements during construction and operation.

Construction

The project site contains disturbed soils that would be subject to erosion. Currently, erosion is controlled through the use of the temporary tarping and netting that is in place. During construction of the proposed project, erosion could be further exacerbated. The proposed project would include further grading of the project site and overlaying the ground surface with primarily pervious pavement, with the exception of approximately 877 sf of impervious surfaces (e.g., concrete-lined drainage ditches). Following grading and prior to overlaying the ground surface with pervious pavement, the potential exists for wind and water erosion to discharge sediment and/or urban pollutants into stormwater runoff, which could adversely affect water quality downstream.

The State Water Resources Control Board (SWRCB) regulates stormwater discharges associated with construction activities where clearing, grading, or excavation results in a land disturbance of one or more acres. The proposed project would create 877 sf of impervious surfaces, and, thus, these construction activities would not be regulated by the SWRCB. Additionally, the proposed project would be required to comply with Chapter 9.18, Stormwater Pollution Prevention and Watershed Prevention, of the City's Municipal Code, in order to prevent siltation and erosion. Furthermore, Chapter 16.08, Excavations, Grading, and Retaining Walls, of the City's Municipal Code, requires applicants to provide

and comply with an Interim Erosion and Sediment Control Plan (Interim Plan). The Interim Plan shall show the location of erosion control measures and erosion control planting shall be shown on the site map/grading plan. The applicant shall provide the following information with respect to conditions existing on the site during land-disturbing or filling activities or stockpiling of soil:

1. A delineation and brief description of the measures to be undertaken to retain sediment on the site, including, but not limited to, the designs and specifications or berms and sediment detention basins, and a schedule for their maintenance and upkeep;

2. A delineation and brief description of the surface runoff and erosion control measures to be implemented, including, but not limited, to types and methods of applying mulches, and designs and specifications for diverters, dikes and drains, and a schedule for their maintenance and upkeep;

3. A delineation and brief description of the vegetative measures to be undertaken, including, but not limited to, seeding methods, and type, location and extent of preexisting and undisturbed vegetation types, and a schedule for maintenance and upkeep.

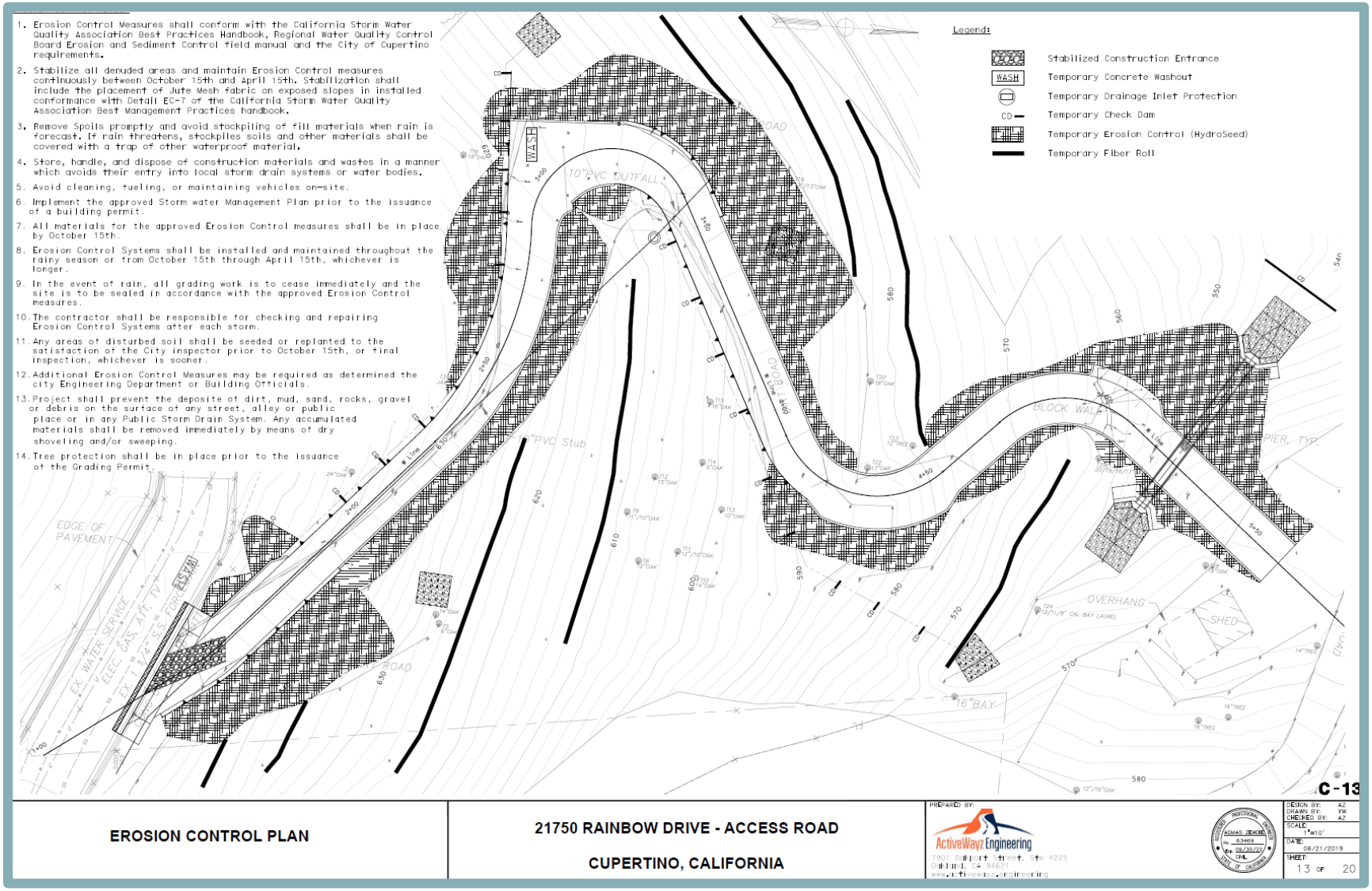
Pursuant to Section 19.40.080, of the City's Municipal Code, an approval body must make certain findings to issue a Hillside Exception Permit, including, but not limited to, whether a proposed development includes grading and drainage plans which will ensure that erosion and scarring of the hillsides caused by necessary construction of roads, housing sites, and improvements will be minimized. The proposed project includes an Erosion Control Plan that would be implemented during construction of the proposed project (see Figure 13). Ultimately, the City will determine if findings can be made qualifying the proposed project for a Hillside Exception Permit.

As shown in Figure 13, BMPs would include drainage inlet protection, designation of a temporary construction entrance, as well as temporary fiber rolls and other BMPs to prevent pollution and erosion. In addition, only a small portion of the subject property would be exposed during construction of the project. Furthermore, due to previous grading activities, erosion has likely occurred and is continuing to occur within the project site. Completion of the proposed project would reduce potential for further erosion to occur. Thus, the project would not result in substantial erosion or siltation. Because the project would comply with the City's interim erosion control requirements, the project would not violate any water quality standards or waste discharge requirements, or otherwise degrade water quality, during construction. In addition, the City will determine whether findings can be made qualifying the proposed project for a Hillside Exception Permit.

Operation

The future access road would not involve operations typically associated with the generation or discharge of polluted water. Nonetheless, the proposed project would include the placement of six rock riprap casings along the proposed access road as a permanent erosion control measure. Three-inch perforated plastic pipes would be used below the access road to redirect water from behind the walls to drainage collection features. In addition, the proposed culvert bridge would also include a rock riprap and concrete-lined channel to adequately treat stormwater and prevent erosion.

Figure 13
Erosion Control Plan



As required by Mitigation Measure VII-1, the project applicant would be required to implement the geotechnical recommendations specified in the geotechnical reports prepared by GeoForensics, Inc. Per the Geotechnical Memo prepared by GeoForensics, Inc., the access road should be constructed with permeable asphalt or concrete. Beneath the permeable pavement areas, the native soil subgrade would be covered with a minimum of four inches of compacted, clean, crushed, ¾-inch drain rock. Where permeable pavement grades have an inclination greater than five percent, perforated collector pipes should be placed at 20-foot centers across the pavement to remove excess runoff that is not able to percolate at a rate comparable to native soil percolation. In all areas, including where grades are flatter than five percent, a perforated pipe should be placed along the downslope margins of the pavement to preclude excess waters from eroding the slopes below, or surcharging back-of-wall drainage collection systems.

Overall, as designed, typical operations on the project site would not violate any water quality standards or waste discharge requirements, nor degrade water quality.

Conclusion

Based on the above, the proposed project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality. Thus, a ***less-than-significant*** impact would occur.

b, e. As discussed previously, the subject property is currently developed with an existing single-family residence, vineyard, and driveway. The new impervious surfaces created by the project would be limited to approximately 877 sf, and the project would include minimal water use for landscape irrigation purposes. The remaining portions of the proposed access road would primarily consist of pervious surfaces. Thus, the project would not interfere substantially with groundwater recharge within the project area. Furthermore, the proposed access road would not substantially increase demand for water supplies associated with the site, including groundwater, and the remaining undeveloped areas within the site would allow for stormwater to percolate into the underlying soils, contributing to the recharge of groundwater. Thus, the proposed project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin, nor would the project conflict with any applicable water quality control or management plans. Thus, a ***less-than-significant*** impact would occur.

c ii,c iii. Development of the proposed project would result in an increase in impervious surfaces on the project site of 877 sf, which would alter the existing drainage pattern of the site. C.3 Regulated projects subject to the State Construction Stormwater National Pollutant Discharge Elimination System (NPDES) General Permit are those that create or replace 10,000 sf or more of impervious surfaces on a site. Because the proposed project would not create or replace more than 10,000 sf of impervious surfaces, the project would not subject to the State Construction NPDES General permit requirements, and preparation of a Stormwater Pollution Prevent Plan (SWPPP) is not required.

However, the proposed project would be required to comply with Chapter 9.18, Stormwater Pollution Prevention and Watershed Prevention, of the City's Municipal Code, in order to prevent siltation and erosion. In addition, although preparation of a SWPPP would not be required, a subdrain PVC system would be constructed under the access road to route drainage to the rock riprap area. Runoff would percolate into underlying soils, which would reduce the flow of stormwater runoff and adequately treat stormwater.

Consequently, the proposed project would not substantially increase stormwater runoff relative to existing conditions. Due to the minimal amount of impervious surfaces created by the project, the proposed project would result in a ***less-than-significant*** impact related to soil erosion, surface runoff, and stormwater drainage.

c iv. According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map number 06085C0216H, the project site is located within an area designated as a 0.2 Percent Annual Chance Flood Hazard zone.[23] However, the site is not classified as a Special Flood Hazard Area or otherwise located within a 100-year or 500-year floodplain. Additionally, the proposed project would not expose housing or structures to risks related to floods. Therefore, development of the proposed project would not impede or redirect flood flows and ***no impact*** would occur.

d. As discussed under question 'c iv' above, the project site is not located within a flood hazard zone. Tsunamis are defined as sea waves created by undersea fault movement, whereas a seiche is a long-wavelength, large-scale wave action set up in a closed body of water such as a lake or reservoir. Although the project site is located approximately one mile from Stevens Creek Reservoir, flooding from a seismically-induced seiche would not affect the project site. Therefore, the proposed project would not pose a risk related to the release of pollutants due to project inundation due to flooding, tsunami, or seiche, and ***no impact*** would occur.

[23] Federal Emergency Management Agency. *Flood Insurance Rate Map 06085C0216H.* Effective May 18, 2009.

XI. LAND USE AND PLANNING. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Physically divide an established community?	☐	☐	✖	☐
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?	☐	☐	✖	☐

Discussion

a. A project risks dividing an established community if the project would introduce infrastructure or alter land uses so as to change the land use conditions in the surrounding community, or isolate an existing land use. The subject property is bound by Regnart Road to the northwest, single-family homes to the northeast and east, Fremont Older Open Space to the south, and undeveloped rural land to the west and south. As noted under question 'b' below, the project would be consistent with the site's current land use and zoning designations. The project would not isolate an existing land use or create a physical barrier within an established community. As such, the proposed project would not physically divide an established community and a ***less-than-significant*** impact would occur.

b. The project site is currently designated Residential Hillside Very Low Density ½ Acre Slope Density Formula per the City's General Plan and is zoned Residential Hillside (RHS). Per the General Plan, anticipated uses for the designated Residential Hillside Very Low Density ½ Acre Slope Density Formula designation include semi-rural residential uses. The proposed project would include construction of an access road associated with an existing rural residence. Therefore, the project would be consistent with the type and intensity of uses anticipated for the site in the General Plan and generally analyzed in the General Plan EIR. In addition, the proposed project would not conflict with City policies and regulations adopted for the purpose of avoiding or mitigating an environmental effect, as demonstrated in this IS/MND. For example, all construction activities and improvements would be setback more than 100 feet from Regnart Creek, tree trimming, to the extent necessary, would occur in compliance with the protection measures specific in the Municipal Code, and erosion control measures would be implemented in compliance with Chapter 16.08, Excavations, Grading, and Retaining Walls, of the City's Municipal Code.

Based on the above, the project would not cause a significant environmental impact due to conflicts with a land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. Therefore, a ***less-than-significant*** impact would occur.

XII. MINERAL RESOURCES. *Would the project:*		Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
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?	☐	☐	☐	✖
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?	☐	☐	☐	✖

Discussion

a,b. According to the City's General Plan, the project site is located in an area which is unsuitable for mineral extraction.[24] The proposed project would include development of the site with a new access road. Therefore, ***no impact*** to mineral resources would occur as a result of the proposed project.

[24] City of Cupertino. *General Plan: Community Vision 2015 – 2040* [pg. ES-10]. Adopted October 20, 2015.

XIII. NOISE. *Would the project result in:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
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?	☐	☐	✖	☐
b. Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	✖	☐
c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	✖

Discussion

a. The following sections present information regarding sensitive noise receptors in proximity to the project site, the existing noise environment, and the potential for the proposed project to result in impacts during project construction and operation. The following terms are referenced in the sections below:

- Decibel (dB): A unit of sound energy intensity. An A-weighted decibel (dBA) is a decibel corrected for the variation in frequency response to the typical human ear at commonly encountered noise levels. All references to decibels (dB) in this section will be A-weighted unless noted otherwise.
- Day-Night Average Level (L_{dn}): The average sound level over a 24-hour day, with a +10 decibel weighing applied to noise occurring during nighttime (10:00 PM to 7:00 AM) hours.

Sensitive Noise Receptors

Some land uses are considered more sensitive to noise than others, and, thus, are referred to as sensitive noise receptors. Land uses often associated with sensitive noise receptors generally include residences, schools, libraries, hospitals, and passive recreational areas. Noise sensitive land uses are typically given special attention in order to achieve protection from excessive noise. The nearest existing noise sensitive land use consists of the single-family residence, located approximately 350 feet to the east of the site. In addition, a single-family residence is located approximately 360 feet to the west of the project site.

Existing Noise Environment

The ambient noise environment in the project vicinity is primarily defined by vehicle traffic on the local roadways within the vicinity of the project site, namely Regnart Road, and to a lesser extent, Rainbow Drive. Additional noise sources in the project vicinity also include maintenance activities associated with the residences in the area, such as landscaping activities.

Impact Analysis

During construction of the proposed project, heavy-duty equipment would be used for grading and construction of the access road, which would result in temporary noise level

increases while in operation. Noise levels would vary depending on the type of equipment used, how the equipment is operated, and how well the equipment is maintained. Standard construction equipment, such as backhoes and haul trucks, would be used on-site.

Table 4
Construction Equipment Noise

Type of Equipment	Maximum Level, dB at 50 feet
Backhoe	78
Compactor	83
Dozer	82
Dump Truck	76
Excavator	81

Source: Federal Highway Administration, Roadway Construction Noise Model User's Guide, January 2006.

Table 4 shows maximum noise levels associated with typical construction equipment. Based on the table, activities involved in typical construction would generate maximum noise levels up to 83 dB at a distance of 50 feet. Given that the property line of the nearest sensitive receptor is located approximately 250 feet to the east of the project site, the noise levels presented in Table 4 would be significantly decreased. Furthermore, per Section 10.48.053 of the City's Municipal Code, grading, construction, and demolition activities are permitted to exceed the City's established noise limits (Chapter 10.48 of the City's Municipal Code) during daytime hours provided that any piece of equipment involved in such activities has high-quality noise mufflers and abatement devices installed, is in good condition, and the activities meet certain established criteria. Compliance with the Municipal Code requirements would be verified as part of the City's standard conditions of approval. In addition, noise associated with construction activities would be temporary, would occur intermittently throughout construction of the roadway, and would occur on a relatively small scale. Operation of the proposed project would not be expected to increase noise levels in the surrounding area, as the proposed roadway is intended to support minor private vehicle use associated with property maintenance activities that currently occur within the project site.

Conclusion

Based on the above, project construction noise would not conflict with the City's Municipal Code related to construction noise. In addition, the proposed project would generate negligible noise level increases during operation. Therefore, the proposed project would not result in a temporary or permanent exceedance of the standards established in the local general plan or noise ordinance, or applicable standards of other agencies, and a ***less-than-significant*** impact could occur.

b. Similar to noise, vibration involves a source, a transmission path, and a receiver. However, noise is generally considered to be pressure waves transmitted through air, whereas vibration usually consists of the excitation of a structure or surface. As with noise, vibration consists of an amplitude and frequency. A person's perception to the vibration depends on the individual's sensitivity to vibration, as well as the amplitude and frequency of the source and the response of the system which is vibrating.

Vibration is measured in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration in terms of peak particle velocities (PPV) in inches per

second (in/sec). Standards pertaining to perception as well as damage to structures have been developed for vibration levels defined in terms of PPV. Human and structural response to different vibration levels is influenced by a number of factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. Table 5, which was developed by the California Department of Transportation (Caltrans), shows the vibration levels that would normally be required to result in damage to structures. As shown in the table, the threshold for architectural damage to structures is 0.20 in/sec PPV and continuous vibrations of 0.10 in/sec PPV, or greater, would likely cause annoyance to sensitive receptors.

Table 5
Effects of Vibration on People and Buildings

PPV		Human Reaction	Effect on Buildings
mm/sec	in/sec		
0.15 to 0.30	0.006 to 0.019	Threshold of perception; possibility of intrusion	Vibrations unlikely to cause damage of any type
2.0	0.08	Vibrations readily perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
2.5	0.10	Level at which continuous vibrations begin to annoy people	Virtually no risk of "architectural" damage to normal buildings
5.0	0.20	Vibrations annoying to people in buildings (this agrees with the levels established for people standing on bridges and subjected to relative short periods of vibrations)	Threshold at which there is a risk of "architectural" damage to normal dwelling - houses with plastered walls and ceilings. Special types of finish such as lining of walls, flexible ceiling treatment, etc., would minimize "architectural" damage
10 to 15	0.4 to 0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause "architectural" damage and possibly minor structural damage

Source: Caltrans. Transportation Related Earthborne Vibrations. TAV-02-01-R9601. February 20, 2002.

The primary vibration-generating activities associated with the proposed project would occur during construction activities. Table 6 shows the typical vibration levels produced by construction equipment at various distances. The most substantial source of groundborne vibrations associated with project construction would likely be the use of vibratory compactors or rollers. At a distance of 26 feet or greater, vibration levels from such equipment would be below the 0.20 in/sec threshold recommended by Caltrans.

The proposed project would only cause elevated vibration levels during construction, as the proposed project would not involve any uses or operations that would generate substantial groundborne vibration. Anticipated construction equipment includes a CAT dozer, CAT backhoe, crane, drill rig, CAT excavator, skip loader, 10-yard dump truck, 815 compactor, steel drum roller, and trencher. Although noise and vibration associated with the construction of the project would add to the noise and vibration environment in the immediate project vicinity, construction activities would be temporary in nature and are anticipated to occur during normal daytime working hours. In addition, the proposed

construction activities would occur at a distance of approximately 350 feet from the existing single-family residence to the east. Therefore, per the vibration levels shown in Table 6, groundborne vibrations would be well below the 0.20 in/sec PPV threshold established by Caltrans for architectural damage to buildings. Further, if soldier piles are installed by a vibratory pile driver, rather than pre-drilled, the anticipated vibration level would be approximately 0.07 PPV at the nearest residence, which would be below the Caltrans threshold for architectural damage.[25]

Table 6
Vibration Levels for Various Construction Equipment

Type of Equipment	PPV at 25 feet (in/sec)	PPV at 50 feet (in/sec)
Large Bulldozer	0.089	0.029
Loaded Trucks	0.076	0.025
Small Bulldozer	0.003	0.000
Auger/Drill Rigs	0.089	0.029
Jackhammer	0.035	0.011
Vibratory Hammer	0.070	0.023
Vibratory Compactor/Roller	0.210	0.070

Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment Guidelines, May 2006.

