County of Ventura Planning Division

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Initial Study for the Day Farms, LLC Parcel Map Waiver / Large Lot Subdivision Case No. SD06-0041

Section A – Project Description

1. **Project Number(s):** Parcel Map Waiver (PMW) / Large Lot Subdivision (LLS) Case No. SD06-0041

2. **Name of Applicant:** Robert Day c/o Day Farms, LLC

3. **Project Location / Assessor Parcel Number:** 2127 Olsen Road, Unincorporated area of Ventura County / 594-0-010-035 (Attachment 1, Aerial Location Map)

4. **Existing General Plan Land Use Designation and Zoning Designation of the Project Site** (Attachment 2, Zoning and General Plan Map):

   a. **General Plan Land Use Designation:** Open Space

   b. **Zoning Designation:** OS 40 ac (Open Space 40 acres minimum lot size)

5. **Description of the Environmental Setting:** The project site is comprised of a 213.4-acres property. State Route (SR) 23 is to the west and Olsen Road is south of the project site. The cities of Thousand Oaks, Simi Valley, and Moorpark are to the south, north and east, respectively. The project site is currently developed with one primary dwelling on Lot 4 and accessory dwelling units on Lots 1 and 3. After the PMW / LLS is recorded, the dwellings on Lots 1 and 3 will become the main residence. These structures have a combined footprint of 6,983 square feet. Approximately 20,920 square feet of accessory structures related to animal keeping and agricultural uses are located on Lots 1, 3 and 4. All existing structures have been permitted through the County. Avocado orchards (approximately 14.25 acres) are located in the southern portion of the property. Agricultural and open space surround the project site, single family dwellings are located north and northeast of the project site, the nearest offsite single-family dwelling being located about 15 feet from the northern property line.

   The project site includes a blue line channel (Tierra Rejada Creek), that transverses the project site over Lots 1 and 3 in a northwest / southwest direction and is separated by SR 23. Tierra Rejada Creek becomes a Ventura County Watershed Protection District red line jurisdictional watercourse immediately

southwest of SR 23 and onto the Tierra Rejada farms property (APN 500-0-410-410) off of Read Road.

The zoning and current use of the parcels surrounding the project site are described in the following table.

Adjacent parcel	Adjacent Zoning Designation	Existing Use
North	OS 10 ac & OS 40 ac	Open Space & residential uses
South	City of Thousand Oaks: R-2 (two residential dwellings per lot) and OS	Ventura County Sherriff's Department Thousand Oaks sub-station
East	City of Simi Valley: Residential Very High density and Residential Planned Development	City of Simi Valley residential uses
West	OS 10 ac & AE 40 ac	SR 23, Open Space & agricultural uses

6. **Project Description:** The applicant requests approval of a Parcel Map Waiver/Large Lot Subdivision (PMWLLS) to subdivide one existing lot (represented by APN 594-0-010-035) into four lots as illustrated in the PMW / LLS Site Plan (Attachment 3). The acreage for each new lot would be as follows:

Proposed Lot Sizes

Proposed Lot	Net Area (acres)
1	41.14
2	54.74
3	67.95
4	49.62

The proposed project also includes the realignment of an existing driveway connected to Olsen Road (Attachment 4). The réalignment will result in the removal of one or two oak trees depending on the final design and alignment. These trees are part of an existing oak woodland that is located adjacent to Olsen Road. Approximately 1.1 acres of land will be disturbed to accommodate the widening of the existing access road to 20-feet in width and the installation of a fire department turnaround for reasonably foreseeable development on Lot 2.

The project site is currently developed with one primary dwelling on Lot 4 and accessory dwelling units on Lots 1 and 3. The accessory dwelling units on Lots 1 and 3 will become the main residence on these lots after the PMW / LLS is recorded. These structures have a combined footprint of 6,983 square feet. Approximately 20,920 square feet of accessory structures related to animal

keeping and agricultural uses are located on Lots 1, 3 and 4. Lot 2 is not developed. No new development is proposed as part of the requested PMW / LLS, however, the applicant has proposed a 3.64 acre building envelope (i.e. access road and building pad) on proposed Lot 2. The building envelope is the designated area where future construction of a single family dwelling and accessory structures would be confined to.

Water supply for the proposed new lots will be provided by the Camrosa Water District. Wastewater disposal would be accomplished through the use of onsite septic systems installed under County permit.

7. **List of Responsible Agencies:** California Department of Fish and Wildlife, United States Department of Fish and Wildlife, Los Angeles Regional Water Quality Control Board and United States Army Corps of Engineers.

8. **Methodology for Evaluating Cumulative Impacts:** Pursuant to the CEQA Guidelines [§ 15064(h)(1)], this Initial Study evaluates the cumulative impacts of the project, by considering the incremental effects of the proposed project in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects. The projects listed in Table 1 were included in the evaluation of the cumulative impacts of the project, due to their proximity to the proposed project site and potential to contribute to environmental effects of the proposed project (Attachment 5, Map of Projects):

Table 1- Pending and Recently Approved Projects Within 5 Mile Radius

Permit No.	Permit Type	Description
SD4410	SD	TPM to subdivide 6 Lots into 15 Lots.
SD09-0025	SD	Vesting Tentative Tract Map to subdivide 1 Lot into 24 Lots.
PL18-0081	CUP	Modified CUP for the continued operation of an Organics Processing Operation (composting, chipping, grinding, soil amendment and mulching operations with sales of incidental landscape materials). The request also includes expansion of the facility stock pile area and addition of a vermiculture operations and area.
PL18-0128	PMW	PMW and Conditional Certificate of Compliance to legalize a remainder parcel.
PL18-0124	PMW / LLA	PMW / LLA between two legal lots for the conveyance of approximately .67 acres on Parcel 2 to Parcel 1.
PL18-0013	CUP	CUP for a wireless communication facility designed as 80 ft. tall mono-eucalyptus tree/tower with the associated telecommunication equipment and diesel emergency backup generator located within a fenced lease area located at the base of the tower.

PL19-0008	CUP	Minor Modification to CUP No. LU07-0037 for an unmanned wireless communication facility most recently modified by Minor Modification LU10-0076, which replaced three 40-foot tall mono-poles with two 50-foot tall monopoles and one 55-foot tall monopole. All three of the monopoles are "slim line" in design with the antennas flush mounted to the poles.

* TPM- Tentative Tract Map
CUP- Conditional Use Permit
SD - Subdivision
PMW - Parcel Map Waiver
LLA - Lot Line Adjustment

Section B – Initial Study Checklist and Discussion of Responses[1]

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
RESOURCES:								
1. Air Quality (VCAPCD)								
Will the proposed project:								
a) Exceed any of the thresholds set forth in the air quality assessment guidelines as adopted and periodically updated by the Ventura County Air Pollution Control District (VCAPCD), or be inconsistent with the Air Quality Management Plan?		X				X		
b) Be consistent with the applicable General Plan Goals and Policies for Item 1 of the Initial Study Assessment Guidelines?		X				X		

Impact Discussion:

1a. Based on information provided by the applicant, the VCAPCD determined that air quality impacts will be below the 25 pounds per day threshold for reactive organic

[1] The threshold criteria in this Initial Study are derived from the *Ventura County Initial Study Assessment Guidelines* (April 26, 2011). For additional information on the threshold criteria (e.g., definitions of issues and technical terms, and the methodology for analyzing each impact), please see the *Ventura County Initial Study Assessment Guidelines*.

compounds and oxides of nitrogen as described in the *Ventura County Air Quality Assessment Guidelines* (Ventura County Air Pollution Control District, 2003).

No new development is proposed. Construction activities associated with future development of Lot 2 is not expected to generate local air quality impacts.

Therefore, the proposed project will have a less than significant project-specific impact and will not make a cumulatively considerable contribution to a significant cumulative impact, with regard to local or regional air quality.

1b. The proposed project is consistent with the applicable *General Plan* Goals and Policies for Item 1 of the *Ventura County Initial Study Assessment Guidelines*.

Mitigation/Residual Impact(s)

No mitigation required. Residual impacts will be less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
2A. Water Resources – Groundwater Quantity (WPD)								
Will the proposed project:								

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
1) Directly or indirectly decrease, either individually or cumulatively, the net quantity of groundwater in a groundwater basin that is overdrafted or create an overdrafted groundwater basin?		X				X		
2) In groundwater basins that are not overdrafted, or are not in hydrologic continuity with an overdrafted basin, result in net groundwater extraction that will individually or cumulatively cause overdrafted basin(s)?		X				X		
3) In areas where the groundwater basin and/or hydrologic unit condition is not well known or documented and there is evidence of overdraft based upon declining water levels in a well or wells, propose any net increase in groundwater extraction from that groundwater basin and/or hydrologic unit?		X				X		
4) Regardless of items 1-3 above, result in 1.0 acre-feet, or less, of net annual increase in groundwater extraction?		X				X		
5) Be consistent with the applicable General Plan Goals and Policies for Item 2A of the Initial Study Assessment Guidelines?		X				X		

Impact Discussion:

2A-41 to 2A-4. The Camrosa Water District (CWD) would provide water for the proposed lots. After the subdivision, Lot 2 would be undeveloped. Reasonable foreseeable development of Lot 2 could result in two new dwellings (i.e. one primary dwelling unit and one accessory dwelling unit). The water demand for two new dwellings would be approximately 1.5 acre feet per year (AFY) according to Certified Hydrogeologist Brian R. Baca (CHG 398; pers. comm.).

The CWD collects and distributes water from several sources. These sources include surface water imported from the State Water Project, groundwater produced from three local groundwater basins, surface water diverted from Conejo Creek, and recycled

water. Approximately two-thirds of the water delivered by the CWD is from surface water sources and one-third is groundwater.

The proposed project would result in an estimated 0.8 AFY of new groundwater extraction, according to Certified Hydrogeologist Brian R. Baca (CHG 398; pers. comm.). This is less than the Threshold of Significance established for new extractions from an overdrafted basin. Most of the new demand would be accommodated within the surface water supplies distributed by the CWD. The new demand associated with the project is minor and would not substantially affect the CWD system.

2A-5. The proposed project would be consistent with the applicable *General Plan* Goals and Policies for Item 2A of the *Ventura County Initial Study Assessment Guidelines*.

Based on the above discussion, project-specific and cumulative impacts on groundwater quantity will be less than significant.

Mitigation/Residual Impact(s)

No mitigation required. Residual impacts will be less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
2B. Water Resources - Groundwater Quality (WPD)								
Will the proposed project:								

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
1) Individually or cumulatively degrade the quality of groundwater and cause groundwater to exceed groundwater quality objectives set by the Basin Plan?		X				X		
2) Cause the quality of groundwater to fail to meet the groundwater quality objectives set by the Basin Plan?		X				X		
3) Propose the use of groundwater in any capacity and be located within two miles of the boundary of a former or current test site for rocket engines?		X				X		
4) Be consistent with the applicable General Plan Goals and Policies for Item 2B of the Initial Study Assessment Guidelines?		X				X		

Impact Discussion:

2B-1 & 2B-2. The Ventura County Watershed Protection District determined that the proposed project will not individually or cumulatively degrade the quality of groundwater and cause groundwater to exceed groundwater quality objectives set by the Basin Plan. Wastewater disposal will be accomplished through the use of onsite septic systems installed under County permit. Adherence to established regulations that pertain to septic disposal systems will prevent substantial degradation of groundwater.

2B-3. The proposed project will not be located within two miles of the boundary of a former test site for rocket engines.

2B-4. The proposed project would be consistent with the applicable *General Plan* Goals and Policies for Item 2B of the *Ventura County Initial Study Assessment Guidelines*.

Based on the above discussion, project-specific and cumulative impacts on groundwater quality will be less than significant.

Mitigation/Residual Impact(s)

No mitigation required. Residual impacts will be less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
2C. Water Resources - Surface Water Quantity (WPD)								
Will the proposed project:								
1) Increase surface water consumptive use (demand), either individually or cumulatively, in a fully appropriated stream reach as designated by SWRCB or where unappropriated surface water is unavailable?		X				X		
2) Increase surface water consumptive use (demand) including but not limited to diversion or dewatering downstream reaches, either individually or cumulatively, resulting in an adverse impact to one or more of the beneficial uses listed in the Basin Plan?		X				X		
3) Be consistent with the applicable General Plan Goals and Policies for Item 2C of the Initial Study Assessment Guidelines?		X				X		

Impact Discussion:

2C-1 & 2C-2. Water demand associated with the potential creation of a total of two new dwellings is estimated to be 1.5 AFY, according to Certified Hydrogeologist Brian R. Baca (CHG 398; pers. comm.). This demand would be primarily supplied by imported surface water and local groundwater distributed by the Camrosa Water District. A minor component of the CWD supply is local surface water diverted from Conejo Creek. An increase in surface water diversions is not anticipated to occur as a result of the limited increase in water demand due to the proposed project.

2C-3. The proposed project would be consistent with the *General Plan* Goals and Policies that pertain to item 2C of the *Ventura County Initial Study Assessment Guidelines*.

Based on the above discussion, project-specific and cumulative impacts on surface water quantity will be less than significant.

Mitigation/Residual Impact(s)

No mitigation required. Residual impacts will be less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
2D. Water Resources - Surface Water Quality (WPD)								
Will the proposed project:								
1) Individually or cumulatively degrade the quality of surface water causing it to exceed water quality objectives as contained in Chapter 3 of the three Basin Plans?		X				X		
2) Directly or indirectly cause storm water quality to exceed water quality objectives or standards in the applicable MS4 Permit or any other NPDES Permits?		X				X		
3) Be consistent with the applicable General Plan Goals and Policies for Item 2D of the Initial Study Assessment Guidelines?		X				X		

Impact Discussion:

2D-1. The Ventura County Watershed Protection District determined that the proposed project would not result in a violation of any surface water quality standards as defined in the Los Angeles Basin Plan. Although no construction is proposed at this time, reasonable foreseeable development of Lot 2 could result in two dwelling units (i.e. 1 primary, 1 accessory). Future construction of dwellings would include the creation of new impervious surfaces that incrementally increase surface water runoff. The effects of increased runoff on surface water quantity and quality would be negligible given the large size of the proposed lots (greater than 40 acres) relative to the existing and potential building sites (0.25 to 3.82 acres).

2D-2. This proposed project is located outside of the County unincorporated urban areas and is not subject to Part 4.E "Planning and Land Development" of the Ventura Countywide Municipal Stormwater NPDES Permit Order No. R4-2010-0108.

2D-3. The proposed project would be consistent with the *General Plan* Goals and Policies that pertain to item 2D of the *Ventura County Initial Study Assessment Guidelines*.

Based on the above discussion, project-specific and cumulative impacts on surface water quality will be less than significant.

Mitigation/Residual Impact(s)

No mitigation required. Residual impacts will be less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
3A. Mineral Resources – Aggregate (Plng.)								
Will the proposed project:								
1) Be located on or immediately adjacent to land zoned Mineral Resource Protection (MRP) overlay zone, or adjacent to a principal access road for a site that is the subject of an existing aggregate Conditional Use Permit (CUP), and have the potential to hamper or preclude extraction of or access to the aggregate resources?	X				X			
2) Have a cumulative impact on aggregate resources if, when considered with other pending and recently approved projects in the area, the project hampers or precludes extraction or access to identified resources?					X			
3) Be consistent with the applicable General Plan Goals and Policies for Item 3A of the Initial Study Assessment Guidelines?	X				X			

Impact Discussion:

3A-1 & 3A-2. The project site is not located on or immediately adjacent to land included in an MRP overlay zone or located adjacent to land classified as MRZ-2. The proposed project site is also not located adjacent to a principal access road for a site that is the subject of an existing aggregate CUP. The proposed project would also not preclude

access to mineral resources. Therefore, the proposed project will not have a cumulative impact on aggregate resources and does not hamper or preclude extraction or access to identified resources.

3A-3. The proposed project would be consistent with the *General Plan* Goals and Policies that pertain to item 3A of the *Ventura County Initial Study Assessment Guidelines*.

Based on the above discussion, there will be not be any project-specific or cumulative impacts on aggregate resources.

Mitigation/Residual Impact(s)

No mitigation required. There will not be any residual impacts.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
3B. Mineral Resources – Petroleum (Plng.)								
Will the proposed project:								
1) Be located on or immediately adjacent to any known petroleum resource area, or adjacent to a principal access road for a site that is the subject of an existing petroleum CUP, and have the potential to hamper or preclude access to petroleum resources?	X				X			
2) Be consistent with the applicable General Plan Goals and Policies for Item 3B of the Initial Study Assessment Guidelines?	X				X			

Impact Discussion:

3B-1. The proposed project is not located within or adjacent to a known petroleum resource area. The proposed project would also not preclude access to a site that is the subject of an existing petroleum CUP or have the potential to hamper or preclude access to petroleum resources.

3B-2. The proposed project would be consistent with the *General Plan* Goals and Policies that pertain to item 3B of the *Ventura County Initial Study Assessment Guidelines*.

Based on the above discussion, there will be not be any project-specific or cumulative impacts on petroleum resources.

Mitigation/Residual Impact(s)

No mitigation required. There will not be any residual impacts.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
4. Biological Resources								
4A. Species								
Will the proposed project, directly or indirectly:								
1) Impact one or more plant species by reducing the species' population, reducing the species' habitat, fragmenting its habitat, or restricting its reproductive capacity?			X				X	
2) Impact one or more animal species by reducing the species' population, reducing the species' habitat, fragmenting its habitat, or restricting its reproductive capacity?			X				X	

The parcel supports various uses, including stables, corrals, one single-family dwelling and accessory structures related to the existing animal keeping activities, a water tank, and avocado orchard. Portions of upland areas on the parcel are natural open space with horse riding trails. Within the parcel, approximately 48% of the land supports native vegetation, 7% non-native vegetation, 8% agriculture/grazing, 34% bare/graded /cleared ground, and 3% buildings and paved roads (Envicom Corporation, 2018a)[2].

An Initial Study Biological Assessment (ISBA), was prepared for the project (Envicom, 2018 et al, Original Report dated October 27, 2009) (Attachment 6). Surveys included general habitat assessments, vegetation mapping, delineation of jurisdictional waters,

[1]Envirom Corporation (Envicom), 2018a Initial Study Biological Assessment (ISBA). Prepared by Envicom Corporation, for the Ventura County Planning Division. Original ISBA report date: October 27, 2009, revised October 19, 2018.

and focused botanical surveys. Figure 2 in Attachment 6 depicts the various vegetation communities type occurring on the parcel.

Drainage on the parcel occurs primarily through a central "valley" from southeast to northwest toward a depression in the northwest that supports a wetland that has been characterized as a "vernal pool." Overflow and sheet flows from flat areas in the west are directed toward a single 10 ft diameter culvert under the freeway, discharging into an agricultural field on the west side. Flows in the main channel through the central valley are evidently ephemeral, and the channel does not support wetland vegetation.

The proposed building envelope on Lot 2 has been cleared in the past and is now an annual grassland. There are chamise shrubs (*Adenostoma fasiculatum*) scattered throughout the area. The access road alignment on Lot 2 and Lot 4 is comprised of non-native annual grassland. Native coastal sage scrub occurs at some locations along the existing paved access road alignment, comprising of black sage (*Salvia mellifera*), California buckwheat (*Eriogonum fasciculatum*) and California brittle bush (*Encelia californica*). A much denser stand of coastal sage scrub occurs on the north-facing slope near Olsen Road, comprising of California sagebrush, California buckwheat, black sage, and purple sage (*Salvia leucophylla*) (Attachment 6, ISBA).

A dry ephemeral drainage traverses southeast to northwest where the proposed access road originates from Olsen Road. The northern bank of this drainage supports coast live oak (*Quercus agrifolia*) woodlands. The proposed access road to Lot 2 avoids this woodland, as well as a small area of California walnut (*Juglans californica*) woodland, that occurs in this central drainage area. A stand of chaparral vegetation surrounds the drainage, which extends onto the slope to the north. This stand is characterized by large shrubs, consisting of toyon (*Heteromeles arbutifolia*) and lemonade berry (*Rhus integrifolia*).

Impact Discussion:

4.A-1.

Special-status Plants

Project site surveys conducted between 2010 and 2011 revealed the occurrence of 188 vascular plant species, including 128 native species and introduced species. Special-status plant species detected during this set of surveys of the parcel include: bracted verbena (*Verbena bracteate),* recognized as a Ventura County Locally Important Plant [VCLIP]); one individual Plummer's mariposa lily (*Calochortus plummerae*) (California Rare Plant Rank 4.2 (CRPR 4.2)[3], a small stand of California walnuts (CRPR 4.3), and

[3] The California Native Plant Society's (CNPS) Rare Plant Ranking system ranges from presumed extinct species, California Rare Plant Rank (CRPR) 1A, to limited distribution species now on a watch list CRPR 4:

clover fern (*Marsilea vestita* sbsp. *vestita*) (VCLIP). Additional special-status species reported previously by others but not detected in the 2010-2011 surveys, include: California Orcutt grass (State Endangered Federally Endangered; VCLIP), Catalina mariposa lily (*Calochortus catalinae*) (CRPR 4.2), and Rocky Mountain sedge (*Schoenoplectus saximontanus*), (VCLIP).

During the Spring 2018 botanical surveys, 95 vascular plants species were found, including one (1) fern ally, 72 dicots, and 22 monocots. Special-status plant species observed included Conejo dudleya (*Dudleya parva*), a species recognized as Federally Threatened (FT) and Catalina mariposa lily (*Calochortus catalinae*) (CRPR 4.2). Conejo dudleya was the only plant species considered to be rare, threatened, or endangered, that was detected during the surveys. Catalina mariposa lily and Plummer's mariposa lily both CRPR 4 plants, were detected within the proposed development envelope for Lot 2 in low numbers. All other plant species occur on the parcel outside of the proposed development envelope. CRPR 4 plants are not rare, but rather are included on a "watch list" of species with limited distribution. CRPR 4 species do not meet criteria for listing as Threatened or Endangered under the California Endangered Species Act. Based on these conditions, implementation of the proposed project would not result in significant impacts to special status plant species.

Special Status Trees

Numerous coast live oak and scrub oak (*Quercus berberidifolia*) occur on the subject property. The final design and alignment of the access road on Lot 2 and Lot 4 is not definite and will be determined at the time development of Lot 2 is proposed. Based on the final design, there may be a need to remove one or two oak trees. Reasonably foreseeable development of Lot 2 may also result in encroachment into several other protected trees. Impacts to trees protected under the Ventura County Tree Ordinance would be considered significant. Therefore, Mitigation Measure (MM) BIO-1 and MM BIO-2 are proposed. MM BIO-1 and MM BIO-2 requires the Applicant to submit a Tree Protection and Monitoring Plan and compensatory mitigation for impacted trees. With

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CRPR 1A..... CNPS listed as presumed to be extinct
CRPR 1B..... listed as rare or endangered in California and elsewhere
CRPR 2..... California Native Plant Society listed as rare or endangered in California but more common elsewhere
CRPR 3..... **A review list only.** California Native Plant Society listed as in need of more information.
CRPR 4..... **A watch list only**. California Native Plant Society listed as of limited distribution or infrequent throughout a broader area in California; vulnerability to threat appears relatively low.

Ranks at each level also include a threat rank (e.g., CRPR 4.3) and are determined as follows:

- 0.1-Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
- 0.2-Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
- 0.3-Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

the implementation of these mitigation measures, impacts to special status trees would be considered less than significant.

4.A-2.

Special Status Wildlife

Two reptile species, 67 bird species (two introduced), and six mammal species (one introduced) have been observed on the subject property. In addition, numerous other special status species have the potential to occur based on suitable habitat and nearby occurrences of these species recorded in the California Natural Diversity Database (CNDDB).

USFWS Critical Habitat

Approximately 202 acres of the property is located within designated Critical Habitat for the federally Threatened coastal California gnatcatcher (*Polioptila californica californica*) and the Riverside fairy shrimp (*Streptocephalus wootoni*) which is recognized as a Federally Endangered (FE) species. The proposed development envelope on Lot 2 and the access road will result in the removal of a total of 3.82 acres of suitable coastal sage scrub vegetation, of which 1.60 acres within the proposed development area would be Critical Habitat for the California gnatcatcher (January 18, 2008, USFW, 72 FR 72009 Federal Register 50 CFR 17). The removal of critical habitat designated by the US Fish and Wildlife Service (USFWS) is considered a potentially significant impact. However, MM BIO-3 is proposed as mitigation for the removal of 3.82 acres of critical habitat/suitable gnatcatcher habitat. MM BIO-3 requires the Applicant to deed restrict onsite intact coastal sage scrub habitat at a 2:1 mitigation to impact ratio (6.84 acres total), which would reduce these impacts to a less than significant level (Attachment 7, Development Restriction Area).

Coastal California Gnatcatcher

In addition to Critical Habitat, coastal California gnatcatchers (FT) have been observed during USFWS protocol surveys near the southern boundary of the subject property and are presumed to have been present on-site in the southwestern portion of the property in 2012. A nesting pair of coastal California gnatcatchers was observed very close to the southern property boundary by BonTerra Consulting in Spring 2012. Two gnatcatcher pairs and an individual juvenile were also observed approximately 500 feet south of the property, just south of Olsen/Madera Road (Messett, 2010 and 2012). Four additional groups of nests or birds have been recorded within 1.5 miles of the project site since 1997 (CNDDB, 2013). These birds are likely to have foraged in the coastal sage scrub habitats in the southwestern corner of the property and this species may continue to be present on-site.

The current presence/absence of coastal California gnatcatchers at the site is unknown. No development is proposed at this time however, reasonably foreseeable development of Lot 2 and Lot 4 would result in the potential removal of 3.82 acres of suitable coastal

sage scrub habitat for the gnatcatcher, of which 1.60 acres would be within Critical Habitat for the California gnatcatcher. In order to mitigate potentially significant impacts, MM BIO-4 requires protocol surveys be conducted for coastal California gnatcatcher in all areas proposed for development. If protocol surveys determine that gnatcatchers are present, an Incidental Take Permit in compliance with the Endangered Species Act (ESA) will be required from the USFWS; prior to any earth disturbing activities on Lot 2 and Lot 4.

Numerous special-status wildlife with habitat in or around the vernal pool have been observed or could occur on the subject property. These species include, but are not limited to, Riverside fairy shrimp and two-striped garter snake (*Thamnophis hammondii*). The proposed project is not located within the area of the vernal pools and therefore, no impacts to potentially sensitive biological receptors, if present within the vernal pool or in its vicinity, are anticipated to be impacted by the proposed project.

Nesting Birds

The Federal Migratory Bird Treaty Act (MBTA) and the California Department of Fish and Game (CDFG) Code (3503, 3503.5, 3511, 3513, and 3800) protect most native birds. In addition, the federal and state endangered species acts protect bird species listed as threatened or endangered. CDFG Code 3513 upholds the MBTA by prohibiting any take or possession of birds designated by the MBTA as migratory nongame birds except as allowed by federal rules and regulations promulgated pursuant to the MBTA. In addition, CDFG Codes (3503, 3503.5, 3511, and 3800) further protect nesting birds and their parts, including passerine birds, raptors, and state "fully protected" birds. Project-related impacts to birds protected by these regulations would occur during the breeding season, because unlike adult birds, eggs and chicks are unable to escape impacts. No development is proposed at this time however, reasonably foreseeable development of Lot 2 and Lot 4 would result in construction related noise that could potentially impact nesting birds under the protection of the MBTA.

Two special-status bird species, oak titmouse (*Baeolophus inornatus*) and Nuttall's woodpecker (*Picoides nuttallii*), both CDFW "Special Animals," have been observed on the subject property. Both have potential to nest on site, especially in the riparian and oak woodland, and sometimes in ornamental trees. No direct impacts will occur to oak woodland habitats, except for the removal of 1-2 individual trees associated with the access road construction. Removal of these trees, as well as indirect impacts, such as noise, vibration, and human presence during land clearing activities could cause potentially significant impacts to nesting birds including Nuttall's woodpecker and oak titmouse. Therefore, the applicant will be subject to a standard condition of approval that will require the applicant to conduct land clearing activities that would avoid the nesting season (January 1 – September 1) or conduct pre-construction surveys within the nesting season to determine presence or absence and if present, to avoid impacts to nesting birds.

Two special-status reptiles have a high potential to occur on site in areas proposed for development, the coast horned lizard (*Phyrnosoma blainvilli*) and coastal western whiptail (*Aspidoscelis tigris stejnegeri*). Land clearing activities and ongoing construction could result in the mortality of coast horned lizard and coastal western whiptail, resulting in a potentially significant impact. Therefore, the applicant will be subject to a standard condition of approval that will require pre-construction surveys for special-status wildlife species. To prevent special status wildlife from moving into the area, a biological monitor will be present onsite during ground disturbance/grading activities. These actions are expected to reduce the potential impacts to a level below significance.

Mitigation Measures:

Mitigation Measure BIO-1: Tree Protection Plan (TPP)

Purpose: To comply with the County's Tree Protection Regulations (TPR) set forth in § 8107-25 et seq. of the Ventura County Non-Coastal Zoning Ordinance and the Tree Protection Guidelines (TPG), with the Oak Woodland Conservation Act (OWCA) (PRC § 21083.4, Fish and Game Code § 1361).

Requirement: The applicant shall avoid impacting protected trees to the extent feasible and shall offset or mitigate any damage to protected trees or associated impacts from such damage. If protected trees are felled/damaged and require offsets/mitigation pursuant to the TPR (§ 8107-25.10) and TPG (§ IV.C, Offset/Replacement Guidelines), the applicant shall post a financial assurance to cover the costs of planting and maintaining the offset trees.

Documentation: The applicant shall prepare and submit to the Planning Division for review and approval, a TPP pursuant to the "Content Requirement for Tree Protection Plans" that is currently available on-line at: http://www.ventura.org/rma/planning/pdf/permits/tree/Tree-Protection-Plan-11-11-19.pdf. The TPP must include (but is not limited to):

a. measures to protect all TPR-protected trees whose tree protection zones (TPZs) are within 50 feet of the construction envelope (including stockpile and storage areas, access roads, and all areas to be used for construction activities) or within 10 feet of other trees proposed for felling or removal;

b. the offset or mitigation that will be provided for any trees approved for felling; and

c. the offset or mitigation that will be provided should any protected trees be damaged unexpectedly.

A qualified arborist[4] shall prepare the TPP in conformance with the County's TPR, TPG, and "Content Requirements for Tree Protection Plans."

If in-lieu fees will be paid to a conservation agency by the Planning Division's Tree Impact Fund for tree offsets/mitigation, the applicant shall submit to the Planning Division for review and approval, a tree mitigation plan from a conservation agency that explains how the mitigation funds will be used to support the preservation of protected trees. After the Planning Division's review and approval of the tree mitigation plan, the applicant shall provide the Planning Division with a copy of the contract between the conservation agency and the applicant.

If a financial assurance is required for tree offsets/mitigation, the Planning Division shall provide the applicant with a "Financial Assurance Acknowledgement" form. The applicant shall submit the required financial assurance and the completed "Financial Assurance Acknowledgement" form to the Planning Division. The applicant shall submit annual verification that any non-cash financial assurances are current and have not expired.

Timing: Prior to the issuance of a Zoning Clearance for construction, the applicant shall submit the TPP to the Planning Division for review and approval, implement all prior-to-construction tree protection measures, and submit the required documentation to demonstrate that the applicant implemented the tree protection measures. Unless otherwise approved by the Planning Director, replacement and transplant trees must be planted prior to issuance of Zoning Clearance for construction. Other monitoring and reporting dates shall be as indicated in the approved TPP.

If in lieu fees are required and will be paid to the Planning Division's Tree Impact Fund, the applicant shall submit these fees prior to the issuance of a Zoning Clearance for construction. Where a TPP damaged tree addendum is prepared, the applicant shall remit payment of the fees within 30 days of Planning Division's approval of the addendum.