Based on the above, the proposed project would not expose people to or generate excessive groundborne vibration or groundborne noise levels, and a ***less-than-significant*** impact would occur.

c. The nearest airport to the project site is the San Jose International Airport, which is located approximately eight miles northeast of the site. As such, the project site is not located within two miles of any public airports, and does not fall within an airport land use plan area. Therefore, ***no impact*** would occur related to the project being located within an airport land use plan or within two miles of a public airport or public use airport, thereby resulting in a safety hazard or excessive noise for people residing or working in the project area.

[25] Caltrans. *Transportation and Construction Vibration Guidance Manual* [pg. 33]. April 2020.

XIV. POPULATION AND HOUSING. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (e.g., through projects in an undeveloped area or extension of major infrastructure)?	☐	☐	☐	✖
b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	✖

Discussion

a, b. The proposed project would include the construction of an access road with retaining walls and a culvert bridge. The project site is located in an area comprised of rural residential development and would not include the extension of major infrastructure. Given the nature of the proposed project, the project would not create a large number of jobs or result in an influx of new residents to the project area. In addition, the proposed project would not include the construction of new housing or the demolition of existing residences. Therefore, the proposed project would not result in substantial unplanned population growth or the displacement of a substantial number of existing people or housing, necessitating the construction of replacement housing, and ***no impact*** would occur.

XV. PUBLIC SERVICES.

Would the project 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 public services:	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Fire protection?	☐	☐	☐	✖
b. Police protection?	☐	☐	☐	✖
c. Schools?	☐	☐	☐	✖
d. Parks?	☐	☐	☐	✖
e. Other Public Facilities?	☐	☐	☐	✖

Discussion

a-e. Fire protection services are currently provided to the site by the Santa Clara County Fire Department. The Santa Clara County Fire Department includes 15 fire stations to protect approximately 100 square miles and serve a population of over 226,000 residents. County Fire employs over 300 personnel to provide fire protection services to the Department's cities and district consolidations. The nearest fire station to the project site is Seven Springs Fire Station #2, located approximately 0.88-mile east of the project site. Additionally, the City of Cupertino contracts with the Santa Clara County Sheriff's Office and the West Valley Patrol Division for police protection services. The West Valley Patrol Division is headquartered at the Westside Sheriff's Substation at 1601 South De Anza Boulevard in Cupertino. The Cupertino General Plan EIR determined that buildout of the General Plan would increase the overall demand on fire and police protection services; however, the project does not include development which would increase the demand for such services. Furthermore, the proposed project would not result in population growth, and, consequently, would not increase the demand for schools, parks, or other public facilities.

Based on the above, the proposed project would have ***no impact*** related to the need for new or physically altered fire protection, police protection, schools, parks, or other public facilities, the construction of which could cause significant environmental impacts.

XVI. RECREATION. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Would the project 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?	☐	☐	☐	✖
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	✖

Discussion

a, b. The proposed project would include the development of an access road with retaining walls and a culvert for stream diversion. As discussed above, the proposed project would not result in population growth that could result in increased use of existing recreational facilities, nor would the proposed project include or require construction or expansion of recreational facilities. Thus, ***no impact*** would occur.

XVII. TRANSPORTATION. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	☐	☐	✖	☐
b. Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	✖	☐
c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	✖	☐
d. Result in inadequate emergency access?	☐	☐	✖	☐

Discussion

a-d. During construction, the proposed project would generate a minor amount of traffic on local roadways. However, such construction traffic would be extremely limited, and would be temporary in nature. The proposed project does not include construction of new roadways or extension of existing roadways that would be part of the City's existing transportation infrastructure. Rather, the proposed access road would be used only by residents of the subject property to facilitate access to downhill portions of the subject property for property maintenance purposes. In addition, the proposed project does not include development which would alter or increase demand for transit, bicycle, or pedestrian facilities. Thus, the proposed project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities or conflict with CEQA Guidelines section 15064.3, subdivision (b). Because the proposed project would not alter the existing circulation network, the proposed project would not substantially increase hazards due to a geometric design feature or result in inadequate emergency access.

Based on the above, the proposed project would result in a ***less-than-significant*** impact related to transportation.

XVIII. TRIBAL CULTURAL RESOURCES.

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:	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. 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).	☐	☐	✖	☐
b. 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 Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	✖	☐

Discussion

a, b. A search of the NAHC Sacred Lands File did not yield any information regarding the presence of cultural resources within the project site or the immediate area. However, per the records search of the CHRIS conducted by the NWIC, the potential for unrecorded Tribal Cultural Resources to occur in the project area is moderate. However, the subject property, including the project site, has been subject to previous disturbance associated with past grading activities and development of the residence located on the subject property. Previous development of the subject property and disturbance of the project site would have been likely to disturb or remove any resources that were previously present within the site. Thus, the potential for tribal cultural resources to exist in the area is relatively unlikely.

The City of Cupertino has not received any formal requests from local tribes for consultation pursuant to AB 52 (Public Resources Code Section 21080.3.1). As such, formal notification of the proposed project to any tribes is not required, pursuant to AB 52.

Based on lack of identified cultural resources at the site and the extensive disturbance that has occurred within the project vicinity, known Tribal Cultural Resources do not exist within the site. Nevertheless, the possibility exists that construction of the proposed project could result in a substantial adverse change in the significance of a Tribal Cultural Resource, if previously unknown resources are uncovered during grading or other ground-disturbing activities. Thus, a ***potentially significant*** impact to tribal cultural resources could occur.

Mitigation Measure(s)

Implementation of the following mitigation measure would reduce the above potential impact to a *less-than-significant* level.

XVIII-1 *Implement Mitigation Measures V-1 and V-2.*

XIX. UTILITIES AND SERVICE SYSTEMS. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
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?	☐	☐	✖	☐
b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?	☐	☐	✖	☐
c. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	✖	☐
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?	☐	☐	✖	☐
e. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	✖	☐

Discussion

a-c. As discussed under Section, X, Hydrology and Water Quality, construction activities associated with the proposed project would include BMPs in order to prevent erosion and stormwater pollution. An erosion control plan has been prepared for the project, which includes erosion control measures. Wastewater infrastructure would not be affected by the proposed project, as the project would not generate wastewater. A minor increase in water demand would be attributable to the project's landscaping irrigation. However, the proposed access road would not substantially increase demand for water supplies associated with the site, including groundwater, and the remaining undeveloped areas within the site would allow for stormwater to continue to percolate into the underlying soils, contributing to the recharge of groundwater.

Electricity for construction of the proposed project would be provided through connection to the existing infrastructure within the subject property, if feasible, otherwise portable generators may need to be used. As such, the construction activities may result in slightly increased electricity usage at the site. However, due to the size and nature of the proposed project, the project would not require the relocation or construction of new or expanded utilities. Additionally, construction equipment could include the use of natural gas; however, as discussed in Section III, Air Quality, of this IS/MND, the amount of construction equipment to be used would be minimal and would not require any alterations to existing on-site infrastructure. As for telecommunication facilities, the proposed project would not require the use of such infrastructure facilities.

Thus, the proposed project would result in a ***less-than-significant*** impact related to utilities and service systems.

d,e. The City contracts with Recology South Bay (Recology) for solid waste collection services. All non-hazardous solid waste collected under the Recology franchise agreement is taken to Newby Island Sanitary Landfill for processing. Under the agreement, recyclable materials also are handled by Recology. According to the California Department of Resources Recycling and Recovery (CalRecycle), the Newby Island Sanitary Landfill has a remaining capacity of 21,200,000 cubic yards.[26] While construction of the proposed project would generate a small amount of solid waste, the waste could be accommodated by the existing landfill facilities used by the City. Operations associated with the proposed project would not contribute additional solid waste beyond what is currently generated at the project site.

Therefore, the proposed project would not 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 and would comply with federal, State, and local management and reduction statutes and regulations related to solid waste. Thus, a ***less-than-significant*** impact related to solid waste would occur as a result of the proposed project.

[26] California Department of Resources Recycling and Recovery (CalRecycle). *Facility/Site Summary Details: Newby Island Sanitary Landfill (43-AN-0003).* Available at: https://www2.calrecycle.ca.gov/swfacilities/Directory/43-AN-0003/. Accessed January 28, 2020.

XX. WILDFIRE. *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
a. Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	✖	☐
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?	☐	☐	✖	☐
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?	☐	☐	✖	☐
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?	☐	☐	✖	☐

Discussion

a-d. According to the California Department of Forestry and Fire Protection (CAL FIRE) Fire and Resource Assessment Program, the project site is not located within a Very High Fire Hazard Severity Zone (VHFHSZ) or State Responsibility Area.[27] The project site is located near a VHFHSZ to south; however, the proposed project does not include the development of any buildings or structures that would expose people to risks of wildland fires.

As noted in Section IX, implementation of the proposed project would not interfere with potential evacuation or response routes used by emergency response teams. In addition, the proposed project would include irrigated landscaping that would reduce readily combustible vegetation. Furthermore, as noted in Section VII, Geology and Soils, and Section X, Hydrology and Water Quality, the proposed project would not result in increased flooding or landslides as a result of runoff, post-fire slope instability, or drainage changes. For example, Mitigation Measure VII-1 would require implementation of the geotechnical recommendations provided within the geotechnical reports to ensure slope stability. The proposed project would also include implementation of an Erosion Control Plan that requires BMPs to prevent pollution and erosion. Furthermore, the proposed project would arguably provide better access throughout the site, which could help with emergency evacuation.

Based on the above, the proposed project would not expose people or structures to the risk of loss, injury or death involving wildland fires, and a ***less-than-significant*** impact would occur.

[27] California Department of Forestry and Fire Protection. *Very High Fire Hazard Severity Zones in LRA – Cupertino*. October 9, 2008.

XXI. MANDATORY FINDINGS OF SIGNIFICANCE.	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Does the project 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?	☐	☐	✖	☐
b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a 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)?	☐	☐	✖	☐
c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	✖	☐

Discussion

a. As discussed in Section IV, Biological Resources, of this IS/MND, while the potential exists for FYLF, CRLF, Santa Cruz black salamander, nesting raptors and migratory birds, and San Francisco dusky-footed woodrat to occur on-site, Mitigation Measures IV-1 through IV-6 would ensure that impacts to special-status species would be less than significant. In addition, the potential exists for the proposed project to result in impacts to the existing drainage channel with construction of the culvert bridge; however, implementation of Mitigation Measures IV-7 through IV-9 would ensure that impacts to the drainage channel are less-than-significant. While unlikely, the project could encounter previously undiscovered archeological and/or paleontological resources during project construction. However, the proposed project would comply with applicable State and local regulations related to unintentional discovery, as discussed in Section V, Cultural Resources, of this IS/MND. Given compliance with Mitigation Measure V-1 and V-2, impacts to cultural resources would be less-than-significant.

Considering the above, the proposed project would not: 1) degrade the quality of the environment; 2) substantially reduce or impact the habitat of fish or wildlife species; 3) cause fish or wildlife populations to drop below self-sustaining levels; 4) threaten to eliminate a plant or animal community; 5) reduce the number or restrict the range of a rare or endangered plant or animal; or 6) eliminate important examples of the major periods of California history or prehistory. Therefore, a ***less-than-significant*** impact would occur.

b. The proposed project in conjunction with other development within the City of Cupertino could incrementally contribute to cumulative impacts in the area. However, as demonstrated in this IS/MND, all potential environmental impacts that could occur as a result of project implementation would be reduced to a less-than-significant level through compliance with the mitigation measures included in this IS/MND, as well as applicable General Plan policies, Municipal Code standards, and other applicable local and State regulations. In addition, the project would be consistent with the site's existing land use and zoning designations. Accordingly, buildout of the site with such uses was generally

considered in the cumulative analysis of buildout of the General Plan within the General Plan EIR.

Therefore, when viewed in conjunction with other closely related past, present, or reasonably foreseeable future projects, development of the proposed project would not result in a cumulatively considerable contribution to cumulative impacts in the City of Cupertino, and the project's incremental contribution to cumulative impacts would be ***less than significant***.

c. As described in this IS/MND, the proposed project would comply with all applicable General Plan policies, Municipal Code standards, other applicable local and State regulations, and mitigation measures included herein. In addition, as discussed in the Geology and Soils section of this IS/MND, the proposed project would not cause substantial effects to human beings, which cannot be mitigated to less-than-significant levels, including effects related to geologic hazards. Therefore, the proposed project's impact would be ***less than significant***.

APPENDIX A

AIR QUALITY AND GREENHOUSE GAS MODELING RESULTS

Road Construction Emissions Model Version 9.0.0

Data Entry Worksheet

Note: Required data input sections have a yellow background.
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.
The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project types.
Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Input Type

Project Name	Rainbow Drive	
Construction Start Year	2021	Enter a Year between 2014 and 2040 (inclusive)
Project Type	1	1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway 2) Road Widening : Project to add a new lane to an existing roadway 3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane 4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construction
Project Construction Time	2.25	months
Working Days per Month	25.00	days (assume 22 if unknown)
Predominant Soil/Site Type: Enter 1, 2, or 3 (for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)	2	1) Sand Gravel : Use for quaternary deposits (Delta/West County) 2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the Ione formation (Scott Road, Rancho Murieta) 3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta)
Project Length	0.09	miles
Total Project Area	0.43	acres
Maximum Area Disturbed/Day	0.43	acres
Water Trucks Used?	2	1. Yes 2. No

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries

Material Hauling Quantity Input

Material Type	Phase	Haul Truck Capacity (yd^3) (assume 20 if unknown)	Import Volume (yd^3/day)	Export Volume (yd^3/day)
Soil	Grubbing/Land Clearing	20.00	0.00	0.00
	Grading/Excavation	20.00	11.20	19.20
	Drainage/Utilities/Sub-Grade	20.00	0.00	0.00
	Paving	20.00	0.00	0.00
Asphalt	Grubbing/Land Clearing	20.00	0.00	0.00
	Grading/Excavation	20.00	0.00	0.00
	Drainage/Utilities/Sub-Grade	20.00	0.00	0.00
	Paving	20.00	27.75	0.00

Mitigation Options

On-road Fleet Emissions Mitigation		Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer
Off-road Equipment Emissions Mitigation		Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure (http://www.airquality.org/Businesses/CEQA-Land-Use-Planning/Mitigation). Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard

The remaining sections of this sheet contain areas that can be modified by the user, although those modifications are optional.

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of Construction Months	Program Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing		0.23		1/1/2021
Grading/Excavation		1.01		1/8/2021
Drainage/Utilities/Sub-Grade		0.68		2/8/2021
Paving		0.34		3/1/2021
Totals (Months)	2			

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emissions User Input	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
Miles/round trip: Grubbing/Land Clearing		30.00		0	0.00
Miles/round trip: Grading/Excavation		30.00		2	60.00
Miles/round trip: Drainage/Utilities/Sub-Grade		30.00		0	0.00
Miles/round trip: Paving		30.00		0	0.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69
Grading/Excavation (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69
Draining/Utilities/Sub-Grade (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69
Paving (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69
Grubbing/Land Clearing (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.01	0.06	0.42	0.01	0.01	0.00	235.36	0.00	0.04	246.39
Tons per const. Period - Grading/Excavation	0.00	0.00	0.01	0.00	0.00	0.00	2.98	0.00	0.00	3.12
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.01	0.00	0.00	0.00	2.98	0.00	0.00	3.12

Note: Asphalt Hauling emission default values can be overridden in cells D91 through D94, and F91 through F94.

Asphalt Hauling Emissions User Input	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
Miles/round trip: Grubbing/Land Clearing		30.00		0	0.00
Miles/round trip: Grading/Excavation		30.00		0	0.00
Miles/round trip: Drainage/Utilities/Sub-Grade		30.00		0	0.00
Miles/round trip: Paving		30.00		2	60.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69
Grading/Excavation (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69
Draining/Utilities/Sub-Grade (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69
Paving (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69
Grubbing/Land Clearing (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.01	0.06	0.42	0.01	0.01	0.00	235.36	0.00	0.04	246.39
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.99	0.00	0.00	1.04
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.99	0.00	0.00	1.04

Note: Worker commute default values can be overridden in cells D121 through D126.

Worker Commute Emissions User Input	User Override of Worker Commute Default Values	Default Values		
Miles/ one-way trip		20	Calculated Daily Trips	Calculated Daily VMT
One-way trips/day		2		
No. of employees: Grubbing/Land Clearing		4	8	160.00
No. of employees: Grading/Excavation		17	34	680.00
No. of employees: Drainage/Utilities/Sub-Grade		14	28	560.00
No. of employees: Paving		10	20	400.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.02	1.10	0.10	0.05	0.02	0.00	339.80	0.00	0.01	342.28
Grading/Excavation (grams/mile)	0.02	1.10	0.10	0.05	0.02	0.00	339.80	0.00	0.01	342.28
Draining/Utilities/Sub-Grade (grams/mile)	0.02	1.10	0.10	0.05	0.02	0.00	339.80	0.00	0.01	342.28
Paving (grams/mile)	0.02	1.10	0.10	0.05	0.02	0.00	339.80	0.00	0.01	342.28
Grubbing/Land Clearing (grams/trip)	1.18	2.95	0.34	0.00	0.00	0.00	72.81	0.08	0.04	85.39
Grading/Excavation (grams/trip)	1.18	2.95	0.34	0.00	0.00	0.00	72.81	0.08	0.04	85.39
Draining/Utilities/Sub-Grade (grams/trip)	1.18	2.95	0.34	0.00	0.00	0.00	72.81	0.08	0.04	85.39
Paving (grams/trip)	1.18	2.95	0.34	0.00	0.00	0.00	72.81	0.08	0.04	85.39
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.03	0.44	0.04	0.02	0.01	0.00	121.14	0.00	0.00	122.24
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.34	0.00	0.00	0.34

Pounds per day - Grading/Excavation	0.12	1.87	0.17	0.07	0.03	0.01	514.86	0.01	0.01	519.53
Tons per const. Period - Grading/Excavation	0.00	0.02	0.00	0.00	0.00	0.00	6.52	0.00	0.00	6.58
Pounds per day - Drainage/Utilities/Sub-Grade	0.10	1.54	0.14	0.06	0.02	0.00	424.00	0.01	0.01	427.85
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.01	0.00	0.00	0.00	0.00	3.58	0.00	0.00	3.61
Pounds per day - Paving	0.07	1.10	0.10	0.04	0.02	0.00	302.86	0.01	0.01	305.60
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	1.28	0.00	0.00	1.29
Total tons per construction project	0.00	0.04	0.00	0.00	0.00	0.00	11.71	0.00	0.00	11.82

Note: Water Truck default values can be overridden in cells D153 through D156, I153 through I156, and F153 through F156.

Water Truck Emissions	User Override of	Program Estimate of	User Override of Truck	Default Values	Calculated	User Override of	Default Values	Calculated
User Input	Default # Water Trucks	Number of Water Trucks	Round Trips/Vehicle/Day	Round Trips/Vehicle/Day	Trips/day	Miles/Round Trip	Miles/Round Trip	Daily VMT
Grubbing/Land Clearing - Exhaust		0		5	0		8.00	0.00
Grading/Excavation - Exhaust		0		5	0		8.00	0.00
Drainage/Utilities/Subgrade		0		5	0		8.00	0.00
Paving		0		5	0		8.00	0.00

Emission Rates	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Grubbing/Land Clearing (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69
Grading/Excavation (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69
Draining/Utilities/Sub-Grade (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69
Paving (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69
Grubbing/Land Clearing (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Fugitive dust default values can be overridden in cells D183 through D185.

Fugitive Dust	User Override of Max Acreage Disturbed/Day	Default Maximum Acreage/Day	PM10 pounds/day	PM10 tons/per period	PM2.5 pounds/day	PM2.5 tons/per period
Fugitive Dust - Grubbing/Land Clearing		0.43	8.60	0.02	1.79	0.01
Fugitive Dust - Grading/Excavation		0.43	8.60	0.11	1.79	0.02
Fugitive Dust - Drainage/Utilities/Subgrade		0.43	8.60	0.07	1.79	0.02

Off-Road Equipment Emissions

Grubbing/Land Clearing	Default Number of Vehicles	Override of	Mitigation Option Default		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Override of Default Number of Vehicles	*Program-estimate*	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1		Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Excavators	0.23	3.27	2.15	0.10	0.10	0.01	500.19	0.16	0.00	505.59
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1		Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Tractors/Loaders/Backhoes	0.19	2.26	1.90	0.11	0.10	0.00	300.90	0.10	0.00	304.14
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Number of Vehicles	Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Grubbing/Land Clearing	pounds per day	0.42	5.53	4.05	0.22	0.20	0.01	801.09	0.26	0.01	809.72
Grubbing/Land Clearing	tons per phase	0.00	0.02	0.01	0.00	0.00	0.00	2.25	0.00	0.00	2.28

Grading/Excavation	Default Number of Vehicles	Override of	Mitigation Option Default		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Override of Default Number of Vehicles	*Program-estimate*	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Bore/Drill Rigs	0.26	2.07	3.02	0.09	0.08	0.01	912.06	0.30	0.01	921.92
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	0		Model Default Tier	Cranes	0.41	1.98	4.85	0.20	0.18	0.01	558.74	0.18	0.01	564.76
	1		Model Default Tier	Crawler Tractors	0.55	2.44	6.97	0.26	0.24	0.01	760.36	0.25	0.01	768.56
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	3		Model Default Tier	Excavators	0.23	3.27	2.15	0.10	0.10	0.01	500.19	0.16	0.00	505.59
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Generator Sets	0.36	3.68	3.17	0.17	0.17	0.01	623.04	0.03	0.00	625.23
0.00	1		Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	2		Model Default Tier	Rollers	0.19	1.88	1.92	0.12	0.11	0.00	254.09	0.08	0.00	256.83
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Rubber Tired Dozers	1.05	4.04	10.97	0.53	0.49	0.01	827.35	0.27	0.01	836.26
0.00	1		Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	2		Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1		Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Skid Steer Loaders	0.08	1.39	1.00	0.04	0.04	0.00	200.20	0.06	0.00	202.36
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00	2		Model Default Tier	Tractors/Loaders/Backhoes	0.37	4.52	3.79	0.22	0.21	0.01	601.80	0.19	0.01	608.28
1.00			Model Default Tier	Trenchers	0.38	2.61	3.51	0.25	0.23	0.00	326.92	0.11	0.00	330.44
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Number of Vehicles	Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day

0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavation		pounds per day	3.88	27.88	41.36	1.99	1.85	0.06	5,564.76	1.63	0.05	5,620.22
	Grading/Excavation		tons per phase	0.05	0.35	0.52	0.03	0.02	0.00	70.43	0.02	0.00	71.13

Drainage/Utilities/Subgrade	Default Number of Vehicles	Mitigation Option: Override of	Default		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Override of Default Number of Vehicles	*Program-estimate*	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1		Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Bore/Drill Rigs	0.26	2.07	3.02	0.09	0.08	0.01	912.06	0.30	0.01	921.92
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Cranes	0.41	1.98	4.85	0.20	0.18	0.01	558.74	0.18	0.01	564.76
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Excavators	0.23	3.27	2.15	0.10	0.10	0.01	500.19	0.16	0.00	505.59
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	1		Model Default Tier	Generator Sets	0.36	3.68	3.17	0.17	0.17	0.01	623.04	0.03	0.00	625.23
0.00	1		Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1		Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1		Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Rollers	0.19	1.88	1.92	0.12	0.11	0.00	254.09	0.08	0.00	256.83
0.00	1		Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Rubber Tired Dozers	1.05	4.04	10.97	0.53	0.49	0.01	827.35	0.27	0.01	836.26
0.00			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	2		Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1		Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Skid Steer Loaders	0.08	1.39	1.00	0.04	0.04	0.00	200.20	0.06	0.00	202.36
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00	2		Model Default Tier	Tractors/Loaders/Backhoes	0.37	4.52	3.79	0.22	0.21	0.01	601.80	0.19	0.01	608.28
1.00			Model Default Tier	Trenchers	0.38	2.61	3.51	0.25	0.23	0.00	326.92	0.11	0.00	330.44
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Number of Vehicles	Equipment Tier	Type		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Drainage/Utilities/Sub-Grade		pounds per day	3.33	25.45	34.39	1.73	1.61	0.05	4,804.39	1.38	0.04	4,851.66
	Drainage/Utilities/Sub-Grade		tons per phase	0.03	0.21	0.29	0.01	0.01	0.00	40.54	0.01	0.00	40.94

Paving	Default Number of Vehicles	Mitigation Option: Override of	Default		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Override of Default Number of Vehicles	*Program-estimate*	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Bore/Drill Rigs	0.26	2.07	3.02	0.09	0.08	0.01	912.06	0.30	0.01	921.92
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Cranes	0.41	1.98	4.85	0.20	0.18	0.01	558.74	0.18	0.01	564.76
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Excavators	0.23	3.27	2.15	0.10	0.10	0.01	500.19	0.16	0.00	505.59
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Generator Sets	0.36	3.68	3.17	0.17	0.17	0.01	623.04	0.03	0.00	625.23
0.00			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1		Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1		Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	3		Model Default Tier	Rollers	0.19	1.88	1.92	0.12	0.11	0.00	254.09	0.08	0.00	256.83
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Rubber Tired Dozers	1.05	4.04	10.97	0.53	0.49	0.01	827.35	0.27	0.01	836.26
0.00			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1		Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Skid Steer Loaders	0.08	1.39	1.00	0.04	0.04	0.00	200.20	0.06	0.00	202.36
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00	2		Model Default Tier	Tractors/Loaders/Backhoes	0.37	4.52	3.79	0.22	0.21	0.01	601.80	0.19	0.01	608.28
1.00			Model Default Tier	Trenchers	0.38	2.61	3.51	0.25	0.23	0.00	326.92	0.11	0.00	330.44
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type		ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Paving	pounds per day		3.33	25.45	34.39	1.73	1.61	0.05	4,804.39	1.38	0.04	4,851.66
	Paving	tons per phase		0.01	0.11	0.15	0.01	0.01	0.00	20.27	0.01	0.00	20.47
Total Emissions all Phases (tons per construction period) =>				0.09	0.69	0.97	0.05	0.04	0.00	133.49	0.04	0.00	134.81

Equipment default values for horsepower and hours/day can be overridden in cells D403 through D436 and F403 through F436.

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		78		8
Bore/Drill Rigs		221		8
Cement and Mortar Mixers		9		8
Concrete/Industrial Saws		81		8
Cranes		231		8
Crawler Tractors		212		8
Crushing/Proc. Equipment		85		8
Excavators		158		8
Forklifts		89		8
Generator Sets		84		8
Graders		187		8
Off-Highway Tractors		124		8
Off-Highway Trucks		402		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		168		8
Pavers		130		8
Paving Equipment		132		8
Plate Compactors		8		8
Pressure Washers		13		8
Pumps		84		8
Rollers		80		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		247		8
Rubber Tired Loaders		203		8
Scrapers		367		8
Signal Boards		6		8
Skid Steer Loaders		65		8
Surfacing Equipment		263		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		97		8
Trenchers		78		8
Welders		46		8

END OF DATA ENTRY SHEET

Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for -> Rainbow Drive Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.44	5.97	4.09	8.83	0.23	8.60	1.99	0.21	1.79	0.01	922.24	0.26	0.01	931.97
Grading/Excavation	4.00	29.81	41.95	10.68	2.08	8.60	3.67	1.88	1.79	0.06	6,314.98	1.64	0.10	6,386.14
Drainage/Utilities/Sub-Grade	3.42	26.99	34.54	10.39	1.79	8.60	3.42	1.63	1.79	0.05	5,228.40	1.40	0.05	5,279.51
Paving	3.40	26.61	34.92	1.79	1.79	0.00	1.63	1.63	0.00	0.05	5,342.61	1.39	0.09	5,403.66
Maximum (pounds/day)	4.00	29.81	41.95	10.68	2.08	8.60	3.67	1.88	1.79	0.06	6,314.98	1.64	0.10	6,386.14
Total (tons/construction project)	0.10	0.73	0.98	0.26	0.05	0.21	0.09	0.05	0.04	0.00	149.17	0.04	0.00	150.79

Notes:

Project Start Year ->	2021
Project Length (months) ->	2
Total Project Area (acres) ->	0
Maximum Area Disturbed/Day (acres) ->	0
Water Truck Used? ->	No

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	160	0
Grading/Excavation	30	0	60	0	680	0
Drainage/Utilities/Sub-Grade	0	0	0	0	560	0
Paving	0	28	0	60	400	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Rainbow Drive Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.02	0.01	0.02	0.00	0.02	0.01	0.00	0.01	0.00	2.59	0.00	0.00	2.38
Grading/Excavation	0.05	0.38	0.53	0.14	0.03	0.11	0.05	0.02	0.02	0.00	79.92	0.02	0.00	73.32
Drainage/Utilities/Sub-Grade	0.03	0.23	0.29	0.09	0.02	0.07	0.03	0.01	0.02	0.00	44.11	0.01	0.00	40.41
Paving	0.01	0.11	0.15	0.01	0.01	0.00	0.01	0.01	0.00	0.00	22.54	0.01	0.00	20.68
Maximum (tons/phase)	0.05	0.38	0.53	0.14	0.03	0.11	0.05	0.02	0.02	0.00	79.92	0.02	0.00	73.32
Total (tons/construction project)	0.10	0.73	0.98	0.26	0.05	0.21	0.09	0.05	0.04	0.00	149.17	0.04	0.00	136.79

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

APPENDIX B

BIOLOGICAL EVALUATION

LIVE OAK ASSOCIATES, INC.

an Ecological Consulting Firm

21750 RAINBOW DRIVE
TECHNICAL BIOLOGICAL REPORT
CUPERTINO, SANTA CLARA COUNTY, CALIFORNIA

Prepared by

LIVE OAK ASSOCIATES, INC.

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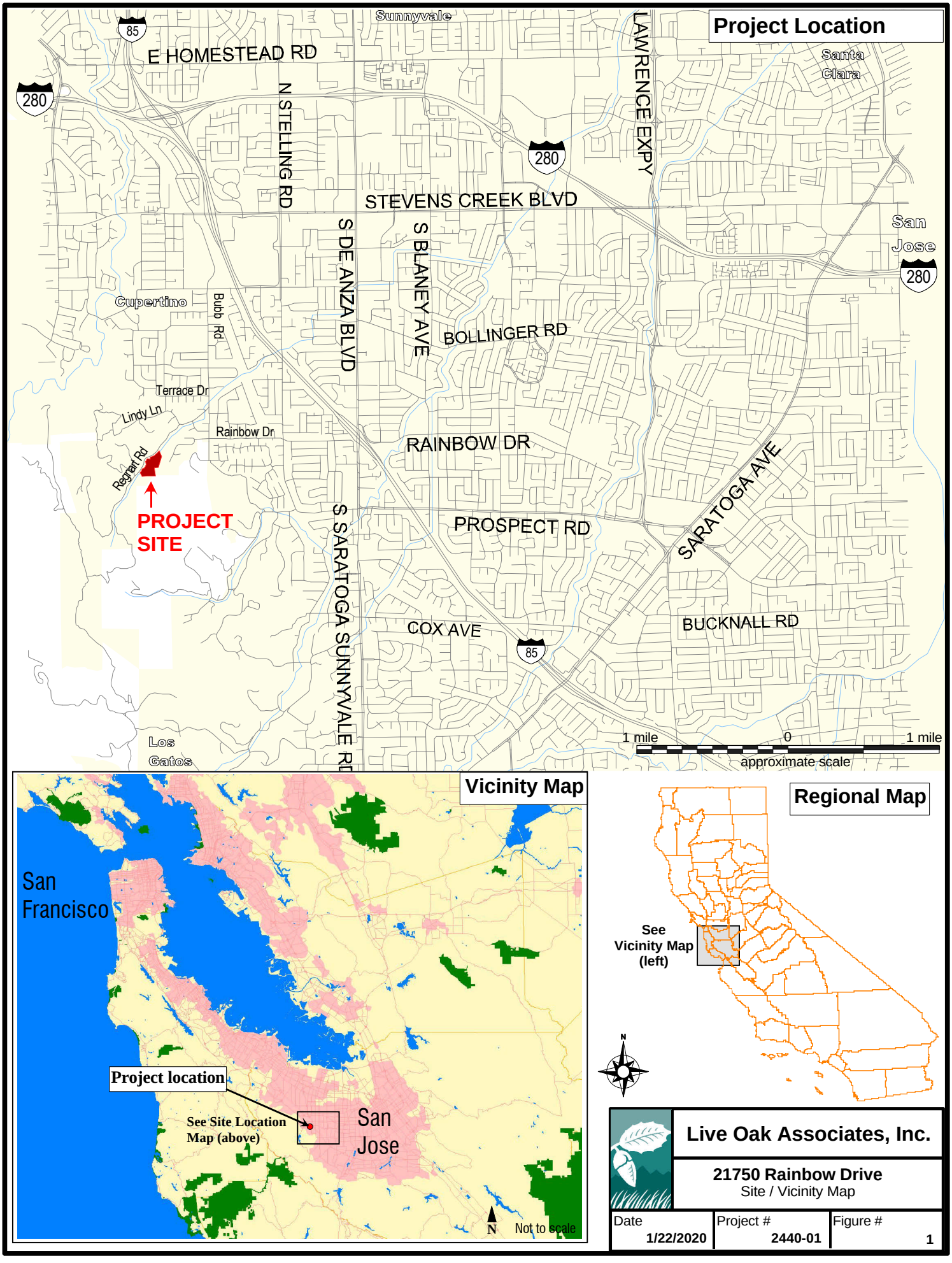
1 INTRODUCTION

This technical biological evaluation report, prepared by Live Oak Associates, Inc. (LOA) in support of California Environmental Quality Act (CEQA) review, describes the biological resources of the project site located at 21750 Rainbow Drive (hereafter referred to as the "study area" or "project site") and evaluates possible impacts to those resources resulting from the proposed development of an access road and associated culvert bridge ("project"). The site is located at 21750 Rainbow Drive, on APN 237-28-056 and a portion of APN 366-03-064, in the City of Cupertino, Santa Clara County, California (Figure 1). The site can be found on the Cupertino U.S.G.S. 7.5' quadrangle in Section 26, Township 7 South, Range 2 West.

In general, the development of parcels can damage or modify biotic habitats used by sensitive plant and wildlife species. In such cases, site development may be regulated by state or federal agencies, subject to provisions of CEQA, and/or covered by local policies and ordinances. Therefore, this report addresses: 1) sensitive biotic resources potentially occurring in the study area; 2) the federal, state, and local laws regulating such resources, 3) possible significant impacts to these resources that could result from the project; and 4) mitigation measures that would reduce these impacts to a less-than-significant level as defined by CEQA.

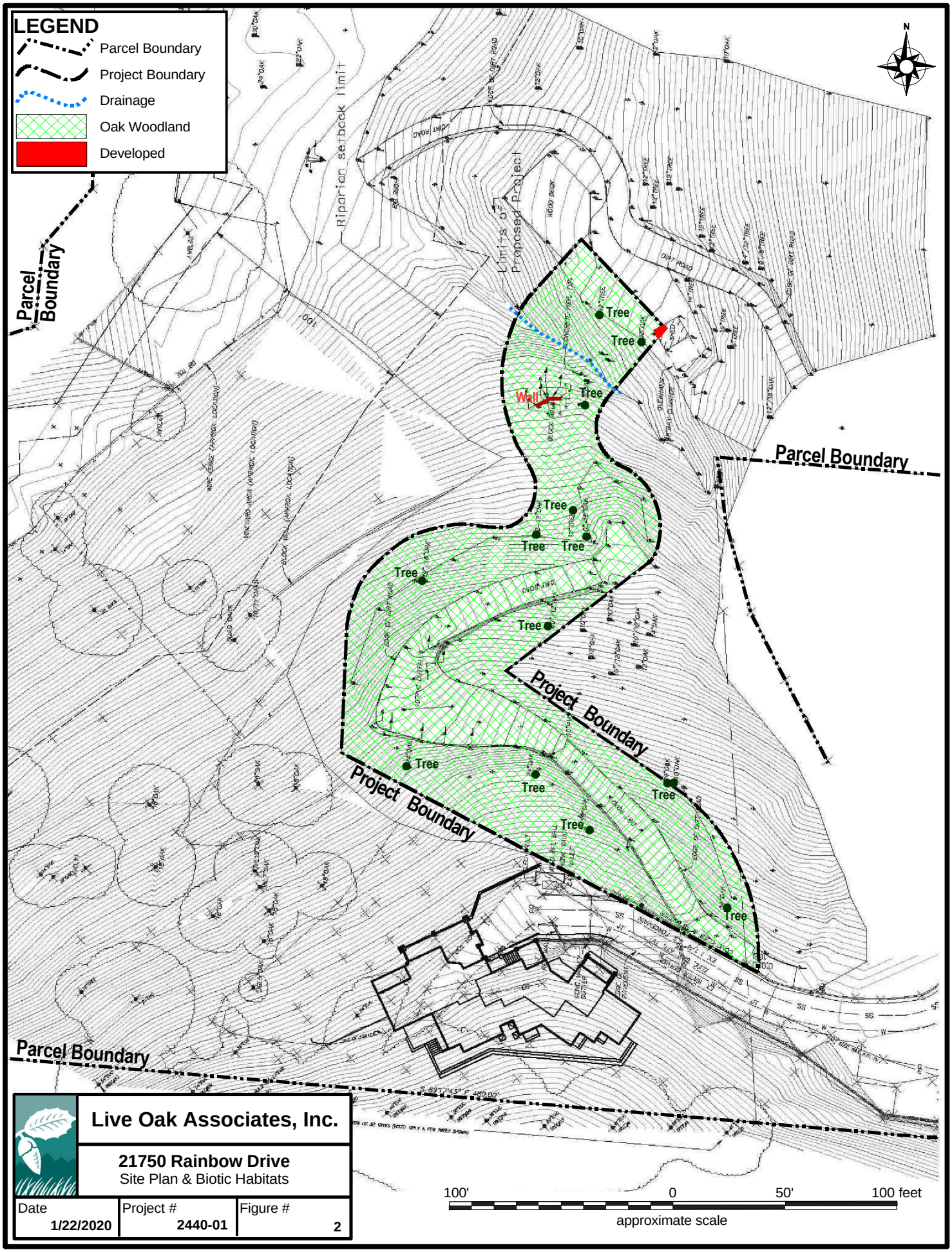
The analysis of impacts, as discussed in Section 3.0 of this report, was based on the known and potential biotic resources of the study area discussed in Section 2.0. Sources of information used in the preparation of this analysis included: 1) the *California Natural Diversity Data Base* (CDFW 2020); 2) the *Online Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2020); 3) manuals and references related to plants and animals of the Santa Clara County region; and 4) the City of Cupertino policies and ordinances.

A field survey of the study area was conducted on January 8, 2020 by LOA ecologist Katrina Krakow.


Project Location
Sunnyvale
Santa Clara
San Jose
E HOMESTEAD RD
N STELLING RD
S DE ANZA BLVD
S BLANEY AVE
LAWRENCE EXPY
STEVENS CREEK BLVD
BOLLINGER RD
RAINBOW DR
PROSPECT RD
SARATOGA AVE
COX AVE
BUCKNALL RD
S SARATOGA SUNNYVALE RD
Cupertino
Bubb Rd
Terrace Dr
Lindy Ln
Rainbow Dr
Regnart Rd
PROJECT SITE
Los Gatos
280
85
1 mile
0
1 mile
approximate scale
Vicinity Map
San Francisco
Project location
See Site Location Map (above)
San Jose
N
Not to scale
Regional Map
See Vicinity Map (left)
N
Live Oak Associates, Inc.
21750 Rainbow Drive
Site / Vicinity Map
Date
1/22/2020
Project #
2440-01
Figure #
1

1.1 PROJECT DESCRIPTION

The project, as proposed, would construct a new access roadway from the property's existing residence, winding down a steep northwest-facing hillside that supports native vegetation, to the northern portion of the property. The project would include the construction a retaining wall and construction of a culvert bridge over an ephemeral drainage feature tributary to Regnart Creek, which is located immediately northwest of the site. The proposed site plan is provided in Figure 2.