If in lieu fees are required and will be paid to an approved conservation agency, the applicant shall submit these fees, along with the required tree mitigation plan and contract from the conservation organization, prior to the issuance of a Zoning Clearance for construction.

If a financial assurance is required, the applicant shall submit the required financial assurance and the completed "Financial Assurance Acknowledgement" form prior to the issuance of a Zoning Clearance for construction. The Planning Division may release the

[4] A qualified arborist may be either an International Society of Arboriculture certified arborist or a related professional, such as a landscape architect, with qualifying education, knowledge and experience, as determined by the Planning Director. The project arborist is the arborist who prepared the TPP and remains involved with implementation and monitoring of the Project.

financial assurance after receiving the report from the project arborist that verifies that the replacement trees met their final 5-year performance targets set forth in the TPP.

Monitoring and Reporting: The applicant shall retain an arborist to monitor and prepare the documentation regarding the health of the protected trees, pursuant to the monitoring and reporting requirements set forth in the "Content Requirements for Tree Protection Plans." The Planning Division maintains the approved TPP and all supporting documentation in the Project file. The Resource Management Agency Operations Division maintains copies of all financial documentation. Planning Division staff, Building and Safety Inspectors, and Public Works Agency grading inspectors have the authority to inspect the site during the construction phase of the Project, in order to verify that tree protection measures remain in place during construction activities, consistent with the requirements of § 8114-3 of the Ventura County Non-Coastal Zoning Ordinance

Mitigation Measure BIO-2: Tree Health Monitoring and Reporting

Purpose: To comply with the County's Tree Protection Regulations (TPR) in § 8107-25 of the Ventura County Non-Coastal Zoning Ordinance and Tree Protection Guidelines (TPG), with the Oak Woodland Conservation Act (OWCA) (PRC § 21083.4, Fish and Game Code § 1361).

Requirement: The applicant shall submit annual monitoring reports, prepared by an arborist, after initiation of construction activities and until five years after the completion of construction activities, which address the success of tree protection measures and the overall condition of encroached-upon trees relative to their condition prior to the initiation of construction activities. If any trees are found to be in serious decline (e.g., "D" status, or "C" status if pre-construction status was "A"), the arborist's report must include a Damaged Tree Addendum to the TPP which recommends offsets and any associated additional monitoring.

Documentation: The applicant shall submit annual arborist reports as stated in the "Requirement" section of this condition (above).

Timing: The applicant shall submit annual arborist reports after initiation of construction activities and until five years after the completion of construction activities.

Monitoring and Reporting: The applicant shall implement any recommendations made by the arborist's Damaged Tree Addendum to the satisfaction of the Planning Director. The Planning Division maintains copies of all documentation and evidence that the arborist's recommendations are implemented. The Planning Division has the authority to inspect the site to confirm the health of the protected trees and to ensure that the recommendations made by the arborist are implemented consistent with the requirements of § 8114-3 of the Ventura County Non-Coastal Zoning Ordinance.

Mitigation Measure BIO-3: On-site Preservation of Potential Suitable Gnatcatcher Habitat

Purpose: To compensate for the loss of approximately 3.82 acres of Ventura Coastal Sage Scrub of which 1.60 acres is also designated Critical Habitat for the potentially occurring coastal California gnatcatcher.

Requirement: The applicant shall provide for the onsite preservation, in perpetuity, of native scrub habitat at a 2:1 mitigation to impact ratio. To accomplish this, the applicant shall deed restrict 6.84-acres of land supporting undeveloped high-quality chamise chaparral and coastal sage scrub habitats as well as a headwaters section of an ephemeral drainage, located in an undeveloped portion of proposed Lots 2 and 3, as shown in (Attachment 6, Figure 7, Deed Restriction Mitigation Area Map).

Documentation: The Planning Division shall provide a form and map of the Deed Restriction area (DRA) and the applicant shall concurrently record with the PMW/LLS: (1) the conditions of this PMW / LLS; and (2) an Exhibit depicting the DRA.

The deed restriction shall:

a. Include a copy of this condition of approval, a site-specific DRA map, and legal description and map(s) of the areas that are subject to the DRA ("Protected Areas");

b. Include provisions for the long-term preservation and maintenance of the Protected Areas by describing what maintenance activities are allowed and are prohibited in the Protected Areas:

   Allowed Activities:

   (1) Provide a hiking trail map showing the existing trails to be maintained within the DRA notwithstanding the prohibition requirements below. Maintenance within the DRA shall include brush clearance of 5 feet on either side of the hiking trail that is delineated on the trail map.

   Prohibited Activities:

   (1) removal, mining, excavation, or disturbance of the soil or surface rocks or decaying material such as fallen trees;

   (2) dumping, filling, storing, disposal, burying, or stockpiling of any natural or manmade materials;

   (3) erection of buildings or structures of any kind, including, but not limited to, fencing, corrals, advertising signs, antennas, and light poles;

(4) placement of pavements, concrete, asphalt and similar impervious materials, laying of decomposed granite for pathways, or setting of stones, paving bricks, or timbers;

(5) operation of dune buggies, motorcycles, all-terrain vehicles, bicycles, mowers, tractors, or any other types of motorized or non-motorized vehicles or equipment;

(6) removal or alteration of native trees or plants, through such activities as irrigating, mowing, draining, plowing, tilling or disking, except as necessary for controlled burns or fuel reduction as regulated by the Ventura County Fire Protection District, or for removal of non-native species and native habitat restoration or maintenance under the direction of a qualified biologist;

(7) application of insecticides or herbicides, poisons, or fertilizers;

(8) grazing or keeping of cattle, sheep, horses or other livestock, or pet animals;

(9) agricultural activity of any kind including the harvesting of native materials for commercial purposes;

(10) planting, introduction, or dispersal of non-native plant or animal species;

(11) hunting or trapping, except live trapping for purposes of scientific study or removal of non-native species;

(12) manipulating, impounding or altering any natural watercourse, body of water or water circulation and activities or uses detrimental to water quality, including but not limited to degradation or pollution of any surface or sub-surface waters;

(13) artificial lighting that illuminates or is directed towards critical gnatcatcher habitat; and

(14) other activities that damage the existing flora, fauna or hydrologic conditions;

c. Be recorded with the Office of County Recorder, with a copy of the recorded document provided to the Planning Division.

Timing: Concurrent with recordation of the PMW/LLS, the applicant shall record the conditions and an Exhibit depicting the DRA with the deed to the subject property.

Monitoring and Reporting: The Planning Division maintains a copy of the recorded deed restriction in the Project file. The Planning Division has the authority to inspect the

site to confirm on-going compliance with this project condition consistent with the requirements of § 8114-3 of the Ventura County Non-Coastal Zoning Ordinance.

Mitigation Measure BIO 4: Coastal California Gnatcatcher Surveys

Purpose: In order to avoid and/or minimize the impacts on federally Threatened coastal California gnatcatcher by determining the presence/absence of the coastal California gnatcatcher at the site and complying with CDFW and USFWS requirements to protect the species, if present.

Requirement: Prior to all tree removal/trimming, vegetation clearing, and grading activities (collectively, "land clearing activities"), a County-approved biologist authorized under § 10(a)(1)(A) of the Endangered Species Act[5] shall conduct protocol surveys for coastal California gnatcatcher, in accordance with the United States Fish and Wildlife Service's (USFWS') "Coastal California Gnatcatcher (*Polioptila californica*) Presence/Absence Survey Guidelines" (February 28, 1997). The biologist shall conduct the surveys within one-year of initiating land clearing activities. The survey area must include all areas that will be subject to land clearing activities and the area within 500' of the area that will be subject to land clearing activities. The biologist shall follow this protocol unless otherwise authorized by the US Fish and Wildlife Service (USFWS) in writing. Protocol surveys are valid for one year.

If surveys confirm the presence of coastal California gnatcatcher on the site, then the applicant shall implement either one of the following procedures:

1. Timing of land clearing or construction: Prohibit land clearing or construction activities during the breeding and nesting season (January 1 – September 1), in which case the following surveys are not required; or

2. Surveys and avoidance of occupied nests: Conduct site-specific surveys prior to land clearing or construction activities during the breeding and nesting season (January 1 – September 1) and avoid occupied bird nests. A County-approved biologist shall conduct surveys to identify any occupied (active) bird nests in the area proposed for disturbance. Occupied nests shall be avoided until juvenile birds have vacated the nest.

The County-approved biologist shall conduct an initial breeding and gnatcatcher survey 30 days prior to the initiation of land clearing or grading activities. The County-approved

[5] A Section 10(a)(1)(A) Endangered Species Act (ESA) permit, also sometimes referred to as a "recovery permit", is issued by the USFWS to allow for take as part of activities intended to foster the recovery of listed species. A typical use of a recovery permit is to allow for scientific research on a listed species. Whereas, a Section 10(a)(1)(B) Endangered Species Act permit, also called as an 'Incidental Take Permit' issued by the USFWS; is needed when an applicant conducts an otherwise lawful activity (project development) where a listed species may be adversely affected, and the purpose of the activity is not scientific research or enhancement of a listed species.

biologist shall continue to survey the Project site on a weekly basis, with the last survey completed no more than 3 days prior to the initiation of land clearing activities. The gnatcatcher bird survey must cover the areas reasonably foreseeable development of Lot 2 and Lot 4 and 300 feet from this reasonably foreseeable development. If occupied (active) nests are found, land clearing activities within a setback area surrounding the nest shall be postponed or halted. Land clearing activities may commence in the setback area when the nest is vacated (juveniles have fledged) provided that there is no evidence of a second attempt at nesting, as determined by the County-approved biologist. Land clearing activities can also occur outside of the setback areas. Pursuant to the recommendations of the California Department of Fish and Wildlife, the required setback is 300 feet for most birds and 500 feet for raptors. This setback can be increased or decreased based on the recommendation of the County-approved biologist and approval from the Planning Division.

Documentation: The applicant shall provide to the Planning Division a Survey Report from a County-approved biologist with a Section 10(a)(1)(A) permit under the Endangered Species Act documenting the results of the protocol surveys for coastal California gnatcatcher.

If coastal California gnatcatchers are found during the protocol surveys, the applicant shall submit the following to the Planning Division:

a. If the Project involves federal permitting or funding, the applicant shall submit a copy of one of the following documents: (a) a Biological Opinion issued by the USFWS; or (b) a written concurrence letter from the USFWS stating the Project is unlikely to adversely affect the coastal California gnatcatcher; or

b. If the Project does not involve federal permitting or funding, the applicant shall submit a copy of one of the following documents: (a) an incidental take permit and Habitat Conservation Plan (HCP);[6] or (b) a written concurrence letter from the USFWS stating that the Project is unlikely to adversely affect the coastal California gnatcatcher.

If (1) the Project site is located within 1 mile of a recorded occurrence of coastal California gnatcatcher, (2) the Project will result in the removal of coastal sage scrub vegetation, and (3) surveys produced no observations of the species, then the applicant shall submit a letter to the Planning Division prior to the issuance of a Zoning Clearance for grading from USFWS stating:

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[6] A Habitat Conservation Plan (HCP) is a required part of an application for an Incidental Take Permit [10(a)(1)(A) permit], a permit issued under the United States Endangered Species Act (ESA) to private entities undertaking projects that might result in the destruction of an endangered or threatened species. It is a planning document that ensures that the anticipated take of a listed species will be minimized or mitigated by conserving the habitat upon which the species depend, thereby contributing to the recovery of the species as a whole

a. The project is not likely to adversely affect the coastal California gnatcatcher pursuant to Section 7 of the Federal Endangered Species Act; and

b. The project is not likely to result in take of the coastal California gnatcatcher pursuant to Section 10 of the Federal Endangered Species Act.

Timing: Prior to the issuance of a Zoning Clearance for grading, the applicant shall provide to the Planning Division a copy of the Survey Report and—if coastal California gnatcatchers are confirmed to be present during the protocol surveys—the applicant shall also provide a copy of one of the following as appropriate: (a) the Biological Opinion (B.O.) issued by the USFWS; (b) the written concurrence letter from the USFWS stating that the Project is unlikely to adversely affect the coastal California gnatcatcher; or (c) the Incidental Take Permit and HCP.

The biologist shall conduct the protocol surveys within one-year of initiating land clearing activities. If the surveys reveal the presence of coastal California gnatcatcher, then the survey results shall remain valid for three years. If the surveys do not reveal the presence of coastal California gnatcatcher, then the survey results shall remain valid for one year.

If (1) the Project site is located within 1 mile of a recorded occurrence of coastal California gnatcatcher, (2) the Project will result in the removal of coastal sage scrub vegetation, and (3) surveys produced no observations of the species, then the applicant shall submit the letter to the Planning Division prior to the issuance of a Zoning Clearance for grading.

Monitoring and Reporting: The Planning Division reviews for adequacy the Survey Report and documents issued by the USFWS prior to issuance of a Zoning Clearance for construction. The USFWS and Planning Division has the authority to inspect the Project site to ensure that the applicant implements the mitigation measures set forth in the Biological Opinion or HCP (as applicable). If the USFWS or Planning Division confirms that the applicant is not maintaining the Project site in compliance with the Biological Opinion or HCP, Planning Division staff has the authority to initiate enforcement actions pursuant to § 8114-3 of the Ventura County Non-Coastal Zoning Ordinance.

Residual Impacts:
With the implementation of the above mitigation measures, impacts on biological resources (species) will be less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**	Cumulative Impact Degree Of Effect**

	N	LS	PS-M	PS	N	LS	PS-M	PS
4B. Ecological Communities - Sensitive Plant Communities								
Will the proposed project:								
1) Temporarily or permanently remove sensitive plant communities through construction, grading, clearing, or other activities?			X				X	
2) Result in indirect impacts from project operation at levels that will degrade the health of a sensitive plant community?			X				X	

4.B-1. Several special status plant communities occur on the subject property. These include:

- California walnut groves (*Juglans californica*) Alliance
- Coast live oak woodland (*Quercus agrifolia*) Alliance
- Chamise chaparral (*Adenostoma fasciculatum*) AllianceCalifornia buckwheat scrub (*Eriogonum fasciculatum*) Alliance
- California sagebrush scrub (*Artemisia californica)* Alliance
- Purple sage scrub (*Salvia leucophylla*) Alliance
- Black sage scrub (*Salvia mellifera*) Alliance
- Salt marsh bulrush marshes (*Bolboschoenus maritimus [Scirpus* m.]) Alliance
- Creeping ryegrass turfs (*Elymus triticoides [Leymus* t.] Alliance, and,
- Pale spike-rush marshes (*Eleocharis macrostachya*) Alliance

Salt Marsh Bulrush (ranked G[7]4S3), occurs on the subject property, but is limited to small, relative pure stands within the vernal pool, probably amounting to approximately 100 square feet of coverage. Reasonably foreseeable development of Lot 2 and Lot 4 (access driveway) does not include the area of the vernal pool and therefore, no impacts to this plant community would occur.

Creeping Ryegrass Alliance (ranked G4S3), occurs as a nearly pure stand along a constructed drainage ditch traversing from south to north in the western portion of the parcel. No impacts to this plant community would is expected from reasonable future development of Lot 2 or Lot 4 (access driveway).

[7] Global Ranking as defined in the ISBA pg. 44 (Attachment 6)

California Walnut Woodland Alliance (ranked G3S3), is found in a very small stand in a small drainage in the southeastern portion of the site, adjacent to cleared land, the avocado orchard, and buckwheat scrub on a manufactured slope adjoining Olsen Road. No impacts to this plant community is expected from reasonably foreseeable development of Lot 2.

Coast Live Oak Woodland Alliance (ranked) G5S4, occurs as a dense, mature woodland in the upper portion of the main canyon in the southeast portion of the subject parcel, including a few scattered individuals at the bases of slopes on either side of the main canyon, and a single isolated individual on a highland area in the northeast. Coast live oak woodland is protected under the California Oak Woodland Act (COWA), is considered sensitive by the California Natural Diversity Database (CNDDB) and is classified as a Locally Important Plant Community. The construction of the driveway to the building envelope on proposed Lot 2 and 4, is anticipated to result in the removal of one or two individual oak trees. The proposed development is not expected to encroach into the Oak Woodland Community, which occurs further to the west of the proposed access road in the southern portion of the parcel. Mitigation for the potential impacts to individual oak trees are address by proposed MM BIO-1 and MM BIO-2; identified earlier under Section 4A.

The proposed development of the road and single-family dwelling on proposed Lot 2 and Lot 4 is anticipated to result in a loss of approximately 3.82 acres of Venturan Coastal Sagebrush Scrub, which is a Locally Important Community. Therefore, these impacts are potentially significant. However, MM BIO-3 proposed under Section 4A, which requires the permanent preservation on site of a 6.84-acre area of undeveloped, high-quality chamise chaparral and coastal sage scrub habitats at a 2:1 mitigation to impact ratio; will mitigate impacts to a less than significant level.

4B-2. Indirect impacts to sensitive plant communities could result from the introduction and proliferation of invasive plants. This can occur through the inadvertent transportation of seed or propagules or the intentional use of invasive plants in hydroseed or landscaping within the areas proposed for development of Lot 2 in the reasonably foreseeable future, including the fuel modification zone. Introduction of invasive plants has the potential to degrade the quality of plant communities and wildlife habitat and would result in significant impacts to sensitive plant communities. Therefore, MMs BIO-5 and BIO-6 are proposed, requiring the preparation of a Fuel Modification Plan to be submitted for approval by the County, and to avoid non-native plant species in landscaping. With the implementation of these measures, potential indirect impacts would be mitigated to a less than significant level and cumulatively considerable impacts would be less than significant.

Mitigation Measures:

Mitigation Measure BIO-5: Fuel Modification Plan

Purpose: To mitigate potentially significant impacts to sensitive plant communities and other native vegetation that provide habitat to wildlife, and to ensure the fuel modification zone contains appropriate plants, is properly maintained, and does not serve as a source for non-native invasive plants to spread into native habitats.

Requirement: The applicant shall use a County-approved qualified biologist or landscape architect to prepare a Fuel Modification Plan for the Planning Division's review and approval that consists of drought-tolerant, non-invasive plants and meets the Ventura County Fire Protection District's requirements to modify fuels surrounding structures.

The Fuel Modification Plan shall specify methods for controlling and eradicating any non-native plants within the fuel modification zone. The Plan shall also specify the species of plants and seed that are indigenous to California that will be used in the fuel modification zone. These plants and seeds must also be approved by the Ventura County Fire Protection District (VCFPD) to not pose a flammability risk within the fuel modification zone. The Plan shall also specify the locations of plantings and seeding, methods of installation (hydroseed, plantings, cuttings, etc.), and the future methods for maintaining the vegetation consistent with VCFPD requirements. Maintenance of fuels may include use of hand tools to prune vegetation, thinning shrubs rather than clear-cutting, avoiding nesting birds, etc. The Plan should also identify any physical features or constraints and how they will be addressed such as steep slopes and erosion control methods e.g. straw waddles, silt fencing, hydroseeding, erosion control blankets, etc. Any erosion control materials shall be plastic-free and biodegradable. Seed or plantings should be sourced from within Ventura County, and the providence of seed shall be stated in the Fuel Modification Plan.

The fuel modification area shall be maintained by the applicant to be consistent with the provisions of the approved Fuel Modification Plan for the life of any future structure.

Documentation: The applicant shall record a copy of the conditions of approval for the project in the Office of the County Recorder. Within one week of recording the conditions of approval, the applicant shall provide the Planning Division with a copy of the recorded conditions of approval. The applicant shall submit the Fuel Modification Plan to Planning Division and the VCFPD for review and approval to assure compliance with the requirements of this condition prior to issuance of a Zoning Clearance for construction.

Timing: The applicant shall submit a Fuel Modification Plan prior to issuance of a Zoning Clearance for construction. The Fuel Modification Plan shall be implemented after the issuance of the Zoning Clearance for construction.

Monitoring and Reporting: The Planning Division maintains copies of the Fuel Modification Plan and amendments thereto provided by the applicant in the project file. The fuel modification area shall be maintained by the applicant to be consistent with the provisions of the approved Fuel Modification Plan for the life of any future structure.

Mitigation Measure BIO-6: Avoidance of Non-Native Invasive Plants in Landscaping

Purpose: To mitigate potentially significant impacts from invasive plants on wetlands and sensitive plant communities.

Requirement: Invasive plants identified by the California Invasive Plant Council are prohibited within landscaping. For any future landscaping within the project site, landscaping shall exclude invasive plants.

Documentation: The applicant shall submit to the County of Ventura Planning Division a landscape plan for review and approval by the Planning Division in accordance with the California Department of Water Resources Model Water Efficient Landscape Ordinance. The requirements are available on-line at: http://www.water.ca.gov/wateruseefficiency/landscapeordinance/.

Timing: The applicant shall submit the Landscape Plan for review and approval prior to the issuance of the Zoning Clearance for construction of the single-family dwelling on Lot 2. Within 10 days after landscape installation, a written statement supported with photographs of the landscaping from the project landscape architect shall be submitted to the Planning Division. The documentation shall confirm that all landscaping has been installed as shown on the approved landscape plan.

Monitoring and Reporting: The Planning Division shall confirm, which may include a site inspection by Planning Division staff, that no invasive landscaping has been installed prior to issuing the Certificate of Occupancy.

Mitigation/Residual Impact(s)

With the implementation of the above mitigation measures, impacts on biological resources (sensitive plant communities) will be less than significant.

Issue (Responsible Department)*	**Project Impact Degree Of Effect****				**Cumulative Impact Degree Of Effect****			
	N	LS	PS-M	PS	N	LS	PS-M	PS

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
4C. Ecological Communities - Waters and Wetlands								
Will the proposed project:								
1) Cause any of the following activities within waters or wetlands: removal of vegetation; grading; obstruction or diversion of water flow; change in velocity, siltation, volume of flow, or runoff rate; placement of fill; placement of structures; construction of a road crossing; placement of culverts or other underground piping; or any disturbance of the substratum?			X				X	
2) Result in disruptions to wetland or riparian plant communities that will isolate or substantially interrupt contiguous habitats, block seed dispersal routes, or increase vulnerability of wetland species to exotic weed invasion or local extirpation?			X				X	
3) Interfere with ongoing maintenance of hydrological conditions in a water or wetland?			X				X	
4) Provide an adequate buffer for protecting the functions and values of existing waters or wetlands?			X				X	

Vernal Pool

An area characterized as a vernal pool is located in the northwest portion of the parcel (Figure 2 in the Initial Study Biological Assessment, Attachment 6). The vernal pool receives direct flows through earthen drainages emanating from highlands on the parcel, as well as sheet flows from cleared areas. The Vernal Pool area is separated by an earthen dam from a man-made pond on the adjacent parcel to the north. Overflows are directed to a large conduit under State Route 23 into an agricultural field on the west side. There is no direct or permanent connection of the contributory stream or the vernal pool to any adjacent navigable waterway. Therefore, the streams and vernal pool are not likely to be considered as "Waters of the United States" (WOUS) under provisions of the federal Clean Water Act. The vernal pool itself would nonetheless be classified as a wetland from the standpoint of this habitat supporting hydrophytic vegetation, hydric soils, and wetland hydrology. Approximately 5.32 acres of Ventura County wetlands and

potential CDFW jurisdiction are estimated for the vernal pool area onsite. CDFW would likely consider the vernal pool and tributary drainages Jurisdictional, pursuant to Fish and Game Code Section 1602. The quality of the vernal pool is degraded by ground modifications (earthen dam), that separate it from the downstream area on the adjacent parcel to the north, and by invasion by invasive species, sedimentation, and nutrient enrichment. Reasonably foreseeable development of Lot 2 and Lot 4 (access driveway) is not located in the area of the vernal pool and therefore, the proposed subdivision will not have direct or indirect impacts on the vernal pool and surrounding habitats.

Ephemeral Drainage

Two converging drainages onsite (depicted as "W2" and W3" of Figure 3 in the Initial Study Biological Assessment, Attachment 6), which are ephemeral in nature, are potentially CDFW jurisdictional areas and also recognized as "Significant Wetlands", by the County of Ventura. Both of these drainages originate from flows carried in buried culverts under Olsen Road and flow into the vernal pool in the northwest area of the subject property. The eastern-most portion of the drainage traverses in a northwesterly direction, and is characterized by steep slopes and *Quercus agrifolia* Alliance dominated by coast live oak. The portion of the ephemeral drainage that originates in the central portion of the site traverses in a northerly direction and is characterized by *Juglans californica* Alliance dominated by southern California black walnut. Approximately 3.55 acres associated with these drainages are estimated to be potential CDFW jurisdictional areas ("State waters").

The proposed access road to the building envelope on Lot 2 would impact the unnamed ephemeral drainage just north of Olsen Road (identified as "W2" of Attachment 6, Figure 3), which supports a riparian habitat. The extent of the potential CDFW jurisdictional areas was delineated for the portion of W2 that would be impacted by the project, on June 10, 2015. Based on the results of this delineation and the revised project plan (prepared by T Engineering, October 25, 2018), a total of 0.14 acres (580 linear feet) of potential CDFW jurisdictional areas of the drainage would be permanently impacted. The impacts would be primarily loss of coastal sage scrub and chaparral species along with one or two individual coast live oaks trees. In addition to the areas that would be permanently impacted, the potential exists for incidental temporary impacts to CDFW jurisdictional habitat to occur during construction activities.

Impacts to potential CDFW jurisdictional areas, including riparian habitat, is a potentially significant impact. Therefore, MM BIO-7 and MM BIO-8 are proposed, that when implemented, are expected to reduce the potential impacts to a level below significance. MM BIO-7 entails restoration of the riparian habitat and MM BIO-6 entails agency notification (US Army Corps of Engineers [USACE], CDFW and the procurement of a Lake and Streambed Alteration Agreement (LSAA)), pursuant to CDFG Code 1600.

Mitigation/Residual Impact(s)

Mitigation Measure BIO-7: Restoration of Riparian Habitat

Purpose: To provide compensatory mitigation for permanent impacts to jurisdictional areas and habitat associated with the ephemeral drainage on site.

Requirement: The applicant shall mitigate for the proposed permanent impacts to 0.14 acres (580 linear feet) as well as any incidental temporary impacts to CDFW jurisdictional streambed and habitat by:

a. restoration of streambeds/riparian habitat onsite and preservation of the restoration area at a 3:1 mitigation to impact ratio for permanent impacts and a 1:1 mitigation to impact ratio for temporary impacts; or,

b. a contribution made to an off-site restoration project in the same watershed as the project site to restore streambeds/riparian habitat at a 3:1 mitigation to impact ratio for permanent impacts and a 1:1 mitigation to impact ratio for temporary impacts.

The mitigation site(s) shall be preserved in perpetuity.

The area(s) selected to be restored on-site (Restoration Areas) shall be identified in a Restoration Plan. The applicant shall also modify the site plan to include the Restoration Areas. The applicant shall ensure that a County-approved, qualified biologist prepares a Restoration Plan that includes the following details:

1. Plant community, vegetation alliance or species that will be restored.

2. A reference site for each vegetation alliance that is an ecologically intact example of the alliance with minimal disturbance, with the following documented for each reference site:

   a. Total percent cover by native plant species;

   b. Species richness; and

   c. Total percent cover by non-native plant species.

3. A plant palette and methods of salvaging, propagating, and planting. The plant palette shall consist only of plants propagated from locally collected (on the project site or adjacent to the project site) seeds or cuttings.

4. Methods of soil preparation.

5. Method and timing of irrigation.

6. Best Management Practices (BMPs) that will be implemented during restoration.

7. Maintenance and monitoring necessary to ensure that the restored plant communities meet the following success criteria by Year 5 of the maintenance and monitoring program:

   a. 90 percent of the native plant cover found for the reference site;

   b. 100 percent of the species richness found for the reference site; and

   c. Equal or lower percent cover by non-native plant species as that found for the reference site.

The applicant shall record these conditions of approval with the Office of County Recorder in the chain of title to the subject property and shall ensure that the Restoration Plan is fully implemented.

Documentation: The applicant shall provide the Planning Division with a Restoration Plan prepared by a County-approved qualified biologist that meets the requirements of this condition; and revised site plan. The applicant shall submit a copy of the recorded conditions of approval and Restoration Plan to the Planning Division. The applicant shall submit a report with photographs of the restoration area and a description of the restoration work to demonstrate to the Planning Division that implementation of the Restoration Plan has commenced. The applicant shall provide annual reports prepared by a County-approved qualified biologist on the progress of the restoration area for 5 years (or more, if the success criteria have not been met by Year 5).

Timing:

a. Prior to issuance of a Zoning Clearance for grading, the applicant shall provide the Restoration Plan and revised site plan to Planning Division staff for review and approval.

b. The applicant shall record these conditions of approval and provide a copy of the recorded conditions of approval and Restoration Plan to the Planning Division, prior to issuance of a Zoning Clearance for grading.

c. Implementation of the Restoration Plan shall commence prior to issuance of a Zoning Clearance for construction. The annual reports must be provided to the Planning Division by December 31st of each year during the monitoring period.

Monitoring and Reporting: The Planning Division shall review for approval the Restoration Plan and revised site plan prior to issuing a Zoning Clearance for construction. The Planning Division shall review the applicant's report with photographs of the restoration area and a description of the restoration work to confirm that implementation of the Restoration Plan has commenced prior to issuing a Zoning Clearance for construction. The restoration area must be monitored by a County-approved qualified biologist for at least 5 years (or more, if the success criteria have not been met by Year 5). The biologist shall provide an annual report on the status of the restoration area, including results of qualitative monitoring (i.e., photographs taken at permanent photo-points, observations of the health and condition of plantings and wildlife use of the restoration area) and quantitative monitoring (i.e., randomly placed transects to estimate cover and richness), to the Planning Division for the length of the monitoring period. The applicant shall submit the annual reports to the Planning Division to demonstrate compliance with this condition and the success criteria. The release of the requirement for monitoring the restoration area may occur when the Planning Division determines that the success criteria have been met by Year 5 or later, based on the annual reports and a Planning Division staff site inspection.

Mitigation Measure BIO-8: Notification of US Army Corps of Engineers and California Department of Fish and Wildlife (CDFW) Lake and Streambed Alteration Agreement (LSAA or "SAA")

Purpose: To ensure compliance with the *US Clean Water Act* and *California Fish and Game Code § 1602*.

Requirement: The applicant shall send a Notification Letter to ACOE and CDFW and obtain Clean Water Act Permits from ACOE and a SAA from the CDFW for any excavation, fill, or other land disturbance activity (i.e. proposed access road on proposed Lot 2 and Lot 4, that crosses the existing drainage course), as necessary.

Documentation: The applicant shall provide written proof or documentation to the County that the applicant has obtained either: (1) the SAA from the CDFW; or, (2) written verification from CDFW stating that a SAA is not required. The applicant shall also provide written proof or documentation to the County that the applicant has obtained either: (1) Clean Water Act Permits from the ACOE; or, (2) written verification from ACOE stating that a permit is not required.

Timing: The applicant shall provide the Clean Water Act permit, SAA or written verification from the CDFW and/or ACOE that a permit is not required, to the Planning Division prior to issuance of a Zoning Clearance for grading.

Monitoring and Reporting: The Planning Division maintains a copy of the Clean Water Act Permit and SAA provided by the applicant in the Project file. Monitoring of any

mitigation measures required as part of the Clean Water Act permit or SAA is the responsibility of ACOE and CDFW, respectively.

With the implementation of the above mitigation measures, impacts on ecological communities (waters and wetlands) will be less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
4D. Ecological Communities - ESHA (Applies to Coastal Zone Only)								
Will the proposed project:								
1) Temporarily or permanently remove ESHA or disturb ESHA buffers through construction, grading, clearing, or other activities and uses (ESHA buffers are within 100 feet of the boundary of ESHA as defined in Section 8172-1 of the Coastal Zoning Ordinance)?	X				X			
2) Result in indirect impacts from project operation at levels that will degrade the health of an ESHA?	X				X			

4D-1 and 2. The project site is not within the coastal zone; therefore, ESHA policies and analysis do not apply. The proposed project will not result in a direct impact or make a cumulatively considerable impact to ESHA.