LEGEND
Parcel Boundary
Project Boundary
Drainage
Oak Woodland
Developed
N
Riparian setback limit
Limits of Proposed Project
Parcel Boundary
Project Boundary
Project Boundary
Parcel Boundary
Wall
Tree
Live Oak Associates, Inc.
21750 Rainbow Drive
Site Plan & Biotic Habitats
Date 1/22/2020
Project # 2440-01
Figure # 2
100' 0 50' 100 feet
approximate scale

2 EXISTING CONDITIONS

The project site is located in the foothills to the west of the urban environs of the City of Cupertino and is surrounded by rural residences on large acreages. The site is situated on a relatively steep northwesterly-facing slope at elevations ranging from approximately 554 feet (169 meters) National Geodetic Vertical Datum (NGVD) at the lowest point in the western portion of the property to approximately 650 feet NGVD (198 meters) at the top of the slope near the existing residence.

At the time of LOA's January 2020 field survey, the grading of the access road had already occurred almost to the ephemeral drainage crossing, and plastic or jute netting had been placed over the bare ground to prevent erosion. Additionally, trees had been removed for the grading of the road; however, a retaining wall had not yet been built.

Annual precipitation in the general vicinity of the study area is about 15-20 inches, almost 85% of which falls between the months of October and March. Virtually all precipitation falls in the form of rain.

One soil map unit occurs on the site, identified as Merbeth-Literr complex, 30 to 65 percent slopes (NRCS Websoil Survey 2020). This map unit is characterized by very deep, well drained soils with slow permeability. The map unit consists of non-hydric soils and does not include alkaline or serpentine soils; therefore, the site is not expected to support rare plant populations that are endemic on (restricted to) serpentine or alkaline soil types.

2.1 BIOTIC HABITATS

Two land cover types are present on the project site: coast live oak woodland and vineyard (see Figure 2). These land cover types are described in greater detail below.

2.1.1 Coast Live Oak Woodland

Oak woodland is the most prevalent habitat on the project site. This habitat is dominated by coast live oaks (*Quercus agrifolia*) with a sparse understory. A small ephemeral drainage channel is present within the oak woodlands of the site. This channel appears to be an ephemeral feature that only flows during and immediately following storm events. Vegetation within this ephemeral channel is undifferentiated from the surrounding upland oak woodland habitat. In addition to coast live oaks, other shrub and herbaceous plant species observed within the oak woodlands of the site

included, but were not limited to, coyote brush (*Baccharis pilularis*), elderberry (*Sambucus nigra ssp. cerulea*), black sage (*Salvia mellifera*), dissected geranium (*Geranium dissectum*), California blackberry (*Rubus ursinus*), poison-oak (*Toxicodendron diversilobum*), rose (*Rosa* sp.), annual willowherb (*Epilobium brachycarpum*), sourgrass (*Oxalis pes-caprae*), stinking fleabane (*Dittrichia graveolens*), Italian thistle (*Carduus pycnocephalus*), wild oats (*Avena* sp.), gold back fern (*Pentagramma triangularis*), sticky monkeyflower (*Diplacus aurantiacus*), bedstraw (*Galium* sp.), poison hemlock (*Conium maculatum*), hedge parsley (*Torilis arvensis*), mugwort (*Artemisia douglasiana*), and gooseberry (*Ribes* sp.). Other trees included California bay (*Umbellularia californica*) and blue gum (*Eucalyptus globulus*).

Avian species observed within or flying over the woodland of the site during the January survey included the red-tailed hawk (*Buteo jamaicensis*), Anna's hummingbird (*Calypte anna*), northern flicker (*Colaptes auratus*), spotted towhee (*Pipilo maculatus*), and dark-eyed junco (*Junco hyemalis*). Black-tailed deer (*Odocoileus hemionus columbianus*) scat was also observed. Other wildlife that would be expected to occur commonly in this habitat may include the western fence lizard (*Sceloporus occidentalis*), raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), bobcat (*Lynx rufus*), and coyote (*Canis latrans*). This habitat is likely to be regularly utilized by species associated with adjoining land uses as well.

2.1.2 Vineyard

The project site contains the southeastern corner of an existing fenced vineyard with the actual vines occurring adjacent to the impact area. The portion to be impacted is under canopy of the oak woodland and none of the vineyard itself is not within the project impact area and are not expected to be impacted. This vineyard was installed and is currently maintained by the owners of the property. It is enclosed by fencing to keep out wildlife such as deer. Other wildlife, such as reptiles and birds occurring in the adjacent oak woodland habitat would be expected to occur within the vineyard on the site as well.

2.2 MOVEMENT CORRIDORS

Habitat corridors are vital to terrestrial animals for connectivity between core habitat areas (i.e., larger intact habitat areas where species make their living). Connections between two or more core habitat areas help ensure that genetic diversity is maintained, thereby diminishing the probability of inbreeding depression and geographic extinctions.

Movement corridors in California are typically associated with valleys, rivers and creeks supporting riparian vegetation, and ridgelines. With increasing encroachment of humans on wildlife habitats, it has become important to establish and maintain linkages, or movement corridors, for animals to be able to access locations containing different biotic resources that are essential to maintaining their life cycles.

Regnart Creek is a perennial creek, located more than 100 feet from the project site. This creek is more than 10 feet wide, has steep banks, and supports a fully mature riparian habitat with sparse understory at its location where it is closest to the site. This creek may support local wildlife movement. Due to the proximity of the creek, some wildlife movement associated with the creek may occur on the project site itself. However, although surrounding land uses include dispersed residences on large lots, the project site does not fall within any regional corridor. Movements on and across the site are expected to consist of normal movements associated with an individual animal's home range or territory, or animals dispersing from their natal range.

2.3 SPECIAL STATUS PLANTS AND ANIMALS

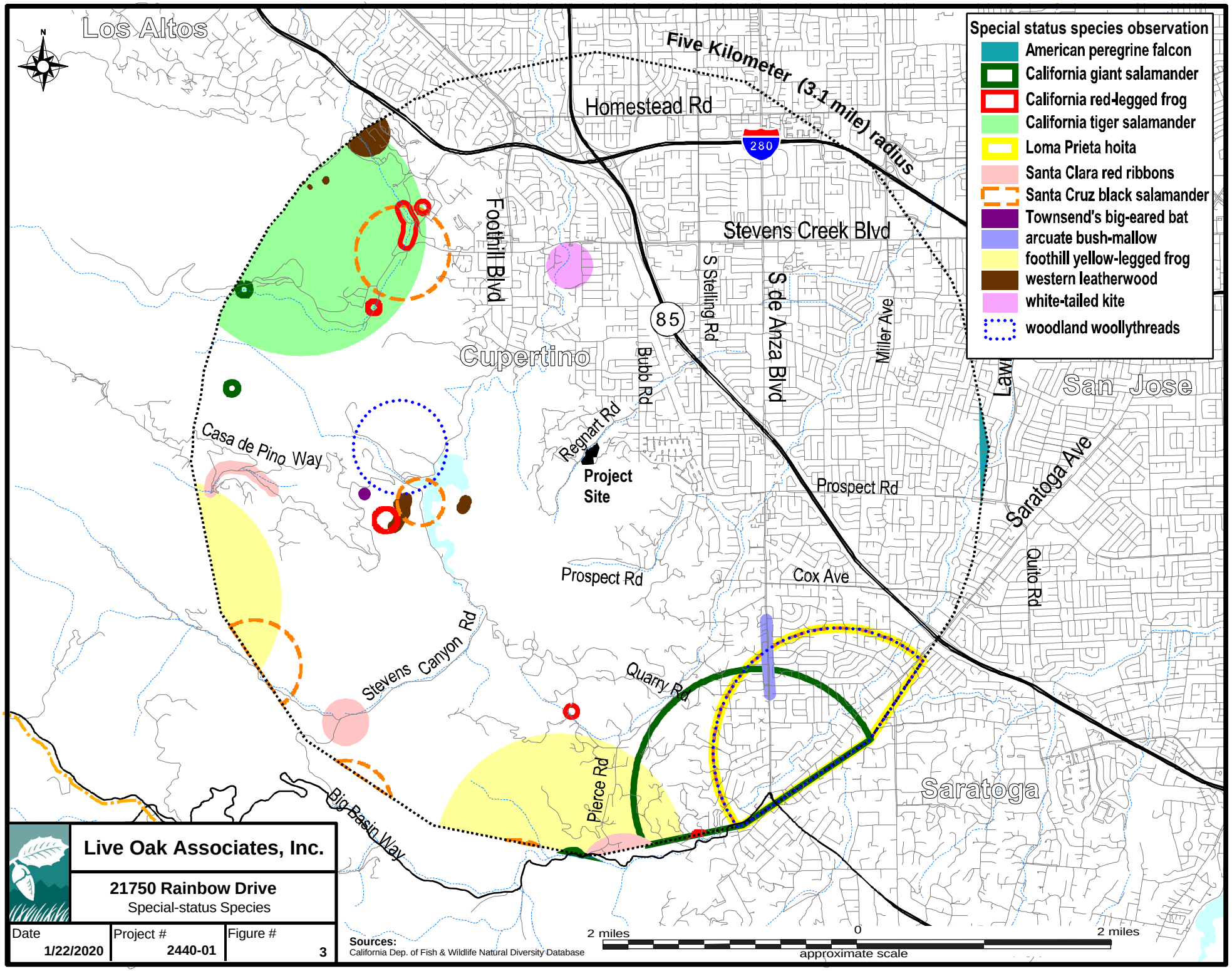
Several species of plants and animals within the state of California have low populations, limited distributions, or both. Such species may be considered "rare" and are vulnerable to extirpation as the state's human population grows and the habitats these species occupy are converted to agricultural and urban uses. As described more fully in Section 3.2, state and federal laws have provided the California Department of Fish and Wildlife (CDFW) and the U.S. Fish and Wildlife Service (USFWS) with a mechanism for conserving and protecting the diversity of plant and animal species native to the state. A sizable number of native plants and animals have been formally designated as threatened or endangered under state and federal endangered species legislation, others have been designated as "candidates" for such listing, and others have been designated as "species of special concern" by the CDFW. The California Native Plant Society (CNPS) has

developed its own lists of native plants considered rare, threatened, or endangered (CNPS 2001). Collectively, all of these plants and animals are referred to as "special status species."

A number of special status plants and animals are known to occur, or to once have occurred, in the vicinity of the study area. These species and their potential to occur in the study area are listed in Table 1. Sources of information for this table included the *California Natural Diversity Data Base* (CNDDB) (CDFW 2020), *Listed Plants* and *Listed Animals* (USFWS 2019), *State and Federally Listed Endangered and Threatened Animals of California* (CDFW 2019), *The California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2020), *Flora of North America* (accessed on-line at www.efloras.org on 1/29/2020), *California Bird Species of Special Concern* (Shuford and Gardall 2008), and *California Amphibian and Reptile Species of Special Concern* (Thompson et al. 2016). Figure 3 depict local occurrences of special status species found in the CNDDB.

A search of published accounts for all of the relevant special status plant and animal species was conducted for the Cupertino USGS 7.5-minute quadrangle in which the project site occurs, and for the eight surrounding quadrangles (Palo Alto, Mountain View, Milpitas, Mindego Hill, San Jose West, Big Basin, Castle Rock Ridge, and Los Gatos) using the CNDDB Rarefind 5 Program (CDFW 2020). All species listed as occurring in these quadrangles on CNPS Lists 1A, 1B, 2, or 4 were also reviewed (See Figure 3).

Serpentine soils are absent from the site; as such, those plant species that are uniquely adapted to serpentine conditions in the project's vicinity are considered absent from the site and are dismissed from further consideration in this document. These species include the San Mateo Thorn-mint (*Acanthomintha duttonii*), Franciscan onion (*Allium peninsulare* var. *franciscanum*), Mt. Hamilton fountain thistle (*Cirsium fontinale* var. *campylon*), fountain thistle (*Cirsium fontinale* var. *fontinale*), San Francisco collinsia (*Collinsia multicolor*), Santa Clara Valley dudleya (*Dudleya abramsii ssp. setchellii*), San Mateo woolly sunflower (*Eriophyllum latilobum*), fragrant fritillary (*Fritillaria liliacea*), Marin western flax (*Hesperolinon congestum*), Loma Prieta hoita (*Hoita strobilina*), smooth lessingia (*Lessingia micradenia* ssp. *glabrata*), woodland woollythreads


Special status species observation
American peregrine falcon
California giant salamander
California red-legged frog
California tiger salamander
Loma Prieta hoita
Santa Clara red ribbons
Santa Cruz black salamander
Townsend's big-eared bat
arcuate bush-mallow
foothill yellow-legged frog
western leatherwood
white-tailed kite
woodland woollythreads
Five Kilometer (3.1 mile) radius
Los Altos
Homestead Rd
280
Foothill Blvd
Stevens Creek Blvd
S Stelling Rd
S de Anza Blvd
Miller Ave
85
Cupertino
Bubb Rd
Regnart Rd
San Jose
Casa de Pino Way
Project Site
Prospect Rd
Saratoga Ave
Quito Rd
Cox Ave
Prospect Rd
Stevens Canyon Rd
Quarry Rd
Pierce Rd
Saratoga
Big Basin Way
Live Oak Associates, Inc.
21750 Rainbow Drive
Special-status Species
Date 1/22/2020
Project # 2440-01
Figure # 3
Sources:
California Dep. of Fish & Wildlife Natural Diversity Database
2 miles
0
2 miles
approximate scale

(*Monolopia gracilens*), white-rayed pentachaeta (*Pentachaeta bellidiflora*), most beautiful jewel-flower (*Streptanthus albidus* ssp. *peramoenus*), and two-forked clover (*Trifolium amoenum*).

Several other special status plant species are dismissed from further consideration as they occur in habitats not present in the study area (e.g., vernal pool, coastal prairie, coastal scrub, etc.) or at elevations significantly below or above elevations of the site (approximately 169-198 meters NGVD). These species include the Anderson's manzanita (*Arctostaphylos andersonii*), Schreiber's manzanita (*Arctostaphylos glutinosa*), Ohlone manzanita (*Arctostaphylos ohloneana*), Kings Mountain manzanita (*Arctostaphylos regismontana*), Bonny Doon manzanita (*Arctostaphylos silvicola*), alkali milk-vetch (*Astragalus tener* var. *tener*), brittlescale (*Atriplex depressa*), lesser saltscale (*Atriplex minuscule*), Congdon's tarplant (*Centromadia parryi* ssp. *congdonii*), Ben Lomond spineflower (*Chorizanthe pungens var. hartwegiana*), robust spineflower (*Chorizanthe robusta* var. *robusta*), Santa Clara red ribbons (*Clarkia concinna ssp. automixa*), round-headed Chinese-houses (*Collinsia corymbosa*), Point Reyes bird's-beak (*Cordylanthus maritimum* ssp. *palustre*), western leatherwood (*Dirca occidentalis*), Hoover's button-celery (*Eryngium aristulatum var. hooveri*), Jepson's coyote-thistle (*Eryngium jepsonii*), San Joaquin spearscale (*Extriplex joaquinana*), vaginulate grimmia (*Grimmia vaginulata*), short-leaved evax (*Hesperevax sparsiflora* var. *brevifolia*), Santa Cruz cypress (*Hesperocyparis abramsiana* var. *abramsiana*), Butano Ridge cypress (*Hesperocyparis abramsiana* var. *butanoensis*), Contra Costa goldfields (*Lasthenia conjugens*), legenere (*Legenere limosa*), arcuate bush-mallow (*Malacothamnus arcuatus*), Hall's bush-mallow (*Malacothamnus hallii*), prostrate vernal pool navarretia (*Navarretia prostrate*), Kellman's bristle moss (*Orthotrichum kellmanii*), Santa Cruz Mountains beardtongue (*Penstemon rattanii* var. *kleei*), Choris' popcorn-flower (*Plagiobothrys chorisianus* var. *chorisianus*), hairless popcorn flower (*Plagiobothrys glaber*), rock sanicle (*Sanicula saxatilis*), chaparral ragwort (*Senecio aphanactis*), slender-leaved pondweed (*Stuckenia filiformis*), California seablite (*Suaeda californica*), Saline clover (*Trifolium hydrophilum*), and Pacific Grove clover (*Trifolium polyodon*).

Plant and animal species having some potential to occur on the project site or in the immediate vicinity are discussed further below.

TABLE 1. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY

PLANTS (adapted from CDFW 2020 and CNPS 2020)
Special status plants listed by CNPS

Species	Status	Habitat	Occurrence in the Study Area*
Bent-flowered fiddleneck (*Amsinckia lunaris*)	CRPR 1B	Habitat: Coastal bluff scrub, cismontane woodland, and valley and foothill grasslands Elevation: 3-800 meters Blooming period: March–June Life form: Annual herb	**Unlikely.** Woodland habitats of the site are extremely marginal for this species due to existing human disturbance and surrounding development, and there are no occurrences within a three-mile radius of the site.
Slender silver moss (*Anomobryum julaceum*)	CRPR 2	Habitat: Damp rock and soil outcrops usually on roadcuts found in broadleafed upland forest, lower montane coniferous forest, and north coast coniferous forest Elevation: 100-1000 meters. Blooming period: N/A Life form: Moss	**Absent.** There are no suitable soils and habitats onsite to support this species.
Santa Cruz Mountains pussypaws (*Calyptridium parryi var. hesseae*)	CRPR 1B	Habitat: Chaparral and cismontane woodland in sandy or gravelly openings with flat to gentle slopes, often in poor soil or disturbed areas with little competition from other plants Elevation: 305-1530 meters. Blooms: May-August. Life form: Annual herb	**Absent.** Suitable habitat is absent from the site.
Lost thistle (*Cirsium praeteriens*)	CRPR 1A	Habitat: Unknown. This species was last collected in 1897 and 1901 in the Palo Alto area. Elevation: 0-100 meters Blooms: June–July Life form: Perennial herb	**Absent.** This species has not been observed since 1901 and is presumed extinct.
Western leatherwood (*Dirca occidentalis*)	CRPR 1B	Habitats: Mesic habitats such as broadleafed upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, north coast coniferous forest, riparian forest, and riparian woodland Elevation: 25-425 meters Blooms: January-March Life form: Perennial deciduous shrub	**Absent.** There are no suitable mesic habitats onsite to support this species. This is a perennial shrub species that would have been observed if present during the site visit. Existing human disturbance and surrounding development contribute to absence of suitable habitat.
Minute pocket moss (*Fissidens pauperculus*)	CNPR 1B	Habitat: North coast coniferous forest with damp coastal soil Elevation: 10 to 1,024 meters Blooms: N/A Life form: Moss	**Absent.** Suitable habitat is absent from the site.

TABLE 1. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY

PLANTS (Continued adapted from CDFW 2020 and CRPR 2020)
Other special status plants listed by CNPS

Species	Status	Habitat	Occurrence in the Study Area*
Toren's grimmia (*Grimmia torenii*)	CRPR 1B	Habitats: Occurs in openings, rock outcrops, boulders, rock walls, carbonate, and volcanic areas in chaparral, cismontane woodland, and lower montane coniferous forests Elevation: 325-1160 meters Blooms: N/A Life form: Moss	**Absent.** Suitable habitat is absent from the site.
Dudley's lousewort (*Pedicularis dudleyi*)	CRPR 1B	Habitat: Riparian sites and shaded banks in coast redwood (*Sequoia sempervirens*) forests as well as maritime chaparral, cismontane woodland, and valley and foothill grassland. Elevation: <350 meters Blooms: March–June Life form: Perennial herb	**Absent.** Oak woodlands of the site provide extremely marginal habitat for this species because of human disturbance and surrounding development, and this perennial species would have been observed if present on the site during the survey.
White-flowered rein orchid (*Piperia candida*)	CRPR 1B	Habitat: Broadleaved upland forest, lower montane coniferous forest, and north coast coniferous forest, sometimes on serpentine soils Elevation: 30-1300 meters Blooms: March-September Life form: Perennial herb	**Absent.** Suitable habitat is absent from the site.
California alkali grass (*Puccinellia simplex*)	CRPR 1B	Habitat: Vernally mesic areas and alkaline soils within chenopod scrub, vernal pools, meadows, seeps, and valley and foothill grasslands Elevation: 2-930 meters Blooms: March-May Life form: Annual herb	**Absent.** Suitable habitat is absent from the site.
Santa Cruz microseris (*Stebbinsoseris decipiens*)	CRPR 1B	Habitat: Open areas within broadleaved upland forest, closed-cone coniferous forest, chaparral, coastal prairie, coastal scrub, and valley and foothill grassland, sometimes on serpentinite Elevation: 10-500 meters Blooms: April-May Life form: Annual herb	**Absent.** Suitable habitat is absent from the site.
Santa Cruz clover (*Trifolium buckwestiorum*)	CRPR 1B	Habitat: Broadleaved upland forest, cismontane woodland, and coastal prairie with preference for gravelly margins Elevation: 105-610 meters Blooms: April-October Life form: Annual herb	**Absent.** Suitable habitat is absent from the site.

TABLE 1. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY

PLANTS (Continued adapted from CDFW 2020 and CRPR 2020)
Other special status plants listed by CNPS

Species	Status	Habitat	Occurrence in the Study Area*
Methuselah's beard lichen (*Usnea longissima*)	CRPR 4	Habitat: Typically on branches of old growth hardwoods within broadleaved upland forest and conifers within north coast coniferous forest Elevation: 50-1460 meters Blooms: N/A Life form: Fruticose lichen (epiphytic)	**Absent.** Suitable habitat is absent from the site.

ANIMALS (adapted from CDFW 2020 and USFWS 2020)
Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Act

Species	Status	Habitat	Occurrence in the Study Area*
Crotch bumble bee (*Bombus crotchii*)	CCE	In California, inhabits open grassland and scrub habitats of the southern 2/3 of California. Historically in, but largely extirpated from the Central Valley. Flight period for queens is late February to late October peaking in April and July; flight period for males and workers is March through September peaking in early July. Constructs nests underground in animal burrows. Overwintering sites are likely in soft soils or in debris or leaf litter.	**Absent.** Habitat onsite is not suitable for this species. Additionally, the nearest documented observation of this species is more than three miles from the site (CDFW 2020).

TABLE 1. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY

ANIMALS (adapted from CDFW 2020 and USFWS 2020)
Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Act

Species	Status	Habitat	Occurrence in the Study Area*
Western bumble bee (*Bombus occidentalis*)	CCE	In California, mainly occurs within the coastal and Sierra Nevada ranges within meadows and grasslands and some natural areas within urban environments. There is some indication that the current distribution is potentially restricted to high elevation and coastal areas. Historically occurred from the Channel Islands to the northern California border. Flight period is February to late November, peaking in late June and late September. Tends to construct nest underground in animal burrows on west and south-west facing slopes. Overwintering sites are likely in friable soils or in debris or leaf litter.	**Unlikely.** The site lacks suitable nesting sites for this species and contains limited growth of flowering plants on which this species can forage. Therefore, this species is not likely to use the site for nesting or regular foraging. Additionally, the nearest documented observation of this species is more than three miles from the site (CDFW 2020).
California tiger salamander (*Ambystoma californiense*)	FT, CT	Breeds in stagnant pools with continuous inundation for a minimum of three months, which may include vernal pools and stock ponds of central California; adults aestivate in grassland habitats adjacent to the breeding sites.	**Absent.** Suitable breeding habitat for this species is absent from the site and the immediate vicinity. The closest documented observation of this species is approximately two miles northwest of the site (CDFW 2020).

TABLE 1. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY

ANIMALS (Continued adapted from CDFW 2020 and USFWS 2020)
Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Act

Species	Status	Habitat	Occurrence in the Study Area*
Foothill yellow-legged frog (FYLF) (*Rana boylii*)	CSC CCT	Occurs in swiftly flowing streams and rivers with rocky substrate with open, sunny banks in forest, chaparral, and woodland habitats, and can sometimes be found in isolated pools.	**Possible.** The nearby Regnart Creek supports suitable breeding and dispersal habitat for the FYLF, as it is a perennial creek and supports a mature riparian habitat. There are no records of the FYLF to date within Regnart Creek. Lack of records within the creek could either be due to a lack of surveys for the FYLF or actual lack of presence. The site itself does not support suitable stream or wetland habitat for the FYLF, however, should the FYLF occur in the creek, the site would provide potentially suitable upland habitat for this species. Should individuals of this species occur within this creek, they could be expected utilize the site from time to time as upland habitat. The nearest documented observations of this species are approximately two miles south (from 1958) and 2.5 miles southwest (from 1939) of the site (CDFW 2020).
California red-legged frog (CRLF) (*Rana aurora draytonii*)	FT, CSC	Rivers, creeks and stock ponds of the Sierra foothills and Bay Area, preferring pools with overhanging vegetation.	**Possible.** The nearby Regnart Creek supports suitable breeding and dispersal habitat for the CRLF, as it is a perennial creek and supports a mature riparian habitat. There are no records of the CRLF to date within Regnart Creek. Lack of records within the creek could either be due to a lack of surveys for the CRLF or actual lack of presence. The site itself does not support suitable stream or wetland habitat for the CRLF, however, should the CRLF occur in the creek, the site would provide potentially suitable upland habitat for this species. Should individuals of this species occur within this creek, they could be expected utilize the site from time to time as upland habitat. The CRLF is known to occur within two miles to the north (from 2017), west (from 1970s), and south (from 2007) of the site (CDFW 2020). Should CRLF occur within Regnart Creek, they could be expected to utilize the site from time to time as upland habitat.

TABLE 1. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY

ANIMALS (Continued adapted from CDFW 2020 and USFWS 2020)
Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Act

Species	Status	Habitat	Occurrence in the Study Area
Swainson's hawk (SWHA) (*Buteo swainsoni*)	CT	Breeds in stands with few trees in juniper-sage flats, riparian areas, and in oak savannah. Requires adjacent suitable foraging areas such as grasslands or alfalfa fields supporting rodent populations.	**Absent.** The SWHA is only known in the region from one pair which breeds each year in Coyote Valley, more than 15 miles to the southeast of the site (CDFW 2020). Therefore, Swainson's hawks are not expected to occur onsite.
Bald eagle (*Haliaeetus leucocephalus*)	CE, CP	Breeding habitat is usually within 4 km of a water source in a tall tree or cliffs; roosting in large numbers in winter is common.	**Unlikely.** Although the bald eagle may occur at the nearby Stevens Creek Reservoir, and this species may occasionally fly over the project site, this species is unlikely to forage or nest on the project site. The nearest documented observation of this species is more than three miles from the site (CDFW 2020).
Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)	FC, CE	Breed in large blocks of riparian habitats, particularly cottonwoods and willows.	**Absent.** Dense riparian habitat required by the western yellow-billed cuckoo is absent from the project site. Additionally, the nearest documented observation of this species is more than three miles from the site (CDFW 2020).
Tricolored blackbird (*Agelaius tricolor*)	CSC, CT	Breeds near fresh water in dense emergent vegetation.	**Absent.** Suitable nesting habitat is absent from the site. Additionally, the nearest documented observation of this species is more than three miles from the site (CDFW 2020).

State Species of Special Concern and Protected Species

Species	Status	Habitat	Occurrence in the Study Area*
Santa Cruz black salamander (SCBS) (*Aneides niger*)	CSC	Occurs in deciduous woodland, coniferous forests, and coastal grasslands around the Santa Cruz Mountains and foothills. This species is also known to occur on the developed flats in pockets within older developments. They can be found under rocks near streams, in talus, under damp logs, rotting wood, and other objects.	**Possible.** Suitable habitat for the Santa Cruz black salamander is marginal on the project site due to the lack of rock piles and debris on the site. This species is known to occur in the Santa Cruz Mountains, with the nearest documented observation of this species being less than 1.5 miles to the west of the site on the other side of Stevens Creek Reservoir in 1955 (CDFW 2020).
California giant salamander (*Dicamptodon ensatus*)	SCC	Occurs in or adjacent to cold clear permanent to semi-permanent streams and seeps.	**Unlikely.** Although this species may occur in the adjacent perennial Regnart Creek, this species spends most of its life within streams and riparian habitat, and therefore, would be unlikely to occur on the project site itself. The nearest documented observation of this species is nearly three miles to the west of the site in 2009 (CDFW 2020).

TABLE 1. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY

ANIMALS (Continued adapted from CDFG 2020 and USFWS 2020)
State Species of Special Concern and Protected Species

Species	Status	Habitat	Occurrence in the Study Area*
Red-bellied newt (*Taricha rivularis*)	CSC	This species lays eggs in running water and can be found in coastal woodlands and redwood forest along the coast of northern California north of San Francisco except a small population occurring in the Stevens Creek watershed near the San Francisco Bay.	**Unlikely.** The only location this species is known to occur in the vicinity of the site is the Stevens Creek watershed, which is adjacent to the site, however, due to the proximity of the known range of this species and the ability for individuals to travel long distances, it cannot be completely ruled out. The nearest documented observation of this species is more than three miles from the site (CDFW 2020).
Northern California legless lizard (NCLL) (*Anniella pulchra*)	CSC	The NCLL (previously called black legless lizard) occurs mostly underground in warm moist areas with loose soil and substrate. The NCLL occurs in habitats including sparsely vegetated areas of beach dunes, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces with sycamores, cottonwoods, or oaks.	**Absent.** Habitats required by northern California legless lizards are absent from the site, as the site lacks sandy soils and consists of oak woodland habitat which is not suitable for this species. The nearest documented observation of this species is more than three miles from the site (CDFW 2020).
Western pond turtle (WPT) (*Actinemys marmorata*)	CSC	Intermittent and permanent waterways including streams, marshes, rivers, ponds and lakes. Open slow-moving water of rivers and creeks of central California with rocks and logs for basking.	**Unlikely.** Suitable habitat for the WPT is marginal onsite. The nearest recorded location of the WPT is more than three miles from the site (CDFW 2020).
Northern harrier (*Circus cyaneus*)	CSC	Frequents meadows, grasslands, open rangelands, freshwater emergent wetlands; uncommon in wooded habitats.	**Unlikely.** The site does not provide suitable foraging or nesting habitat; however, as suitable grassland habitat exists nearby, this species may fly over the site from time to time. The nearest documented observation of this species is more than three miles from the site (CDFW 2020).
White-tailed kite (*Elanus leucurus*)	CP	Open grasslands and agricultural areas throughout central California.	**Possible.** The nearest documented observation of this species is approximately two miles from the site (CDFW 2020), and suitable nesting and foraging habitat exists onsite or adjacent to the site for this species.

TABLE 1. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY

ANIMALS (Continued adapted from CDFW 2020 and USFWS 2020)
State Species of Special Concern and Protected Species

Species	Status	Habitat	Occurrence in the Study Area*
American peregrine falcon (*Falco peregrines anatum*)	CP	Individuals breed on cliffs in the Sierra or in coastal habitats; occurs in many habitats of the state during migration and winter.	**Absent.** The site does not support suitable nesting habitat for the peregrine falcon, and the nearest documented occurrence is approximately three miles east of the site. As this species is well documented in the region as occurring within cities, it is not expected to forage on the site.
Golden eagle (*Aquila chrysaetos*)	CP	Typically frequents rolling foothills, mountain areas, sage-juniper flats and desert.	**Unlikely.** Suitable breeding habitat is absent from the site, and foraging habitat is considered marginal on the site for this species due to the dense tree cover. The nearest documented occurrence of this species is more than three miles from the site.
Long-eared owl (*Asio otus*)	CSC	Occur on edge habitats including in clumps of trees or edges of open forests that are adjacent to grasslands, shrublands, wetlands, marshes, and farmlands. Need stick nests built by other birds in trees.	**Unlikely.** Long-eared owls are unlikely to occur on the site, as the site does not support edge habitats used by this species. Additionally, the nearest recorded observation is more than three miles from the site.
Burrowing owl (*Athene cunicularia*)	CSC	Found in open, dry grasslands, deserts and ruderal areas. Requires suitable burrows for nesting and cover. This species is often associated with California ground squirrels.	**Absent.** Suitable nesting burrow sites are presently absent and habitat is not suitable for this species. Additionally, the nearest recorded observation is more than three miles from the site.
Purple martin (*Progne subis*)	CSC	Cavity nester, nests widely in man-made birdhouses.	**Unlikely.** The trees of the site may provide potential nesting habitat; however, these birds are known to nest near open water, which is not present on the site or in the vicinity of the site.
Saltmarsh common yellowthroat (*Geothlypis trichas sinuosa*)	CSC	Breeds in herbaceous wetlands and salt marshes of the San Francisco Bay Area, can also be found in non-breeding along the California coast. Nests in thick herbaceous vegetation up to one meter above the ground or over water.	**Absent.** Suitable habitat for this species is absent from the site. They are found along San Francisco Bay with the nearest record more than three miles from the site.
Alameda song sparrow (*Melospiza melodia pusillula*)	CSC	Found in tidal salt marsh habitat with exposed ground for foraging with no more than 2-5 cm between bases of plants. Current range is generally only along the San Francisco Bay.	**Absent.** Suitable habitat for this species is absent from the site. They are found along San Francisco Bay with the nearest record more than three miles from the site.

TABLE 1. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY

ANIMALS (Continued adapted from CDFW 2020 and USFWS 2020)
State Species of Special Concern and Protected Species

Species	Status	Habitat	Occurrence in the Study Area*
Townsend's big-eared bat (*Corynorhinus townsendii*)	CSC	Primarily a cave-dwelling bat that may also roost in buildings, bridges, rock crevices, and hollow trees. Occurs in a variety of habitats.	**Possible.** Although suitable foraging habitat occurs onsite, suitable roosting habitat is absent from the site. The nearest documented occurrence is nearly two miles from the site (CDFW 2020).
Pallid bat (*Antrozous pallidus*)	CSC	Occurs in grasslands, chaparral, woodlands, and forests; most common in dry rocky open areas providing roosting opportunities. Roost sites include caves, mines, rock crevices, and large cavities of trees.	**Possible.** Although suitable foraging habitat occurs onsite, suitable roosting habitat is absent from the site. The nearest documented occurrence is more than three miles from the site (CDFW 2020).
San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*)	CSC	Found in hardwood forests, oak riparian and shrub habitats.	**Present.** Suitable habitat is present on the site, and a woodrat nest was observed upstream of the proposed culvert/bridge location.
American badger (*Taxidea taxus*)	CSC	Found in drier open stages of most shrub, forest and herbaceous habitats with friable soils, specifically grassland environments. Natal dens occur on slopes.	**Unlikely.** Although the site does not support grassland habitat suitable as breeding or foraging habitat for badgers, grassland habitat does exist nearby. Although unlikely, a badger could move through the site on its way to more suitable habitat. The nearest documented observation is more than three miles from the site.

***Explanation of Occurrence Designations and Status Codes**
Present: Species observed on the sites at time of field surveys or during recent past.
Likely: Species not observed on the site, but it may reasonably be expected to occur there on a regular basis.
Possible: Species not observed on the sites, but it could occur there from time to time.
Unlikely: Species not observed on the sites, and would not be expected to occur there except, perhaps, as a transient.
Absent: Species not observed on the site and precluded from occurring there because habitat requirements not met.

STATUS CODES

FE	Federally Endangered	CE	California Endangered
FT	Federally Threatened	CT	California Threatened
FPE	Federally Endangered (Proposed)	CR	California Rare
FC	Federal Candidate	CP	California Protected
CSC	California Species of Special Concern	CCE	California Candidate Endangered

CNPS	California Native Plant Society Listing		
1A	Plants Presumed Extinct in California	3	Plants about which we need more information – a review list
1B	Plants Rare, Threatened, or Endangered in California and elsewhere	4	Plants of limited distribution – a watch list
2	Plants Rare, Threatened, or Endangered in California, but more common elsewhere		

2.4 JURISDICTIONAL WATERS

Jurisdictional waters include rivers, creeks, and drainages that have a defined bed and bank and which, at the very least, carry ephemeral flows. Jurisdictional waters also include lakes, ponds, reservoirs, and wetlands. Such waters may be subject to the regulatory authority of the U.S. Army

Corps of Engineers (USACE), the CDFW, and the California Regional Water Quality Control Board (RWQCB). See Section 3.2.4 of this report for additional information.

While a formal wetland delineation was not conducted on the site, the ephemeral channel on the site could potentially be considered a jurisdictional water of the U.S. and/or state.

3 IMPACTS AND MITIGATIONS

3.1 SIGNIFICANCE CRITERIA

General plans, area plans, and specific projects are subject to the provisions of the California Environmental Quality Act. The purpose of CEQA is to assess the impacts of proposed projects on the environment before they are constructed. For example, site development may require the removal of some or all existing vegetation. Animals associated with this vegetation could be destroyed or displaced. Animals adapted to humans, roads, buildings, pets, etc., may replace those species formerly occurring on a site. Plants and animals that are state and/or federally listed as threatened or endangered may be destroyed or displaced. Sensitive habitats such as wetlands and riparian woodlands may be altered or destroyed. These impacts may be considered significant. According to *2019 CEQA Status and Guidelines* (2019), "Significant effect on the environment" means a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic interest. Specific project impacts to biological resources may be considered "significant" if they will:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service;
- 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 Wildlife or U.S. Fish and Wildlife Service;
- 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;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; and

- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

3.2 RELEVANT GOALS, POLICIES, AND LAWS

3.2.1 Threatened and Endangered Species

State and federal "endangered species" legislation has provided the CDFW and USFWS with a mechanism for conserving and protecting plant and animal species of limited distribution and/or low or declining populations. Species listed as threatened or endangered under provisions of the state and federal Endangered Species Acts, candidate species for such listing, state species of special concern, and some plants listed as endangered by the California Native Plant Society are collectively referred to as "species of special status." Permits may be required from both the CDFW and USFWS if activities associated with a proposed project will result in the take of a listed species. To "take" a listed species, as defined by the state of California, is "to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill" said species (California Fish and Game Code, Section 86). "Take" is more broadly defined by the federal Endangered Species Act to include "harm" of a listed species (16 USC, Section 1532(19), 50 CFR, Section 17.3). Furthermore, the CDFW and the USFWS are responding agencies under CEQA. Both agencies review CEQA documents in order to determine the adequacy of their treatment of endangered species issues and to make project-specific recommendations for their conservation.

3.2.2 Migratory Birds

State and federal laws also protect most bird species. The State of California signed Assembly Bill 454 into law in 2019, which clarifies native bird protection and increases protections where California law previously deferred to Federal law. The Federal Migratory Bird Treaty Act (FMBTA: 16 U.S.C., scc. 703, Supp. I, 1989) prohibits killing, possessing, or trading in migratory birds, except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs.

3.2.3 Birds of Prey

Birds of prey are protected in California under provisions of the State Fish and Game Code, Section 3503.5, which states that it is "unlawful to take, possess, or destroy any birds in the order *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." Construction 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 "taking" by the CDFW.

Additionally, the Bald and Golden Eagle Protection Act (16 U.S.C., scc. 668-668c) prohibits anyone from taking bald or golden eagles, including their parts, nests, or eggs, unless authorized under a federal permit. The act prohibits any disturbance that directly affects an eagle or an active eagle nest as well as any disturbance caused by humans around a previously used nest site during a time when eagles are not present such that it agitates or bothers an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death or nest abandonment.

3.2.4 Bats

Section 2000 and 4150 of the California Fish and Game Code states that it is unlawful to take or possess a number of species, including bats, without a license or permit, as required by Section 3007. Additionally, Title 14 of the California Code of Regulations states it is unlawful to harass, herd, or drive a number of species, including bats. To harass is defined as "an intentional act which disrupts an animal's normal behavior patterns, which includes, but is not limited to, breeding, feeding or sheltering." For these reasons, bat colonies in particular are considered to be sensitive and therefore, disturbances that cause harm to bat colonies are unlawful.

3.2.5 Wetlands and Other "Jurisdictional Waters"

The USACE regulates the filling or grading of waters of the U.S. under the authority of Section 404 of the Clean Water Act. Natural drainage channels and adjacent wetlands may be considered "waters of the United States" or "jurisdictional waters" subject to the jurisdiction of the USACE. The extent of jurisdiction has been defined in the Code of Federal Regulations and clarified in federal courts.