Mitigation/Residual Impact(s)

No mitigation required. No impacts identified.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
4E. Habitat Connectivity								
Will the proposed project:								

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
1) Remove habitat within a wildlife movement corridor?		X				X		
2) Isolate habitat?			X				X	
3) Construct or create barriers that impede fish and/or wildlife movement, migration or long term connectivity or interfere with wildlife access to foraging habitat, breeding habitat, water sources, or other areas necessary for their reproduction?			X				X	
4) Intimidate fish or wildlife via the introduction of noise, light, development or increased human presence?			X				X	

4E-1. The subject parcel consists of 213.4 acres and is entirely located within the mapped Santa Monica-Sierra Madre Connection, a regional wildlife linkage mapped by the South Coast Missing Linkages Project (Pernod, et. al. 2006). On a more local scale, this route can be termed the Tierra Rejada Valley to Big Mountain Wildlife Corridor. The width of this corridor is approximately 3.5 miles, measured east to west. This corridor is important in linking the Simi Hills, Santa Monica Mountains, and the Santa Rosa Valley to the Big Mountain and Oak Ridge open space areas located north of the City of Simi Valley. This branch of the linkage includes both riparian and upland habitats that allow movement of diverse species including mountain lion, badger, mule deer, brush rabbit, desert woodrat, loggerhead shrike, acorn woodpecker, western toad, western coastal whiptail, harvester ant, valley oak, black walnut, and Bigberry manzinita.

The development of the Ronald Reagan Library and other projects in the Tierra Rejada Valley have limited the ability of wildlife to move from areas north of Tierra Rejada Road to crossings at SR 23 and to areas south of Olsen Road. The development of the area located just east of SR 23, and both north and south of Tierra Rejada Road, has reduced, but not eliminated, the value of the north-south wildlife corridor. Agricultural uses in the Tierra Rejada Valley have narrowed the amount of naturally vegetated land in the east side of the Valley where the project is located. Because of the on-going diminution of the corridor, further reduction in the dimension of the corridor could result in significant adverse impacts to wildlife movement and potentially increased roadway mortality as animals are forced out of formerly suitable areas (Cheadle, 2007).

A culvert is located underneath State SR 23. This culvert consists of a 10-foot diameter corrugated steel drainage culvert passing under the SR 23 freeway, with a slight bend on the western (downstream) side, discharging into an agricultural field. Studies conducted by the National Park Service (NPS) have identified the culvert under SR 23 adjacent to the parcel as a highly used wildlife crossing. The culvert facilitates the east-west movement of wildlife, between the agricultural lands to the west of SR 23, and the western half of the project site and through the undeveloped areas on the eastern half of the parcel. Figure 6 in Attachment 6 is a Wildlife Connectivity Map that depicts the culvert, denoted as "CS1." In relation to Connectivity Feature "CS1", the closest component of the proposed project to this feature, would be located approximately 3,860 linear feet east of SR 23, as seen in Figure 6 of Attachment 6, which depicts the limits of the proposed construction.

The existing Venturan coastal sage scrub/chaparral provides cover and foraging habitat used by local wildlife populations that move through the Tierra Rejada area and cross under State Route 23. The existing agricultural field/equestrian area is accessible to wildlife, and currently there are no nighttime uses of the site (light and/or noise) that would disturb wildlife.

The proposed subdivision would create four lots, Lots 1, 3 and 4 are developed, reasonably foreseeable development of Lot 2 would allow the future construction of two dwellings and an access road on Lot 2 and Lot 4. The removal of approximately 3.82 acres of native vegetation from reasonably foreseeable development, along with other reasonably foreseeable development within the project area, could adversely impact the functionality of the wildlife corridor and linkages occurring in the project area. Loss of vegetation, and direct and indirect anthropogenic impacts from other projects in the area, are expected to impair wildlife movement and reduce the functionality of the wildlife corridor. These impacts are therefore considered cumulatively considerable. However, proposed MM BIO-3 entails the onsite preservation, in perpetuity, of native scrub habitat at a 2:1 mitigation to impact ratio. This MM requires the applicant to deed restrict 6.84-acres of land supporting undeveloped high-quality chamise chaparral and coastal sage scrub habitats as well as a headwaters section of an ephemeral drainage. With the implementation of this MM, the project's contribution to the cumulative impacts and potential to impact the wildlife corridor is expected to be reduced to a level below significance.

4E-2: Based on the set back of approximately 3,860 feet that would be achieved between Connectivity Feature "CS1" and the proposed project construction, reasonably foreseeable development on Lot 2 and the access road on Lot 2 and Lot 4 would not directly impact the culvert as a connectivity feature nor isolate habitat.

4E-3: The subject parcel is entirely within a mapped "Landscape Linkage" that crosses the Moorpark freeway (SR 23). Reasonably foreseeable development on Lot 2 and the access roadway on Lots 2 and 4 would permanently remove vegetation amounting to a

combined 3.82 acres of coastal scrub, chaparral, and oak woodland habitat, which may provide habitat or movement opportunities for wildlife. As discussed in Section 4E-2, the reasonably foreseeable development of Lot 2 and access road on Lot 4 are located east of the culvert (i.e. CS1). CS1 functions as the primary conduit for wildlife movement, connecting the project site to the open lands outside of the parcel. Based on this setback, the proposed project implementation is not anticipated to substantially affect access to, or the functionality of CS1.

Reasonably foreseeable project development would not result in construction or creation of barriers that would impair this east-west movement of wildlife facilitated by CS1. The total parcel size is 213.4 acres. Reasonably foreseeable development of Lot 2 would disturb approximately 3.82 acres of the 54.72-acre lot (which includes building pad, access road and fuel modification for Lot 2) or approximately 1.8 percent of the property. Surrounding residential development includes an existing single-family residence and one that is currently under construction on the hill immediately northeast of the proposed building envelope on Lot 2, and an existing single-family residence adjacent to the northern property line on proposed Lot 3. This is considered clustered development and would continue to occur with reasonably foreseeable development on proposed Lot 2. Clustered development would not create additional significant impacts on habitat connectivity.

Table 1 in Section A provides a list of pending and recently approved projects within a 5-mile radius of the project. These projects, if approved, would contribute individually and cumulatively to the reduction of the existing habitat available for wildlife movement in the project area. The proposed project's cumulative contribution to these potential impacts, would be minor, given the minor individual impacts of the project.

No other impediments to fish and/or wildlife movement, migration or long-term connectivity or interference with wildlife access to foraging habitat, breeding habitat, water sources, or other areas necessary for their reproduction are expected to occur from the reasonably foreseeable development of the project. Therefore, reasonably foreseeable development of the project would not substantially diminish available foraging habitat or reduce the viability and functionality of the existing wildlife corridor in the project area.

Finally, fencing both on the perimeter and within a large rural parcel can create barriers to essential wildlife movement within the landscape linkage, resulting in potentially significant impacts. Therefore, MM BIO-9 is proposed, that provides standards for wildlife permeable fencing that is required for fences located beyond the development envelope. With the implementation of MM BIO-9, impacts to habitat connectivity and wildlife movement would be less than significant.

4E-4: Occupancy of the residence and use of the roadway have potential to create new sources of night lighting, noise, and human presence that could deter wildlife movement

in the vicinity. Impacts associated with lighting would be potentially significant. Therefore, MM BIO-10 is proposed, which when implemented, would require outdoor lighting intensity falls below certain thresholds, is shielded, and is pointed down and away from habitat areas.

Impacts associated with noise and human presence is not anticipated to be significant because of the housing density of the property (one unit per 54 acres). With the implementation of MMs BIO-9 and BIO-10, direct, indirect, and cumulatively considerable impacts to wildlife movement and habitat connectivity would be less than significant.

Mitigation/Residual Impact(s)

With incorporation of the below mitigation measures, impacts would be less than significant.

Mitigation Measure BIO-9: Wildlife Corridor or Wildlife Habitat Outdoor Lighting/Glare

Purpose: To mitigate potentially significant environmental impacts from light and glare to wildlife migration corridors and/or wildlife habitat and ensure lighting on the subject property is provided in compliance with § 8109-4.1.5 of the Ventura County NCZO.

Requirement: Prior to the future development of the legal lot, the applicant shall prepare a lighting plan that meets the following objectives:

- avoids interference with reasonable use of adjoining properties;
- avoids conflict with landscape features;
- minimizes on-site and eliminates off-site glare;
- minimizes impacts to wildlife movement;
- minimizes energy consumption; and
- includes devices that are compatible with the design of the permitted structure and minimize energy consumption.

The applicant shall include in the lighting plan the manufacturer's specifications for each exterior light fixture type (e.g., light standards, bollards, and wall mounted packs). The plan must include illumination information within pathways and driveways proposed throughout the development. In order to minimize light and glare from the project site, all exterior structure light fixtures and freestanding light standards must be a cut-off type, fully shielded, and downward facing, such that lighting is projected downward onto the property and does not cast any direct light onto any adjacent property and roadway. The applicant shall bear the total cost of the review and approval of the lighting plan. The

applicant shall install all exterior lighting in accordance with the approved lighting plan. The applicant shall prepare and implement the permitted use in conformance with an approved lighting plan.

Documentation: The applicant shall submit two copies of a lighting plan to the Planning Division for review and approval.

Timing: The applicant shall obtain the Planning Division's approval of the lighting plan prior to the issuance of a Zoning Clearance for construction. The applicant shall maintain the lighting as approved in the lighting plan for the life of the permit that authorizes the lighting.

Monitoring and Reporting: The Planning Division maintains a stamped copy of the approved lighting plan in the project file. The applicant shall ensure that the lighting is installed according to the approved lighting plan prior to occupancy of future residential development. The Building and Safety Inspector and Planning Division staff have the authority to ensure that the lighting plan is installed according to the approved lighting plan. The Planning Division has the authority to conduct periodic site inspections to ensure ongoing compliance with this condition consistent with the requirements of § 8114-3 of the Ventura County NCZO.

Mitigation Measure Bio-10: Fencing within Wildlife Corridors

Purpose: To mitigate potentially significant environmental impacts to wildlife migration corridors from fencing.

Requirement: The applicant shall submit a fencing plan for all new fencing located on Lot 2. The applicant shall ensure that all new fences outside the designated building envelope are permeable to wildlife.

Documentation: The applicant shall identify all permeable and impermeable fences on a site plan for future development of Lot 2. The plan must include the fence location, type, design and schematic elevations detailing construction and materials for both permeable and impermeable fences and walls. Fences over six feet in height require a Zoning Clearance and a Building Permit (NCZO; Section 8106-8.1.2).

Timing: Prior to issuance of a Zoning Clearance for construction on Lot 2, the applicant shall demonstrate on project plans that the requirements of this condition are met.

Monitoring and Reporting: The applicant shall submit plans to the Planning Division for review and approval prior to the issuance of a Zoning Clearance for construction. The Planning Division has the authority to ensure that the fencing is installed according to the approved fencing plan prior to the issuance of a Certificate of Occupancy. The Planning Division has the authority to conduct site inspections to ensure ongoing

compliance with this condition consistent with the requirements of *§ 8114-3 of the Ventura County Non-Coastal Zoning Ordinance*.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
4F. General Plan Consistency								
Will the proposed project:								
Will the proposed project be consistent with the applicable General Plan Goals and Policies for Item 4 of the Initial Study Assessment Guidelines?	X				X			

The project was reviewed and found to be consistent with the Ventura County *General Plan* Goals, Programs and Policies. General Plan Policy 1.5.2.1 requires discretionary development which could potentially impact biological resources to be evaluated by a qualified biologist to assess impacts and, if necessary, develop mitigation measures. An ISBA (2009 and amended 2018) was prepared by Envicom. As discussed in Sections 4(a) through 4(e) above, ten mitigation measures were developed to reduce potential impacts to biological resources to less than significant. In accordance with General Plan Policy 1.5.2.2, the proposed building envelope on Lot 2 and the access road on Lots 2 and 4 have been sited and designed to incorporate all feasible measures to mitigate any significant impacts to biological resources.

In the northwest portion of the site surface drainage supports a wetland that has been characterized as a "vernal pool." Reasonably foreseeable development of Lot 2 would be located more than 3,488 feet from this vernal pool. The County biologist reviewed the proposed subdivision for potential impacts on this wetland habitat and determined the project would not impact the vernal pool. The proposed access road to Lot 2 would cross over a drainage course and associated riparian corridor. Proposed MM BIO-8 requires the applicant to notify ACOE and CDFW to determine if federal and state permits are required to construct the access road within this wet environment. In accordance with General Plan Policies 1.5.2.3, 1.5.2.4, 1.5.2.5, at the time the access road is submitted to ACOE and CDFW for review, monitoring of any mitigation measures required as part of the Clean Water Act permit or SAA will be the responsibility of ACOE and CDFW, respectively. Pursuant to General Plan Policy 1.5.2.6., recommended MM BIO-10, requires the applicant to submit a wildlife permeable fence plan for any fencing beyond the required fuel modification zone, to accommodate wildlife passage.

Mitigation/Residual Impact(s)

With the implementation of the biological mitigation measures BIO-1 through BIO-10, the proposed project will be consistent with all applicable General Plan policies governing biological resources.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
5A. Agricultural Resources – Soils (Plng.)								
Will the proposed project:								
1) Result in the direct and/or indirect loss of soils designated Prime, Statewide Importance, Unique or Local Importance, beyond the threshold amounts set forth in Section 5a.C of the Initial Study Assessment Guidelines?		X				X		
2) Involve a General Plan amendment that will result in the loss of agricultural soils?		X				X		
3) Be consistent with the applicable General Plan Goals and Policies for Item 5A of the Initial Study Assessment Guidelines?		X				X		

Impact Discussion:

5A-1. According to the State Important Farmland Inventory Map, the project site is overlain by soils designated as prime, unique, and of statewide importance and grazing land. The General Plan threshold of significance for development in Open Space-designated land overlain by soil of statewide importance is ten acres. The General Plan threshold of significance for the development of Open Space-designated land overlain by prime and unique soils is ten acres and 15-acres, respectively.

The project site is currently developed with one primary dwelling on Lot 4 and accessory dwelling units on Lots 1 and 3. The dwellings on Lots 1 and 3 will become the primary residences after the PMW / LLS is recorded. Development on these lots is approximately 0.25 acres and 0.70 acres in size, respectively. Approximately 20,920 square feet of accessory structures related to animal keeping and agricultural uses are

located on Lots 1 and 3. Approximately 3.82 acres of soil would be removed with the future development of proposed Lot 2. The total amount of acreage set aside for development is approximately 4.8 acres and would not exceed the General Plan 10-acre threshold of significance for the development of Open Space-designated land overlain by soil of statewide importance.

Proposed lot 4 is located on land designated with prime and unique soil. This proposed lot is developed with an existing dwelling, which will become the main residence on after the PMW / LLS is recorded, and ancillary development that includes 0.70 acres. The amount of acreage set aside for development would not exceed the General Plan threshold of significance for the development of Open Space-designated land overlain by prime and unique soils.

5A-2. The proposed project will not involve a General Plan amendment that would result in the loss of agricultural soils

5A-3. The proposed project would be consistent with the *General Plan* Goals and Policies for item 5A of the *Ventura County Initial Study Assessment Guidelines*.

Based on the above discussion, project-specific and cumulative impacts on agricultural soils will be less than significant.

Mitigation/Residual Impact(s)

No mitigation required. Residual impacts will be less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
5B. Agricultural Resources - Land Use Incompatibility (AG.)								
Will the proposed project:								
1) If not defined as Agriculture or Agricultural Operations in the zoning ordinances, be closer than the threshold distances set forth in Section 5b.C of the Initial Study Assessment Guidelines?		X				X		
2) Be consistent with the applicable General Plan Goals and Policies for Item 5b of the Initial Study Assessment Guidelines?		X				X		

Impact Discussion:

5B-1. The evaluation pertains to the introduction of incompatible land uses in areas adjacent to off-site agricultural lands and off-site crop production. The threshold of significance is any non-agricultural land use or development that by its nature, design or operation may be substantially incompatible with nearby property currently in or suitable for agricultural production.

Reasonable foreseeable development on Lot 2 would include a single-family residence and accessory structures incidental to residential, land uses are considered non-agricultural uses. However, the large lot sizes and potential future building site on Lot 2 would not be incompatible with nearby properties which are suitable for agriculture. The nearest offsite agricultural operations are located more than 2,300 feet northwest of the building envelope on proposed Lot 2 and more than 13 feet from the property line of proposed Lot 3. As the proposed development area on Lot 2 is setback more than 350 feet from an off-site agricultural use, potential future development onsite would not affect offsite agricultural operations. Thus, impacts on agricultural land use incompatibility are considered less than significant.

5A-2. The proposed project would be consistent with the General Plan Goals and Policies for item 5B of the *Ventura County Initial Study Assessment Guidelines*.

Based on the above discussion, project-specific and cumulative impacts related to agricultural land use incompatibility will be less than significant.

Mitigation/Residual Impact(s)

No mitigation required. Residual impacts will be less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
6. Scenic Resources (Plng.)								
Will the proposed project:								

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
a) Be located within an area that has a scenic resource that is visible from a public viewing location, and physically alter the scenic resource either individually or cumulatively when combined with recently approved, current, and reasonably foreseeable future projects?		X				X		
b) Be located within an area that has a scenic resource that is visible from a public viewing location, and substantially obstruct, degrade, or obscure the scenic vista, either individually or cumulatively when combined with recently approved, current, and reasonably foreseeable future projects?		X				X		
c) Be consistent with the applicable General Plan Goals and Policies for Item 6 of the Initial Study Assessment Guidelines?		X				X		

Impact Discussion:

6a & 6b. The proposed project site is not located in a Scenic Resource Protection (SRP) overlay zone. However, the project site is located adjacent to SR 23 and Olsen Road, which are designated Scenic Resource Protection (SRP) overlay public viewing locations and a scenic resource according to the Ventura County Initial Study Assessment Guidelines. Reasonably foreseeable development of Lot 2 could include the development of up to two dwellings that would be visible from SR 23 and Olsen Road. Surrounding residential development includes an existing single-family residence and one that is currently under construction on the hill immediately northeast of the proposed building envelope on Lot 2, and an existing single-family residence adjacent to the northern property line on proposed Lot 3. Open space uses surround the project site to the west and south.

The alteration of public views would be softened with the implementation of certain architectural and land use design features. The map will be conditioned to require the applicant to design future structures (including walls) with colors, forms, and materials that blend in with the environment and character of the community (e.g., earth tones, non-reflective paints and non-reflective glass). The applicant shall also demarcate the designated building envelope in the field with stakes for the purposes of confining all future development. Future development shall meet the development standards of the

Ventura County Non-Coastal Zoning Ordinance Section 8106-1.1 for Uses and Structures in the OS zone, and the County Landscape Design Criteria and State Model Efficient Landscape Ordinance.

Based on the above discussion, project-specific and cumulative impacts related to scenic views will be less than significant.

6c. The proposed project would be consistent with the *General Plan* Goals and Policies for item 6 of the *Ventura County Initial Study Assessment Guidelines*.

Mitigation/Residual Impacts:

No mitigation required. Residual impacts will be less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
7. Paleontological Resources								
Will the proposed project:								
a) For the area of the property that is disturbed by or during the construction of the proposed project, result in a direct or indirect impact to areas of paleontological significance?	X				X			
b) Contribute to the progressive loss of exposed rock in Ventura County that can be studied and prospected for fossil remains?	X				X			
c) Be consistent with the applicable General Plan Goals and Policies for Item 7 of the Initial Study Assessment Guidelines?	X				X			

Impact Discussion:

7a & 7b. The subject property is underlain by Conejo Volcanic deposits. According to the VCISAG, Conejo Volcanic deposits do not have the potential to yield paleontological resources. This is because fossils are not found in volcanic rocks.

7c. The proposed project would be consistent with the *General Plan* Goals and Policies for item 7 of the *Ventura County Initial Study Assessment Guidelines*.

Based on the above discussion, there will be not be any project-specific or cumulative impacts on paleontological resources.

Mitigation/Residual Impact(s)

No mitigation required. There would not be any residual impacts.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
8A. Cultural Resources - Archaeological								
Will the proposed project:								
1) Demolish or materially alter in an adverse manner those physical characteristics that account for the inclusion of the resource in a local register of historical resources pursuant to Section 5020.1(k) requirements of Section 5024.1(g) of the Public Resources Code?		X				X		
2) Demolish or materially alter in an adverse manner those physical characteristics of an archaeological resource that convey its archaeological significance and that justify its eligibility for inclusion in the California Register of Historical Resources as determined by a lead agency for the purposes of CEQA?		X				X		
3) Be consistent with the applicable General Plan Goals and Policies for Item 8A of the Initial Study Assessment Guidelines?		X				X		

Impact Discussion:

8A-1 & 8A-2. A search of the County's Archeological Report database found that there are no archeologically important sites within one half mile of the proposed project site. Therefore, it is unlikely that cultural resources exist within the project site. However, in the unlikely event that cultural resources are uncovered during ground disturbance activities, the proposed project will be subject to a standard condition of approval that will require the applicant to suspend construction until a qualified archeologist can evaluate, recover, and curate the find, subject to the Planning Director's concurrence.

8A-3. With the implementation of the recommended condition of approval discussed above, the proposed project would be consistent with the *General Plan* Goals and Policies for item 8A of the *Ventura County Initial Study Assessment Guidelines*.

Based on the above discussion, project-specific and cumulative impacts related to cultural resources will be less than significant.

Mitigation/Residual Impact(s)

No mitigation required. Residual impacts will be less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
8B. Cultural Resources – Historic (Plng.)								
Will the proposed project:								

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
1) Demolish or materially alter in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register of Historical Resources?	X				X			
2) Demolish or materially alter in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to Section 5020.1(k) of the Public Resources Code or its identification in a historical resources survey meeting the requirements of Section 5024.1(g) of the Public Resources Code?	X				X			
3) Demolish or materially alter in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register of Historical Resources as determined by a lead agency for purposes of CEQA?	X				X			
4) Demolish, relocate, or alter an historical resource such that the significance of the historical resource will be impaired [Public Resources Code, Sec. 5020(q)]?	X				X			

Impact Discussion:

8B-1 to 8B-4. The project site is not identified as a historical site by the State Historical Resources Commission, or on the register as a local historical resource. In addition, Cultural Heritage Board staff reviewed the proposed project and determined that there are no items of historical importance located on the project site. Thus, no historical resources will be demolished or materially altered.

Based on the above discussion, there will be not be any project-specific or cumulative impacts on cultural resources.

Mitigation/Residual Impact(s)

No mitigation required. There would not be any residual impacts.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
9. Coastal Beaches and Sand Dunes								
Will the proposed project:								
a) Cause a direct or indirect adverse physical change to a coastal beach or sand dune, which is inconsistent with any of the coastal beaches and coastal sand dunes policies of the California Coastal Act, corresponding Coastal Act regulations, Ventura County Coastal Area Plan, or the Ventura County General Plan Goals, Policies and Programs?	X				X			
b) When considered together with one or more recently approved, current, and reasonably foreseeable probable future projects, result in a direct or indirect, adverse physical change to a coastal beach or sand dune?					X			
c) Be consistent with the applicable General Plan Goals and Policies for Item 9 of the Initial Study Assessment Guidelines?	X				X			

Impact Discussion:

9a & 9b. The proposed project site is located in the Ventura County unincorporated area of the Tierra Rejada Valley. The site is more than 5 miles away from the coast.

9c. The proposed project would be consistent with the *General Plan* Goals and Policies for item 9 of the *Ventura County Initial Study Assessment Guidelines.*

Based on the above discussion, there will be not be any project-specific or cumulative impacts on coastal beaches and sand dunes.

Mitigation/Residual Impact(s)

No mitigation required. There would not be any residual impacts.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
10. Fault Rupture Hazard (PWA)								
Will the proposed project:								
a) Be at risk with respect to fault rupture in its location within a State of California designated Alquist-Priolo Special Fault Study Zone?	X							
b) Be at risk with respect to fault rupture in its location within a County of Ventura designated Fault Hazard Area?	X							
c) Be consistent with the applicable General Plan Goals and Policies for Item 10 of the Initial Study Assessment Guidelines?	X				X			

Impact Discussion:

Any discussion of potential impacts of fault rupture hazards to the proposed project is provided for informational purposes only and is neither required by CEQA nor subject to its requirements.

10a & 10b. The Ventura County Public Works Agency has determined that there are no known active or potentially active faults extending through the subject property. This determination is based on a review of the State of California Earthquake Fault Zones in accordance with the Alquist-Priolo Earthquake Fault Zoning Act, and Ventura County General Plan Hazards Appendix – Figure 2.2.3b. Additionally, reasonable foreseeable development of habitable structures on Lot 2 and would not be located within 50 feet of a mapped trace of an active fault. Thus, there is not an impact from potential fault rupture hazard.

10c. The proposed project would be consistent with the *General Plan* Goals and Policies for item 10 of the *Ventura County Initial Study Assessment Guidelines*.

Based on the above discussion, there will not be any project-specific or cumulative impacts on fault rupture hazards.

Mitigation/Residual Impact(s)

No mitigation required. There would not be any residual impacts.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
11. Ground Shaking Hazard (PWA)								
Will the proposed project:								
a) Be built in accordance with all applicable requirements of the Ventura County Building Code?		X				X		
b) Be consistent with the applicable General Plan Goals and Policies for Item 11 of the Initial Study Assessment Guidelines?		X				X		

Impact Discussion:

Any discussion of potential impacts of ground shaking hazards to the proposed project is provided for informational purposes only and is neither required by CEQA nor subject to its requirements.

11a. The Ventura County Public Works Agency has determined that the property would be subject to moderate to strong ground shaking from seismic events on local and regional fault systems. The County of Ventura Building code adopted from the California Building Code, dated 2016, requires the structures be designed to withstand this ground shaking. At the time development is proposed, the applicant will be required to submit a Geologic and Geotechnical Engineering Investigation Report, that provides the structural seismic design criteria for a single-family dwelling. The requirements of the building code will reduce the effects of ground shaking to a less than significant level.

The hazards from ground shaking will affect each project individually; and no cumulative ground shaking hazard will occur as a result of other approved, proposed, or probable projects.

11b. The proposed project would be consistent with the *General Plan* Goals and Policies for item 11 of the *Ventura County Initial Study Assessment Guidelines*.

Based on the above discussion, project-specific and cumulative impacts related to ground shaking will be less than significant.

Mitigation/Residual Impact(s)

No mitigation required. Residual impacts will be less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
12. Liquefaction Hazards (PWA)								
Will the proposed project:								
a) Expose people or structures to potential adverse effects, including the risk of loss, injury, or death involving liquefaction because it is located within a Seismic Hazards Zone?	X							
b) Be consistent with the applicable General Plan Goals and Policies for Item 12 of the Initial Study Assessment Guidelines?	X				X			

Impact Discussion:

Any discussion of potential impacts of liquefaction hazards to the proposed project is provided for informational purposes only and is neither required by CEQA nor subject to its requirements.

12a. The Ventura County Public Works Agency has determined that the site is not located within a potential liquefaction zone based on the Ventura County General Plan Hazards Appendix – Figure 2.4b. This map is a compilation of the State of California Seismic Hazards Maps for the County of Ventura and is used as the basis for delineating the potential liquefaction hazards within the county. Consequently, liquefaction is not a factor for the proposed project and the site is not within a State of California Seismic Hazards zone for liquefaction. There is not an impact from potential hazards from liquefaction.

The hazards from liquefaction will affect each project individually; and no cumulative liquefaction hazard will occur as a result of other approved, proposed, or probable projects.

12b. The proposed project would be consistent with the *General Plan* Goals and Policies for item 12 of the *Ventura County Initial Study Assessment Guidelines*.

Based on the above discussion, there will be not be any project-specific or cumulative impacts on liquefaction.

Mitigation/Residual Impact(s)

No mitigation required. There will not be any residual impacts.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
13. Seiche and Tsunami Hazards (PWA)								
Will the proposed project:								
a) Be located within about 10 to 20 feet of vertical elevation from an enclosed body of water such as a lake or reservoir?	X							
b) Be located in a mapped area of tsunami hazard as shown on the County General Plan maps?	X							
c) Be consistent with the applicable General Plan Goals and Policies for Item 13 of the Initial Study Assessment Guidelines?	X				X			

Impact Discussion:

Any discussion of potential impacts of seiche and tsunami hazards to the proposed project is provided for informational purposes only and is neither required by CEQA nor subject to its requirements

13a & 13b. The Ventura County Public Works Agency has determined that the project site is not located adjacent to a closed or restricted body of water based on aerial photograph review (photos dated December 2011). Thus, the proposed project would not be subject to a seiche hazard. The project is also not located within a tsunami inundation zone based on the Ventura County General Plan, Hazards Appendix Figure 2.6. Therefore, the hazard from a potential tsunami is considered to have no impact to the proposed project.

The hazards from seiche and tsunami will affect each project individually. No cumulative seiche and tsunami hazard would occur as a result of other projects.

13c. The proposed project would be consistent with the *General Plan* Goals and Policies for item 13 of the *Ventura County Initial Study Assessment Guidelines*.

Based on the above discussion, there will be not be any project-specific or cumulative impacts on tsunami hazards.

Mitigation/Residual Impact(s)

No mitigation required. There will not be any residual impacts.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
14. Landslide/Mudflow Hazard (PWA)								
Will the proposed project:								
a) Result in a landslide/mudflow hazard, as determined by the Public Works Agency Certified Engineering Geologist, based on the location of the site or project within, or outside of mapped landslides, potential earthquake induced landslide zones, and geomorphology of hillside terrain?		X						
b) Be consistent with the applicable General Plan Goals and Policies for Item 14 of the Initial Study Assessment Guidelines?		X				X		

Impact Discussion:

Any discussion of potential impacts from landslide/mudflow hazards is provided for informational purposes only and is neither required by CEQA nor subject to its requirements.

14a. The Geologic Report, prepared by Mountain Geology, dated April 1, 2006, (Attachment 8) indicates mapped landslides and mudslides are present on the property. However, the building envelope for Lot 2 is not located in areas subject to landslides or mudslides. The hazard from seismically induced landslides are considered less than significant with regard to risk of life, injury, collapse of habitable structures. The potential landslide hazards are considered to be less than significant.

The hazards from landslides/mudslides will affect each project individually; and no cumulative landslide/mudslide hazard will occur as a result of other approved, proposed, or probable projects.

14b. The proposed project would be consistent with the *General Plan* Goals and Policies for item 14 of the *Ventura County Initial Study Assessment Guidelines*.

Based on the above discussion, project-specific and cumulative impacts related to landslides / mudslides will be less than significant.

Mitigation/Residual Impact(s)

No mitigation required. Residual impacts will be less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
15. Expansive Soils Hazards (PWA)								
Will the proposed project:								
a) Expose people or structures to potential adverse effects, including the risk of loss, injury, or death involving soil expansion because it is located within a soils expansive hazard zone or where soils with an expansion index greater than 20 are present?		X						
b) Be consistent with the applicable General Plan Goals and Policies for Item 15 of the Initial Study Assessment Guidelines?		X				X		

Impact Discussion:

Any discussion of potential impacts of expansive soils hazards to the proposed project is provided for informational purposes only and is neither required by CEQA nor subject to its requirements.

15a. The geotechnical report prepared by Calwest Geotechnical, dated January 3, 2006, indicates the near surface soils have an expansive index ranging between 22 and 48 (medium). Reasonable foreseeable development of Lot 2 will be subject to the requirements of the County of Ventura Building Code adopted from the California Building Code, dated 2016. Section 1803.5.3 of the County of Ventura Building Code

requires mitigation of potential adverse effects of expansive soils. The potential hazard associated with adverse effects of expansive soils is considered to be less than significant.

The hazards from expansive soils will affect each project individually; and no cumulative expansive soils hazard will occur as a result of other approved, proposed, or probable projects.

15b. The proposed project would be consistent with the *General Plan* Goals and Policies for item 15 of the *Ventura County Initial Study Assessment Guidelines*.

Based on the above discussion, project-specific and cumulative impacts related to expansive soils will be less than significant.

Mitigation/Residual Impact(s)

No mitigation required. Residual impacts will be less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
16. Subsidence Hazard (PWA)								
Will the proposed project:								
a) Expose people or structures to potential adverse effects, including the risk of loss, injury, or death involving subsidence because it is located within a subsidence hazard zone?	X							
b) Be consistent with the applicable General Plan Goals and Policies for Item 16 of the Initial Study Assessment Guidelines?	X				X			

Impact Discussion:

Any discussion of potential impacts from subsidence hazards is provided for informational purposes only and is neither required by CEQA nor subject to its requirements.

16a. The County of Ventura Public Works Agency has determined that the subject property is not within the probable subsidence hazard zone, as delineated on the Ventura County General Plan Hazards Appendix Figure 2.8 (October 22, 2013). In

addition, the proposed project does not relate to oil, gas or groundwater withdrawal. Therefore, the project is considered to have no impact on the hazard of subsidence.

The hazards from subsidence will affect each project individually; and no cumulative subsidence hazard will occur as a result of other approved, proposed, or probable projects.

16b. The proposed project would be consistent with the *General Plan* Goals and Policies for item 16 of the *Ventura County Initial Study Assessment Guidelines*.

Based on the above discussion, there will be not be any project-specific or cumulative impacts on subsidence.

Mitigation/Residual Impact(s)

No mitigation required. There will not be any residual impacts.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
17a. Hydraulic Hazards – Non-FEMA (PWA)								
Will the proposed project:								

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
1) Result in a potential erosion/siltation hazard and flooding hazard pursuant to any of the following documents (individually, collectively, or in combination with one another): • 2007 Ventura County Building Code Ordinance No.4369 • Ventura County Land Development Manual • Ventura County Subdivision Ordinance • Ventura County Coastal Zoning Ordinance • Ventura County Non-Coastal Zoning Ordinance • Ventura County Standard Land Development Specifications • Ventura County Road Standards • Ventura County Watershed Protection District Hydrology Manual • County of Ventura Stormwater Quality Ordinance, Ordinance No. 4142 • Ventura County Hillside Erosion Control Ordinance, Ordinance No. 3539 and Ordinance No. 3683 • Ventura County Municipal Storm Water NPDES Permit • State General Construction Permit • State General Industrial Permit • National Pollutant Discharge Elimination System (NPDES)?		X				X		
2) Be consistent with the applicable General Plan Goals and Policies for Item 17A of the Initial Study Assessment Guidelines?		X				X		

Impact Discussion:

17A-1. The Ventura County Public Works Agency has determined that an increase in impervious area is foreseeable with the potential future construction of structures and driveways on proposed Lot 2 and Lot 4. Reasonable foreseeable development will be subject to the requirements of the current Grading Code and Uniform Building Code at the time a Zoning Clearance for construction is issued for development. Potential future

structures will be required to detain on-site the difference between peak runoff for the existing condition and the peak runoff resulting from development.

17b. The proposed project would be consistent with the applicable *General Plan* Goals and Policies for Item 17A of the *Ventura County Initial Study Assessment Guidelines.*

Based on the above discussion, project-specific and cumulative impacts related to hydraulic hazards will be less than significant.

Mitigation/Residual Impact(s)

No mitigation required. Residual impacts will be less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
17b. Hydraulic Hazards – FEMA (WPD)								
Will the proposed project:								

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
1) Be located outside of the boundaries of a Special Flood Hazard Area and entirely within a FEMA-determined 'X-Unshaded' flood zone (beyond the 0.2% annual chance floodplain: beyond the 500-year floodplain)?		X				X		
2) Be located outside of the boundaries of a Special Flood Hazard Area and entirely within a FEMA-determined 'X-Shaded' flood zone (within the 0.2% annual chance floodplain: within the 500-year floodplain)?		X				X		
3) Be located, in part or in whole, within the boundaries of a Special Flood Hazard Area (1% annual chance floodplain: 100-year), but located entirely outside of the boundaries of the Regulatory Floodway?		X				X		
4) Be located, in part or in whole, within the boundaries of the Regulatory Floodway, as determined using the 'Effective' and latest available DFIRMs provided by FEMA?		X				X		
5) Be consistent with the applicable General Plan Goals and Policies for Item 17B of the Initial Study Assessment Guidelines?		X				X		

Impact Discussion:

17B-1 to 17B-4. The Ventura County Public Works Agency has determined that the entire subject property is located in an 'X Unshaded Zone' floodplain which is situated outside of the 1% annual chance (100-year) floodplain. The subject property is in the 500-year floodplain as mapped by the Federal Emergency Management Agency. This is evidenced on the latest "Effective" Digital Flood Insurance Rate Maps (DFIRMs) issued by FEMA (January 20, 2010) (Panels 839 and 980 of 1275) (#06111Co839E and 06111C0980E); Effective date: January 20, 2010.

The applicant requests that a PMW / LLS be granted to authorize the subdivision of 213.4 acres into four resulting lots of 40 acres or more. Since no site grading, development / redevelopment of habitable or non-habitable structures are proposed at this time, there are no conditions of approval pertaining to floodplain management. However, reasonable foreseeable development of Lot 2 (including site grading), will require the issuance of a Floodplain Clearance by the Ventura County Public Works

Agency Floodplain Manager prior to the issuance of a Building Permit or a Grading Permit.

17B-5. The proposed project would be consistent with the *General Plan* Goals and Policies for item 17B of the *Ventura County Initial Study Assessment Guidelines*.

Based on the above discussion, project-specific and cumulative impacts related to hydraulic hazards will be less than significant.

Mitigation/Residual Impact(s)

No mitigation required. Residual impacts will be less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
18. Fire Hazards (VCFPD)								
Will the proposed project:								
a) Be located within High Fire Hazard Areas/Fire Hazard Severity Zones or Hazardous Watershed Fire Areas?		X				X		
b) Be consistent with the applicable General Plan Goals and Policies for Item 18 of the Initial Study Assessment Guidelines?		X				X		

Impact Discussion:

18a. The VCFPD has determined that the proposed project is located in a high fire hazard area. The applicant will be subject to a standard condition of approval that will require all grass or brush adjacent to a structure's footprint cleared for a distance of 100 feet or to the property line if less than 100 feet prior to the start of any new construction. Any future construction on the newly created lots will be required to conform to the current California Fire Code as adopted and amended by VCFPD Current Ordinance for Fire Hazard Abatement. Future construction must also meet the California Building Code building standards and hazardous fire area building code requirements.

18b. The proposed project would be consistent with the *General Plan* Goals and Policies for item 18 of the *Ventura County Initial Study Assessment Guidelines*.

Based on the above discussion, project-specific and cumulative impacts related to fire hazards will be less than significant.

Mitigation/Residual Impact(s)

No mitigation required. Residual impacts will be less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
19. Aviation Hazards (Airports)								
Will the proposed project:								
a) Comply with the County's Airport Comprehensive Land Use Plan and pre-established federal criteria set forth in Federal Aviation Regulation Part 77 (Obstruction Standards)?	X				X			
b) Will the proposed project result in residential development, a church, a school, or high commercial business located within a sphere of influence of a County airport?	X				X			
c) Be consistent with the applicable General Plan Goals and Policies for Item 19 of the Initial Study Assessment Guidelines?	X				X			

Impact Discussion:

19a. The proposed project is not located within the sphere of influence of Oxnard, Camarillo, Santa Paula or Naval Base Ventura County airports. The proposed project will not involve any obstructions to navigable airspace, as all possible future development will be limited to a maximum height of 35-feet. Therefore, the proposed project will comply with the County's Airport Comprehensive Land Use Plan and pre-established federal criteria set forth in Federal Aviation Regulation Part 77 (Obstruction Standards).

19b. The proposed project would be consistent with the *General Plan* Goals and Policies for item 19 of the *Ventura County Initial Study Assessment Guidelines*.

Based on the above discussion, there will be not be any project-specific or cumulative impacts on aviation hazards.

Mitigation/Residual Impact(s)

No mitigation required. There would not be any residual impacts.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
20a. Hazardous Materials/Waste – Materials (EHD/Fire)								
Will the proposed project:								
1) Utilize hazardous materials in compliance with applicable state and local requirements as set forth in Section 20a of the Initial Study Assessment Guidelines?		X				X		
2) Be consistent with the applicable General Plan Goals and Policies for Item 20a of the Initial Study Assessment Guidelines?		X				X		

Impact Discussion:

20A-1. The Ventura County Environmental Health Division determined that the creation of parcels does not involve the use of any hazardous materials. Existing development on Lots 1, 3 and 4 and reasonable foreseeable development of Lot 2 will involve the use and storage of household hazardous materials, however this use is minor and subject to established regulations. No substantial effects related to hazardous materials are anticipated due to the potential for future residential uses on Lot 2.

20A-2. The proposed project would be consistent with the applicable *General Plan* Goals and Policies for Item 20a of the *Ventura County Initial Study Assessment Guidelines.*

Based on the above discussion, project-specific and cumulative impacts related to hazardous materials / waste will be less than significant.

Mitigation/Residual Impact(s)

No mitigation required. Residual impacts will be less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**	Cumulative Impact Degree Of Effect**

	N	LS	PS-M	PS	N	LS	PS-M	PS
20b. Hazardous Materials/Waste – Waste (EHD)								
Will the proposed project:								
1) Comply with applicable state and local requirements as set forth in Section 20b of the Initial Study Assessment Guidelines?		X				X		
2) Be consistent with the applicable General Plan Goals and Policies for Item 20b of the Initial Study Assessment Guidelines?		X				X		

Impact Discussion:

20b-1. As noted above in item 20a, the creation of parcels does not involve the use of any hazardous materials. Reasonable foreseeable development of Lot 2 will involve the use and storage of household hazardous materials. This use is minor and subject to established regulations. No substantial effects related to hazardous materials are anticipated due to future residential uses.

20b-2. The proposed project would be consistent with the applicable *General Plan* Goals and Policies for Item 20b of the *Ventura County Initial Study Assessment Guidelines.*

Based on the above discussion, project-specific and cumulative impacts related to hazardous materials / waste will be less than significant.

Mitigation/Residual Impact(s)

No mitigation required. Residual impacts will be less than significant.

Issue (Responsible Department)*	**Project Impact Degree Of Effect****				**Cumulative Impact Degree Of Effect****			
	N	LS	PS-M	PS	N	LS	PS-M	PS
21. Noise and Vibration								
Will the proposed project:								

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
a) Either individually or when combined with other recently approved, pending, and probable future projects, produce noise in excess of the standards for noise in the Ventura County General Plan Goals, Policies and Programs (Section 2.16) or the applicable Area Plan?		X				X		
b) Either individually or when combined with other recently approved, pending, and probable future projects, include construction activities involving blasting, pile-driving, vibratory compaction, demolition, and drilling or excavation which exceed the threshold criteria provided in the Transit Noise and Vibration Impact Assessment (Section 12.2)?		X				X		
c) Result in a transit use located within any of the critical distances of the vibration-sensitive uses listed in Table 1 (Initial Study Assessment Guidelines, Section 21)?		X				X		
d) Generate new heavy vehicle (e.g., semi-truck or bus) trips on uneven roadways located within proximity to sensitive uses that have the potential to either individually or when combined with other recently approved, pending, and probable future projects, exceed the threshold criteria of the Transit Use Thresholds for rubber-tire heavy vehicle uses (Initial Study Assessment Guidelines, Section 21-D, Table 1, Item No. 3)?		X				X		
e) Involve blasting, pile-driving, vibratory compaction, demolition, drilling, excavation, or other similar types of vibration-generating activities which have the potential to either individually or when combined with other recently approved, pending, and probable future projects, exceed the threshold criteria provided in the Transit Noise and Vibration Impact Assessment [Hanson, Carl E., David A. Towers, and Lance D. Meister. (May 2006) Section 12.2]?		X				X		

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
f) Be consistent with the applicable General Plan Goals and Policies for Item 21 of the Initial Study Assessment Guidelines?		X				X		

Impact Discussion:

21a. & 21b. The methodology used in determining whether or not a project will result in a significant noise impact is to determine if the proposed use is a "Noise Sensitive Use" or a "Noise Generator." Noise sensitive uses are dwellings, schools, hospitals, nursing homes, churches and libraries. The proposed residential subdivision is considered a noise sensitive use.

The proposed residential subdivision may result in the potential future construction of one dwelling and one accessory structure on proposed Lot 2. Construction vibration impacts of future development were evaluated using the criteria set forth in the *Transit Noise and Vibration Impact Assessment* (Hanson *et al*, May 2006, Section 12.2). "The construction activities that typically generate the most severe vibrations are blasting and impact pile-driving" (*Ibid,* p.12-11). Proposed Lot 2 would require partial grading to accommodate the potential future construction of future dwelling units and accessory structures. It is unclear if future construction activities on proposed Lot 2 will require pile-driving, vibratory compaction, demolition, drilling, excavation, or other similar types of vibration-generating activities. Should pile driving occur at the time of future development of Lot 2, noise impacts are expected to be less than significant. This is because existing nearby homes are located more than 55 feet from the proposed building site on Lot 2 and were constructed using traditional construction techniques. Given the proximity of the building site to these existing homes, future construction activities are not anticipated to impact adjacent development

21c. The proposed project does not involve the creation of a vibration-generating transit use. Therefore, the proposed project will not result in a transit use located within any of the critical distances of the vibration-sensitive uses listed in Table 1 (Initial Study Assessment Guidelines, Section 21). The noise that will be experienced at the sites of future dwellings on proposed Lot 2 will largely result from traffic on SR 23 freeway. Lot 2 is located approximately 4,190 feet east of SR 23. At this distance, the traffic noise would not exceed exteriors noise levels specified in County General Plan Policy of the ISAG Thresholds.

The project site has direct access to Olsen Road. The proposed project will not involve the use of semi-trucks or buses. Therefore, the proposed project does not have the

potential to exceed the threshold criteria of the Transit Use Thresholds for rubber-tire heavy vehicle uses.

21d. The project site has direct access to Olsen Road, which is a paved public road. Therefore, the proposed project will not involve the use of heavy vehicle (e.g., semi-truck or bus) trips on uneven roadways located within proximity to sensitive uses that have the potential to either individually or when combined with other recently approved, pending, and probable future projects, exceed the threshold criteria of the Transit Use Thresholds for rubber-tire heavy vehicle uses (Initial Study Assessment Guidelines, Section 21-D, Table 1, Item No. 3). Therefore, the proposed project will not have a project-specific vibratory impact and will not make a cumulatively considerable contribution to a significant cumulative vibratory impact, related to the use of rubber-tire heavy vehicle uses.

21e. The Transit Noise and Vibration Impact Assessment states that the "level of construction vibration analysis will be determined by factors related to the scale of the project and the sensitivity of the surrounding land use" (p. 12-10). The nearest single family dwelling is located on APN 594-0-020-195 about 55 feet from the northern property line of proposed Lot 2. No development is proposed with the subdivision. The applicant will be subject to a standard condition of approval (assuming the proposed project is granted) to ensure that future development of proposed Lot 2 will comply the *Ventura County General Plan* Goals, Policies and Programs Policy 2.16.2-1(5) and Construction Noise Threshold Criteria and Control Plan (2010). The applicant will be required to limit construction activity for future development of Lot 2 to the hours between 7:00 a.m. and 7:00 p.m., Monday through Friday, and from 9:00 a.m. to 7:00 p.m. Saturday, Sunday, and State holidays. Construction equipment maintenance shall be limited to the same hours. Therefore, the proposed project will not have a project-specific vibratory impact, and will not make a cumulatively considerable contribution to a significant cumulative vibratory impact, related to vibration-generating activities.

21f. The proposed project would be consistent with the applicable *General Plan* Goals and Policies for Item 21 of the *Ventura County Initial Study Assessment Guidelines.*

Based on the above discussion, project-specific and cumulative impacts related to noise and vibration will be less than significant.

Mitigation/Residual Impact(s)

No mitigation required. Residual impacts will be less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
22. Daytime Glare								
Will the proposed project:								
a) Create a new source of disability glare or discomfort glare for motorists travelling along any road of the County Regional Road Network?		X				x		
b) Be consistent with the applicable General Plan Goals and Policies for Item 22 of the Initial Study Assessment Guidelines?		x				X		

Impact Discussion:

22a. The proposed subdivision would allow for the construction of up to two new dwellings (i.e. 1 primary, 1 accessory) on proposed Lot 2 with a zoning clearance. Development on proposed Lot 2 would be visible from the SR 23. Reflections off windows and other components of future dwellings and accessory structures could distract motorists. The potential to create a daytime glare associated with buildings and structures on proposed Lot 2 would be reduced with the implementation of certain architectural and land use design features. As discussed in item 6.a of this initial study, the map will be conditioned to require the applicant use construction materials and colors that blend in with the environment and character of the community (e.g., earth tones, non-reflective paints and non-reflective glass). Therefore, daytime glare impacts associated with future development on proposed Lot 2 will adequately be addressed.

Based on the above discussion, project-specific and cumulative impacts related to daytime glare will be less than significant.

22b. The proposed project would be consistent with the applicable *General Plan* Goals and Policies for Item 22 of the *Ventura County Initial Study Assessment Guidelines*.

Mitigation/Residual Impact(s)

No mitigation required. Residual impacts will be less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
23. Public Health (EHD)								
Will the proposed project:								
a) Result in impacts to public health from environmental factors as set forth in Section 23 of the Initial Study Assessment Guidelines?		X				X		
b) Be consistent with the applicable General Plan Goals and Policies for Item 23 of the Initial Study Assessment Guidelines?		X				X		

Impact Discussion:

23a. The Ventura County Environmental Health Division determined that the proposed project may have impacts to public health from onsite sewage disposal (septic system). Compliance with applicable state and county regulations enforced by the Environmental Health Division will reduce potential impacts to a level considered less than significant.

23b. The proposed project would be consistent with the applicable *General Plan* Goals and Policies for Item 23 of the *Ventura County Initial Study Assessment Guidelines*.

Based on the above discussion, project-specific and cumulative impacts related to public health will be less than significant.

Mitigation/Residual Impact(s)

No mitigation required. Residual impacts will be less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
24. Greenhouse Gases (VCAPCD)								
Will the proposed project:								

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
a) Result in environmental impacts from greenhouse gas emissions, either project specifically or cumulatively, as set forth in CEQA Guidelines §§ 15064(h)(3), 15064.4, 15130(b)(1)(B) and -(d), and 15183.5?		X				X		

Impact Discussion:

24a. The Ventura County Air Pollution Control District has not yet adopted any approach to setting a threshold of significance for land use development projects in the area of project greenhouse gas emissions. The project will generate less than significant impacts to regional and local air quality and the project will be subject to a condition of approval to ensure that all project construction and operations shall be conducted in compliance with all VCAPCD Rules and Regulations. Furthermore, the amount of greenhouse gases anticipated from the project will be a small fraction of the levels being considered by the VCAPCD for greenhouse gas significance thresholds and far below those adopted to date by any air district in the state.

Based on the above discussion, project-specific and cumulative impacts related to greenhouse gases will be less than significant.

Mitigation/Residual Impact(s)

No mitigation required. Residual impacts will be less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
25. Community Character (Plng.)								
Will the proposed project:								

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
a) Either individually or cumulatively when combined with recently approved, current, and reasonably foreseeable probable future projects, introduce physical development that is incompatible with existing land uses, architectural form or style, site design/layout, or density/parcel sizes within the community in which the project site is located?		X				X		
b) Be consistent with the applicable General Plan Goals and Policies for Item 25 of the Initial Study Assessment Guidelines?		X				X		

Impact Discussion:

25a. The proposed project is consistent with the Ventura County General Plan "Open Space" land use designation, and the Ventura County Non-Coastal Zoning Ordinance OS 40 ac zoning designation of the property.

Proposed Lot 1 would be 41.14 acres, proposed Lot 2 would be 54.74 acres, proposed Lot 3 would be 67.95 acres and proposed Lot 4 would be 49.62 acres. The maximum allowed building coverage per the Ventura County General Plan for development within the OS 40 ac zone district is 5 percent. The proposed building coverage on each resulting parcel would be as follows: Lot 1: (0.30 acres), Lot 2: (3.42 acres), Lot 3: (0.70 acres), and Lot 4: (0.30 acres). Therefore, the proposed project will comply with the maximum building coverage requirements of the OS 40 ac zone district.

The proposed project site is surrounded by open space and residential uses. Parcels west and east of the site are currently in agricultural production. A portion of the proposed Lot 4 is currently in agricultural production. The project site is currently developed with one dwelling on Lots 1, 3 and 4. The dwellings on Lots 1 and 3 will become the main residence on these lots after the PMW / LLS is recorded. These structures have a combined footprint of 6,983 square feet. Approximately 20,920 square feet of accessory structures related to animal keeping and agricultural uses are located on Lots 1, 3 and 4. All existing structures have been permitted through the County. Thus, the proposed project will be in character with these uses. The character of this rural community will not be substantially altered with the proposed four lot subdivision, and potential future residential development on proposed Lot 2. As discussed in items 6.a and 22.a of this initial study, future development on this lot would be conditioned to

blend in blend in with the environment and character of the community (e.g., earth tones, non-reflective paints and non-reflective glass).

25b. The proposed project would be consistent with the *General Plan* Goals and Policies for item 25 of the *Ventura County Initial Study Assessment Guidelines*.

Based on the above discussion, project-specific and cumulative impacts related to community character will be less than significant.

Mitigation/Residual Impact(s)

No mitigation required. Residual impacts will be less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
26. Housing (Plng.)								
Will the proposed project:								
a) Eliminate three or more dwelling units that are affordable to: • moderate-income households that are located within the Coastal Zone; and/or, • lower-income households?		X				X		
b) Involve construction which has an impact on the demand for additional housing due to potential housing demand created by construction workers?		X				X		
c) Result in 30 or more new full-time-equivalent lower-income employees?		X				X		
d) Be consistent with the applicable General Plan Goals and Policies for Item 26 of the Initial Study Assessment Guidelines?		X				X		

Impact Discussion:

26a. The proposed project will not eliminate any existing dwelling units. The project, in fact, could result in the development of one new single-family dwelling unit and one new accessory dwelling unit. This will add to the County's housing stock. Therefore, the

proposed project will not create a project-specific impact, and will not make a cumulatively considerable contribution to a significant cumulative impact, related to the elimination of existing housing.

26b. The proposed subdivision will create four lots, three that are developed and Lot 2 which is undeveloped. Reasonable foreseeable development of Lot 2 may result in the development of one new single-family dwelling unit and one accessory dwelling unit. As stated in the Ventura County Initial Study Assessment Guidelines (p. 146), any project that involves construction has an impact on the demand for additional housing due to potential housing demand created by construction workers. However, construction worker demand is a less than significant project-specific impact, and does not qualify as a cumulatively considerable contribution to a significant cumulative impact, related to the demand for new housing, because construction work is short-term and there is a sufficient pool of construction workers within Ventura County and the Los Angeles metropolitan regions to implement future construction activities on the proposed lots.

26c. The proposed subdivision will not result in 30 or more new full-time-equivalent lower-income employees, as the proposed project will not facilitate the development of a new commercial, institutional, industrial, or other employment-generating use on the subject property. Therefore, the proposed project will not create a project-specific impact, and will not make a cumulatively considerable contribution to a significant cumulative impact, related to the demand for housing for employees associated with an employment-generating use.

26d. The proposed project is consistent with the applicable *Ventura County General Plan* Goals and Policies for Item 26 of the *Ventura County Initial Study Assessment Guidelines*.

Based on the above discussion, project-specific and cumulative impacts related to housing will be less than significant.

Mitigation/Residual Impact(s)

No mitigation required. Residual impacts will be less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
27a(1). Transportation & Circulation - Roads and Highways - Level of Service (LOS) (PWA)								
Will the proposed project:								

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
a) Cause existing roads within the Regional Road Network or Local Road Network that are currently functioning at an acceptable LOS to function below an acceptable LOS?		X				X		

Impact Discussion:

27a(1)-a. The Ventura County Public Works Agency has determined that the project site does not border a County road. Potential future development Lot 2 would create a low volume of traffic. Thus, the proposed project would not have the potential to generate traffic that would alter the level of service on the adjacent public roadway.

Reasonably foreseeable development on Lot 2 may result in the construction of one single family residence and one accessory dwelling unit. This potential future development would create a cumulative traffic impact on public roads. At the time of future development on Lot 2, the applicant will be subject to a standard condition of approval that will require the payment of a Traffic Impact Mitigation Fee per Ventura County Ordinance No. 4246 and General Plan Policy 4.2.2. The Ventura County Public Works Agency determined that the project site is located within Traffic Impact Fee District No. 4 Moorpark. As potential future development of Lot 2 may create a cumulative traffic impact on roads within the City of Moorpark, the applicant may be required to pay a Traffic Impact Mitigation Fee to the City of Moorpark at the time of future development on Lot 2.

Based on the above discussion, project-specific and cumulative impacts related to level of service will be less than significant.

Mitigation/Residual Impact(s)

No mitigation required. Residual impacts will be less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
27a(2). Transportation & Circulation - Roads and Highways - Safety and Design of Public Roads (PWA)								
Will the proposed project:								

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
a) Have an Adverse, Significant Project-Specific or Cumulative Impact to the Safety and Design of Roads or Intersections within the Regional Road Network (RRN) or Local Road Network (LRN)?		X				X		

Impact Discussion:

27a(2)-a. The proposed project is a four lot subdivision with the potential for development of one single-family dwelling unit and one accessory dwelling unit. The low volume of traffic that will be generated by the project does not have the potential to alter the level of safety of the County-maintained roads and state highways near the project. The Ventura County Public Works Agency determined that the project site does not border a County road. Therefore, adverse traffic impacts relating to Safety/Design on a County road would be less than significant.

Based on the above discussion, project-specific and cumulative impacts related to safety and design of public roads will be less than significant.

Mitigation/Residual Impact(s)

No mitigation required. Residual impacts will be less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
27a(3). Transportation & Circulation - Roads & Highways – Safety & Design of Private Access (VCFPD)								

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
a) If a private road or private access is proposed, will the design of the private road meet the adopted Private Road Guidelines and access standards of the VCFPD as listed in the Initial Study Assessment Guidelines?		X				X		
b) Will the project be consistent with the applicable General Plan Goals and Policies for Item 27a(3) of the Initial Study Assessment Guidelines?		X				X		

Impact Discussion:

27a(3)-a. Access to the project site is obtained from Olsen Road by an existing 25-foot wide paved private driveway. At the time development is proposed on Lot 2, a new driveway would be constructed to the building site on Lot 2 and a driveway apron at Olsen Road. The private driveway to Lot 2 will be required to meet VCFPD access standards.

27a(3)-b. The proposed project would be consistent with the *General Plan* Goals and Policies for item 27(a)(3) of the *Ventura County Initial Study Assessment Guidelines*.

Based on the above discussion, project-specific and cumulative impacts related to safety and design of private roads will be less than significant.

Mitigation/Residual Impact(s)

No mitigation required. Residual impacts will be less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
27a(4). Transportation & Circulation - Roads & Highways - Tactical Access (VCFPD)								
Will the proposed project:								

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
a) Involve a road or access, public or private, that complies with VCFPD adopted Private Road Guidelines?		X				X		
b) Be consistent with the applicable General Plan Goals and Policies for Item 27a(4) of the Initial Study Assessment Guidelines?		X				X		

Impact Discussion:

27a(4)-a. Access to the project site is obtained from Olsen Road by an existing 25-foot wide paved private driveway. At the time development is proposed on Lot 2, a new driveway would be constructed to the building site on Lot 2 and a driveway apron at Olsen Road. The private driveway to Lot 2 will be required to meet VCFPD access standards.

27a(4)-b. The proposed project would be consistent with the *General Plan* Goals and Policies for item 27(a)(4) of the *Ventura County Initial Study Assessment Guidelines*.

Based on the above discussion, project-specific and cumulative impacts related to tactical access will be less than significant.

Mitigation/Residual Impact(s)

No mitigation required. Residual impacts will be less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
27b. Transportation & Circulation - Pedestrian/Bicycle Facilities (PWA/Plng.)								
Will the proposed project:								
1) Will the Project have an Adverse, Significant Project-Specific or Cumulative Impact to Pedestrian and Bicycle Facilities within the Regional Road Network (RRN) or Local Road Network (LRN)?		X				X		

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
2) Generate or attract pedestrian/bicycle traffic volumes meeting requirements for protected highway crossings or pedestrian and bicycle facilities?		X				X		
3) Be consistent with the applicable General Plan Goals and Policies for Item 27b of the Initial Study Assessment Guidelines?		X				X		

Impact Discussion:

27b-1. Significant pedestrian and bicycle traffic would not be generated as a result of the proposed project. The adjacent roadway, Olsen Road, is four lanes and lacks bicycle lanes, therefore, bicyclists will be required to share the road with vehicular traffic. Furthermore, the proposed project would not cause actual or potential barriers to any existing or planned pedestrian/bicycle facilities including sidewalks or bike lanes. Therefore, adverse impacts relating to the supplementary addition of pedestrians and bicycles into the area would be less than significant, and the proposed project will not make a cumulatively considerable contribution to a significant cumulative impact related to pedestrian and bicycle facilities/traffic.

27b-3. The proposed project would be consistent with the *General Plan* Goals and Policies for Item 27b of the *Ventura County Initial Study Assessment Guidelines*.

Based on the above discussion, project-specific and cumulative impacts related to pedestrian / bicycle facilities will be less than significant.

Mitigation/Residual Impact(s)

No mitigation required. Residual impacts will be less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
27c. Transportation & Circulation - Bus Transit								
Will the proposed project:								

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
1) Substantially interfere with existing bus transit facilities or routes, or create a substantial increase in demand for additional or new bus transit facilities/services?	X				X			
2) Be consistent with the applicable General Plan Goals and Policies for Item 27c of the Initial Study Assessment Guidelines?	X				X			

Impact Discussion:

27c-1. The project site is not located near any bus transit facilities. There are no bus facilities within the vicinity of the project site with which the proposed project could interfere. The nearest bus route is the Thousand Oaks Transit Line 2, which is more than one mile from the proposed project site. In addition, the proposed four lot subdivision will not create a substantial increase in demand for bus transit facilities.

27c-2. The proposed project would be consistent with the *General Plan* Goals and Policies for item 27C of the *Ventura County Initial Study Assessment Guidelines*.

Based on the above discussion, there will not be any project-specific or cumulative impacts on bus transit.

Mitigation/Residual Impact(s)

No mitigation required. There would not be any residual impacts.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
27d. Transportation & Circulation - Railroads								
Will the proposed project:								

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
1) Individually or cumulatively, substantially interfere with an existing railroad's facilities or operations?	X				X			
2) Be consistent with the applicable General Plan Goals and Policies for Item 27d of the Initial Study Assessment Guidelines?	X				X			

Impact Discussion:

27d-1. There are no railroads within the vicinity of the project site with which the proposed project could interfere. The nearest railroad is located more than two miles northeast of the project site. The proposed project will not create additional demand for railroad facilities or operations.

27d-2. The proposed project would be consistent with the *General Plan* Goals and Policies for item 27D of the *Ventura County Initial Study Assessment Guidelines*.

Based on the above discussion, there will not be any project-specific or cumulative impacts on railroads.

Mitigation/Residual Impact(s)

No mitigation required. There would not be any residual impacts.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
27e. Transportation & Circulation – Airports (Airports)								
Will the proposed project:								

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
1) Have the potential to generate complaints and concerns regarding interference with airports?	X				X			
2) Be located within the sphere of influence of either County operated airport?	X				X			
3) Be consistent with the applicable General Plan Goals and Policies for Item 27e of the Initial Study Assessment Guidelines?	X				X			

Impact Discussion:

27e-1. & 27e-2. The nearest airport is located more than five miles east of the project site. The project site is not located within the sphere of influence of a County operated airport. As a result, airport operations will not be affected by the proposed subdivision or future development of Lot 2.