The definition of waters of the U.S. was updated in 2019 with the repeal of the 2015 Clean Water Rule, which re-codified the prior definition of federal waters. What constitutes federal waters will be redefined yet again with the Navigable Waters Protection Rule, which was finalized in January 2020 and has been submitted for publication in the Federal Register. Until such time that the

Navigable Waters Protection Rule goes into effect, which is anticipated to happen this year, waters of the U.S. are defined in 33 CFR §328.3(a) as:

1. All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
2. All interstate waters, including interstate wetlands;
3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:
    a. Which are or could be used by interstate or foreign travelers for recreational or other purposes; or
    b. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
    c. Which are used or could be used for industrial purpose by industries in interstate commerce;
4. All impoundments of water otherwise defined as waters of the United States under the definition;
5. Tributaries to waters identified in paragraphs (a)(1) through (4) of this section;
6. The territorial seas;
7. Wetlands adjacent to waters (other than waters which are themselves wetlands) identified in paragraphs (a)(1) through (6) of this section.

All activities that involve the discharge of dredge or fill material into Waters of the U.S. are subject to the permit requirements of the USACE. Such permits are typically issued on the condition that the applicant agrees to provide mitigation that result in no net loss of wetland functions or values. No permit can be issued until the RWQCB issues a Section 401 Water Quality Certification (or waiver of such certification) verifying that the proposed activity will meet state water quality standards.

Under the Porter-Cologne Water Quality Control Act of 1969, the State Water Resources Control Board has regulatory authority to protect the water quality of all surface water and groundwater in the State of California ("Waters of the State"). Nine RWQCBs oversee water quality at the local and regional level. The RWQCB for a given region regulates discharges of fill or pollutants into Waters of the State through the issuance of various permits and orders. Discharges into Waters of the State that are also Waters of the U.S. require a Section 401 Water Quality Certification from the RWQCB as a prerequisite to obtaining certain federal permits, such as a Section 404 Clean

Water Act permit. Discharges into all Waters of the State, even those that are not also Waters of the U.S., require Waste Discharge Requirements (WDRs), or waivers of WDRs, from the RWQCB.

The RWQCB also administers the Construction Stormwater Program and the federal National Pollution Discharge Elimination System (NPDES) program. Projects that disturb one or more acres of soil must obtain a Construction General Permit under the Construction Stormwater Program. A prerequisite for this permit is the development of a Stormwater Pollution Prevention Plan (SWPPP) by a certified Qualified SWPPP Developer. Projects that discharge wastewater, stormwater, or other pollutants into a Water of the U.S. may require a NPDES permit.

CDFW has jurisdiction over the bed and bank of natural drainages and lakes according to provisions of Section 1601 and 1602 of the California Fish and Game Code. Activities that may substantially modify such waters through the diversion or obstruction of their natural flow, change or use of any material from their bed or bank, or the deposition of debris require a Notification of Lake or Streambed Alteration. If CDFW determines that the activity may adversely affect fish and wildlife resources, a Lake or Streambed Alteration Agreement will be prepared. Such an agreement typically stipulates that certain measures will be implemented to protect the habitat values of the lake or drainage in question.

3.2.6 City of Cupertino Tree Ordinance

The City of Cupertino has a tree ordinance (Chapter 14.18 of the Municipal Code) that requires a tree removal permit for removal of "protected trees." "Removal" is defined by the ordinance as both the complete removal of the tree and also the severe pruning of a protected tree (i.e. the removal of more than one-fourth of the functioning leaf and stem area of a protected tree in any twelve-month period as determined by the Community Development Director). Per the ordinance, a "protected tree" is defined as:

Heritage Trees in All Zones. "Heritage tree" is defined by the ordinance as any tree or grove of trees which, because of factors including but not limited to, its historic value, unique quality, girth, height or species, has been found by the Planning Commission to have a special significance to the community.

Mature Specimen Trees on Private Property. "Mature specimen tree" is defined by the ordinance as a tree with a minimum single-trunk of 12 inches diameter-at-breast height (DBH) (38-inch

circumference), or multi-trunk DBH of 24 inches (75-inch circumference) or greater, of the following species:

- *Quercus* sp. (any native oak tree);
- *Aesculus californica* (California buckeye);
- *Acer macrophyllum* (big leaf maple);
- *Cedrus deodara* (deodar cedar);
- *Cedrus atlantica* 'Glauca' (blue Atlas cedar);
- *Umbellularia californica* (bay laurel or California bay); and
- *Platanus racemosa* (western sycamore).

Approved Development Tree(s). "Approved development tree(s)" means any class of tree required to be planted or retained as part of an approved development application, building permit, tree removal permit or code enforcement action in all zoning districts.

Approved Privacy Protection Planting in R-1 Zoning Districts. "Privacy planting" means any privacy protection planting, including trees and/or shrubs, required pursuant to Chapter 19.28 of the Municipal Code.

3.2.7 City of Cupertino's General Plan: Community Vision 2015 - 2040

Chapter 6 (Environmental Resources and Sustainability) of the City's General Plan (adopted in 2014) sets forth goals, policies and strategies aimed at protecting the City's environmental resources and promoting sustainability. The following goals, policies, and strategies contained in Chapter 6 of the General Plan would be applicable to development projects.

GOAL ES-5: Protect the City's urban and rural ecosystems.

> POLICY ES-5.1: URBAN ECOSYSTEM Manage the public and private development to ensure the protection and enhancement of its urban ecosystem.
>
> STRATEGIES:
>
> - ES-5.1.1: Landscaping. Ensure that the City's tree planting, landscaping and open space policies enhance the urban ecosystem by encouraging medians, pedestrian crossing curb-extensions planting that is native, drought-tolerant, treats stormwater and enhances urban plant, aquatic and animal resources in both, private and public development.

- ES-5.1.2: Built Environment. Ensure that sustainable landscaping design is incorporated in the development of City facilities, parks and private projects with the inclusion of measures such as tree protection, stormwater treatment and planting of native, drought tolerant landscaping that is beneficial to the environment.

POLICY ES-5.2: DEVELOPMENT NEAR SENSITIVE AREAS Encourage the clustering of new development away from sensitive areas such as riparian corridors, wildlife habitat and corridors, public open space preserves and ridgelines. New developments in these areas must have a harmonious landscaping plan approved prior to development.

STRATEGY:

- ES-5.2.1: Riparian Corridor Protection. Require the protection of riparian corridors through the development approval process.

POLICY ES-5.3: LANDSCAPING IN AND NEAR NATURAL VEGETATION Preserve and enhance existing natural vegetation, landscape features and open space when new development is proposed within existing natural areas. When development is proposed near natural vegetation, encourage the landscaping to be consistent with the palate of vegetation found in the natural vegetation.

STRATEGIES:

- ES-5.3.1: Native Plants. Continue to emphasize the planting of native, drought tolerant, pest resistant, non-invasive, climate appropriate plants and ground covers, particularly for erosion control and to prevent disturbance of the natural terrain.
- ES-5.3.2: Hillsides. Minimize lawn area in the hillsides.

POLICY ES-5.4: HILLSIDE WILDLIFE MIGRATION Confine fencing on hillside property to the area around a building, rather than around an entire site, to allow for migration of wild animals.

POLICY ES-5.5: RECREATION AND NATURAL VEGETATION Limit recreation in natural areas to activities compatible and appropriate with preserving natural vegetation, such as hiking, horseback riding, mountain biking and camping.

POLICY ES-5.6: RECREATION AND WILDLIFE Provide open space linkages within and between properties for both recreational and wildlife activities, most specifically for the benefit of wildlife that is threatened, endangered or designated as species of special concern.

STRATEGIES:

- ES-5.6.1: Creek and Water Course Identification. Require identification of creeks, water courses and riparian areas on site plans and require that they be protected from adjacent development.

- ES-5.6.2: Trail Easements. Consider requiring easements for trail linkages if analysis determines that they are needed.

GOAL ES-7: Ensure protection and efficient use of all water resources.

POLICY ES-7.1: NATURAL WATER BODIES AND DRAINAGE SYSTEMS In public and private development, use Low Impact Development (LID) principles to manage stormwater by mimicking natural hydrology, minimizing grading and protecting or restoring natural drainage systems.

STRATEGIES:

- ES-7.1.1: Development Plans. Continue to require topographical information; identification of creeks, streams and drainage areas; and grading plans for both public and private development proposals to ensure protection and efficient use of water resources.

POLICY ES-7.2: REDUCTION OF IMPERVIOUS SURFACES Minimize stormwater runoff and erosion impacts resulting from development and use low impact development (LID) designs to treat stormwater or recharge groundwater.

STRATEGIES:

- ES-7.2.1: Lot Coverage. Consider updating lot coverage requirements to include paved surfaces such as driveways and on grade impervious patios to incentivize the construction of pervious surfaces.

- ES-7.2.2: Pervious Walkways and Driveways. Encourage the use of pervious materials for walkways and driveways. If used on public or quasi-public property, mobility and access for the disabled should take precedence.

- ES-7.2.3: Maximize Infiltration. Minimize impervious surface areas and maximize on-site filtration and the use of on-site retention facilities.

POLICY ES-7.3: POLLUTION AND FLOW IMPACTS Ensure that surface and groundwater quality impacts are reduced through development review and voluntary efforts.

STRATEGY:

- ES-7.3.1: Development Review. Require LID designs such as vegetated stormwater treatment systems and green infrastructure to mitigate pollutant loads and flows.

POLICY ES-7.8: NATURAL WATER COURSES Retain and restore creek beds, riparian corridors, watercourses and associated vegetation in their natural state to protect wildlife habitat and recreation potential and assist in groundwater percolation. Encourage land acquisition or dedication of such areas.

STRATEGY:

- ES-7.8.1: Inter-Agency Coordination. Work with the Santa Clara Valley Water District and other relevant regional agencies to enhance riparian corridors and

provide adequate flood control by use of flow increase mitigation measures, such as hydromodification controls as established by the Municipal Regional Permit.

3.3 IMPACTS SPECIFIC TO THE PROJECT

The project, as proposed, would construct a new access roadway from the base of a residence winding down a steep native hillside to the northern area of the property and would include a culvert bridge over an ephemeral drainage feature. The natural resource issues specific to this project are discussed in detail below.

3.3.1 Loss of Habitat for Special Status Plants

Potential Impact. All special status plant species that are known to occur, or to once have occurred, in the project region are considered absent from, or unlikely to occur on the site due to a lack of suitable habitat such as serpentine or alkaline soils, vernal pools, etc.; because the species has not been observed in the project region for many decades; or because of site disturbance and surrounding development. Therefore, the project is not expected to result in impacts to any special status plant species.

Mitigation. None warranted.

3.3.2 Loss of Habitat for Special Status Animals

Potential Impact. Of the 27 special status animal species that are known to occur, or to once have occurred, in the project region and considered in Table 1, 20 are considered absent from or unlikely to occur on the site due to a lack of suitable habitat, lack of nearby occurrences, and/or the site's location outside of the species' known range. These species include the Crotch bumble bee, western bumble bee, California tiger salamander, California giant salamander, red-bellied newt, northern California legless lizard, western pond turtle, American peregrine falcon, Swainson's hawk, bald eagle, golden eagle, northern harrier, burrowing owl, long-eared owl, purple martin, salt marsh common yellow-throat, western yellow-billed cuckoo, tricolored blackbird, Alameda song sparrow, and American badger. As these species are considered absent from or unlikely to occur on the site, the proposed project is expected to have no impact on them from loss of habitat.

The remaining seven animal species considered in Table 1 have not been observed onsite, however, they may be expected to occasionally to rarely occur on the site.

The nearby Regnart Creek supports suitable breeding and dispersal habitat for the foothill yellow-legged frog and California red-legged frog, as it is a perennial creek and supports a mature riparian habitat. There are no records of the FYLF or CRLF to date within Regnart Creek. Lack of records within the creek could either be due to a lack of surveys for these species or actual lack of presence. The site itself does not support suitable stream or wetland habitat for these species, however, should these species occur in the creek, the site would provide potentially suitable upland habitat for these species. Should individuals of these species occur within this creek, they could be expected utilize the site from time to time as upland habitat.

Suitable habitat for the Santa Cruz black salamander is marginal on the project site due to the lack of rock piles and debris on the site, however, they are known from the Santa Cruz Mountains, and have the potential to occur onsite.

The site provides potential foraging habitat, but no roosting habitat, for two special status bat species: the Townsend's big-eared bat and pallid bat.

The San Francisco dusky-footed woodrat is considered present as a woodrat nest was observed in close proximity and upstream from the location of the proposed culvert bridge.

Lastly, the site provides potential nesting and foraging habitat for the white-tailed kite.

Due to the small size of the project and the availability of habitat regionally for the seven special status animal species potentially occurring on the site, the project is expected to have a less-than-significant impact on these species from loss of habitat. However, the project could result in mortality to individual foothill yellow-legged frogs, California red-legged frogs, Santa Cruz black salamanders and San Francisco dusky-footed woodrats if they occur on the site during project grading activities, and could result in nest abandonment and mortality to unfledged white-tailed kites, should kites be nesting on or adjacent to the site during project construction.

Harm or mortality to individuals of these species may be considered a significant impact and a violation of state and/or federal laws. See Sections 3.3.5, 3.3.6.,3.3.7 and 3.3.8 for further discussion and mitigations for individuals of these species.

Mitigation. No mitigation warranted.

3.3.3 Loss of Habitat for Native Wildlife

Potential Impact. The proposed project would result in the loss of a negligible fraction of the oak woodland habitat that is regionally available to native wildlife and a small corner of vineyard habitat. Therefore, impacts due to the loss of habitats for native wildlife resulting from the proposed project are considered less-than-significant.

Mitigation. No mitigation warranted.

3.3.4 Interference with the Movement of Native Wildlife

Potential Impact. Buildout of the project would not constrain native wildlife movement, as the site does not support a major wildlife movement corridor. Any local wildlife moving through the area of the site would continue move through the area after project development.

Mitigation. No mitigation warranted.

3.3.5 Impacts to Individual Foothill Yellow-Legged Frogs and California Red-Legged Frogs

Potential Impacts. The site provides potentially suitable habitat for the foothill yellow-legged frog, and California red-legged frog. Nearby Regnart Creek supports suitable habitat for the FYLF and CRLF, and should they occur within this creek, they could be expected to use the upland habitats of the project site from time to time. Should either of these species occur on the site during project vegetation clearing and ground disturbance activities, individuals of these species could be harmed or killed. Project-related injury or mortality of the FYLF and CRLF would violate the California Endangered Species Act and, in the case of the latter, the Federal Endangered Species Act. Project-related injury or mortality of any of these amphibians may be considered a significant impact under CEQA.

Mitigation. The following measures will reduce impacts on individual foothill yellow-legged frogs and California red-legged frogs to a less-than-significant level under CEQA and will ensure compliance with state and/or federal laws.

Mitigation Measure 3.3.5a: Preconstruction surveys will be conducted by a qualified biologist within 48 hours prior to any vegetation removal or ground disturbance activities within the project footprint and within 50 feet of the project footprint for presence of these species. Should either of these species be found present in the survey area, work activity will cease until the animal moves out of the work area or, if the applicant has obtained authorization from USFWS and CDFW, a

USFWS/CDFW-approved biologist will relocate the animal to suitable habitat outside of the work area.

Mitigation Measure 3.3.5b: The project biologist will conduct an onsite biological training for all workers on the project site regarding these two species and what to do if located on the project site during project activities, including allowing the animal to move off the site on its own.

3.3.6 Impacts to Individual Santa Cruz Black Salamanders

Potential Impacts. The site provides marginally suitable habitat for the Santa Cruz black salamander. Should this species occur on the site during project vegetation clearing and ground disturbance activities, individuals of this species could be harmed or killed. Project-related injury or mortality of the SCBS may be considered a significant impact under CEQA.

Mitigation. The following measures will reduce impacts on individual Santa Cruz black salamanders to a less-than-significant level under CEQA and will ensure compliance with state and/or federal laws.

Mitigation Measure 3.3.6a: Preconstruction survey will be conducted by a qualified biologist within 48 hours prior to any vegetation removal or ground disturbance activities within the project footprint and within 50 feet of the project footprint for presence of these species. Should this species be found present in the survey area, work activity will cease until the animal moves out of the work area or, if the applicant has obtained authorization from USFWS and CDFW, a CDFW-approved biologist will relocate the animal to suitable habitat outside of the work area.

Mitigation Measure 3.3.6b: The project biologist will conduct an onsite biological training for all workers on the project site regarding this species and what to do if located on the project site during project activities, including allowing the animal to move off the site on its own.

3.3.7 Impacts to Nesting Migratory Birds Including Nesting Raptors and other Protected Birds

Potential Impacts. The site supports oak trees and shrubs providing potentially suitable habitat for nesting migratory birds and raptors. Buildout of the project during the nesting period for migratory birds (i.e., typically between February 1 to August 31), including initial site grading, soil excavation, and/or tree and vegetation removal, poses a risk of nest abandonment and death of any live eggs or young that may be present in nests within or near the site. Such an effect would be

considered a significant impact. To ensure that any active nests will not be disturbed, and individual birds will not be harmed by construction activities, the following measures should be followed.

Mitigation. The following measures will ensure that active migratory bird and raptor nests will not be disturbed, and individual birds will not be harmed by construction activities and will reduce the project's potential impacts to nesting migratory birds to a less-than-significant level.

Mitigation Measure 3.3.7a. If possible, initial site disturbance activities, including tree, shrub, or vegetation removal, are to occur outside of the breeding season, i.e. during the timeframe from September 1st - January 31st.

Mitigation Measure 3.3.7b. If initial site disturbance activities, including tree, shrub, or vegetation removal, are to occur during the bird breeding season (typically February 1st to August 31st), a qualified biologist will conduct a pre-construction survey for nesting migratory birds and raptors. The survey for nesting migratory birds will cover the project site itself and the immediate vicinity of the site, with the survey for nesting raptors encompassing the site and surrounding lands within 250 feet, where accessible. The survey should occur within 14 days prior to the onset of ground disturbance. If active nests are detected, appropriate construction-free buffers will be established. The buffer sizes will be determined by the project biologist based on species, topography, and type of activity occurring in the vicinity of the nest. Typical buffers are 25-50 feet for passerines and up to 250 feet for raptors. The project buffer will be monitored periodically by the project biologist to ensure compliance. After the nesting is completed, as determined by the biologist, the buffer will no longer be required.

3.3.8 Impacts to Individual San Francisco Dusky-footed Woodrats

Potential Impacts. During reconnaissance field surveys, a dusky-footed woodrat nest was found to be present in close proximity and upstream of the proposed culvert/bridge location. The San Francisco dusky-footed woodrat is a state species of special concern and any construction activities that result in harm or mortality to this species, or in nest abandonment, may be considered a significant impact under CEQA and a violation of state law.

Mitigation. The following measures will reduce impacts on individual San Francisco dusky-footed woodrats to a less-than-significant level under CEQA and will ensure compliance with state laws.

Mitigation Measure 3.3.8a: A qualified biologist will conduct a pre-construction survey for San Francisco dusky-footed woodrat nests no more than 30 days prior to the onset of construction

activities. This survey timing allows for the scheduling of and deconstruction of any woodrat nests which need deconstructing. The survey will encompass all construction zones and surrounding lands within 50 feet.

Mitigation Measure 3.3.8b: Identified nests will be avoided, where possible. If avoidance is not possible, the nest(s) will be manually deconstructed when helpless young are not present, typically during the non-breeding season (October through January).

Mitigation Measure 3.3.8c: If it is determined that young may be present during the pre-construction survey, a suitable buffer depending on the timing within the breeding season (ranging from 15-50 feet) will be established around the nest until the young are independent enough and have successfully moved from the nest on their own.

3.3.9 Potential Impacts to Riparian Habitat and Other Sensitive Natural Communities, Including Federally and State Protected Wetlands

Potential Impacts. The project includes the construction of a culvert bridge within the bed and bank of an ephemeral tributary of Regnart Creek. This ephemeral feature traverses through oak woodland habitat and does not support wetland or riparian vegetation, and appears to only flow during and immediately following storm events, with the water likely sheet flowing over gently sloping land (i.e. lands that would not meet the definition of a water of the U.S.) the last 70+ feet to Regnart Creek. Vegetation within this ephemeral channel is undifferentiated from the surrounding upland oak woodland habitat. Construction of the bridge will have a very small impact on either barren habitat or on upland habitat which is undifferentiated from surrounding oak woodlands. Impacts as a result of the loss of a small amount of ephemeral channel that supports upland habitat would be considered a less-than-significant biological impact under CEQA (however, see the section on *Regulatory Issues*, below).