27e-3. The proposed project would be consistent with the *General Plan* Goals and Policies for item 27E of the *Ventura County Initial Study Assessment Guidelines.*

Based on the above discussion, there will not be any project-specific or cumulative impacts on airports.

Mitigation/Residual Impact(s)

No mitigation required. There would not be any residual impacts.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
27f. Transportation & Circulation - Harbor Facilities (Harbors)								
Will the proposed project:								

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
1) Involve construction or an operation that will increase the demand for commercial boat traffic and/or adjacent commercial boat facilities?	X				X			
2) Be consistent with the applicable General Plan Goals and Policies for Item 27f of the Initial Study Assessment Guidelines?	X				X			

Impact Discussion:

27f-1. The proposed project is located approximately 35 miles northeast to the nearest harbor. Additionally, the four lot subdivision and future development of Lot 2 would not increase commercial boat traffic in the nearest harbor facilities. The proposed project will not affect the operations of a harbor and will not increase the demands on harbor facilities.

27f-2. The proposed project would be consistent with the *General Plan* Goals and Policies for item 27F of the *Ventura County Initial Study Assessment Guidelines*.

Based on the above discussion, there will not be any project-specific or cumulative impacts on harbor facilities.

Mitigation/Residual Impact(s)

No mitigation required. There would not be any residual impacts.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
27g. Transportation & Circulation - Pipelines								
Will the proposed project:								

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
1) Substantially interfere with, or compromise the integrity or affect the operation of, an existing pipeline?	X				X			
2) Be consistent with the applicable General Plan Goals and Policies for Item 27g of the Initial Study Assessment Guidelines?	X				X			

Impact Discussion:

27g-1. There are no major or minor pipelines that traverse or enter the subject property. The nearest pipeline is located about 0.92 miles north of the project site. The proposed subdivision and potential future development of Lot 2 will not create additional demand for pipeline facilities or operations.

27g-2. The proposed project would be consistent with the *General Plan* Goals and Policies for item 27G of the *Ventura County Initial Study Assessment Guidelines.*

Based on the above discussion, there will not be any project-specific or cumulative impacts on pipelines.

Mitigation/Residual Impact(s)

No mitigation required. There would not be any residual impacts.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
28a. Water Supply – Quality (EHD)								
Will the proposed project:								

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
1) Comply with applicable state and local requirements as set forth in Section 28a of the Initial Study Assessment Guidelines?	X				X			
2) Be consistent with the applicable General Plan Goals and Policies for Item 28a of the Initial Study Assessment Guidelines?	X				X			

Impact Discussion:

28a-1. The Ventura County Environmental Health Division determined that the public water system which will serve domestic water to the proposed lots is regulated by the State Department of Health Services. The quality of domestic water must be in compliance with applicable State drinking water standards. Design and construction of the any proposed dwellings on Lot 2 must conform with applicable State and Building Code requirements pertaining to water systems.

28a-2. The proposed project would be consistent with the applicable *General Plan* Goals and Policies for Item 28a of the *Ventura County Initial Study Assessment Guidelines*.

Based on the above discussion, there will be not be any project-specific or cumulative impacts on water supply quality.

Mitigation/Residual Impact(s)

No mitigation required. There would not be any residual impacts.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
28b. Water Supply – Quantity (WPD)								
Will the proposed project:								

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
1) Have a permanent supply of water?		X				X		
2) Either individually or cumulatively when combined with recently approved, current, and reasonably foreseeable probable future projects, introduce physical development that will adversely affect the water supply - quantity of the hydrologic unit in which the project site is located?		X				X		
3) Be consistent with the applicable General Plan Goals and Policies for Item 28b of the Initial Study Assessment Guidelines?		X				X		

Impact Discussion:

28b-1. The Ventura County Environmental Health Division determined that water for the proposed lots will be supplied by the Camrosa Water District. The Camrosa Water District is able to supply a permanent supply of domestic water to the project. The applicant will be required, as a standard condition of approval of the map, to submit a project specific Water Service Certificate for Subdivisions to the Environmental Health Division (EHD) prior to map recordation.

The water demand of the proposed project will not be satisfied from groundwater pumpage or stream diversions in the local area. The proposed project will not either individually or cumulatively when combined with recently approved, current, and reasonably foreseeable probable future projects, introduce physical development that would adversely affect the water supply quantity of the hydrologic unit in which the project site is located.

28b-3. The proposed project would be consistent with the *General Plan* Goals and Policies for item 28B of the *Ventura County Initial Study Assessment Guidelines*.

Based on the above discussion, project-specific and cumulative impacts related to water supply quantity will be less than significant.

Mitigation/Residual Impact(s)

No mitigation required. Residual impacts will be less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
28c. Water Supply - Fire Flow Requirements (VCFPD)								
Will the proposed project:								
1) Meet the required fire flow?		X				X		
2) Be consistent with the applicable General Plan Goals and Policies for Item 28c of the Initial Study Assessment Guidelines?		X				X		

Impact Discussion:

28c-1. The VCFPD determined that water supply for fire protection will be required to meet VCFPD Current Ordinance standards prior to construction of future residential dwellings on Lot 2.

28c-2. The proposed project would be consistent with the *General Plan* Goals and Policies for item 28C of the *Ventura County Initial Study Assessment Guidelines*.

Based on the above discussion, project-specific and cumulative impacts related to fire flow will be less than significant.

Mitigation/Residual Impact(s)

No mitigation required. Residual impacts will be less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
29a. Waste Treatment & Disposal Facilities - Individual Sewage Disposal Systems (EHD)								
Will the proposed project:								

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
1) Comply with applicable state and local requirements as set forth in Section 29a of the Initial Study Assessment Guidelines?		X				X		
2) Be consistent with the applicable General Plan Goals and Policies for Item 29a of the Initial Study Assessment Guidelines?		X				X		

Impact Discussion:

29a-1. Existing development on Lots 1, 3 and 4 are under permit with the Ventura County Environmental Health Division. At the time development is proposed on Lot 2, an on-site individual sewage disposal system (septic system) would be constructed for wastewater discharge. The soils report provided for review adequately demonstrates that the installation of a septic system for Lot 2 meets ordinance standards. Compliance with applicable regulations in the County Building Code and County Sewer Policy with respect to the design and installation of future septic systems will reduce potential impacts attributable to direct human contact with sewage from on-site sewage disposal to a level considered less than significant.

29a-2. The proposed project would be consistent with the applicable *General Plan* Goals and Policies for Item 29a of the *Ventura County Initial Study Assessment Guidelines*.

Based on the above discussion, project-specific and cumulative impacts related to Individual Sewage Disposal Systems will be less than significant.

Mitigation/Residual Impact(s)

No mitigation required. Residual impacts will be less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
29b. Waste Treatment & Disposal Facilities - Sewage Collection/Treatment Facilities (EHD)								

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
Will the proposed project:								
1) Comply with applicable state and local requirements as set forth in Section 29b of the Initial Study Assessment Guidelines?	X				X			
2) Be consistent with the applicable General Plan Goals and Policies for Item 29b of the Initial Study Assessment Guidelines?	X				X			

Impact Discussion:

29b-1. The Ventura County Environmental Health Division determined that the proposed project does not include connection to a public sewer. Therefore, the proposed project would comply with applicable state and local requirements as set forth in Section 29b of the Initial Study Assessment Guidelines.

29b-2. The proposed project would be consistent with the *General Plan* Goals and Policies for item 29B of the *Ventura County Initial Study Assessment Guidelines.*

Based on the above discussion, there will not be any project-specific or cumulative impacts on Sewage Collection/Treatment Facilities.

Mitigation/Residual Impact(s)

No mitigation required. There would not be any residual impacts.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
29c. Waste Treatment & Disposal Facilities - Solid Waste Management (PWA)								
Will the proposed project:								

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
1) Have a direct or indirect adverse effect on a landfill such that the project impairs the landfill's disposal capacity in terms of reducing its useful life to less than 15 years?		X				X		
2) Be consistent with the applicable General Plan Goals and Policies for Item 29c of the Initial Study Assessment Guidelines?		X				X		

Impact Discussion:

29c-1. Pursuant to the Integrated Waste Management District's factors determining the significance of project impacts to solid waste facilities within Ventura County, any discretionary development project generating solid waste will impact the County's remaining solid waste disposal capacity. Additionally, as required by California Public Resources Code (PRC) 41701, Ventura County's Countywide Siting Element (CSE), adopted in June of 2001 and updated annually, confirms Ventura County has at least 15 years of disposal capacity available for waste generated by in-County projects. Therefore, because the County currently exceeds the minimum disposal capacity required by state PRC, no individual project should have a significant impact upon remaining Ventura County solid waste disposal capacity. No new development or demolition of existing structures is proposed as a part of this project. However, reasonable foreseeable development of Lot 2 is anticipated to generate less than the CSE disposal capacity for waste generated by in-County projects.

29c-2. The proposed project would be consistent with the *General Plan* Goals and Policies for item 29C of the *Ventura County Initial Study Assessment Guidelines*.

Based on the above discussion, project-specific and cumulative impacts related to solid waste management will be less than significant.

Mitigation/Residual Impact(s)

No mitigation required. Residual impacts will be less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
29d. Waste Treatment & Disposal Facilities - Solid Waste Facilities (EHD)								
Will the proposed project:								
1) Comply with applicable state and local requirements as set forth in Section 29d of the Initial Study Assessment Guidelines?	X				X			
2) Be consistent with the applicable General Plan Goals and Policies for Item 29d of the Initial Study Assessment Guidelines?	X				X			

Impact Discussion:

29d-1. The proposed project does not include a solid waste facility. The proposed project will not have any project-specific or cumulative impacts relating to solid waste facilities.

29d-2. The proposed project would be consistent with the applicable *Ventura County General Plan* Goals and Policies for item 29d of the *Ventura County Initial Study Assessment Guidelines.*

Based on the above discussion, there will be not be any project-specific or cumulative impacts on solid waste facilities.

Mitigation/Residual Impact(s)

No mitigation required. There would not be any residual impacts.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
30. Utilities								
Will the proposed project:								

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
a) Individually or cumulatively cause a disruption or re-routing of an existing utility facility?	X				X			
b) Individually or cumulatively increase demand on a utility that results in expansion of an existing utility facility which has the potential for secondary environmental impacts?	X				X			
c) Be consistent with the applicable General Plan Goals and Policies for Item 30 of the Initial Study Assessment Guidelines?	X				X			

Impact Discussion:

30a & 30b. The project site is located in an area in which electrical, gas, and telephone services are available. No facility will need to be re-routed or expanded to serve the proposed project. Future development of proposed Lot 2 will not substantially increase demand on a utility, such that an expansion of an existing utility facility is necessary.

30c. The proposed project would be consistent with the applicable *General Plan* Goals and Policies for Item 30 of the *Ventura County Initial Study Assessment Guidelines.*

Based on the above discussion, there will not be any project-specific or cumulative impacts on utilities.

Mitigation/Residual Impact(s)

No mitigation required. There would not be any residual impacts.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
31a. Flood Control Facilities/Watercourses - Watershed Protection District (WPD)								
Will the proposed project:								

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
1) Either directly or indirectly, impact flood control facilities and watercourses by obstructing, impairing, diverting, impeding, or altering the characteristics of the flow of water, resulting in exposing adjacent property and the community to increased risk for flood hazards?		X				X		
2) Be consistent with the applicable General Plan Goals and Policies for Item 31a of the Initial Study Assessment Guidelines?		X				X		

Impact Discussion:

31a-1. The project site includes a blue line channel (Tierra Rejada Creek), that transverses the project site over Lots 1 and 3 in a northwest / southwest direction and is separated by SR 23. Tierra Rejada Creek becomes a Ventura County Watershed Protection District red line jurisdictional watercourse immediately southwest of SR 23 and onto the Tierra Rejada farms property (APN 500-0-410-410) off of Read Road. No work is proposed in the portion of the channel within the District's regulatory jurisdiction. District staff is satisfied that the project will have little to no direct or indirect project-specific or cumulative impacts to District flood control facilities.

Note that any activity in, on, over, under or across any jurisdictional red line channel will require a permit from the District. In addition, a project can not impair, divert, impede or alter the characteristics of the flow of water running in any jurisdictional red line channel.

31a-2. The proposed project would be consistent with the *General Plan* Goals and Policies for item 31A of the *Ventura County Initial Study Assessment Guidelines*.

Based on the above discussion, project-specific and cumulative impacts related to flood control facilities / watercourses will be less than significant.

Mitigation/Residual Impact(s)

No mitigation required. Residual impacts will be less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**	Cumulative Impact Degree Of Effect**

	N	LS	PS-M	PS	N	LS	PS-M	PS
31b. Flood Control Facilities/Watercourses - Other Facilities (PWA)								
Will the proposed project:								
1) Result in the possibility of deposition of sediment and debris materials within existing channels and allied obstruction of flow?		X				X		
2) Impact the capacity of the channel and the potential for overflow during design storm conditions?		X				X		
3) Result in the potential for increased runoff and the effects on Areas of Special Flood Hazard and regulatory channels both on and off site?		X				X		
4) Involve an increase in flow to and from natural and man-made drainage channels and facilities?		X				X		
5) Be consistent with the applicable General Plan Goals and Policies for Item 31b of the Initial Study Assessment Guidelines?		X				X		

Impact Discussion:

31b-1 to 31b-4. The Ventura County Watershed Protection District determined that the proposed project will be subject to the requirements of the Grading Code and Uniform Building Code when future development of Lot 2 occurs. The potential future development of two residences, the building pad and the realignment of the access road for Lot 2 will be required to conform with established flood control regulations. These include the requirement to detain on-site the difference between peak runoff for the existing condition and the runoff resulting from future development.

31b-5. The proposed project would be consistent with the *General Plan* Goals and Policies for item 31B of the *Ventura County Initial Study Assessment Guidelines*.

Based on the above discussion, project-specific and cumulative impacts related to flood control facilities / watercourses will be less than significant.

Mitigation/Residual Impact(s)

No mitigation required. Residual impacts will be less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
32. Law Enforcement/Emergency Services (Sheriff)								
Will the proposed project:								
a) Have the potential to increase demand for law enforcement or emergency services?		X				X		
b) Be consistent with the applicable General Plan Goals and Policies for Item 32 of the Initial Study Assessment Guidelines?		X				X		

Impact Discussion:

32a. The proposed project involves the potential development of two additional dwellings (i.e. one primary, one accessory) on Lot 2. This minor change in land use would not require additional personnel, equipment, or facilities of the Ventura County Sheriff's Department, in order to continue to provide law enforcement/emergency services to the project site.

32b. The proposed project would be consistent with the applicable *General Plan* Goals and Policies for Item 32 of the *Ventura County Initial Study Assessment Guidelines*.

Based on the above discussion, project-specific and cumulative impacts related to law enforcement / emergency services will be less than significant.

Mitigation/Residual Impact(s)

No mitigation required. Residual impacts will be less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
33a. Fire Protection Services - Distance and Response (VCFPD)								

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
Will the proposed project:								
1) Be located in excess of five miles, measured from the apron of the fire station to the structure or pad of the proposed structure, from a full-time paid fire department?	X				X			
2) Require additional fire stations and personnel, given the estimated response time from the nearest full-time paid fire department to the project site?	X				X			
3) Be consistent with the applicable General Plan Goals and Policies for Item 33a of the Initial Study Assessment Guidelines?	X				X			

Impact Discussion:

33a-1 & 33a-2. The project site is within five miles of a Fire Station No. 34, located southwest of the project site, addressed as 555 E. Avenida de los Arboles, in the City of Thousand Oaks. No additional fire stations or personnel are required.

33a-3. The proposed project would be consistent with the *General Plan* Goals and Policies for item 33A of the *Ventura County Initial Study Assessment Guidelines*.

Based on the above discussion, there will not be any project-specific or cumulative impacts on fire protection distance and response time.

Mitigation/Residual Impact(s)

No mitigation required. There would not be any residual impacts.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
33b. Fire Protection Services – Personnel, Equipment, and Facilities (VCFPD)								
Will the proposed project:								

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
1) Result in the need for additional personnel?		X				X		
2) Magnitude or the distance from existing facilities indicate that a new facility or additional equipment will be required?		X				X		
3) Be consistent with the applicable General Plan Goals and Policies for Item 33b of the Initial Study Assessment Guidelines?		X				X		

Impact Discussion:

33b-1. As stated in item 33a-1 above, Fire Station 34 is located within 5 miles of the project site. The proposed project will not result in the need for additional fire protection personnel.

33b-2. A new fire protection facility or additional equipment will not be required. As stated in this Initial Study (above), the proposed project site is located within five miles of Fire Station 34. Future development of Lot 2 must comply with the fire prevention standards (e.g., building requirements, water supply and flow requirements, and fuel reduction requirements) of the Ventura County Building and Fire Codes.

33b-3. The proposed project would be consistent with the applicable *Ventura County General Plan* Goals and Policies for Item 33b of the *Ventura County Initial Study Assessment Guidelines.*

Based on the above discussion, project-specific and cumulative impacts related to law enforcement / emergency services will be less than significant.

Mitigation/Residual Impact(s)

No mitigation required. Residual impacts will be less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
34a. Education - Schools								
Will the proposed project:								
1) Substantially interfere with the operations of an existing school facility?		X				X		
2) Be consistent with the applicable General Plan Goals and Policies for Item 34a of the Initial Study Assessment Guidelines?		X				X		

Impact Discussion:

34a-1. Madera Elementary School is the nearest school to the project site. It is located about five and a half miles northeast from the project site. At this distance, the proposed project will not interfere with the operations of an existing school facility.

The proposed project consists of the subdivision of one lot into four lots. The net increase of two dwellings (i.e. 1 primary, 1 accessory) on Lot 2 will create a corresponding demand for new school facilities. However, pursuant to Government Code § 65996(a)(2)(b): (1) the applicant will be required to demonstrate that the applicant paid the requisite school fees prior to obtaining a building permit for the single-family dwellings; and (2) the payment of these fees is considered to be "full and complete school facilities mitigation" of the proposed project's impacts related to the demand for new school facilities.

34a-2. The proposed project would be consistent with the applicable *General Plan* Goals and Policies for Item 34a of the *Ventura County Initial Study Assessment Guidelines*.

Based on the above discussion, project-specific and cumulative impacts related to schools will be less than significant.

Mitigation/Residual Impact(s)

No mitigation required. Residual impacts will be less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
34b. Education - Public Libraries (Lib. Agency)								
Will the proposed project:								
1) Substantially interfere with the operations of an existing public library facility?	X							
2) Put additional demands on a public library facility which is currently deemed overcrowded?	X							
3) Limit the ability of individuals to access public library facilities by private vehicle or alternative transportation modes?	X							
4) In combination with other approved projects in its vicinity, cause a public library facility to become overcrowded?					X			
5) Be consistent with the applicable General Plan Goals and Policies for Item 34b of the Initial Study Assessment Guidelines?	X				X			

Impact Discussion:

34b-1 through 34b-4. The closest County library to the project site is the Oak Park Library, which is located more than five miles southeast from the project site. Based on the distance between the Oak Park Library and the project site, the proposed project will not substantially interfere with the operations of an existing public library facility. In addition, the Oak Park Library has not been deemed overcrowded. There are no transportation facilities located on, or near the project site that afford access to a public library facility. Therefore, the proposed project does not include any development that could interfere with an individual's ability to access public library facilities.

34b-5. The proposed project is consistent with the applicable *General Plan* Goals and Policies for Item 34b of the *Ventura County Initial Study Assessment Guidelines*.

Based on the above discussion, there will not be any project-specific or cumulative impacts on libraries.

Mitigation/Residual Impact(s)

No mitigation required. There would not be any residual impacts.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
35. Recreation Facilities (GSA)								
Will the proposed project:								
a) Cause an increase in the demand for recreation, parks, and/or trails and corridors?		X				X		
b) Cause a decrease in recreation, parks, and/or trails or corridors when measured against the following standards: • Local Parks/Facilities - 5 acres of developable land (less than 15% slope) per 1,000 population; • Regional Parks/Facilities - 5 acres of developable land per 1,000 population; or, • Regional Trails/Corridors - 2.5 miles per 1,000 population?		X				X		
c) Impede future development of Recreation Parks/Facilities and/or Regional Trails/Corridors?		X				X		
d) Be consistent with the applicable General Plan Goals and Policies for Item 35 of the Initial Study Assessment Guidelines?		X				X		

Impact Discussion:

35a. through 35c. The proposed four lot subdivision would allow for the development of two additional dwellings (i.e. 1 primary, 1 accessory) on Lot 2. This level of growth is not expected to create a substantial new demand for recreational resources. However, pursuant to the requirements of the Ventura County Subdivision Ordinance (§ 8209-6.1(a)), the proposed project will be subject to a condition of approval to require the applicant to pay the requisite fee ("Quimby fee") to the General Services Agency – Parks Department, in lieu of dedicating land for local park acquisition or development. With the payment of this fee for the development of recreational facilities, the proposed

project will have a less-than-significant impact on recreational facilities and will not make a cumulatively considerable contribution to a significant cumulative impact related to the demand for recreational facilities.

The proposed project does not have the potential to impede the development of parks/facilities and/or regional trails/corridors. There are no trails or corridors within the project site or on lands adjacent to the project site. Wood Ranch Golf Course and Canada Park are located within 3.7 miles west of the project site. Based on the distance and nature of the proposed project, future development of Recreation Parks/Facilities and/or Regional Trails/Corridors would not be impeded.

Based on the above discussion, project-specific and cumulative impacts related to recreational facilities will be less than significant.

35d. The proposed project is consistent with the applicable *General Plan* Goals and Policies for Item 35 of the *Ventura County Initial Study Assessment Guidelines.*

Mitigation/Residual Impact(s)

No mitigation required. Residual impacts will be less than significant.

***Key to the agencies/departments that are responsible for the analysis of the items above:**

Airports - Department Of Airports	AG. - Agricultural Department	VCAPCD - Air Pollution Control District
EHD - Environmental Health Division	VCFPD - Fire Protection District	GSA - General Services Agency
Harbors - Harbor Department	Lib. Agency - Library Services Agency	Plng. - Planning Division
PWA - Public Works Agency	Sheriff - Sheriff's Department	WPD – Watershed Protection District

****Key to Impact Degree of Effect:**

N – No Impact
LS – Less than Significant Impact
PS-M – Potentially Significant but Mitigable Impact
PS – Potentially Significant Impact

Section C – Mandatory Findings of Significance

Based on the information contained within Section B:		
	Yes	**No**
1. Does the project have the potential to 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, 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?		X
2. Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals? (A short-term impact on the environment is one that occurs in a relatively brief, definitive period of time while long-term impacts will endure well into the future).		X
3. 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 effect of other current projects, and the effect of probable future projects. (Several projects may have relatively small individual impacts on two or more resources, but the total of those impacts on the environment is significant.)		X
4. Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?		X

Findings Discussion:

1. As stated above in Section B of this Initial Study, the proposed project does not have the potential to 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, 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.

2. The proposed project does not involve the potential to achieve short-term, to the disadvantage of long-term, environmental goals.

3. As stated in Section B, the proposed project does not have the potential to create a cumulatively considerable contribution to a significant cumulative impact.

4. As stated in Section B, the proposed project will have at most a less than significant

impact with regard to adverse effects, either directly or indirectly, on human beings.

Section D – Determination of Environmental Document

Based on this initial evaluation:

[ ]	I find the proposed project **could not** have a significant effect on the environment, and a **Negative Declaration** should be prepared.
[X]	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 the mitigation measure(s) described in Section B of the Initial Study will be applied to the project. A **Mitigated Negative Declaration** should be prepared.
[ ]	I find the proposed project, individually and/or cumulatively, MAY have a significant effect on the environment and an **Environmental Impact Report** (EIR) is required.*
[ ]	I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on 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 or Negative Declaration pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or Negative Declaration, including revisions or mitigation measures that are imposed upon the proposed project, **nothing further is required.**

Kristina Boero, Senior Planner

6/24/19
Date

Attachments:

Attachment 1	Aerial Location Map
Attachment 2	Zoning and General Plan Map
Attachment 3	PMW / LLS Plan for SD06-0041
Attachment 4	Access Road Realignment Plan
Attachment 5	List and Map of Past, Present, and Reasonably Foreseeable Future Projects Used in the Cumulative Impacts Analysis
Attachment 6	October 19, 2018 Initial Study Biological Assessment prepared by Envicom Corporation
Attachment 7	Development Restriction Area
Attachment 8	Geologic Report prepared by Mountain Geology, dated April 1, 2016
Attachment 9	Works Cited

Ventura County
Resource Management Agency
Information Systems GIS Services
Map created on 06-04-2019
Source: Pictometry: 2018

RMAgis

Mitigated Negative Declaration
SD06-0041
Attachment 1 - Aerial Map

0 250 500 1,000 Feet

Disclaimer: this map was created by the Ventura County Resource Management Agency Information Systems GIS, which is designed and operated solely for the convenience of the County and related public agencies. The County does not warrant the accuracy of this map and no decision involving a risk of economic loss or physical injury should be made in reliance therein

Ventura County
Resource Management Agency
Information Systems GIS Services
Map created on 06-04-2019
Source: Pictometry: 2018

RMAgis

Mitigated Negative Declaration
SD06-0041
Attachment 2 - General Plan & Zoning Maps

0 250 500 1,000 Feet

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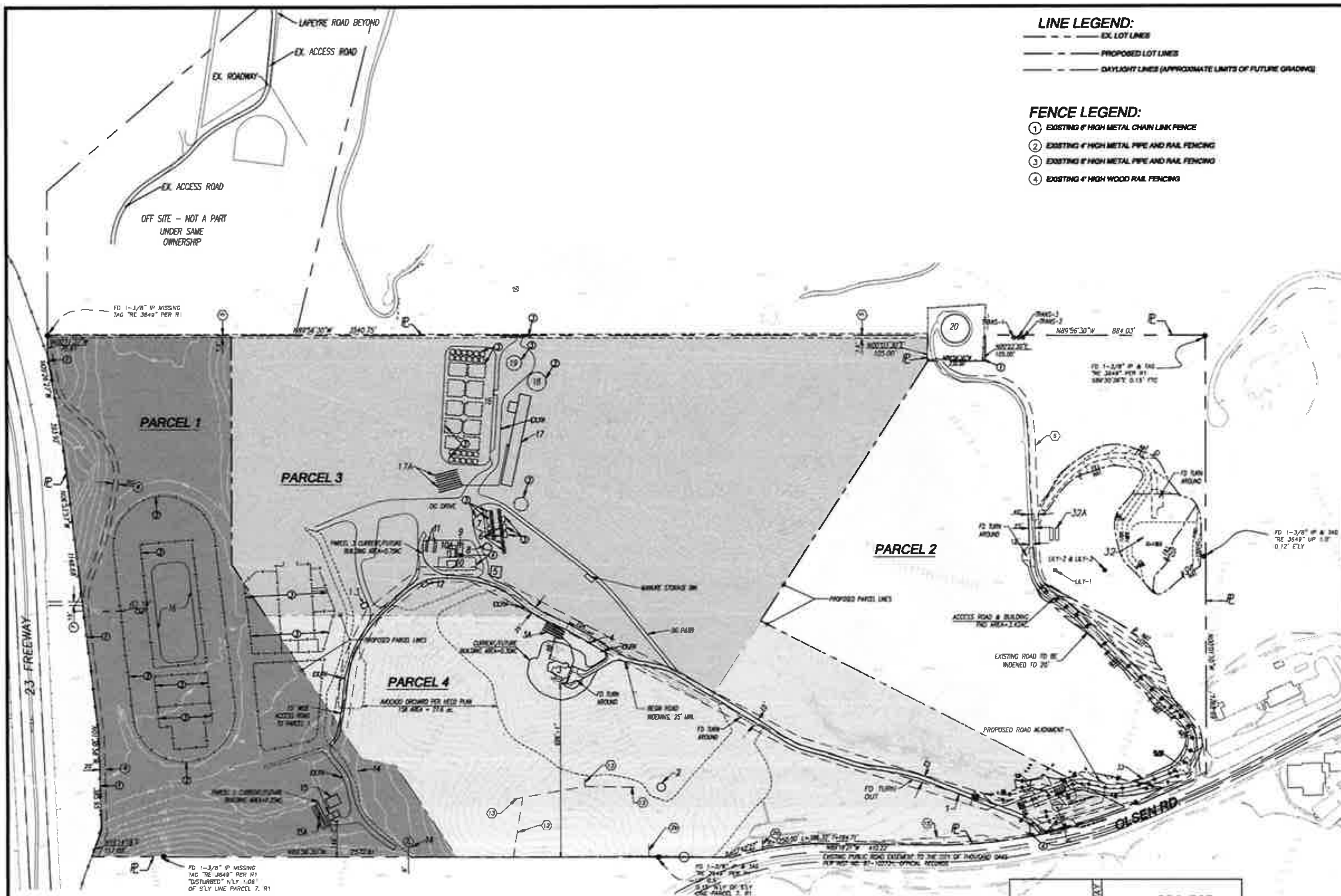


LINE LEGEND:

- EX. LOT LINES
- PROPOSED LOT LINES
- DAYLIGHT LINES (APPROXIMATE LIMITS OF FUTURE GRADING)

FENCE LEGEND:

1. EXISTING 6' HIGH METAL CHAIN LINK FENCE
2. EXISTING 4' HIGH METAL PIPE AND RAIL FENCING
3. EXISTING 5' HIGH METAL PIPE AND RAIL FENCING
4. EXISTING 4' HIGH WOOD RAIL FENCING

EX. EASEMENT LEGEND

(2a) INDICATES A 6 FEET WIDE EASEMENT FOR POLE LINES AND INCIDENTAL PURPOSES, IN FAVOR OF SOUTHERN CALIFORNIA EDISON COMPANY, AS PER INSTRUMENT RECORDED JULY 6, 1964 IN BOOK 2575, PAGE 330 OF OFFICIAL RECORDS.

(2b) INDICATED THE CENTERLINE OF A 2 FEET WIDE EASEMENT FOR POLE LINES AND INCIDENTAL PURPOSES, IN FAVOR OF SOUTHERN CALIFORNIA EDISON COMPANY, AS PER INSTRUMENT RECORDED JUL 6, 1964, IN BOOK 2575, PAGE 330 OF OFFICIAL RECORDS.

(5) INDICATES AN EASEMENT FOR WATER PIPELINES, APPURTENANCES AND INCIDENTAL PURPOSES, IN FAVOR OF CAMROSA COUNTY WATER DISTRICT, AS PER INSTRUMENT RECORDED JULY 16, 1968 IN BOOK 3335, PAGE 222 OF OFFICIAL RECORDS.

(6) INDICATES AN EASEMENT FOR ACCESS ROAD AND INCIDENTAL PURPOSES, IN FAVOR OF CAMROSA COUNTY WATER DISTRICT, AS PER INSTRUMENT RECORDED JULY 16, 1968 IN BOOK 3335, PAGE 226 OF OFFICIAL RECORDS.

(7) INDICATES AN EASEMENT FOR WATER PIPELINES, APPURTENANCES AND INCIDENTAL PURPOSES, IN FAVOR OF CAMROSA COUNTY WATER DISTRICT, AS PER INSTRUMENT RECORDED JULY 16, 1968 IN BOOK 3335 PAGE 230 OF OFFICIAL RECORDS.

(8) INDICATES AN EASEMENT FOR WATER PIPELINES, APPURTENANCES AND INCIDENTAL PURPOSES, IN FAVOR OF CAMROSA COUNTY WATER DISTRICT, AS PER INSTRUMENT RECORDED JULY 16, 1968 IN BOOK 3335 PAGE 233 OF OFFICIAL RECORDS.

(12) INDICATES THE CENTERLINE OF A 10 FEET WIDE EASEMENT FOR PUBLIC UTILITIES AND INCIDENTAL PURPOSES, IN FAVOR SOUTHERN CALIFORNIA EDISON COMPANY, AS PER INSTRUMENT RECORDED JULY 11, 1978 IN BOOK 5159, PAGE 788 OF OFFICIAL RECORDS.

(13) INDICATED THE CENTERLINE OF A 2 FEET WIDE EASEMENT FOR PUBLIC UTILITIES AND INCIDENTAL PURPOSES, IN FAVOR OF SOUTHERN CALIFORNIA EDISON COMPANY, AS PER INSTRUMENT RECORDED JULY 11, 1978 IN BOOK 5159, PAGE 786 OF OFFICIAL RECORDS.

(14) INDICATES AN EASEMENT FOR PUBLIC ROAD, EMBANKMENT SLOPES, DRAINAGE AND INCIDENTAL PURPOSES, IN FAVOR OF THE CITY OF THOUSAND OAKS, AS PER INSTRUMENT RECORDED JULY 29, 1987 AS INSTRUMENT NO 87-107731 OF OFFICIAL RECORDS

(15) INDICATES THE CENTERLINE OF A 10 FOOT WIDE EASEMENT FOR PUBLIC UTILITIES AND INCIDENTAL PURPOSES, IN FAVOR OF SOUTHERN CALIFORNIA EDISON COMPANY, AS PER INSTRUMENT RECORDED MARCH 24, 1988 AS INSTRUMENT NO 88-38117 OF OFFICIAL RECORDS.

(16) INDICATES AN EASEMENT FOR WATER PIPELINES, APPURTENANCES AND INCIDENTAL PURPOSES, IN FAVOR OF CAMROSA COUNTY WATER DISTRICT, AS PER INSTRUMENT RECORDED MARCH 25, 2005, INSTRUMENT NO 20050325-0073453 OF OFFICIAL RECORDS.

	ITEM	AREA(S.F.) OCCUPIED	AREA(S.F.) NON OCCUPIED	USAGE (RESIDENTIAL OR AGRICULTURAL)
EXISTING-EXISTING	1. MAIN ENTRANCE			
	2. WATER TANK (150,000 GAL)	N/A	N/A	R
	3. MAIN RESIDENCE (TO BECOME MAIN RESIDENCE ON PARCEL 4)	4,200		
	GARAGE		600	A
	3A. EXISTING LEACH FIELD	N/A	N/A	N/A
	4. EXISTING WELL	N/A	N/A	N/A
	5. ACCESSORY BUILDING TO REMAIN	N/A	1,800	A
	6. CORRALS TO BE RELOCATED	N/A	N/A	A
	7. ROUND PEN	N/A	N/A	A
	8. METAL STORAGE SHEDS TO REMAIN	N/A	740	A
	9. METAL STORAGE SHED TO REMAIN	N/A	800	A
	10. MAIN DWELLING UNIT (TO BECOME SECOND DWELLING UNIT FOR PARCEL 3)	983	N/A	R
	10A. SEPTIC SYSTEM AREA	N/A	N/A	R
	11. PORTABLE STORAGE CONTAINERS-RELOCATE	N/A	320	A
	12. TRASH ENCLOSURE AREA	N/A	180	A
	13. AG WATER TRUCK FILL STATION	N/A	N/A	A
	14. (2)-EXISTING WATER WELLS	N/A	N/A	A
	15. TEMP. SINGLE FAMILY RESIDENCE TO BE USED DURING CONSTRUCTION (TO BECOME MAIN DWELLING UNIT FOR PARCEL 1)	1,800		R
	GARAGE		600	
	STORAGE		600	
	15A. LEACH FIELD	N/A	N/A	R
	16. EQUESTRIAN ARENA (NOT COVERED)	N/A	N/A	A
	17. HORSE BARN	N/A	15,000	A
	17A. LEACH FIELD	N/A	N/A	R
	18. HOT WALKER-NO COVER	N/A	N/A	A
	19. ROUND PEN-NO COVER	N/A	N/A	A
	20. WATER TANK (? MIL GAL) CAMROSA WATER DIST	N/A	N/A	N/A
	(TOTAL EXISTING)	6,983	20,920	
FUTURE	32. FUTURE BUILDING PAD AREA	N/A	N/A	N/A
	32A. LEACH FIELD	N/A	N/A	N/A
	33. SECONDARY ACCESS ROAD	N/A	N/A	N/A
	A AGRICULTURAL			
	R RESIDENTIAL			

PROJECT DATA

APN NO	594-0-010-035
EXISTING ZONING	OS-40
PROPOSED # LOTS	4
EXISTING # LOTS	1
GROSS AREA:	213.45 Ac.

NOTE:

ALL LOTS TO HAVE ON-SITE SEWAGE DISPOSAL SYSTEMS (NO SEWER)

EARTHWORK QUANTITIES

CUT: TO BE DETERMINED CU. YDS FILL: TO BE DETERMINED CU. YDS
EXPORT: TO BE DETERMINED CU. YDS IMPORT: TO BE DETERMINED CU. YDS
DISPOSAL SITE G.P.# ____ SOURCE G.P.# ____

CONTRACTORS NOTE:

THE EARTHWORK QUANTITIES ARE PROVIDED AS A COURTESY AND CONVENIENCE TO THE OWNERS, AND ARE FOR BONDING AND PLAN CHECK PURPOSES ONLY. THE YARDAGE FIGURES SHOWN ARE APPROXIMATE CALCULATED QUANTITIES BASED ON THE DIFFERENCE BETWEEN EXISTING GROUND ELEVATIONS AND DESIGNED ROUGH GRADE ELEVATIONS. THE CALCULATIONS MAKE NO PROVISIONS FOR STRIPPING, SHRINKAGE, BULKING OR ANY OTHER CONDITION NOT IMPLIED. FOR THIS REASON, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONSULT THE PROJECTS SOILS ENGINEER AND GEOLOGIC INVESTIGATIONS, AND TO DETERMINE FOR HIMSELF, THE QUANTITIES OF EARTH MOVING THAT WILL BE REQUIRED TO COMPLETE THIS PROJECT.

LEGAL DESCRIPTION

THAT PORTION OF PARCEL "7" AS SHOWN ON RECORD OF SURVEY MAP ENTITLED "SURVEY OF A PART OF SECTIONS 11, 13, 14 – T2N R 19W, RANCHO SIMI SUBDIVISION "F", RANCHO SIMI(3 M.R.7)", IN THE COUNTY OF VENTURA, STATE OF CALIFORNIA, FILED IN BOOK 23, PAGE 6 OF RECORDS OF SURVEY.

OWNERS

BOB AND LAURA DAY 12712 ROSEDALE CAMARILLO, CA 93012 (818) 492-3600

GEOTECHNICAL

CAL WEST GEOTECHNICAL 889 PIERCE COURT SUITE 101 THOUSAND OAKS, CALIFORNIA 91360 (805) 497-1244 (818) 991-7148

GEOLOGIST

MOUNTAIN GEOLOGY, INC. 5158 COCHRAN ST SIMI VALLEY, CA 93063 (805) 522-5174

SURVEYOR

CHRIS NELSON & ASSOCIATES 28118 W. AGOURA RD., SUITE 205 AGOURA HILLS, CA 91301 (818) 991-1040

UTILITY COMPANIES

GAS
SOUTHERN CALIFORNIA GAS COMPANY
ATTENTION: BOB KIEVA
1680 MOUNTAIN VIEW AVENUE
OXNARD, CA 93030
(805) 385-4835

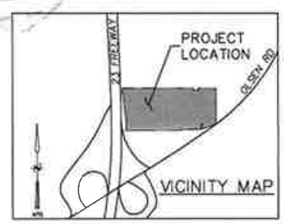
ELECTRICAL:
SOUTHERN CALIFORNIA EDISON COMPANY
ATTENTION: WILLIE CLAYTOR, CUST. SERVICE PLNR
10060 TELEGRAPH ROAD
VENTURA, CA 93004-1705
(805) 654-7315

WATER:
CAMROSA WATER DISTRICT
7385 SANTA ROSA ROAD
CAMARILLO, CA 93012
(805) 482-6562

TELEPHONE:
SBC
2130 WARPAVE, RM. 127
SIMI VALLEY, CA 93065
(805) 482-6562

FLOOD:
VENTURA COUNTY FLOOD CONTROL DISTRICT
ATTENTION: BILL HAYDON
800 SOUTH VICTORIA AVENUE
VENTURA, CA 93009

CABLE TV:
ADELPHIA COMMUNICATIONS 485 EAST ST. UNIT E SIMI VALLEY, CA 93065 (805) 526-3188



PROPOSED PARCEL 1
SINGLE FAMILY RESIDENCE
41.14 AC. GROSS

PROPOSED PARCEL 2
SINGLE FAMILY RESIDENCE
AREA=54.74 AC. GROSS

PROPOSED PARCEL 3
SINGLE FAMILY RESIDENCE
67.95 AC. GROSS

PROPOSED PARCEL 4
SINGLE FAMILY RESIDENCE
AREA=49.62 AC. GROSS

LEGEND

FD FIRE DEPARTMENT
FH FIRE HYDRANT

LOCATION OF PLUMMER'S MARIPOSA LILIES REMOVED FROM

LOCATION OF PLUMMER'S MARIPOSA LILIES MOVED TO

SCALE: 1"=200'
0 200 400 600

WDID# 456C329511

GP-9709 APN- 594-0-010-035

	REVISION DESCRIPTION	RC	APP	DATE
D				
C				
B				
A				

MAP PREPARED BY QUANG TRAN, P.E.

ENGINEERING GROUP, INC.
353 N. LANTANA ST., #333
CAMARILLO, CA 93010
(818)363-3659 (805) 388-4783 FAX

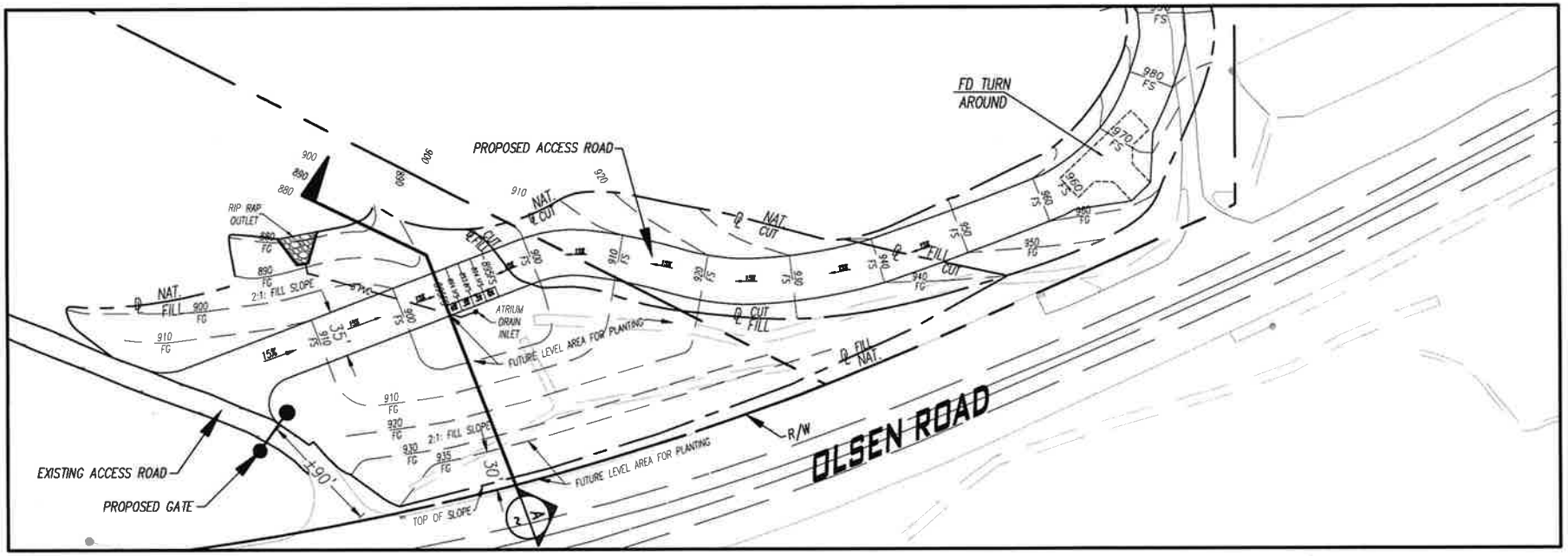
Mitigated Negative Declaration
SD06-0041
Attachment 3 - PMW / LLS Map

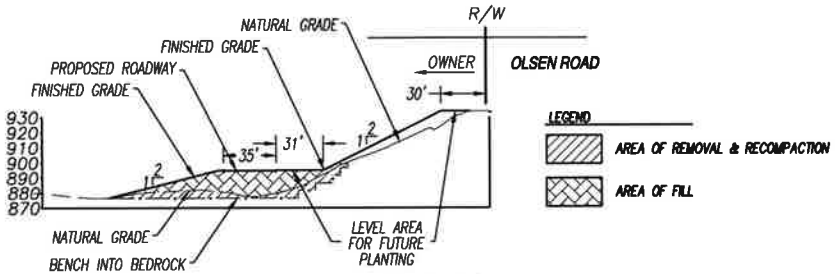
PARCEL MAP WAIVER NO. SD06-0044
2127 OLSEN ROAD
SIMI VALLEY, CA 93065

SHEET 1 OF 1

DATE 10/25/2018

ROADWAY EXHIBIT





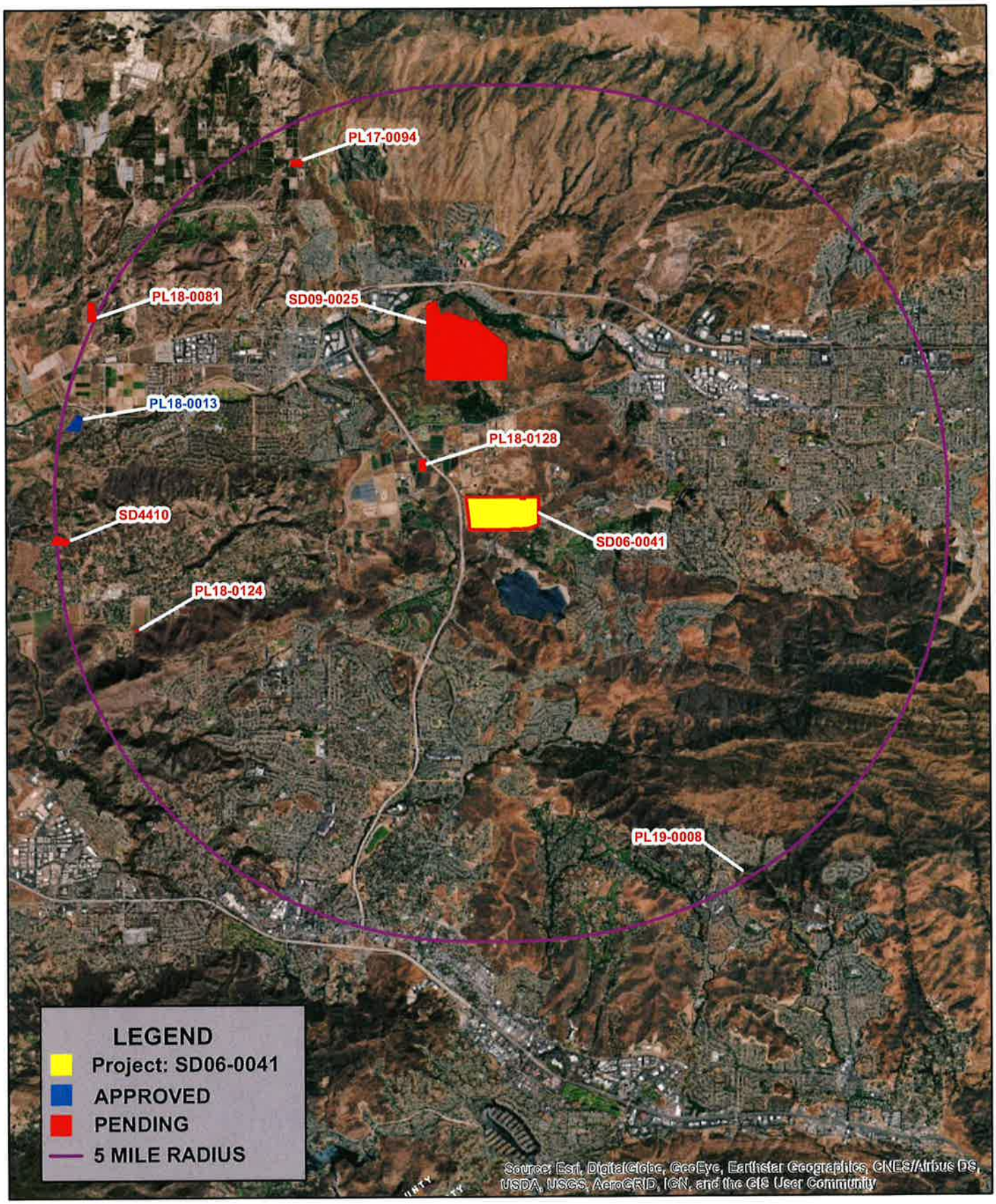
CROSS SECTION A

SCALE: 1"=80'

PROJECT: 2127 OLSEN ROAD
OWNER: ROBERT DAY
DATE: 02/05/2014

ENGINEERING GROUP, INC.
2219 E. THOUSAND OAKS BLVD., SUITE 405 (818) 383-3656
THOUSAND OAKS, CA. 91362 (805)419-4893 FAX

Mitigated Negative Declaration
SD06-0041
Attachment 4 - Road Realignment



Ventura County, California
Resource Management Agency
GIS Development & Mapping Services
Map Created on 02-07-2019
This aerial imagery is under the copyrights of Pictometry
Source: Pictometry, Jan 2017

Mitigated Negative Declaration
SD06-0041
Attachment 5 - Pending and Approved Projects Map

0 0.75 1.5 Miles

Disclaimer: This Map was created by the Ventura County Resource Management Agency, Mapping Services - GIS which is designed and operated solely for the convenience of the County and related public agencies. The County does no warrant the accuracy of this mapand no decision involving a risk of economic loss or physical injury should be made in reliance thereon.

Initial Study Biological Assessment

Original ISBA report date: October 27, 2009

Revision report date(s): January 19, 2012; revised March 24, 2015; revised June 23, 2015; revised August 14, 2015; revised October 19, 2018.

Case number (to be entered by Planning Div.)**:** SD06-0041

Permit type: Large lot parcel map

Applicant: Mr. Robert Day

Case Planner: Ms. Kristina Boero

Total parcel(s) size: 213 acres

Assessor Parcel Number(s): 594-0-010-035

Development proposal description:

The applicant proposes to subdivide the approximately 213.46 acre property known as Day Farms into four (4) separate parcels that would each be a minimum of 40 acres. Specifically, Parcel one (1) will consist of 41.67 acres; Parcel two (2) will consist of 54.3 acres; Parcel three (3) will consist of 67.18 acres; and, Parcel four (4) will consist of 53.24 acres.

Prepared for Ventura County Planning Division by:

As a Qualified Biologist, approved by the Ventura County Planning Division, I hereby certify that this Initial Study Biological Assessment was prepared according to the Planning Division's requirements and that the statements furnished in the report and associated maps are true and correct to the best of my knowledge.

Qualified Biologist (signature):		Date: October 19, 2018
Name (printed): Jim Anderson	Title: Senior Biologist	Company: Envicom Corporation
Phone: 818 879-4700 ext. 234	email: janderson@envicomcorporation.com	
Role: Conducted spring botanical survey and updated vegetation mapping of proposed development footprint in 2018, and identified potential deed restricted areas to serve as mitigation for project impacts to coastal sage scrub. Edits to report as requested by County Biologist Manjunath Venkat following County site visit on September 14, 2018. Edits to report per revised site plan dated March 18, 2015 and Ventura County memorandum *Day Farms 4-Lot Subdivision (SD06-0041) – Revisions to ISBA* dated May 14, 2014. Edits to report as requested by Whitney Wilkinson in email to Travis Cullen, dated June 5, 2015. Edits to report as requested by Kristina Boero in email to Jim Anderson and Whitney Wilkinson on July 15, 2015. Edits to report as requested by Whitney Wilkinson in email to Jim Anderson on July 15, 2015. Preparation of deed restricted areas map.		
Qualified Biologist (signature):		Date: January 19, 2012
Name (printed): Carl Wishner	Title: Principal Biologist	Company: Envicom Corporation
Phone: 818 879-4700	email: cbwishner@gmail.com	
Role: Surveys and report preparation.		
Other Biologist (signature):		Date: January 19, 2012
Name (printed): Travis Cullen	Title: Chief Operating Officer	Company: Envicom Corporation
Phone: 818 879-4700	email: tcullen@envicomcorporation.com	
Role: Report preparation and editor.		

Initial Study Checklist

This Biological Assessment DID provide adequate information to make recommended CEQA findings regarding potentially significant impacts.

		Project Impact Degree of Effect				Cumulative Impact Degree of Effect			
		N	LS	PS-M*	PS	N	LS	PS-M*	PS
A	Endangered, threatened or rare species (includes nests)			PS-M				PS-M	
B	Wetland habitat			PS-M				PS-M	
C	Coastal habitat	N				N			
D	Wildlife movement routes			PS-M				PS-M	
E	Locally important species/communities			PS-M				PS-M	

N: No impact
LS: Less than significant impact
PS-M: Potentially significant unless mitigation incorporated.
PS: Potentially significant
* DO NOT check this box unless the Biological Assessment provided information adequate enough to develop mitigation measures that reduce the level of impact to less than significant.

Contents

Maps

Attachments

Summary

The subject property includes natural plant communities (alliances) consisting of chamise chaparral, California sagebrush scrub, California buckwheat scrub, purple sage scrub, black sage scrub, California walnut groves, coast live oak woodland, salt marsh bulrush marshes, creeping ryegrass turf, and pale spike-rush marshes. Other introduced alliances include avocado orchard, and peppertree groves. In addition, there are agricultural cultivated oats, cleared land, and urban/disturbed built-up lands. There is an ephemeral drainage that traverses the site from the southeast to northwest that feeds into a vernal pool located in the northwest corner of the site. The subject property is mapped partially within the Critical Habitat for coastal California gnatcatcher (*Polioptila californica californica*) and Riverside fairy shrimp (*Streptocephalus woottonii*). Special-status plant communities, and observed and potentially occurring special-status plant and animal species are largely restricted to the coastal scrub and chaparral habitat and the vernal pool. The subject property does not contain coastal habitat. It is located within a mapped wildlife movement linkage.

The proposed project would subdivide an approximate 213.46-acre property into four (4) separate parcels that would each be a minimum of 40 acres. Anticipated future development affecting undeveloped areas at the site includes construction of a single-family residence on proposed Parcel 2 and an access roadway to the residence on proposed Parcels 2 and 4. Prior to implementation of the mitigation measures herein, construction of this residence and access road would have potentially significant impacts to Endangered, Threatened, or Rare Animal or Plant Species, wetlands, wildlife movement, and locally important species. Future development of the residence and access road would not directly impact the vernal pool on Parcel 1, and is not anticipated to result in significant indirect impacts thereto. Also, the federally Threatened Conejo dudleya (*Dudleya parva*), which is present on the property, is not within or near the project footprint and would be avoided. Additional permits required for development of the residence and access road may include Responsible Resource Agency permits from the CDFW (1602), ACOE (404) and RWQCB (401), as well as an oak tree permit. Mitigation in the form of restoration of coastal sage scrub habitat at a 2:1 ratio would be required to offset impacts of 3.42 acres to sensitive Venturan coastal sage scrub, of which 1.60 acres is also designated Critical Habitat for the potentially occurring coastal California gnatcatcher. To accomplish this, the Applicant proposes to deed restrict a portion of proposed Parcels 2 and 3, which would consist of a 6.84-acre area of undeveloped high-quality chamise chaparral and coastal sage scrub habitats. Mitigation in the form of restoration of permanent impacts at a 3:1 ratio and temporary impacts at a 1:1 ratio would be required to offset the impacts to riparian habitats. Additionally, prior to issuance of a grading permit, the applicant shall conduct protocol coastal California gnatcatcher surveys, consult with CDFW/USFWS, and provide the County with proof of consultation and compliance with consultation requirements.

Section 1: Construction Footprint Description

Construction Footprint Definition (per the Ventura County Planning Division): The construction footprint includes the proposed maximum limits of temporary or permanent direct land or vegetation disturbance for a project including such things as the building pad(s), roads/road improvements, grading, septic systems, wells, drainage improvements, fire hazard brush clearance area(s), tennis courts, pools/spas, landscaping, storage/stockpile areas, construction staging areas, fire department turnarounds, utility trenching and other grading areas. The construction footprint on some types of projects, such as mining, oil and gas exploration or agricultural operations, may be quite different than the above.

Development Proposal Description:

The proposed project includes a request for a parcel map exemption for APN 594-0-010-035 to subdivide the parcel into four parcels. The following is breakdown of the size of each of the proposed parcels to be created:

- Parcel 1 – 41.67 acres
- Parcel 2 – 54.3 acres
- Parcel 3 – 67.18 acres
- Parcel 4 – 53.24 acres

Construction Footprint Size

Although not a part of the proposed project, which consists of the subdivision, the anticipated future development at the site that would affect previously undeveloped areas includes construction of a residence on proposed Parcel 2 and an access roadway to the residence on proposed Parcels 2 and 4. The construction footprint including fuel modification for this residence and access road totals 9.23 acres. The following is a breakdown of the anticipated future improvements that contribute to the total construction footprint.

Parcel 1 – 0.00 acres

Parcel 2 – 7.64 acres

- Single-family residence
- Fuel modification clearance around structures, roadway to residence, and access road.
- Roadway to residence
- Main access road to new residence
- Leach field and pipeline for new residence

Parcel 3 – 0.00 acres

Parcel 4 – 1.59 acres

- Main access road to new residence on Parcel 2
- Fuel modification clearance around access road

Development Area Size (construction footprint size without roadway and brush clearance area)

The development area size for the new residence on Parcel 2 would be approximately 2.58 acres.

Project Design for Impact Avoidance or Minimization

The property provides habitat for several special-status plant and animal species that are known to occur, or have potential to occur, either as resident, or on a seasonal basis. These habitats mainly consist of a seasonal wetland represented by a vernal pool, relatively large areas of coastal scrub and chaparral, and limited areas of natural woodlands of coast live oak and California walnut. The design of the buildable areas has completely avoided the vernal pool, which may support the federally Endangered Riverside fairy shrimp, although its presence there has not been confirmed as protocol surveys for the species have not been conducted. California Orcutt grass (*Orcuttia californica)*, Rocky Mountain sedge (*Shoenoplectus saximontanus*), and small-flowered morning glory (*Convolvulus simulans*) have reportedly been observed there in previous years, but not during the course of the current surveys since 2010. Clover fern (*Marsilea vestita*) and bracted verbena (*Verbena bracteata*) were confirmed here in 2010-2011.

Portions of the coastal scrub and chaparral vegetation are designated Critical Habitat for coastal California gnatcatcher. This species is potentially occurring in suitable coastal sage scrub habitats at the site. The Project avoids the federally Threatened Conejo dudleya (*Dudleya parva*), which was found in one of the patches of coastal sage scrub habitat at the site. The native habitats at the site also have high to moderate potential to support several reptiles, including coast horned lizard (*Phrynosoma blainvilli*), coastal western whiptail (*Aspidoscelis tigris stejnegeri*), and two-striped garter snake (*Thamnophis hammondii*). Several other special-status birds have high to moderate potential to occur, and possibly nesting, including southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), Allen's and Costa's hummingbirds (*Calypte costae and Selaphorus sasin,* respectively), and Bell's sage sparrow (*Artemisiospiza belli belli*). Others are not expected to be nesting, such as California horned lark (*Eremophila alpestris actia*). Special-status mammals, including three species of bats, are expected to forage here, but not roost; whereas San Diego desert woodrat (*Neotoma lepida intermedia*), and American badger (*Taxidea taxus*) may be resident. Development of the residence is sited for the most part in an already disturbed area, utilizing existing access roadway in large part.

A coast live oak (*Quercus agrifolia*) woodland in the central drainage provides potential foraging and nesting habitat for special status birds such as Allen's and Costa's hummingbirds, and potential roosting of three species of bats. Development has been sited to completely avoid this woodland, as well as a small area of California walnut (*Juglans californica*) woodland.

Coastal Zone/Overlay Zones

The project is not within the coastal zone or an overlay zone.

Zoning

OS-40

Elevation

680 to 1200 feet in elevation above mean sea level

Other

None.

Section 2: Survey Information

2.1 Survey Purpose

Discretionary actions undertaken by public agencies are required to demonstrate compliance with the California Environmental Quality Act (CEQA). The purpose of this Initial Study Biological Assessment (ISBA) is to gather enough information about the biological resources associated with the proposed project, and their potential to be impacted by the project, to make a CEQA Initial Study significance finding for biological resources. In general, ISBA's are intended to:

- Provide an inventory of the biological resources on a project site and the values of those resources.
- Determine if a proposed project has the potential to impact any significant biological resources.
- Recommend project redesign to avoid, minimize or reduce impacts to significant biological resources.
- Recommend additional studies necessary to adequately assess potential impacts and/or to develop adequate mitigation measures.
- Develop mitigation measures, when necessary, in cases where adequate information is available.

2.2 Survey Area Description

Survey Area Definition (per the Ventura County Planning Division): The physical area a biologist evaluates as part of a biological assessment. This includes all areas that could potentially be subject to direct or indirect impacts from the project, including, but not limited to: the construction footprint; areas that would be subject to noise, light, dust or runoff generated by the project; any required buffer areas (e.g., buffers surrounding wetland habitat). The construction footprint plus a 100-foot buffer—beyond the required fire hazard brush clearance boundary—(or 20-foot from the cut/fill boundary or road fire hazard brush clearance boundary – whichever is greater) is generally the minimum size of a survey area. Required off-site improvements—such as roads or fire hazard brush clearance—are included in the survey area. Survey areas can extend off the project's parcel(s) because indirect impacts may cross property lines. The extent of the survey area shall be determined by the biologist in consultation with the lead agency.

Survey Area 1 (SA1)

Location

The entirety of the subject property (currently one parcel), and a small portion of an adjacent property (under same ownership) that was formerly but not currently proposed for an access roadway were included within the survey. Therefore, the Survey Area (SA1) corresponds to the parcel boundary, and a slight extension on the adjacent property to the north. The 213-acre nearly rectangular parcel is located in the western Simi Hills, north of Olsen Road, and adjoins the east side of the SR-23 freeway.

Survey Area Environmental Setting

Topography is characterized by low to moderate relief, with relatively flat areas in the east and through a central valley area trending diagonally from the southeast to northwest, with low hills bordering the valley on the north and south, increasingly higher in the east. Elevations range from a low depression in the northwest quadrant at 680 ft, to a maximum 1,200 ft along the central eastern boundary, atop a low hill.

Drainage is primarily through the central valley from southeast to northwest, derived from ephemeral tributaries on the slopes of the hills within a deeply incised canyon in the upper reach, and channeled below in earthen ditches toward a depression in the northwest that supports a wetland that has been characterized as a "vernal pool." Overflow and sheet flows from flat areas in the west are directed toward a single 10 ft diameter culvert under the freeway, discharging into an agricultural field on the west side. Flows in the main channel through the central valley are evidently ephemeral, and the channel does not support wetland vegetation.

Existing land use is a working horse ranch, stables, corrals, riding facilities, as well as two estate residences, and ancillary buildings, a water tank, and avocado orchard. Other upland areas are natural open space with several recently constructed roadways that serve as horse riding trails. A large area atop the hill in the east has been cleared of native brush. A paved road services an offsite water tank, and the main road through the central valley is also paved.