Mitigation. No mitigation warranted however, see the *Regulatory Issues* section below, which describes permits that may be required from resource agencies having jurisdiction over the ephemeral channel. Mitigations that may be required as a condition of those permits may include the following:

Mitigation Measure 3.3.9a (Avoidance): The agencies may require avoidance measures such as using an arch culvert.

Mitigation Measure 3.3.9b (***Minimization)***: The agencies may require minimization measures such as habitat enhancement.

Mitigation Measure 3.3.9c (Compensation): If Avoidance and/or Minimization measures do not adequately address impacts, then Compensation may be required, which may include channel creation at a minimum 1:1 ratio (one linear foot of channel created for each linear foot impacted) and some form of additional riparian habitat creation, restoration, and/or enhancement, also at a minimum 1:1 ratio. These ratios may increase if channel creation is not a feasible mitigation option and if only riparian habitat creation, restoration, and/or enhancement is proposed. Habitat enhancement would likely include planting woody and herbaceous riparian vegetation and monitoring the vegetation for a minimum of five years.

Regulatory Issues. Although a formal delineation has not been prepared, the ephemeral drainage feature that will be impacted by the culvert bridge has a defined bed and bank and likely would be considered to be a jurisdictional tributary water by the USACE. This feature may also be considered a jurisdictional water under the jurisdiction of the CDFW and RWQCB to the top of the bank to the extent of the OHW mark on opposing banks. Impacts to jurisdictional waters of the U.S. and state would require that Clean Water Act Section 404 and 401 permits be obtained from the USACE and RWQCB, respectively, and that a CDFW Section 1600 Stream Alteration Agreement be obtained from the CDFW.

3.3.10 Degradation of Water Quality in Seasonal Drainages, Stock Ponds and Downstream Waters

Potential Impact. Eventual site development and construction may require grading that leaves the soil of construction zones barren of vegetation and, therefore, vulnerable to sheet, rill, or gully erosion. Eroded soil is generally carried as sediment in surface runoff to be deposited in natural creek beds, canals, and adjacent wetlands. Furthermore, urban runoff is often polluted with grease, oil, pesticide and herbicide residues, heavy metals, etc. These pollutants may eventually be carried to sensitive wetland habitats used by a diversity of native wildlife species. The deposition of pollutants and sediments in sensitive riparian and wetland habitats would be considered a potentially significant adverse environmental impact.

The project would comply with the City's grading requirements; this typically requires Best Management Practices (BMPs) to reduce the potential for off-site sedimentation, erosion, and

pollution. Therefore, the project buildout would result in a less-than-significant impact to water quality.

Mitigation. No mitigation is warranted.

3.3.11 Conflict with Local Policies and Ordinances: Disturbance to Protected Mature Specimen Trees

Potential Impacts. An arborist report has been prepared for the project and tree impacts are being addressed separately from this document.

Mitigation. An arborist report has been prepared for the project and tree impacts are being addressed separately from this document.

3.3.12 Conflict with Local Policies and Ordinances: City of Cupertino's General Plan: Community Vision 2015 - 2040

As discussed in Section 3.2.7, the City of Cupertino's General Plan: Community Vision 2015 – 2040 covers the project site. Chapter 6 the City's General Plan sets forth goals, policies and strategies aimed at protecting the City's environmental resources and promoting sustainability, including a number of goals, policies and strategies relevant to development projects (see Section 3.2.7). It is assumed that the project will be consistent with all such goals, policies, and strategies.

Mitigation. No mitigation is warranted.

3.3.13 Conflict with Local Policies and Ordinances: Habitat Conservation Plan or Natural Community Conservation Plan

There are no Habitat Conservation Plans or Natural Community Conservation Plans which cover the project site.

Mitigation. No mitigation is warranted.

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APPENDIX C

GEOTECHNICAL INVESTIGATION PACKAGE

File: 210132
January 5, 2011

Mr. and Mrs. Steakley
10152 Deeprose Place
Cupertino, CA 95014

Subject: **Steakley Property**
21750 Rainbow Drive
Cupertino, California
GEOTECHNICAL INVESTIGATION UPDATE
FOR PROPOSED NEW RESIDENCE

Dear Mr. and Mrs. Steakley:

In accordance with your authorization, we have prepared this report to update the geotechnical findings, conclusions, and recommendations originally presented in our geotechnical report dated November 19, 1996 (our file number 96311). Since that report was prepared, there have been changes in the practice of geotechnical engineering, changes in the building codes, and changes at the property. This report updates our previous report to accommodate these changes.

Proposed Construction

We understand that the current development for the site proposes the construction of a new single family residence and associated improvements. The residence is to have a daylight basement. The house is to be of conventional, wood-framed construction with concrete walls for the basement. New foundation loads are expected to be typical for this type of structure (i.e. light).

Excavation work at the site is expected to include: crawlspace, foundation, and basement excavations up to about 10 feet deep. No significant fill placement is anticipated as part of this work. House and site retaining walls up to 10 feet tall will be required for the proposed construction. No pool is planned for the residence.

INVESTIGATION UPDATE

Scope and Purpose

The purpose of our investigation update was to review the information contained in our 1996 report, and augment and update the findings, conclusions, and recommendations as necessary to bring that information into conformance with current standards of practice and codes. In order to achieve this purpose, we have performed the following scope of work:

1 - revisited the property to observe the geotechnical setting of the area to be developed;

2 - reviewed newer published geotechnical maps;

3 - reviewed our previous report;

4 - assessed the collected information and prepared this report.

The findings of these work items are discussed in the following sections of this report.

Site Description

The subject site was originally identified as Parcel 2 in our original report. This lot was to be located at the end of a new asphalt paved access roadway extending off the westerly terminus of Rainbow Drive in the hills above Cupertino. Our original investigation relied upon subsurface information obtained from borings (#3 and #4) and test pits (#5) excavated as part of previous geotechnical investigations by another firm (JCP), along with some of our own test pits, to formulate our opinions and recommendations. As noted in our original report, Parcel 2 is underlain by weathered bedrock of the Santa Clara Formation at relatively shallow depth (2 to 3.5 feet below grade).

After the issuance of our 1996 report, the access roadway was constructed through Parcel 1 to provide access to the proposed building pad location on Parcel 2. Our office was present during the construction of the roadway to observe, test, and document the construction process of the construction activities. The roadway construction has resulted in some cuts along the upslope side of the street on the property which are supported by retaining walls, as well as some wall supported fills on the downslope side of the street. No existing walls are located in the building pad area of the proposed residence. Based upon our observations and testing, we confirmed that the roadway construction was completed in conformance with the intents of the recommendations contained in our reports, and the project plans.

The site is currently an empty lot covered by a growth of small bushes and weeds, with a few small to medium sized trees. There is no evidence that there has previously been any significant grading activity at the site, other than a dirt road that continues off of the end of the private driveway onto the site.

The ground surface in the site vicinity has an overall slope down towards the north (as shown on Figure 2). At the site, the ground slopes gently to steeply down towards the north. Surface gradients range from 20:1 to 2:1 (horizontal:vertical, H:V).

Map Review

We reviewed the *Quaternary Geology of Santa Clara Valley, Santa Clara, Alameda, and San Mateo Counties, California: A Digital Database*, by E.J. Helley, R.W. Graymer, G.A. Phelps, P.K. Showaller, and C.M. Wentworth (1994), and the *State of California Seismic Hazards Zone Map; Cupertino Quadrangle* (2002) . The relevant portions of the Helley, Graymer, Phelps, Showaller, and Wentworth map and *State* map has been reproduced in Figures 3 and 3a.

The Helley, Graymer, Phelps, Showaller, and Wentworth map indicate that the site is underlain by the Santa Clara Formation (map symbol "QTsc"). These materials have been described as consisting of "gray to red-brown poorly indurated conglomerate, sandstone, and mudstone in irregular and lenticular beds. Conglomerate consists mainly of sub-angular to sub-rounded cobbles in a sandy matrix but locally includes pebbles and boulders. Cobbles and pebbles are mainly chert, greenstone, and graywacke with some schist, serpentine, and limestone."

Subsurface exploration at the site siltstones and sandstones judged to be consistent with the Santa Clara Formation mapping.

The Seismic Hazards Zone Map indicates the site is ***outside*** of the areas where there is a historic occurrence of liquefaction. Similarly, this map indicates the site is ***outside*** of the areas where 1) there have been previous occurrences of landslide movement; and 2) there are local topographic, local geological, geotechnical, and groundwater conditions would indicate a potential for permanent ground displacement such that mitigation, as defined in Public Resource Code Section 2693(c), would be required.

Our previous investigation report had reviewed a geologic map prepared by Sorg and McLaughlin (1975) which indicated that the Santa Clara Formation at the site tends to strike northwesterly, and dip at 10 to 30 degrees to the southwest. This places the dip into the hillside, which is viewed as a generally favorable bedding attitude.

The active San Andreas Fault is mapped approximately 3.5 miles (5.7 km) southwest of the site, and the potentially active Monte Vista-Shannon Fault is mapped approximately 0.5 miles (0.8 km) to the northeast.

CONCLUSIONS AND RECOMMENDATIONS

General

Based upon our site reconnaissance, and upon our review of our previous geotechnical study, we find that the information contained in that report is generally sufficient, and accurate for design and construction of the proposed new residence. However, there have been changes to the seismic codes, and changes to our general recommendations, which require updating. Therefore, we have prepared the remainder of this report to address these issues in a manner which permits the report to "stand alone" for the purpose of design and construction recommendations.

The proposed development of this site is considered to be feasible from a geotechnical perspective, provided the design and construction implement the recommendations presented in this updated report.

Seismicity

The greater San Francisco Bay Area is recognized by Geologists and Seismologists as one of the most active seismic regions in the United States. Several major fault zones pass through the Bay Area in a northwest direction which has produced approximately 12 earthquakes per century strong enough to cause structural damage. The faults causing such earthquakes are part of the San Andreas Fault System, a major rift in the earth's crust that extends for at least 700 miles along western California. The San Andreas Fault System includes the San Andreas, San Gregorio, Hayward, Calaveras Fault Zones, and other faults.

During 1990, the U.S. Geological Survey cited a 67 percent probability that an earthquake of Richter magnitude 7, similar to the 1989 Loma Prieta Earthquake, would occur on one of the active faults in the San Francisco Bay Region in the following 30 years. Recently, this probability was increased to 70 percent, as a result of studies in the vicinity of the Hayward Fault. A 23 percent probability is still attributed specifically to the potential for a magnitude 7 earthquake to occur along the San Andreas Fault by the year 2020.

Ground Rupture - The lack of mapped active fault traces through the site, suggests that the potential for primary rupture due to fault offset on the property is low.

Ground Shaking - The subject site is likely to be subject to very strong to violent ground shaking during its life span due to a major earthquake in one of the above-listed fault zones. Current (2007) building code design may be followed by the structural engineer to minimize damages due to seismic shaking, using the following input parameters from the USGS Java Ground Motion Parameter Calculator:

Site Class – C	$SM_S = 2.47$	$SM_1 = 1.160$	$SD_S = 1.649$	$SD_1 = 0.773$

Landsliding - The subject site and the surrounding area are relatively gently sloping. The State of California Seismic Hazards Zones map of the Cupertino Quadrangle (9/23/02) indicates that the site is ***outside*** of areas which are potentially subject to seismically induced landsliding. Previous subsurface investigations have found that the site is underlain by dense siltstones with favorable bedding attitudes below the upper couple of feet of soil. Therefore, the hazard due to seismically-induced landsliding is, in our opinion, very low for the site.

Liquefaction - The state of California Seismic Hazards Zones map for the Cupertino Quadrangle (9/23/02) indicates that the site is ***not in*** an area potentially subject to liquefaction. Liquefaction most commonly occurs during earthquake shaking in loose fine sands and silty sands associated with a high ground water table. These conditions were demonstrated to be absent in the upper 9.5 feet of site materials. Based upon the subsurface investigation, the proposed building site is underlain by a thin veneer of soils then bedrock. Therefore, it is our opinion the liquefaction is unlikely to occur on the subject property.

Ground Subsidence - Ground subsidence may occur when poorly consolidated soils densify as a

result of earthquake shaking. Since the proposed building site is underlain at shallow depths by resistant materials, the hazard due to ground subsidence is, in our opinion, considered to be low.

Lateral Spreading - Lateral spreading may occur when a weak layer of material, such as a sensitive silt or clay, loses its shear strength as a result of earthquake shaking. Overlying blocks of competent material may be translated laterally towards a free face. Such conditions were not encountered on the proposed building site, therefore, the hazard due to lateral spreading is, in our opinion, considered very low.

UPDATED RECOMMENDATIONS

General

The recommendations presented below update and refine the recommendations presented in our original 1996 report. In order for ease of referral, we have provided a complete set of new recommendations in this update report. The recommendations below supersede all recommendations previously provided.

Site Preparation and Grading

All debris resulting from the demolition of existing improvements should be removed from the site and may not be used as fill. Any existing underground utility lines to be abandoned should be removed from within the proposed building envelope and their ends capped outside of the building envelope.

Any vegetation and organically contaminated soils should be cleared from the building area. All holes resulting from removal of tree stumps and roots, or other buried objects, should be over-excavated into firm materials and then backfilled and compacted with native materials.

The placement of fills at the site is expected to include: utility trench backfill, retaining wall backfill, slab subgrade materials, and finished drainage and landscaping grading. These and all other fills should be placed in conformance with the following guidelines:

Fills may use organic-free soils available at the site or import materials. Import soils should be free of construction debris or other deleterious materials and be non-expansive. *A minimum of 3 days prior to the placement of any fill, our office should be supplied with a 30 pound sample (approximately a full 5 gallon bucket) of any soil or baserock to be used as fill (including native and import materials) for testing and approval.*

All areas to receive fills should be stripped of organics and loose or soft near-surface soils. Fills should be placed on level benches in lifts no greater than 6 inches thick (loose) and be compacted to at least 90 percent of their Maximum Dry Density (MDD), as determined by ASTM D-1557. In pavement (concrete or asphalt) areas to receive vehicular traffic, all baserock materials should be compacted to at least 95 percent of their MDD. Also, the upper 6 inches of soil subgrade beneath

any pavements should be compacted to at least 95 percent of its MDD.

All unretained fills to be placed on slopes steeper than 6 to 1 (horizontal to vertical, H:V) will need to be keyed and benched into competent native materials. Any retained fills will need to be benched into competent native materials (bedrock), however, a formal keyway is not required. The entire base of any keyway should extend into competent weathered bedrock materials, located about 2.5 to 3.5 feet below grade. The entire bases of all benches should also extend into competent bedrock, as identified in the field by representatives from our office. It should be anticipated that the outer edge of bench excavations will extend at least 3 feet below native grade. Keyways and benches should be sloped back into the hillside at a minimum 2% gradient.

Temporary, dry-weather, vertical excavations should remain stable for short periods of time to heights of 5 feet. All excavations should be shored or sloped in accordance with OSHA standards

Even moderately deep cuts are likely to encounter hard bedrock materials. Heavy excavation equipment may be required.

Permanent cut and/or fill slopes should be no steeper than 2:1 (H:V). However, even at this gradient, minor sloughing of slopes may still occur in the future. Positive drainage improvements (e.g. drainage swales, catch basins, etc.) should be provided to prevent water from flowing over the tops of cut and/or fill slopes.

Foundation Alternative #1 - Drilled Piers

The upper site soils were found to be moderately expansive, as were the bedrock materials in some areas of the site. Therefore, we have recommended that the building foundations consist of drilled piers and grade beams. Where foundation elements are located more than 5 feet below finish grade, and bear on bedrock, other types of foundations may also be used (see Alternative #2 below).

Any new improvements built on, or within 15 feet of the crests of slopes steeper than 4:1 (H:V), will need to be supported by a drilled pier foundation system. Piers must also be used where foundation elements are located on bedrock less than 5 feet below finish grade. Piers can also be used in level areas, if desired.

In level areas (flatter than 4:1, H:V) , the piers should penetrate a minimum of 8 feet below lowest adjacent grade, and 5 feet into competent weathered rock, whichever is deeper. In sloping areas (steeper than 5:1), the piers should penetrate a minimum of 12 feet below lowest adjacent grade, and 8 feet into competent weathered rock, whichever is deeper.

The piers should have a minimum diameter of 16 inches and be nominally reinforced with a minimum of four #4 bars vertically. Piers should be spaced a maximum of 10 feet center to center, and be spaced no closer than 4 diameters, center to center. Additionally, piers should not be located within 5 feet of the back of any basement retaining walls.
Actual pier depth, diameter, reinforcement, and spacing should be determined by the structural

engineer based upon the following design criteria:

A friction value of 600 psf may be assumed to act on that portion of the pier within bedrock. Lateral support may be assumed to be developed along the length of the pier within bedrock, using a passive pressure of 400 pcf Equivalent Fluid Weight (EFW). Passive resistance may be assumed to act over 1.5 projected pier diameters. Above the bedrock, no frictional or lateral support may be assumed. These design values may be increased 1/3 for transient loads (i.e. seismic and wind). Where piers are located on slopes in excess of 5:1, a lateral creep pressure of 35 pcf EFW should be applied to the upslope sides of the piers to a depth of 5 feet. The creep pressure should be assumed to act over 2 pier diameters.

Even though piers are designed to derive their vertical resistance through skin friction, the bases of the piers holes should be clean and firm prior to setting steel and pouring concrete. If more than 6 inches of slough exists in the base of the pier holes after drilling, then the slough should be removed. If less than 6 inches of slough exists, the slough may be tamped to a stiff condition. Piers should not remain open for more than a few days prior to casting concrete. In the event of rain, shallow groundwater, or caving conditions it may be necessary to pour piers immediately.

All perimeter piers, and piers under load-bearing walls, should be connected by concrete grade beams. Perimeter grade beams should penetrate a minimum of 6 inches below crawlspace grade (unless a perimeter footing drain is installed to intercept water attempting to enter around the perimeter). Interior grade beams do not need to penetrate below grade.

All improvements connected directly to any pier supported structure, also need to be supported by piers. This includes, but is not limited to: porches, decks, entry stoops and columns, etc. If the designer does not wish to pier-support these items, then care must be taken to structurally isolate them (with expansion joints, etc.) from the pier supported structure.

If the above recommendations are followed, total foundation settlements should be less than 1 inch, while differential settlements should be less than ½ inches.

Foundation Alternative #2 – Mat Slabs

As portions of the house will consist of basements which are more than 5 feet below existing and finish grade, and which will also penetrate into the site bedrock, mat slabs may be used to construct the basement floors and support the perimeter retaining walls.

The mat slab should have a minimum thickness of 8 inches and be designed using a modulus of subgrade reaction of 200 tci. The mat slab may need to be locally thickened using thickening ribs depending upon the application of point loads in the structural design. If the basement "daylights", then those portions of the slab which are less than 5 feet below finish grade should consist of a structural slab supported by drilled piers (see above). A void form should be placed under the structural slab sections to preclude uplift forces on the slabs.
Ideally, the perimeter edges of the mat slab should be aligned to be flush with any concrete

basement walls to facilitate applications of water proofing or panel drainage materials.

Under the mat slab, a granular section consisting of 4 inches of ¾ inch drain rock should be placed to act as a capillary break. A perforated collector pipe system should be placed under this gravel section to preclude any build up of free water within the gravel. Atop the gravel, a vapor barrier which conforms to ASTM E1745-97 (e.g. Stegowrap or Moistop) should be placed to further reduce moisture transmission through the floor slab. This barrier should be turned up the edge of the slab and then overlapped with the retaining wall water proofing barrier to complete a full wrap of the basement. If desired, a thin protective layer of sand may be placed on top of the barrier to protect it from foot traffic and steel placement operations. Where the mat slab translates into a pier supported slab, a 2" void form should be installed to preclude uplift forces on the slab. The void forms may be placed under 2 inches of drain rock, under the vapor barrier.

Retaining Walls

Retaining walls (including basement walls) may be supported by drilled piers, spread footings, or the mat slab, depending upon wall type and location. Where retaining walls are structurally connected to the house, they should use a foundation system similar to the residence in that location. Where non-attached walls are to be constructed, they must derive their support from the bedrock materials, using either spread footings (in level cut areas) or drilled piers (on, or adjacent to slopes).