Habitats include Agriculture, Exotic vegetation, cleared areas, Coastal Scrub and Annual Grassland, Chaparral, and Vernal Pool.

Surrounding Area Environmental Setting

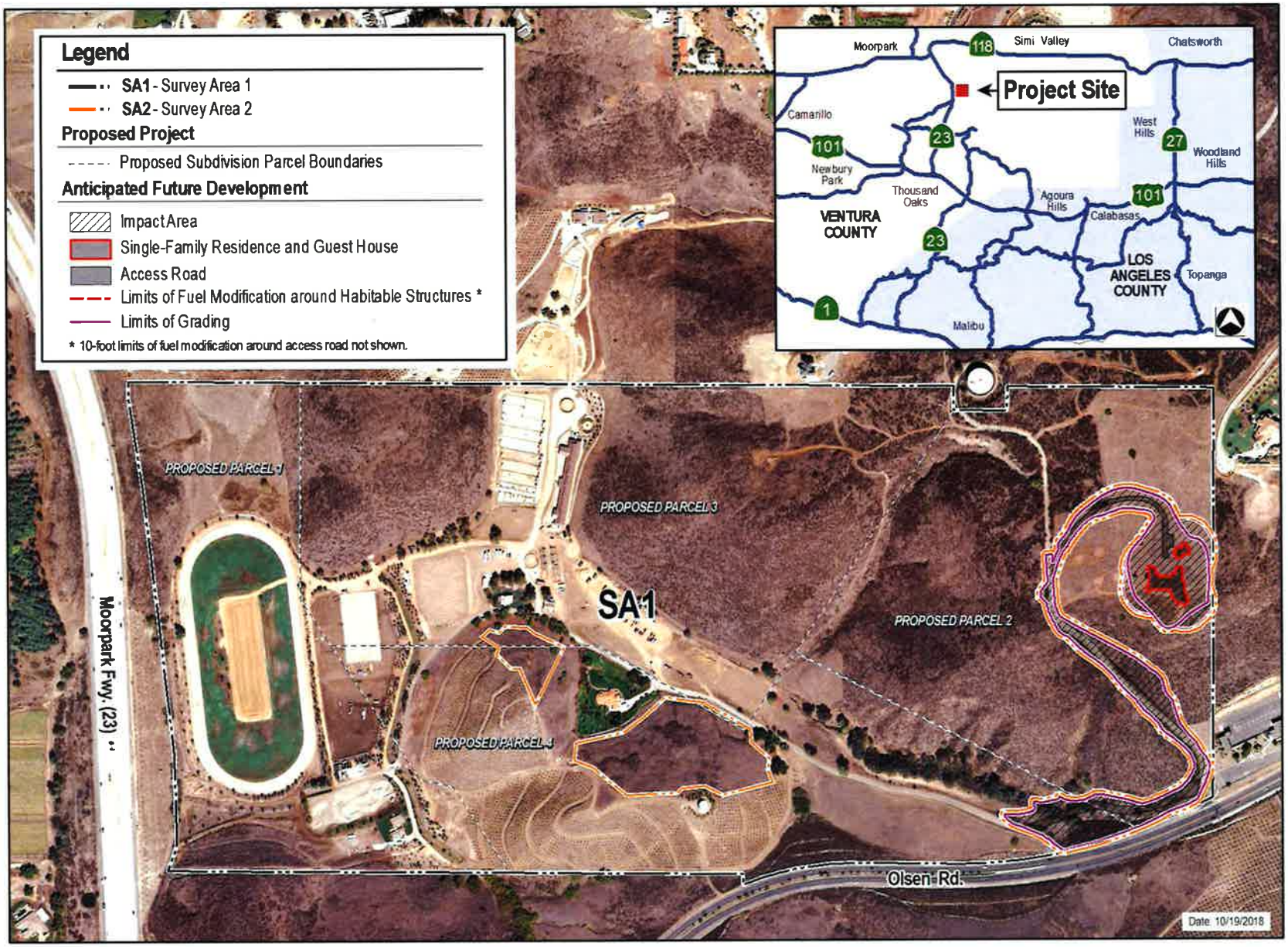
The parcel adjoins similar horse ranch property on the north boundary, an estate residence in the northeast, a power company maintenance facility and Olsen Road in the southeast, and open space lands to the south and east. The SR 23 freeway borders the western boundary. Protected lands of the Sunset Hills Open Space, and Bard Reservoir occur nearby, to the south, but not contiguous, in the surrounding area.

Cover

48% native vegetation
7% non-native vegetation
0% recently burned
8% agriculture/grazing
34% bare ground/cleared/graded
3% buildings, paved roads and other impervious cover
0% other

Survey Area 2 (SA2)

SA2 included the proposed development footprint. SA2 also included two additional areas on proposed Parcels 3 and 4, which were evaluated but ultimately not selected as deed restricted areas to mitigate for project impacts to coastal sage scrub. SA2 was surveyed in Spring 2018.



Aerial Source: CIRGIS, 2007.

envicom

Survey Area Map

0 300 600 Feet

FIGURE 1

2.3 Methodology

References

The following references and databases were reviewed prior to the surveys of SA1 in 2010 and 2011 or during preparation of the ISBA:

- California Department of Fish and Wildlife (CDFW), Biogeographic Information and Observation System (BIOS) (November 2007).
- Ventura County Planning Division, GIS Biology Map Packet (November 2008). Consists of mapped resource information for the project site, including: wetlands and water bodies; wildlife corridors/connectivity areas; vegetation; and high-resolution aerial imagery.
- Vegetation Classification of the Santa Monica Mountains National Recreation Area and Environs in Ventura and Los Angeles Counties, California. Presented to National Park Service, Santa Monica Mountains National Recreation Agency. California Department of Fish and Wildlife, Wildlife and Habitat Data Analysis Branch and California Native Plant Society. January 2006.
- California Department of Fish and Wildlife, Vegetation Classification and Mapping Program, List of California Vegetation Alliances, October 22, 2007. www.dfg.ca.gov/biogeodata/vegcamp/pdfs/NaturalCommunitiesList_Oct07.pdf
- California Department of Fish and Wildlife, Vegetation Classification and Mapping Program, List of California Vegetation Alliances, September, 2010. www.dfg.ca.gov/biogeodata/vegcamp/pdfs/natcomlist.pdf
- CNPS Inventory of Rare and Endangered Plants database, v7-08a 2-01-08, http://cnps.web.aplus.net/cgi-bin/inv/inventory.cgi/Html?item=checkbox_9.htm#g9
- BonTerra Consulting, 2012. Results of Focused Coastal California Gnatcatcher Presence/Absence Surveys for the Presidential Substation Project, Ventura County, California. Costa Mesa, CA.
- BonTerra Consulting, 2010. Results of Focused Presence/Absence Surveys for the Coastal California Gnatcatcher for the Presidential Substation Project, Ventura County, California. Costa Mesa, CA.

The following references and databases were also reviewed prior to the botanical survey and updated vegetation mapping of SA2 in Spring 2018:

- Biogeographic Information and Observation System (BIOS), CDFW, data as of June 13, 2018.
- California Natural Communities List, CDFW, January 24, 2018.
- California Natural Diversity Database (CNDDB) Rarefind 5 report for the 7.5' USGS Simi Valley West quadrangle and adjacent quadrangles, CDFW, data as of June 13, 2018.
- 2017 Locally Important Plant List, Ventura County Planning Division.
- DRAFT 2018 Locally Important Plant List, Ventura County Planning Division.
- Inventory of Rare and Endangered Vascular Plants of California report for the 7.5' USGS Simi Valley West quadrangle and adjacent quadrangles, California Native Plant Society (CNPS), data as of June 13, 2018.
- List of Special Vascular Plants, Bryophytes, and Lichens, CDFW, April 2018.
- Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Natural Communities, CDFW, March 10, 2018.
- United States Fish and Wildlife Service Critical Habitat Mapper, United States Fish and Wildlife Service (USFWS), data as of June 13, 2018.

Survey Details Table

Survey Date & Details							
Survey Key (1)	Survey Date (2)	Survey Area Map Key(s) (3)	Survey Type (4)	Time Period (5)	Methods/Constraints (6)	GPS (7)	Surveyors
SD1	8/13/2010	SA1	ISBA	8:30 am– 16:30 pm	Walking transects. The entire site was accessible.	Trimble GEOXT	Carl Wishner
SD2	8/16/2010	SA1	ISBA	8:30 am– 16:30 pm	Walking transects. The entire site was accessible.		Carl Wishner
SD3	8/26/2010	SA1	ISBA	14:30 pm– 16:30 pm	Walking transects. The entire site was accessible.	Trimble GEOXT	Carl Wishner
SD4	5/18/2011	SA1	ISBA	9:00 am- 16:00 pm	Walking transects. The entire site was accessible.		Carl Wishner
SD5	10/9/2011	SA1	ISBA	10:30 am– 12:30 pm	Walking transects. The entire site was accessible.		Carl Wishner
SD6	6/10/2015	SA1 (only performed within small section of SA1)	CDFW Jurisdictional Delineation	5:00 pm- 6:30 pm	Walked limits of CDFW jurisdictional habitat within impact area of W2 and recorded boundaries using a GPS.	Trimble GEOXT	Jim Anderson
SD7	4/27/18	SA2	Botanical	10:50 a.m. – 6:20 p.m.	Walked transects. The entire survey area was accessible.	Trimble GEOXT	Jim Anderson
SD8	5/11/18	SA2	Botanical	10:30 a.m. – 6:00 p.m.	Walked transects. The entire survey area was accessible.	Trimble GEOXT	Jim Anderson
SD9	5/23/18	SA2	Botanical	1:00 p.m. – 2:00 p.m.	Walked transects. The entire survey area was accessible.	Trimble GEOXT	Jim Anderson
ISBA..... Initial Study Biological Assessment Botanical ..... Botanical Survey							

Section 3: The Biological Inventory

See Appendix One for an overview of the types of biological resources that are protected in Ventura County.

3.1 Habitats: Plant Communities, Physical Features and Wetlands

(Initial Study Checklist A, B, C & E)

Plant Communities

Locally important or rare plant communities were found within the survey area(s).

The plant communities within SA1 were mapped in 2010 and 2011, and are shown on Figure 2 and in the Plant Communities table, below. The major plant communities and the communities of high inventory priority identified within SA1 in 2010 and 2011 are summarized at the Alliance level, below. Plant community mapping was also updated within SA2 in Spring 2018, which included the proposed development footprint and two additional areas on proposed Parcels 3 and 4. Refer to the attached *Spring 2018 Rare Plant Survey and Natural Community Mapping Report* (Envicom Corporation, October 19, 2018) for a map and discussion of the 2018 plant community mapping within SA2.

Alliances listed by the California Department of Fish and Wildlife (December 2009) that have a G1 through G3 code, considered of high inventory priority, and/or a S1 through S3 code are present. These are as follows:

Juglans californica Alliance G3S3, California walnut groves.

Bolboschoenus maritimus Alliance G4S3 Salt marsh bulrush marshes

Leymus triticoides Alliance G4S3 Creeping ryegrass turfs

Major Plant Communities Summary

Woodland Alliances

Juglans californica Alliance G3S3, California walnut groves. Limited to very small stand in a minor drainage in the south, adjacent to cleared land, avocado orchard, and buckwheat scrub on a manufactured slope adjoining Olsen Road.

Quercus agrifolia Alliance G5S4 Coast live oak woodland. Limited to a dense, mature woodland in the upper portion of the main canyon in the southeast, and a few scattered individuals at the bases of slopes on either side of the main canyon, and a single isolated individual on a highland area in the northeast. The main woodland area has very sparse understory vegetation.

Shrubland Alliances

Adenostoma fasciculatum Alliance G5S5, Chamise chaparral. This is well developed on the highland area in the east. Associates are an occasional scrub oak (*Quercus berberidifolia*), and lemonadeberry (*Rhus integrifolia*). Areas between the shrubs are occupied by California sagebrush (*Artemisia californica*), black sage (*Salvia mellifera*), California buckwheat (*Eriogonum fasciculatum*), and *Bromus/Avena* annual grasses, interspersed with rocklands, some with Bigelow's spike-moss (*Selaginella bigelovii*).

Eriogonum fasciculatum Alliance G5S5, California buckwheat scrub. This occupies the manufactured slopes adjacent to Olsen road in the southeast. California buckwheat is well distributed throughout these areas, although other coastal sage scrub species are also present, such as black sage and purple sage. California buckwheat is also a common associate among the other natural Shrubland Alliances.

Artemisia californica Alliance G5S5, California sagebrush scrub. California sagebrush is extensively distributed over the hills in the western portion of the parcel, there associated with California buckwheat, black sage, California encelia (*Encelia californica)*, black sage, and *Bromus/Avena* annual grasses, interspersed with rocklands, some with Bigelow's spike-moss. Also, there are a few minor occurrences of coast prickly-pear (*Opuntia littoralis* and *O. oricola*), and coast cholla (*Cylindropuntia prolifera [Opuntia p.]*).

Salvia leucophylla Alliance G4S4, Purple sage scrub. Small areas dominated by purple sage occur along the southwestern and western boundaries.

Salvia mellifera Alliance G4S4, Black sage scrub. Areas dominated by black sage are mapped on westerly-facing slopes in the east-central portion of the parcel. Otherwise, black sage is a common associate throughout the other native shrublands on the site.

Herbaceous Alliances

Bolboschoenus maritimus [*Scirpus m.*] Alliance G4S3, Salt marsh bulrush marshes. Limited to small, relative pure stands within the Vernal Pool, probably amounting to about 100 square feet of coverage, associated with pale spike-rush (*Eleocharis macrostachya*). A previous investigator reported Rocky Mountain sedge, which is a much smaller plant with distinctively wrinkled fruits, and a Ventura County Locally Important Species. That species has not been observed at this location by the present investigator.

Elymus triticoides [*Leymus t.*] Alliance G4S3, Creeping ryegrass turfs. Occurring as a nearly pure stand along a man-made drainage ditch traversing from south to north in the western portion of the parcel. Associated with exotic tree plantings on both sides.

Eleocharis macrostachya Alliance G4S4, Pale spike-rush marshes. Limited to areas within the Vernal Pool, rather extensive, associated mainly with swamp grass (*Crypsis schoenoides*), and small amounts of Mexican rush (*Juncus mexicanus*). Other common associates are maritime dock, clustered dock, curly dock, *(Rumex maritimus, R. conglomeratus, R. crispus,* resp.), cocklebur (*Xanthium strumarium*), and sunflower (*Helianthus annuus*). Also in occurrence is burhead (*Echinodorus berteroi*), and bracted verbena (). A previous investigator reported the sedge occurring here as Rocky Mountain sedge), which is a much smaller plant with distinctively wrinkled fruits. In addition, the federally-listed Endangered California Orcutt grass was reported at or adjacent to this location, triggering an extensive search of the entire vernal pool complex. No Orcutt grass was observed.

Other Alliances

Schinus molle Unranked Peppertree groves. Peruvian peppertrees are planted extensively throughout the managed/developed portions of the parcel, and evidently occasionally escaped in the natural highland areas.

Persea americana Avocado orchard. A substantial area on the slopes of a hill in the south-central portion of the parcel are planted with avocado trees.

Cleared Land

Much of the western portion, and central valley area is cleared land, either by grading, mowing, or through long use as a horse ranch. The original vegetation is unknown, but presumed to have been coastal scrub. A number of dirt roads traverse the highland areas, through coastal scrub and chaparral vegetation. A large highland area has been cleared in the east, probably formerly consisting of chamise chaparral. Two areas have stockpiles of sand or decomposed granite, and these appear, perhaps secondarily, to have become areas used for motocross recreational activity.

Urban/Disturbed or Built-Up

Two estate residences, numerous stables, outbuildings, large storage containers, and a water tank occur mainly in the western portion of the parcel.

Agriculture

An area of a hill in the south-central portion of the parcel is planted with avocado trees. Another area on the east-central slopes is planted with cultivated oats (*Avena sativa*).

Undifferentiated Exotic Vegetation

Exotic trees and shrubs, and limited areas of turf grasses are planted extensively on the managed/developed portions of the ranch grounds, and around the estate residences.

Plant Communities								
Map Key (1)	**SVC Alliance**	**SVC Association**	**Misc. (2)**	**Status (3)**	**Condition (4)**	**Acres Total**	**Acres Impacted**	**Comments (5)**
PC1	*Juglans californica*	California walnut groves	n/a	G3S3	Intact	0.17	0.00	limited area
PC2	*Quercus agrifolia*	Coast live oak woodland	n/a	G5S4	Intact	2.48	0.06 (Indiv. trees)	restricted to upper canyon drainage and individual trees adjacent to Olsen Road
PC3	*Adenostoma fasciculatum*	Chamise chaparral	n/a	G5S5	Intact	15.00	0.34	highland areas only, some cleared
PC4	*Eriogonum fasciculatum*	California buckwheat scrub	n/a	G5S5	Potentially introduced	5.59	1.03	California buckwheat possibly introduced as slope stabilizer along Olsen Road
PC5	*Artemisia californica*	California sagebrush scrub	n/a	G5S5	Intact	70.53	2.39	variable composition, uplands in west
PC6	*Salvia leucophylla*	Purple sage scrub	n/a	G4S4	Intact	3.31	0.00	limited dominance
PC7	*Salvia mellifera*	Black sage scrub	n/a	G4S4	Intact	3.32	0.00	limited dominance
PC8	*Bolboschoenus maritimus*	Salt marsh bulrush marshes	n/a	G4S3	Intact	0.04	0.00	restricted to vernal pool
PC9	*Elymus triticoides* (*Leymus t.*)	Creeping ryegrass turfs	n/a	G3S3	Introduced/ Disturbed	0.74	0.00	along man-made drainage, possibly introduced
PC10	*Eleocharis macrostachya*	Pale spike-rush marshes	n/a	G4S4	Intact	3.24	0.00	restricted to vernal pool
PC11	Agriculture: *Persea americana*	n/a	Agriculture	NA	Introduced	15.56	0.00	on hill in south-central
PC12	Agriculture: cultivated oat	n/a	Agriculture	NA	Introduced	1.00	0.00	limited area
PC13	Cleared Land	n/a	Cleared Land	NA	Disturbed	79.23	5.41	extensive, mowed, roads, riding areas, etc.
PC14	Urban/Disturbed Built-up	n/a	Urban/Disturbed Built-up	NA	Built-up	0.97	0.00	extensive, residences, stables, outbuildings, water tank, etc.
PC15	Undifferentiated Exotic Vegetation	n/a	Undifferentiated Exotic Vegetation	NA	Introduced	10.48	0.00	extensive
PC16	*Schinus molle*	n/a	Exotic	Unranked	Introduced	1.95	0.00	planted extensively
					Totals	213.61	9.23	

Plant Communities
LIC ..... Locally Important Plant Community
ESHA ..... Environmentally Sensitive Habitat Areas (Coastal Zone)
CDFW Rare:
G1 or S1..... Critically Imperiled Globally or Subnationally (state)
G2 or S2..... Imperiled Globally or Subnationally (state)
G3 or S3..... Vulnerable to extirpation or extinction Globally or Subnationally (state)
Cal OWA ..... Protected by the California Oak Woodlands Act

Physical Features

Physical Features Table

No unique or rare physical features, such as rock outcroppings, riprap, caves or cliff faces that may be important to the site's biological resources were observed on the site.

Physical Features		
Map Key (1)	**Physical Feature (2)**	**Comments (3)**
n/a	n/a	n/a

Waters and Wetlands

See Appendix One for an overview of the local, state and federal regulations protecting waters, wetlands and riparian habitats. Wetlands are complex systems; delineating their specific boundaries, functions and values generally takes a level of effort beyond the scope of an Initial Study Biological Assessment (ISBA). The goal of the ISBA with regard to waters and wetlands is simply to identify whether they may exist or not and to determine the potential for impacts to them from the proposed project. This much information can be adequate for designing projects to avoid impacts to waters and wetlands. Additional studies are generally warranted to delineate specific wetland boundaries and to develop recommendations for impact minimization or impact mitigation measures.

Waters and/or wetlands were found within the survey area(s).

Waters and Wetlands Summary

An area characterized as a Vernal Pool (W1) is located in the northwest portion of the parcel. It receives direct flows through earthen ditches that catch ephemeral streams emanating from highlands on the parcel, as well as sheet flows from cleared areas. The Vernal Pool area is separated by an earthen dam from a man-made pond on the adjacent parcel to the north. Overflows are directed to a large conduit under the SR 23 freeway into an agricultural field on the west side. There is no direct or permanent connection of the contributory streams (W2) or the vernal pool to any adjacent navigable waterway. Therefore, the streams (W2) and vernal pool are not likely to be considered as Waters of the United States under provisions of the federal Clean Water Act. The Vernal Pool area itself would nonetheless be classified as a wetland from the standpoint of parameters of predominantly hydrophytic vegetation, hydric soils, and wetland hydrology. The California Department of Fish and Wildlife would likely consider the Vernal Pool and contributory streams under their jurisdiction under Fish and Game Code Section 1602. W3 is a small man-made drainage that originates southwest of the large barn at the site, which receives runoff from concrete v-ditches. This drainage is potentially not under the jurisdiction of CDFW.

The quality of the Vernal Pool is degraded by ground modifications (earth dam) that separates it from the downstream area to the north, and by invasion by exotic species, sedimentation, and nutrient enrichment. The prior characteristics of the wetland are unknown.

Waters and Wetlands Table

Waters and Wetlands						
Map Key (1)	Wetland Type (2)	Wetland Name (if any)	Wetland Status (3) (if known)	Wetland Size (4)	Hydrologic Status (5)	Primary Water Source (6)
W1	Vernal Pool	Unnamed	CDFW, County	Approx. 2 ac -	Ponded: standing water, seasonal	Runoff
USACE.....U.S. Army Corps of Engineers regulated CDFW .....California Department of Fish & Wildlife regulated County.....County General Plan protected wetland WPD.....Co. Watershed Protection District (red-line stream)						

Waters and Wetlands (continued)			
Map Key	County Wetland Significance (7)	Wetland Distance from Project (8)	Comments (9)
W1	Significant	200 ft	No connectivity or adjacency to Traditional Navigable Waterways.

Waters and Wetlands						
Map Key (1)	Wetland Type (2)	Wetland Name (if any)	Wetland Status (3) (if known)	Wetland Size (4)	Hydrologic Status (5)	Primary Water Source (6)
W2	Ephemeral stream	Unnamed	CDFW, County	7,310 linear feet -	Dry Seasonal	Runoff
W3	Man-made ephemeral drainage	Unnamed	Unknown	290 linear feet	Dry	Runoff
USACE.....U.S. Army Corps of Engineers regulated CDFW .....California Department of Fish & Wildlife regulated County.....County General Plan protected wetland WPD.....Co. Watershed Protection District (red-line stream)						

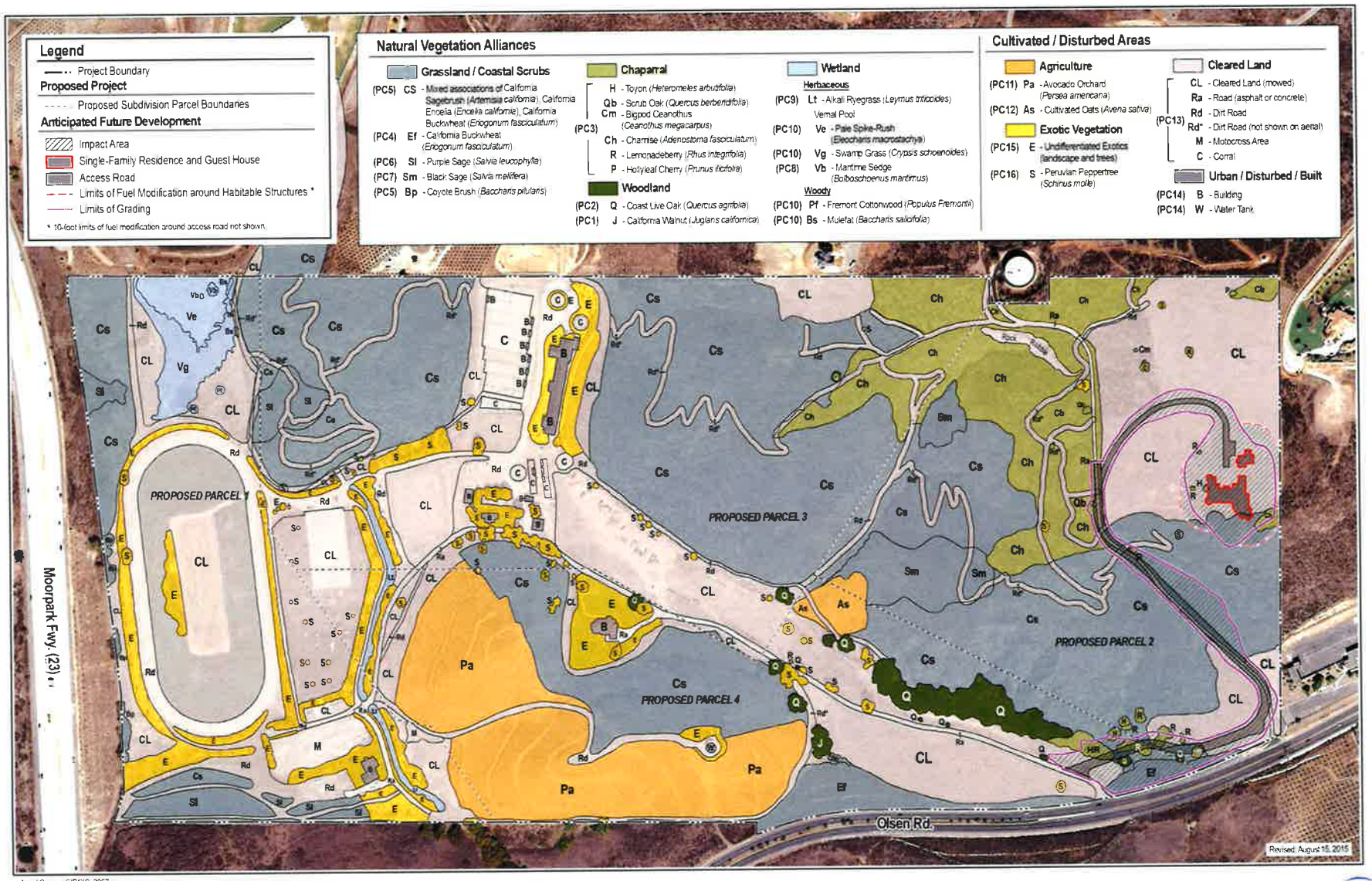
Waters and Wetlands (continued)			
Map Key	County Wetland Significance (7)	Wetland Distance from Project (8)	Comments (9)
W2	Not significant	0 ft	No connectivity or adjacency to Traditional Navigable Waters. No recommended buffer.
W3	Not significant	0 ft	No connectivity or adjacency to Traditional Navigable Waters. No recommended buffer.

Water/Wetland Buffers		
Map Key (1)	Recommended Buffer (2)	Comments
W1B1	20'	Existing dirt roadways on east and west sides are approximately within 20' buffer.
W2B1	0'	Existing dirt roadways and cleared areas are not buffered.

Other Areas/Observations

None.

Other Observations		
Map Key (1)	Describe Features (Violations, other observations, etc.)	Comments
n/a	n/a	n/a



Aerial Source: CIRGIS, 2007.

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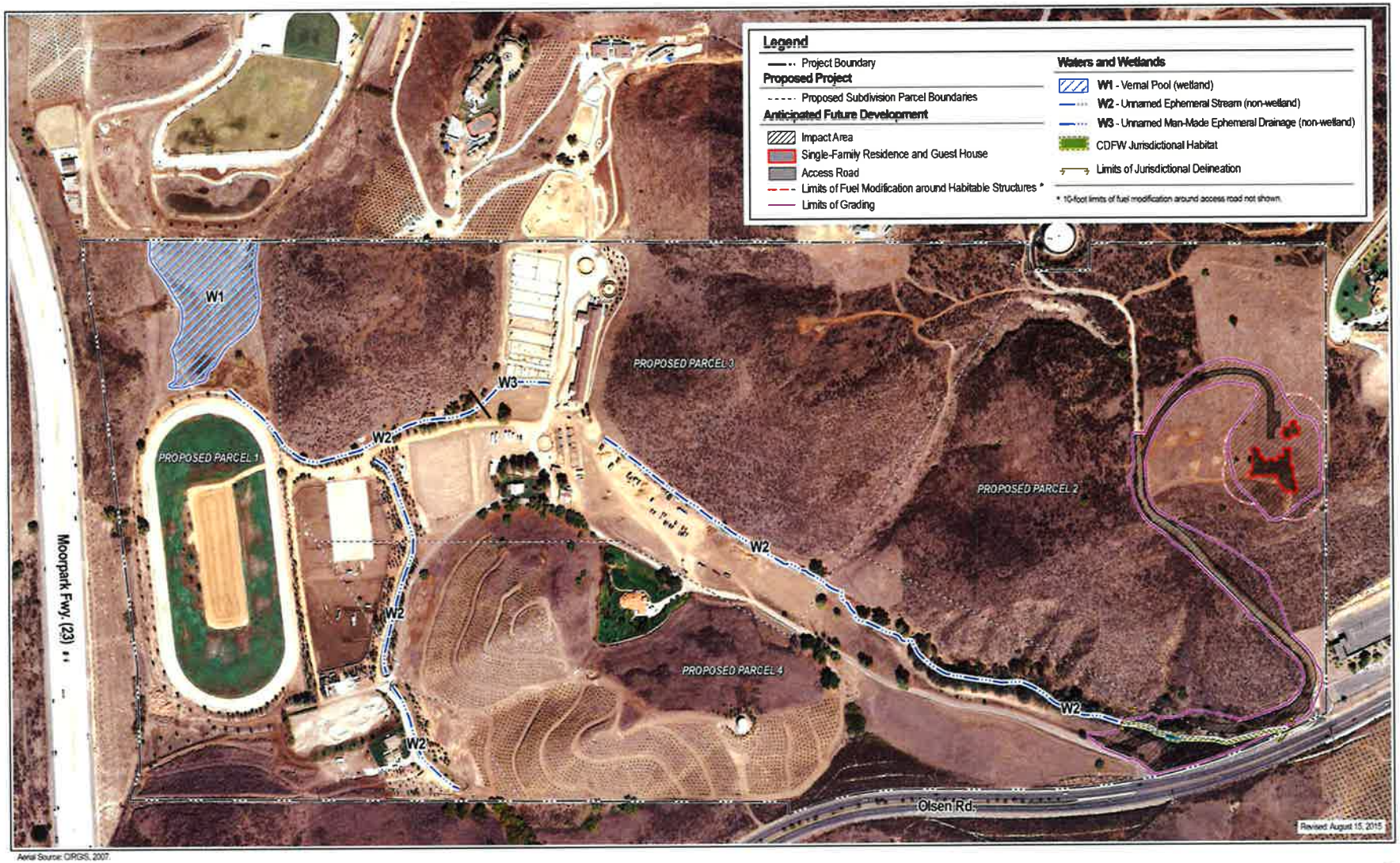
SD06-0041 - INITIAL STUDY BIOLOGICAL ASSESSMENT

Vegetation Communities Map

0 175 350 Feet

FIGURE 2



Aerial Source: CIRGIS, 2007.