Wall Forces - Any unrestrained retaining walls required for the proposed construction should be designed to resist an active pressure of 45 pcf Equivalent Fluid Weight (EFW) in supporting soils with retained slopes less than 4:1 (H:V). An active pressure of 65 pcf EFW should be utilized for retained slopes with an inclination of 2:1 (H:V). Where retained slopes are greater than 4:1, though less than 2:1, the designer should linearly interpolate between 45 and 65 pcf EFW. *These active pressures may be reduced 5 pcf when supporting cuts deeper than 5 feet.*

Any restrained retaining walls required should be designed for the aforementioned active pressures with an additional uniform pressure of 8H psf, where H is the height of the wall in feet. We leave it to the design professional's judgment in determining whether a wall is restrained or not. Our office does not require the use of any additional seismic forces on retaining walls. However, should the designer choose to apply such an additional load, we suggest a uniform load application of 10H psf (where H is the height of the wall).

All retaining walls should also be designed to resist a point load applied at the midpoint of the wall, equal to ½ the maximum applied surcharge.

Drilled Piers - Any wall which is located on, or within 15 feet of the crest of, slopes steeper than 4:1 (H:V) should utilize a drilled pier foundation system. We note that pier-supported walls may not rely upon a toe footing to resist overturning forces. All vertical and lateral forces should be resisted by piers. This may require the use of a staggered, double row of piers, depending upon the wall height and any surcharges.

Please refer to the *Foundation Alternative #1* section of this report for the applicable pier design recommendations.

If drilled piers are utilized beneath a concrete or block wall, they will need to be connected by a concrete grade beam. No grade beam is required for a wood lagging wall.

Spread Footings - Walls located 15 or more feet from the crest of slopes steeper than 4:1 (H:V) may utilize a spread footing foundation system. Spread footings must be supported on bedrock in areas where the ground downslope is flatter than 5:1. Footings may be designed for an allowable bearing pressure of 4500 psf at a minimum of 12 inches below finish grade. Resistance to lateral forces may be accomplished through base friction (assume a coefficient of friction of 0.35), or passive resistance on a shear key (assume a passive pressure of 450 pcf EFW acting under the footing).

Mat Slabs – Refer to the *Foundation Alternative #2* section above.

Wall Drainage - The above values have been provided assuming that back-of-wall drains will be installed to prevent build-up of hydrostatic pressures behind all walls. This drainage system may consist of a prefabricated drainage panel (i.e. Miradrain) or a gravel and filter fabric type system. We also recommend that any interior retaining walls, or walls through which efflorescence transmission would be undesirable, should be waterproofed. The waterproofing should be specified by the designer, though we recommend the use of Bituthene, Miradri, or other similar waterproofing membrane. Additionally, the ground surface above all walls should form a drainage swale to carry water to the sides of the wall. Excess surface water should not overtop the retaining wall.

The back-of-wall drain systems should be installed with a minimum 3 inch diameter perforated pipe placed a minimum of 4 inches below the top of the footing. ***In basement areas, the pipe should be located at the elevation of the gravel substrate under the mat slab.*** The pipe should not be placed on top of the heel of the wall footing unless seepage through the base of the wall is acceptable. Perforations should be placed face-down (at 5 and 7 o'clock). The perforated pipe should connect to a solid discharge line, which discharges away from the new structures. This solid line should not connect to surface water drain lines (i.e. downspout and area drain lines). If water transmission through the base of a wall is not a concern, then weep holes may be used in place of the pipe.

If used, the gravel system should consist of a minimum 12 inch wide column of drain rock (3/8 to ¾ inch clean, crushed rock) extending the full width of the wall. The rock should continue to within 12 inches of finish grade. Prior to backfilling with the drain rock, a layer of filter fabric (Mirafi 140N or approved equivalent) should be placed against all soil surfaces to separate the rock and soil. The filter fabric should wrap over the top of the gravel and then a 12 inch thick cap of native soils should be placed at the top of the drain. If concrete flatwork is to directly overlay the back-of-wall drain, or if the drain is located in a crawlspace area, then the soil cap should be eliminated.

If prefabricated drainage panels are used, these panels should dead-end into the subslab gravel for collection under the slab. *The tops of the panels should be sealed and secured in accordance with the manufacturer's specifications. The base of the drainage panels should extend down below the top of the filter fabric-wrapped drain rock.*

We note that Caltrans Class II permeable rock may be utilized in lieu of clean drain rock and filter fabric. The Class II permeable rock needs to be compacted into place, and needs to be certified by the quarry or rockery that it meets the Caltrans Class II permeable rock specifications. Additionally, the perforated collector pipes will need to be wrapped in a filter fabric sock to prevent the permeable rock from washing into the pipe.

Window Well and Access Well Drainage - Window Well and Access Well Drainage should be tight lined to the same sump pump used for under-slab and wall drainage. This sump should be located in the stairwell area for easy access, and may discharge into the area drain system. There should be a minimum 4 inch lip between the wells and the floor slab. A high water alarm should be provided in the sump. Consideration should be given to providing an emergency gas generator to operate the sump pump if the contents of the basement are valuable. ***Alternatively, the best solution to discharge of basement waters would be to provide a gravity flow outfall to the drainage swale to the northeast of the building site.***

Slabs-on-Grade

The basement floor may consist of a thickened mat slab which will also serve as the foundation for the basement walls (see Foundation Alternative #2 above). Otherwise slabs should **not** be used for the house floors. The driveway, any sidewalks or patios, and garage floor may also consist of conventional concrete slabs-on-grade. Though, it should be expected that some seasonal shifting of such slabs will occur if soils remain beneath the slabs. We have provided guidelines to help reduce post-construction movements, however, it is nearly impossible to economically eliminate all shifting.

To help reduce cracking, we recommend slabs be a minimum of 4 inches thick and be nominally reinforced with #4 bars at 12 inches on center, each way. Slabs which are thinner or more lightly reinforced may experience undesirable cosmetic cracking. However, actual reinforcement and thickness should be determined by the structural engineer based upon anticipated usage and loading.

It would be prudent to underlay all slabs on grade with thick non-expansive materials to reduce the potential of the soils to damage the slabs by shrinking and swelling cycles. The thicker the underlayment, the less movement the slabs should be expected to experience. Similarly, those slabs which are surrounded by deepened footings or edges, will tend to perform better than those which are simply exposed to the elements along their edge. We suggest that a minimum of 12 inches of non-expansive material be used under any moderately sensitive slab, and a minimum of 30 inches be used under any sensitive slabs. Consideration should be given to pre-wetting the soils by ponding water on the exposed subgrade for a minimum of 5 days prior to pouring the slabs in an

effort to pre-swell any dried soils.

Slabs on grade which are located within 15 feet of the crest of any slope should be expected to be subject to lateral creep. Lateral creep is the slow downslope movement of the near surface soils. Should creep be unacceptable, then these slabs will need to be restrained by piers.

In large slabs (e.g. patios, garage, etc.), score joints should be placed at a maximum of 10 feet on center. In sidewalks, score joints should be placed at a maximum of 5 feet on center. All slabs should be separated from adjacent improvements (e.g. footings, columns, etc.) with expansion joints.

In large non-interior slabs (e.g. patios, garage, etc.), score joints should be placed at a maximum of 10 feet on center. In sidewalks, score joints should be placed at a maximum of 5 feet on center. All slabs should be separated from adjacent improvements (e.g. footings, porches, columns, etc.) with expansion joints. Interior floor slabs will experience shrinkage cracking. These cosmetic cracks may be sealed with epoxy or other measures specified by your architect.

All interior slabs, and slabs through which moisture transmission is undesirable, should be underlain by 2 inches of sand over 4 inches of ¾ inch drain rock. The sand and drain rock should be separated by a vapor barrier which conforms to ASTM E1745-97 (e.g. Moistop, Stegowrap).

Slabs which will be subject to light vehicular loads and through which moisture transmission is not a concern (e.g. driveway) should be underlain by at least 6 inches of compacted baserock, in lieu of the sand and gravel. Exterior landscaping flatwork (e.g. patios and sidewalks) may be placed directly on proof-rolled soil subgrade materials (e.g. no granular subgrade), however, they will be potentially subject to shifting and moisture transmission.

As stated previously, in pavement (concrete or asphalt) areas to receive vehicular traffic, all baserock materials should be compacted to at least 95 percent of their MDD. Also, the upper 6 inches of native soil subgrade beneath any pavements should be compacted to at least 90 percent of its MDD.

The garage slabs may "float" independently from the perimeter footing. The slab should be separated from the footing with an expansion joint completely around the perimeter and at any interior isolated columns. Alternatively, the garage slabs may be tied to the perimeter foundations if the garage slab is a mat slab or structural slab constructed pursuant to the recommendations of Foundation Option #2.

To reduce post-construction movements (i.e. heave) of any slabs, care should be taken to keep the subgrade moist for an extended period of time prior to pouring the slabs. *Shrinkage cracks should not be allowed to develop in the soil beneath any proposed slabs.*

Drainage

Due to the sloping nature of the site, it will be important to provide good drainage improvements at the property.

Surface Drainage - Adjacent to any buildings, the ground surface should slope at least 4 percent away from the foundations within 5 feet of the perimeter. Impervious surfaces should have a minimum gradient of 2 percent away from the foundation.

Surface water should be directed away from all buildings into drainage swales, or into a surface drainage system (i.e. catch basins and a solid drain line). "Trapped" planting areas should not be created next to any buildings without providing means for drainage.

All roof eaves should be lined with gutters. The downspouts should be connected to solid drain lines, or should discharge onto paved surfaces which drain away from the structure. The downspouts may be connected to the same drain line as any catch basins, but should not connect to any perforated pipe drainage system.

Footing Drain - Due to the potential for changes to surface drainage provisions, we recommend that a perimeter footing drain be installed to intercept water attempting to enter the crawlspace. Where the perimeter walls of the residence are basement walls, the back of wall drain for these walls will suffice as a perimeter footing drain. Other perimeter footing subdrains may discharge into the basement back of wall drain for final collection and discharge.

The footing drain system should consist of a 12 inch wide gravel-filled trench, *dug at least 12 inches below the elevation of the adjacent crawlspace or slab subgrade*. The trench should be lined with a layer of filter fabric (Mirafi 140N or equivalent) to prevent migration of silts and clays into the gravel, but still permit the flow of water. Then 1 to 2 inches of drain rock (clean crushed rock or pea gravel) should be placed in the base of the lined trench. Next a perforated pipe (minimum 3 inch diameter) should be placed on top of the thin rock layer. The perforations in the pipe should be face down. The trench should then be backfilled with more rock to within 6 inches of finished grade. The filter fabric should be wrapped over the top of the rock. Above the filter fabric 6 inches of native soils should be used to cap the drain. If concrete slabs are to directly overlay the drain, then the gravel should continue to the base of the slab, without the 6 inch soil cap. <u>This drain should not be connected to any surface drainage system.</u>

Detention and Percolation Systems – current drainage designs often require the incorporation of onsite detention or percolation systems to reduce flows into the public collections systems. Due to the steeply sloping nature of this site, we recommend that ***percolation systems be avoided***.

If required, a detention system would likely consist of a large diameter storage pipe with a small diameter outfall pipe used to meter out the discharge to an acceptable rate. We recommend that a sedimentation basin be installed upstream of the storage pipe in order to limit the collection of debris and sediment in the underground pipes. The basin should include a gravel set base for

summer percolation, and an outfall line with a turned down inlet to keep out floating debris from the line. At the outfall end of the system, an emergency overflow should be provided to prevent back up of the system during unusually heavy rainfall. This overflow may double as clean-out access to the detention pipe system.

Backfill of the large diameter pipes should use granular bedding materials up to the spring line of the pipe to facilitate proper support for the pipes. Depending upon the granular materials used, filter fabric will likely be required to prevent loss of adjacent soils into the granular materials.

Drainage Discharge - The surface drain system should discharge at least 30 feet away from the house. Ideally, all drain lines would be carried down the slope to the access roadway for discharge into the natural drainage swale northeast of the property. Care must be taken not to increase or concentrate flows of water towards the steep slopes. The discharge location(s) should be protected as necessary by energy dissipaters to reduce the potential for erosion.

The footing drain (if installed) and any back-of-wall drain lines should discharge independently from the surface drainage system. The surface and subsurface drain systems should not be connected to one another.

Drainage Materials - Drain lines should consist of hard-walled pipes (e.g. Schedule 40 PVC or SDR 35) where pipes are properly supported in trenches less than 10 feet deep. In areas where vehicle loading is not a possibility and trenches are shallower than 3 feet, SDR 38 or HDPE pipes may be used. Corrugated, flexible pipes may not be used in any drain system installed at the property.

Surface drain lines (e.g. downspouts, area drains, etc.) should be laid with a minimum 2 percent gradient (¼ inch of fall per foot of pipe). Subsurface drain systems (e.g. footing drains) should be laid with a minimum 1 percent gradient (1/8 inch of fall per foot of pipe).

Utility Lines

Unless they pass through the perimeter footing drain system, all utility trenches should be backfilled with compacted native clay-rich materials within 5 feet of any buildings. This will help to prevent migration of surface water into trenches and then underneath the structures' perimeter. The rest of the trenches may be compacted with other native soils or clean imported fill. Only mechanical means of compaction of trench backfill will be allowed. Jetting of sands is not acceptable. Trench backfill should be compacted to at least 90 percent of its MDD. However, under pavements, concrete flatwork, and footings the upper 12 inches of trench backfill must be compacted to at least 95 percent of its MDD.

Pavement

The new driveway is expected to be asphaltic concrete over Caltrans Class II aggregate base (baserock). The asphalt should have a minimum thickness of 2½ inches. The baserock should have

a minimum thickness of 6 inches. All of the baserock and the upper 6 inches of soil subgrade should attain a minimum compaction of 95 percent of its MDD. Any fill below this layer should attain a minimum of 90 percent relative compaction.

Plan Review and Construction Observations

The use of the recommendations contained within this report is contingent upon our being contracted to review the plans, and to observe geotechnically relevant aspects of the construction.

We should be provided with a full set of plans to review at the same time the plans are submitted to the building/planning department for review. A minimum of one working week should be provided for review of the plans.

At a minimum, our observations should include: compaction testing of fills and subgrades; basement excavation; footing excavations; pier drilling; slab and driveway subgrade preparation; installation of any drainage system (e.g. back-of-wall, basement wall, under-slab, footing, and surface), and final grading. A minimum of 48 hours notice should be provided for all construction observations.

LIMITATIONS

This report has been prepared for the exclusive use of the addressee, and their architects and engineers for aiding in the design and construction of the proposed development. It is the addressee's responsibility to provide this report to the appropriate design professionals, building officials, and contractors to ensure correct implementation of the recommendations.

The opinions, comments and conclusions presented in this report were based upon information derived from our field investigation and laboratory testing. Conditions beyond our boring may vary from those encountered. Such variations may result in changes to our recommendations and possibly variations in project costs. Should any additional information become available, or should there be changes in the proposed scope of work as outlined above, then we should be supplied with that information so as to make any necessary changes to our opinions and recommendations. Such changes may require additional investigation or analyses, and hence additional costs may be incurred.

Our work has been conducted in general conformance with the standard of care in the field of geotechnical engineering currently in practice in the San Francisco Bay Area for projects of this nature and magnitude. We make no other warranty either expressed or implied. By utilizing the design recommendations within this report, the addressee acknowledges and accepts the risks and limitations of development at the site, as outlined within the report.

Respectfully Submitted;
GeoForensics, Inc.

File: 210132
January 5, 2011

Daniel F. Dyckman, PE, GE
Senior Geotechnical Engineer, GE 2145

Bernard A. Atendido
Field Engineer

cc: 1 to addressee
4 to RH Associates (10091 Streeter Road, #13, Auburn, CA 95602)

GEOFORENSICS INC. **Consulting Soil Engineering**

561-D Pilgrim Drive, Foster City, CA 94404 Phone: (650) 349-3369 Fax: (650) 571-1878

File: 210132
August 19, 2019

Mr. and Mrs. Steakley
21750 Rainbow Drive
Cupertino, CA

Subject: **Steakley Property**
21750 Rainbow Drive
Cupertino, California
GEOTECHNICAL INVESTIGATION OF
PROPOSED VINEYARD ACCESS ROAD

Mr. and Mrs. Steakley:

This letter has been prepared to provide you with the results of our investigation into the grading work which has been performed at the subject site, and present our recommendations for mitigation of those aspects of the work which are not in conformance with good geotechnical grading practices. Our office has previously prepared a geotechnical report for the subdivision including the subject parcel (dated 11/19/96), and a report for the construction of your residence (1/5/11).

Site Observations

We visited the site after the grading of the roadway had been completed to a point about 30 feet upslope from the entry to the vineyard. The roadway had two major turns in the alignment: one near the main house driveway, and a second about 2/3 of the way down the slope towards the vineyard. Although the majority of the straight portions of the roadway have minimal fills on the downslope side, the turns have significant amounts of fill placed out over the native slopes. Upslope of the roadway, the cuts generally expose a small amount of soil over friable Santa Clara formation sandstone bedrock. Both the cuts and fills at the site exceed the conventionally acceptable inclination of 2:1 (Horizontal:Vertical).

Investigation

We had the contractor excavate three test pits on the margins of the roadway path which has been graded down the hillside. As the pits were advanced, nuclear density testing was performed at select elevations to check on the degree of compaction obtained during its original placement. The pits were also advanced to determine whether the bases of the fills had been properly benched into the hillside bedrock.

Findings

Our test pits found that the new fills had been adequately keyed into the underlying Santa Clara formation materials as would have been required by our office. The testing also indicated that adequate levels of compaction had been achieved within the fills as they were placed. The only aspects of the current grading which is not within the current standards for such hillside work is the excessive steepness of the cut and fill slope faces. Current practice limits the surface inclination of cuts and fills to a 2:1 (H:V) ratio. The fill slopes at the project exceed these inclinations.

File: 210132
August 19, 2017

Recommendations

Where cut or fill slopes exceed the 2:1 inclination, the slopes taller than 3 feet must be cut back to a more stable 2:1 inclination, retained with walls, or alternatively, the slopes can be reconstructed at their existing inclinations if the slopes are reinforced with geogrids.

Retaining Walls – where walls are used to support elevation differences along the roadway, they should be designed for an active pressure of 45 pcf EFW for slopes up to an inclination of 5:1. Where retained slopes are at an inclination of 2:1, the pressures should be increased to 65 pcf EFW. Between those two inclinations, the engineer should interpolate between 45 and 65 pcf EFW. These values are considered to be inclusive of seismic forces. Where the ground slope below the wall (native or fill) exceeds an inclination of 5:1, a creep force of 35 pcf EFW should be applied over 3 pier diameters, or the spacing between piers (whichever is less). These values assume that a proper back of wall drain system (prefabricated drainage panels or filter fabric wrapped drain rock) will be provided to preclude hydrostatic build up behind the walls.

Where the slope below the wall is flatter than 5:1, or where the wall will be supported on bedrock with a minimum of 10 feet of horizontal cover to the face of any adjacent parallel slope, spread footings may be used to support the walls. Spread footings may have an allowable bearing capacity of 3000 psf. Frictional resistance along the base of the footing may be calculated using a coefficient of friction of 0.4, or alternatively a passive resistance of 400 pcf EFW starting at 500 psf may be used. Friction and passive resistance may only be allowed with the written permission of our office, based upon the geometry of the proposed foundation.

Where the slope below the wall is steeper than 5:1 and bedrock is too deep to reach with a conventional spread footing (major fill areas), the walls should consist of I-beam and lagging walls. The I-beams will be set in concrete filled piers extending below the new fills. The piers should be designed to resist the active loads and creep forces using a passive resistance of 450 pcf EFW, starting at a resistance pressure of 1000 psf acting over 1.5 pier diameters, starting at the base of the fill (i.e. in bedrock).

Reinforced Fill Slope – If the fill slopes are rebuilt, then we would recommend that the fills be reinforced with geogrids (Miragrid 3XT) spaced at two foot vertical intervals. The grid would need to extend back into the hillside a minimum distance of 5 feet, or 2/3 of the height of the fill slope (whichever is longer). The slopes may then be constructed at an inclination up to 1:1. For fill slopes taller than 5 feet, we would also recommend a chimney drain at the rear of the bench (contact our office for further recommendations should this option be chosen).

Should you have any questions please contact the undersigned.

Respectfully Submitted;
GeoForensics, Inc.





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