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Waters and Wetlands Map

0 175 350 Feet

FIGURE 3

3.2 Species

Observed Species

During the course of surveys of SA1 conducted in 2010 and 2011 as well as those performed by prior observers (RTC 2003; Rincon 2007; Burgess 200?) 188 vascular plant species were found, which were comprised of three native ferns, and 185 flowering plants including 146 dicot species (44 introduced) and 39 monocot species (16 introduced). The proportion of introduced species found during these surveys was 32 percent. Two reptile species were observed as well as 67 bird species (two introduced) and six mammal species (one introduced). Refer to Appendix 2 for a full list of species observed during the 2010 and 2011 surveys of SA1, or reported by others. Special-status species observed in 2010-2011 include bracted verbena [VCLIP], one individual Plummer's mariposa lily (*Calochortus plummerae*) [CRPR 4.2], a small stand of California walnuts [CRPR 4.2], and clover fern [VCLIP]. Additional special-status species reported previously by others, but not seen in 2010-2011 include California Orcutt grass [SE, FE; VCLIP], Catalina mariposa lily (*Calochortus catalinae*) [CRPR 4.2], small-flowered morning-glory [VCLIP (proposed for delisting); CRPR 4.2], and Rocky Mountain sedge [VCLIP]. Two special-status animal species, namely, oak titmouse (*Baeolophus inornatus*), and Nuttall's woodpecker (*Picoides nuttallii*), both CDFW "Special Animals," were observed. Both have potential to nest on site, especially in oak woodland, or possibly in introduced trees. A nesting pair of federally Threatened coastal California gnatcatchers was observed very close to the southern property boundary by BonTerra Consulting in May/June 2012. It can be safely assumed that these birds would have foraged in the coastal sage scrub habitats in the southwestern corner of the property in 2012, and this species may continue to be present on-site. However, the current presence/absence of coastal California gnatcatchers at the site is unknown.

During the course of surveys of SA2 conducted in Spring 2018, 95 vascular plants species were found, including one (1) fern ally, 72 dicots, and 22 monocots. Of these, 66 species were native and 29 were non-native. Special-status plant species observed within SA2 during the Spring 2018 survey included Conejo dudleya (*Dudleya parva*) [FT], small-flowered morning-glory [VCLIP (proposed for delisting), CRPR 4.2], and Catalina mariposa lily (*Calochortus catalinae*) [CRPR 4.2]. Refer to the attached *Spring 2018 Rare Plant Survey and Natural Community Mapping Report* for maps showing the locations of these special-status species as well as lists of the vascular plants observed at SA2 in Spring 2018.

Endangered, Threatened, Rare, and Locally Important Species and Nests

(Initial Study Checklist A & E)

See Appendix One for definitions of the types of special status species that have federal, state or local protection and for more information on the regulations that protect birds' nests.

Endangered, threatened, rare, or locally important species were observed or have a moderate to high potential to occur within the survey area(s).

Habitat suitable for nests of birds protected under the Migratory Bird Treaty Act does exist within the survey area(s).

Special Status Species Summary

Special Status Species						
Map Key (1)	Survey/ Source (2)	Scientific Name (3)	Common Name	Species' Status (4)	Potential to Occur (5)	Habitat Requirements (6)
SSO1	SD1	*Calochortus plummerae*	Plummer's mariposa lily	CRPR 4.2	Observed	Dry, rocky coastal scrub, chaparral, yellow pine forest, below 1,700m
SSO2	SD1	*Verbena bracteata*	bracted verbena	VCLIP	Observed (Envicom 2010)	Open, disturbed places, pond or lake margins, below 2,200m. Restricted here to Vernal Pool area.
SSO3	SD1	*Baeolophus inornatus*	oak titmouse	SA	Observed (Envicom 2010)	Oaks in valley foothill and montane hardwood, valley foothill hardwood conifer and riparian habitats, nest is woodpecker hole, natural cavity or nest box.

Special Status Species						
SSO4	SD1	*Picoides nuttallii*	Nuttall's woodpecker	SA	Observed (Envicom 2010)	Low elevation riparian deciduous and oak habitats, nests mostly in dead trunk or limb of willow, cottonwood, sycamore, or alder, rarely oak.
SSO5	SD1	*Juglans californica*	California walnut	CRPR 4.2	Observed (Envicom 2010)	Chaparral, coastal scrub, woodland, slopes, canyons, alluvial habitats, below 900m
SSO6	Burgess 200?	*Orcuttia californica*	California Orcutt grass	SE, FE VCLIP	Observed/ Reported (Burgess 200?)	Vernal pools, below 660m
SSO7	Burgess 200?; RTC 2003	*Marsilea vestita v.*	clover fern	VCLIP	Observed Envicom May 2011/Reported (Burgess 200?; RTC 2003)	Creek beds, flood basins, vernal pools, below 2,200m
SSO8	Burgess 200?; RTC 2003	*Schoenoplectus saximontanus (Scirpus s.)*	Rocky Mountain sedge	VCLIP	Observed/ Reported (Burgess 200?; RTC 2003)	Ponds, lake margins, below 300m
SSO9 (Also, see map in attached report)	RTC 2003	*Convolvulus simulans*	small-flowered morning-glory	CRPR 4.2,	Observed/ Reported (RTC 2003); Observed 2018	Chaparral, coastal scrub, valley and foothill grassland; wet clay, serpentine ridges, below 700m
SSO10	RTC 2003	*Calochortus catalinae*	Catalina mariposa lily	CRPR 4.2	Observed/ Reported (RTC 2003); Observed 2018	Valley and foothill grassland, chaparral, coastal scrub, cismontane woodland, in heavy soils, open slopes, openings in brush, below 700m
SSO11 (Also, see map in attached report)	SD2	*Dudleya parva*	Conejo dudleya	FT, CRPR 1B.2	Observed 2018	Rocky or gravelly clay or volcanic rock substrates in coastal scrub and grassland habitats.
SSP1	CNDDB	*Streptocephalus woottonii*	Riverside fairy shrimp	FE	Moderate	Seasonally astatic pools. A portion of the property is included within mapped Critical Habitat for this species, although there are no records of occurrence of this species at this location. See Figure 5
SSP2	Zeiner et al. 1988	*Aneides lugubris*	arboreal salamander	VCLIA	Low	Valley-foothill hardwood and chaparral in so. California. Dry season refuge in natural or man made moist areas.
SSP3	Zeiner et al. 1988	*Taricha torosa t.*	coast range newt	SSC	Low	Optimum habitats in or near streams, valley foothill hardwood and hardwood conifer habitats
SSP4	Zeiner et al. 1988	*Spea hammondii*	western spadefoot	SSC	Low	Grasslands, valley-foothill hardwood, with shallow temporary pools.

Special Status Species						
SSP5	Zeiner et al. 1988	*Phrynosoma blainvillii (P. coronata b.)*	Coast Horned Lizard	SSC	High	Distributed throughout the foothills and coastal plains from Los Angeles area to northern Baja California. A ground dweller, it frequents areas with abundant, open vegetation such as chaparral or coastal scrub.
SSP6	Zeiner et al. 1988	*Aspidoscelis tigris stejnegeri*	coastal western whiptail	SA	High	Chaparral, coastal scrub, valley-foothill hardwood, riparian, annual grass. Sandy areas, ridges, harvester ants.
SSP7	Zeiner et al. 1988	*Anniella pulchra p.*	silvery legless lizard	SSC	Low	Valley foothill hardwood, chaparral, coastal scrub. Sandy or loose organic soils or where there is plenty of leaf litter.
SSP8	Zeiner et al. 1988	*Diadophis punctatus modestus*	San Bernardino ringneck snake	SA	Low	Open, relatively rocky areas within valley-foothill hardwood, chaparral, annual grassland.
SSP9	Zeiner et al. 1988	*Salvadora hexalepis virgultea*	coast patchnose snake	SSC	Low	Chaparral, coastal scrub, desert scrub, washes, sandy flats and rocky areas.
SSP10	Zeiner et al. 1988	*Thamnophis hammondii*	two-striped garter snake	SSC	Moderate	Permanent or semi-permanent bodies of water in a variety of habitats. Adjacent pond to north of Vernal Pool might support this mainly aquatic species.
SSP11	Wishner, pers. obs. 199?	*Arizona elegans occidentalis*	western glossy snake	VCLIA	Low	Desert, chaparral, sagebrush, valley-foothill hardwood, annual grass, sandy or rocky areas. Site mapped out of range in Zeiner et al. 1988, observed and collected by Wishner in Dry Canyon, north of Simi.
SSP17	CNDDB	*Polioptila californica c.*	Coastal California gnatcatcher	FT	High. Presumed present on-site in 2012.	Obligate, permanent resident of coastal scrub below 2,500 ft in arid washes, mesas, and on slopes. Site is within designated Critical Habitat. Site is largely included within mapped Critical Habitat for this species. See Figure 5.
SSP18	Zeiner et al. 1990	*Accipiter cooperii*	Cooper's hawk (nesting)	SA	High	Dense stands of trees including oaks, conifers, riparian woodland.
SSP19	Zeiner et al. 1990	*Circus cyaneus*	Northern harrier (nesting)	SSC	Low	Open areas, particularly grasslands, wet meadows and marshes. Not nesting in region, expected foraging in winter.
SSP20	Zeiner et al. 1990	*Elanus leucurus*	white-tailed kite (nesting)	SFP	Low	Riparian woodlands near agricultural fields, grasslands, scrub. Possible foraging on site, not expected to nest.
SSP21	Zeiner et al. 1990	*Calypte costae*	Costa's hummingbird (nesting)	SA	High	Desert wash, riparian, valley-foothill hardwood, coastal scrub, chaparral. Possibly nesting in a variety of trees and shrubs, Apr-Jul.
SSP22	Zeiner et al. 1990	*Selasphorus sasin*	Allen's hummingbird (nesting)	SA	High	Coastal scrub, valley-foothill hardwood, riparian, urban habitats. Possibly nesting in a variety of trees and shrubs, Feb-Aug.
SSP23	Zeiner et al. 1990	*Lanius ludovicianus*	loggerhead shrike (nesting)	SSC	Low	Open habitats with scattered shrubs, trees, posts, fences, utility lines, other perches. Open-canopied foothill woodland, , riparian, only rarely in heavily urbanized areas, but often in open cropland. Possible foraging on site, not expected to nest.
SSP24	Zeiner et al. 1990	*Eremophila alpestris actia*	California horned lark	SA	Moderate	Open, short, very sparse grasslands and forb dominated areas. Possible foraging on site in winter, not expected to nest.

Special Status Species						
SSP25	Zeiner et al. 1990	*Aimophila ruficeps canescens*	So. California rufous-crowned sparrow	SA	High	Coastal scrub, chaparral, steep rocky hillsides.
SSP26	Zeiner et al. 1990	*Artemisiospiza belli b. (Amphispiza belli b.)*	Bell's sage sparrow (nesting)	SA	High	Coastal scrub, chaparral.
SSP27	Zeiner et al. 1990a	*Antrozous pallidus*	pallid bat	SSC	Moderate	Deserts, scrublands, grasslands, woodlands, forest, rocky areas for roosting. Expected occasional foraging over site, not roosting.
SSP28	Zeiner et al. 1990a	*Eumops perotis californicus*	western mastiff bat	SSC	Moderate	Semi-arid to arid coastal scrub, chaparral, grasslands, conifer forest and hardwood woodlands, roosts in cliff, buildings, trees, and tunnels. Expected occasional foraging over site, possible roosting.
SSP29	Zeiner et al. 1990a	*Myotis ciliolabrum*	western small-footed myotis	SA	Moderate	Arid woodlands, brushlands, near water, roosts in caves, buildings, mines. Semi-arid to arid coastal scrub, chaparral, grasslands, conifer forest and hardwood woodlands, roosts in cliff, buildings, trees, and tunnels. Expected occasional foraging over site, possible roosting.
SSP30	Zeiner et al. 1990a	*Neotoma lepida intermedia*	San Diego desert woodrat	SSC	Moderate	Coastal scrub, chaparral, rocky outcrops. No nests were observed.
SSP31	Rincon 2007	*Taxidea taxus*	American badger	SSC	Moderate	Shrub, forest, woodland, grassland, etc. Ground squirrels abundant prey item on site, large home ranges. Rincon 2007 cite road kill data near to site.
SSP32	CNDDB	*Astragalus brauntonii*	Braunton's milkvetch	FE CRPR 1B.1	Low	Chaparral, coastal scrub, grassland, carbonate soils. Not observed, presumed absent.
SSP33	CNDDB	*California macrophylla (Erodium macrophyllum)*	round-leaf filaree	CRPR 1B.1	Low	Woodland, grassland, chaparral, coastal scrub, clay soils. Not observed, presumed absent.
SSP34	CNDDB	*Deinandra minthornii (Hemizonia m.)*	Santa Susana tarplant	SR, CRPR 1B.2,	Low	Chaparral, coastal scrub, sandstone outcrops, rarely on Conejo volcanic rocks. Not observed, presumed absent.
SSP35	CNDDB	*Dudleya parva (D. abramsii p.)*	Conejo dudleya	FT, CRPR 1B.2,	Low	Coastal scrub, valley-foothill grassland, clay or volcanic soils on rocky slopes. Not observed, presumed absent.
SSP36	CNDDB	*Eriogonum crocatum*	Conejo buckwheat	SR, CRPR 1B.2, VCLIP	Low	Coastal scrub, chaparral, valley-foothill grassland, Conejo volcanic soils outcrops Not observed, presumed absent.
SSP37	CNDDB	*Pentachaeta lyonii*	Lyon's pentachaeta	FE, SE, CRPR 1B.1	Low	Chaparral, coastal scrub, valley-foothill grassland, disturbed areas, and sparse-vegetated openings. Not observed, presumed absent.
SSP38	CNDDB	*Senecio aphanactis*	rayless ragwort	CRPR 2B.2 VCLIP	Low	Cismontane woodland, coastal scrub, chaparral, alkaline flats. Possible in scrub on site, easily mistaken for common *Senecio vulgare*. Not observed, presumed absent.
SSP39	CNDDB	*Nolina cismontana*	chaparral nolina	CRPR 1B.2	Low	Chaparral, coastal scrub, sandstone, shale, gabbro, occurrence coincides with *Astragalus brauntonii* in much of Simi Hills. Not observed, presumed absent.

Special Status Species (continued)				
Map Key	Adequate Habitat Onsite	Adequate Habitat Size (7)	Acreage Impacted	Comments (8)
SSO1	Yes	Yes		Habitat on site is large enough to support a population. Large areas of coastal scrub and chaparral with rocky soils.
SSO2	Yes	Yes	0	Habitat limited to vernal pool.
SSO3	Yes	Yes	0.06	Habitat on site is large enough to support a population. Oak woodland and exotic trees.
SSO4	Yes	Yes	0.06	Habitat on site is large enough to support a population. Oak woodland and exotic trees.
SSO5	No	No	0	Area occupied by California walnut is extremely small.
SSO6	No	No	0	Habitat limited to vernal pool. Not observed in 2010, possibly extirpated during construction of pond on adjacent property to north.
SSO7	No	No	0	Habitat limited to vernal pool. Not observed in 2010, possibly extirpated during construction of pond on adjacent property to north.
SSO8	No	No	0	Habitat limited to vernal pool. Not observed in 2010, possibly extirpated during construction of pond on adjacent property to north.
SSO9	No	No	0	Habitat limited to vernal pool. Not observed in 2010, possibly extirpated during construction of pond on adjacent property to north. Observed in 2018. See attached report for map and discussion of 2018 observations.
SSO10	Yes	Yes	0	Habitat on site is large enough to support a population. Large areas of coastal scrub and chaparral. See attached report for discussion of 2018 observations, which were not mapped.
SSO11	Yes	Yes	0	See attached report for map and discussion of 2018 observations.
SSP1	Yes	Yes	0	Habitat limited to vernal pool. Not confirmed by any protocol surveys.
SSP2	Yes	Yes	0	Habitat limited to contiguous oak woodland. Not surveyed for this species.
SSP3	No	No	0	No streams suitable to support this species.
SSP4	Yes	Yes	0	Habitat limited to vernal pool. Not surveyed.
SSP5	Yes	Yes		Habitat on site is large enough to support a population. Large areas of coastal scrub and chaparral with rocky soils. Not surveyed.
SSP6	Yes	Yes		Habitat on site is large enough to support a population. Large areas of coastal scrub and chaparral with rocky soils. Not surveyed.
SSP7	Yes	Yes	0	Habitat limited to contiguous oak woodland, leaf litter. Not surveyed for this species.
SSP8	Yes	Yes		Habitat on site is large enough to support a population. Large areas of coastal scrub and chaparral with rocky soils. Not surveyed.
SSP9	Yes	Yes		Habitat on site is large enough to support a population. Large areas of coastal scrub and chaparral with rocky soils. Not surveyed.
SSP10	No	No	0	Habitat limited to vernal pool and adjacent man-made pond. Not surveyed.
SSP11	Yes	Yes		Habitat on site is large enough to support a population. Large areas of coastal scrub and chaparral with rocky soils. Not surveyed.
SSP17	Yes	Yes		Habitat on site is large enough to support a population. Large areas of coastal scrub. This species has been observed south of the southern property boundary, as reported in coastal California gnatcatcher protocol survey reports by BonTerra Consulting (BonTerra Consulting 2010; BonTerra Consulting 2012). Also, on June 23, 2010, one juvenile coastal California gnatcatcher was observed on the southern side of Olsen Road between Hardy Lane and Country Club Drive approximately 500 feet from the subject property boundary. Between May 16 and June 28, 2012, several coastal California gnatcatchers including three nesting pairs, two (2) juveniles, and one solitary male were observed at three locations south of the southern property boundary; one nesting pair was observed adjacent to the southern property boundary and the two other pairs were observed approximately 800 feet and 1,000 feet from the property boundary. USFWS protocol surveys of the property for this species have not been conducted.
SSP18	Yes	Yes		Habitat on site is large enough to support a population. Oak woodland and exotic trees.
SSP19	Yes	Yes		Virtually all areas suitable for winter foraging. Site was surveyed in summer.
SSP20	Yes	Yes		Virtually all areas suitable for foraging.
SSP21	Yes	Yes		Virtually all areas suitable for foraging.

Special Status Species (continued)				
SSP22	Yes	Yes		Virtually all areas suitable for foraging.
SSP23	Yes	Yes		Habitat on site is large enough to support a population. Large areas of coastal scrub, chaparral with rocky soils. Not surveyed.
SSP24	Yes	Yes		Habitat on site is large enough to support a population. Large areas of coastal scrub, chaparral with rocky soils. Not surveyed.
SSP25	Yes	Yes		Habitat on site is large enough to support a population. Large areas of coastal scrub, chaparral with rocky soils. Not surveyed.
SSP26	Yes	Yes		Habitat on site is large enough to support a population. Large areas of coastal scrub, chaparral with rocky soils. Not surveyed.
SSP27	Yes	Yes		Virtually all areas suitable for aerial foraging.
SSP28	Yes	Yes		Virtually all areas suitable for aerial foraging.
SSP29	Yes	Yes		Virtually all areas suitable for aerial foraging.
SSP30	Yes	Yes		Habitat on site is large enough to support a population. Large areas of coastal scrub, chaparral with rocky soils. No nests observed.
SSP31	Yes	Yes		Habitat on site is large enough to support a population. Large areas of coastal scrub, chaparral with rocky soils. Not surveyed.
SSP32	No	No	0	Habitat on site is large enough to support a population. But large areas of coastal scrub, chaparral have unsuitable soils. Conspicuous species not observed.
SSP33	Yes	Yes	0	Habitat on site is large enough to support a population. Large areas of coastal scrub, chaparral. Inconspicuous species not observed in areas proposed for developments.
SSP34	No	No	0	Habitat on site is large enough to support a population. Large areas of coastal scrub, chaparral. But rock outcrops are not sandstone, Conejo volcanic rock is rarely occupied. Conspicuous species not observed.
SSP35	Yes	Yes	0	Habitat on site is large enough to support a population. Large areas of coastal scrub, chaparral with rocks. Not observed in areas proposed for developments.
SSP36	Yes	Yes	0	Habitat on site is large enough to support a population. Large areas of coastal scrub, chaparral with rocks. Conspicuous species not observed.
SSP37	Yes	Yes	0	Habitat on site is large enough to support a population. Large areas of coastal scrub, chaparral with rocks. Inconspicuous species not observed in areas proposed for developments.
SSP38	Yes	Yes	0	Habitat on site is large enough to support a population. Large areas of coastal scrub, chaparral with rocks. Inconspicuous species not observed in areas proposed for developments.
SSP39	Yes	Yes	0	Habitat on site is large enough to support a population. Large areas of coastal scrub, chaparral with rocks. Conspicuous species not observed.

FE ..... Federal Endangered
FT..... Federal Threatened
FC ..... Federal Candidate Species
FSC..... Federal Species of Concern
SFP..... California Fully Protected Species
SE ..... California Endangered
ST ..... California Threatened
SR..... California Rare
SSC ..... California Species of Special Concern
CDFW/NatureServe Rank
G1 or S1 - Critically Imperiled Globally or Subnationally (state)
G2 or S2 - Imperiled Globally or Subnationally (state)
G3 or S3 - Vulnerable to extirpation or extinction Globally or Subnationally (state)
CRPR 1A ..... California Native Plant Society listed as presumed to be extinct
CRPR 1B ..... California Native Plant Society listed as rare or endangered in California and elsewhere
CRPR 2..... California Native Plant Society listed as rare or endangered in California but more common elsewhere
CRPR 3..... **A review list only.** California Native Plant Society listed as in need of more information.
CRPR 4..... **A watch list only**. California Native Plant Society listed as of limited distribution or infrequent throughout a broader area in California; vulnerability to threat appears relatively low.
VCLIS..... Ventura County Locally Important Species

Nesting Bird Summary

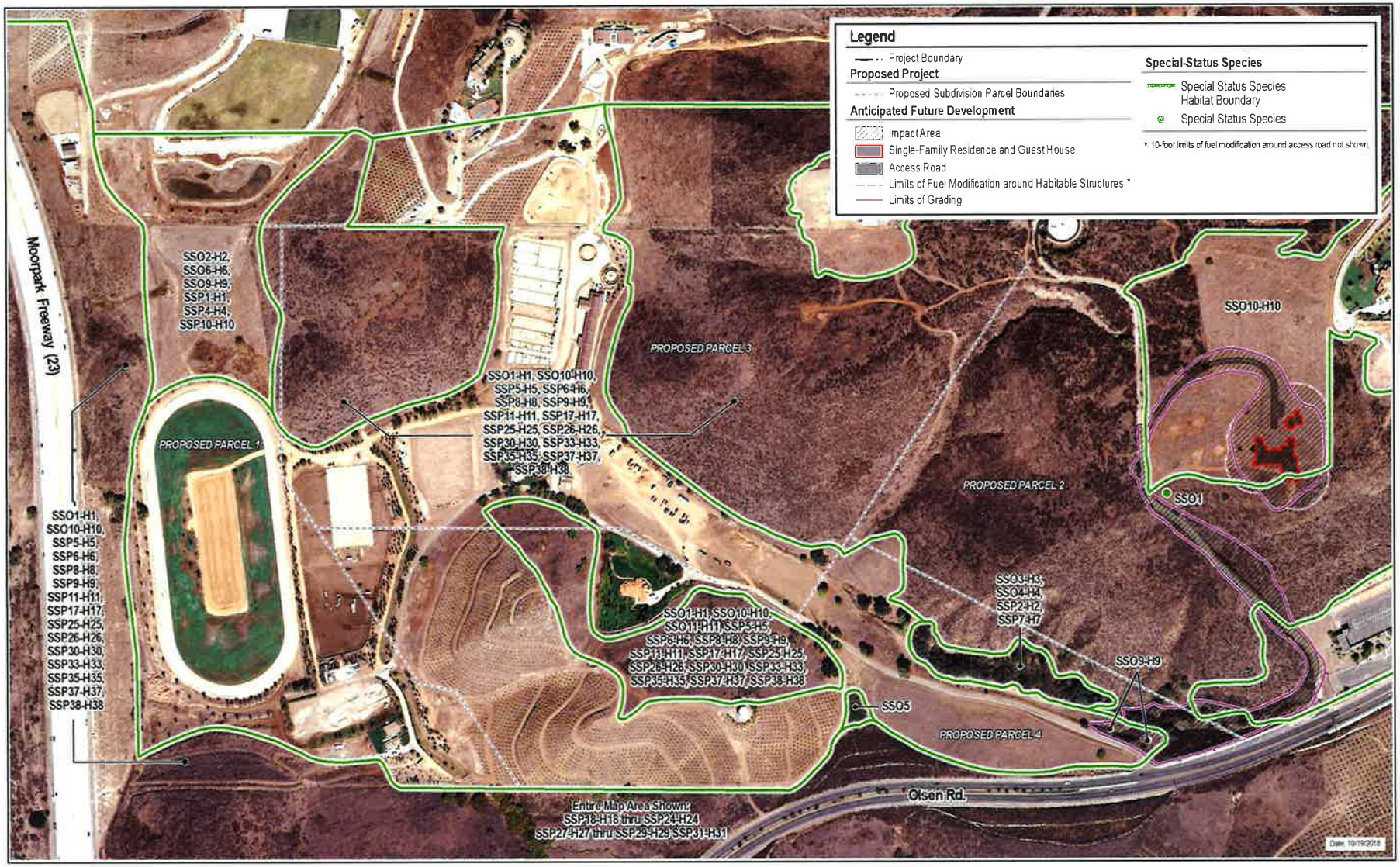
There is potential for the nesting of birds protected under the federal Migratory Bird Treaty Act (MBTA) to be present in the survey areas. This is because there are a large number of species so listed by MBTA, and many of

these are known to nest in coastal Ventura County. The potential varies with the many species involved. The following is a list of potentially nesting bird species of the Survey Areas, which are protected by the MBTA, and that are reported as nesting bird species of coastal Ventura County, derived from California's Wildlife Volume II Birds (Zeiner et al. [eds.] 1990.). Typical locations of nests are also provided.

Turkey vulture: cliffs, ledges, trees
White-tailed kite; trees
Cooper's hawk: trees
Red-shouldered hawk, trees
Red-tailed hawk: trees
Golden eagle: cliffs
American kestrel: trees, crevices, cliffs, buildings.
Virginia rail; on ground, marshland
American coot: over water, marshland
Killdeer: on ground, pastures, riverbeds, roadsides, golf courses, etc.
Spotted sandpiper: ground, vicinity rivers, lakes, ponds
Forster's tern: open levees and low islands in lakes, saltponds
Band-tailed pigeon: trees
Mourning dove: trees, ground
Greater roadrunner: low trees, shrubs
Barn owl: ledges, crevices, buildings, culverts, burrows, trees, nest boxes
Western screech-owl: trees (obligate secondary cavity nester)
Great horned owl: caves, crevices, cliffs, trees
Burrowing owl: burrows, pipes, culverts, nest boxes
Common poorwill: ground
White-throated swift: deep crevices on rocky cliff, tall buildings
Black-chinned hummingbird: trees, shrubs
Anna's hummingbird: trees, shrubs
Costa's hummingbird: shrubs, trees
Allen's hummingbird: trees
Belted kingfisher: burrows, tree cavity
Nuttall's woodpecker: trees
Downy woodpecker: trees
Northern flicker: trees, poles, banks
Western wood pewee: trees
Pacific slope and Cordilleran flycatcher: trees, cliffs, buildings
Black phoebe: cliffs, buildings, bridges, eaves
Ash-throated flycatcher: trees, nest boxes, posts, pipes, culverts, etc.
Cassin's kingbird: trees
Western kingbird: trees, shrubs
Horned lark: ground
Tree swallow: trees, cliffs, nest boxes, buildings, etc.
Violet-green swallow: trees, cliffs, rocks, nest boxes, structures
Northern rough-winged swallow: banks, cliffs
Cliff swallow: buildings, bridges, cliffs, trees
Barn swallow: bridges, cliffs, banks, buildings, etc.

Western scrub-jay: trees, shrubs
American crow: trees, poles, shrubs, ground
Common raven: trees, cliffs
Oak titmouse: trees, nest boxes
Bushtit: trees, shrubs
White-breasted nuthatch: trees
Brown creeper: trees
Cactus wren: cacti, shrubs, small trees
Rock wren: rocks, cliffs, banks
Canyon wren: cliffs, banks, ledges, structures
Bewick's wren: ground, cavity, cliffs, ledges, structures
House wren: cavity, crevice, trees, buildings
Coastal California gnatcatcher: shrubs
Blue-gray gnatcatcher: shrubs, low trees
Western bluebird: trees, cavity, nest boxes
Swainson's thrush: trees
American robin: trees, large shrubs, ground
Northern mockingbird: trees: shrubs
California thrasher: shrubs, trees
Phainopepla: trees, shrubs
Loggerhead shrike: trees, shrubs
Least Bell's vireo: shrubs, trees
Hutton's vireo: trees, shrubs
Warbling vireo: shrubs, trees
Orange-crowned warbler: shrubs, trees
Yellow warbler: trees, shrubs
Black-throated gray warbler: shrubs, small trees
Common yellowthroat: ground, shrubs
Yellow-breasted chat: shrubs
Western tanager; trees, shrubs
Black-headed grosbeak: trees, shrubs
Blue grosbeak: trees, shrubs
Lazuli bunting: shrubs, low trees
Spotted towhee: ground, shrubs
California towhee: shrubs, trees
Rufous-crowned sparrow: ground, shrubs
Lark sparrow: ground, shrubs, trees
Sage sparrow: ground, shrubs
Savannah sparrow: ground
Grasshopper sparrow: ground
Song sparrow: ground, shrubs, small trees
Dark-eyed junco: ground, shrubs, trees
Red-winged blackbird: thickets in marshland
Tricolored blackbird: thickets in marshland
Western meadowlark: ground

Yellow-headed blackbird: thickets in marshland
Brewer's blackbird: meadow, grassland, cropland, urban, ground, trees,
Great-tailed grackle: trees, shrubs, thickets
Brown-headed cowbird: trees, shrubs, ground
Hooded oriole: trees
Bullock's oriole: trees
House finch: trees, shrubs, structures
Lesser goldfinch: shrubs, trees
Lawrence's goldfinch: trees, shrubs
American goldfinch: trees, shrubs



Aerial Source: CIRGIS, 2007.

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Special Status Species Map

0 175 350 Feet

FIGURE 4

Aerial Source: CIRGIS, 2007. Data Source: U.S. Fish & Wildlife Service, Critical Habitat Portal, 2015.

Critical Habitat Map

0 175 350 Feet

FRAME 5

3.3 Wildlife Movement and Connectivity

(Initial Study Checklist D)

Wildlife movement or connectivity features, or evidence thereof, were found within the survey area(s).

Mapped Corridors or Linkages

The property is entirely within a mapped "Landscape Linkage" that crosses the Moorpark freeway (SR 23) in a broad fashion, as shown on Figure 6.

Connectivity Feature 1 (C1)

Connectivity Feature

Linkage.

Description

Broad areas of disturbed, urban, agricultural, natural scrub and chaparral, and highway corridor across the Moorpark Freeway (SR 23).

Species Observed

No species were observed using the Linkage.

Evidence

County BIOS Mapper.

Functional Group/Species Expected

Functional groups include: large mammals, medium mammals, small mammals, birds and bats, aquatic/riparian reptiles and amphibians, upland reptiles, and mesopredators.

Habitats Connected

Connects habitats of disturbed, urban, agricultural, natural scrub and chaparral on the east with similar habitats on the west.

Discussion

Feature is severely choked by Moorpark freeway, and a six-foot high chain-link fence on both sides thereof.

Connectivity Feature 2(CS1)

Connectivity Feature

Chokepoint.

Description

A 10-foot diameter corrugated steel drainage culvert passing under the freeway, with a slight bend on the western (downstream) side, discharging into an agricultural field. The culvert is not barricaded, has sandy bottom, some light inside. National Park service has installed wildlife monitoring cameras at both ends of the culvert.

Species Observed

No species were observed using the culvert.

Evidence

Obscure evidence of tracks of unspecified animals in the sand on the bottom of the culvert.

Functional Group/Species Expected

Functional groups include: large mammals, medium mammals, small mammals, birds and bats, aquatic/riparian reptiles and amphibians, upland reptiles, and mesopredators.

Habitats Connected
Connects habitats of disturbed, urban, agricultural, natural scrub and chaparral on the east with similar habitats on the west.

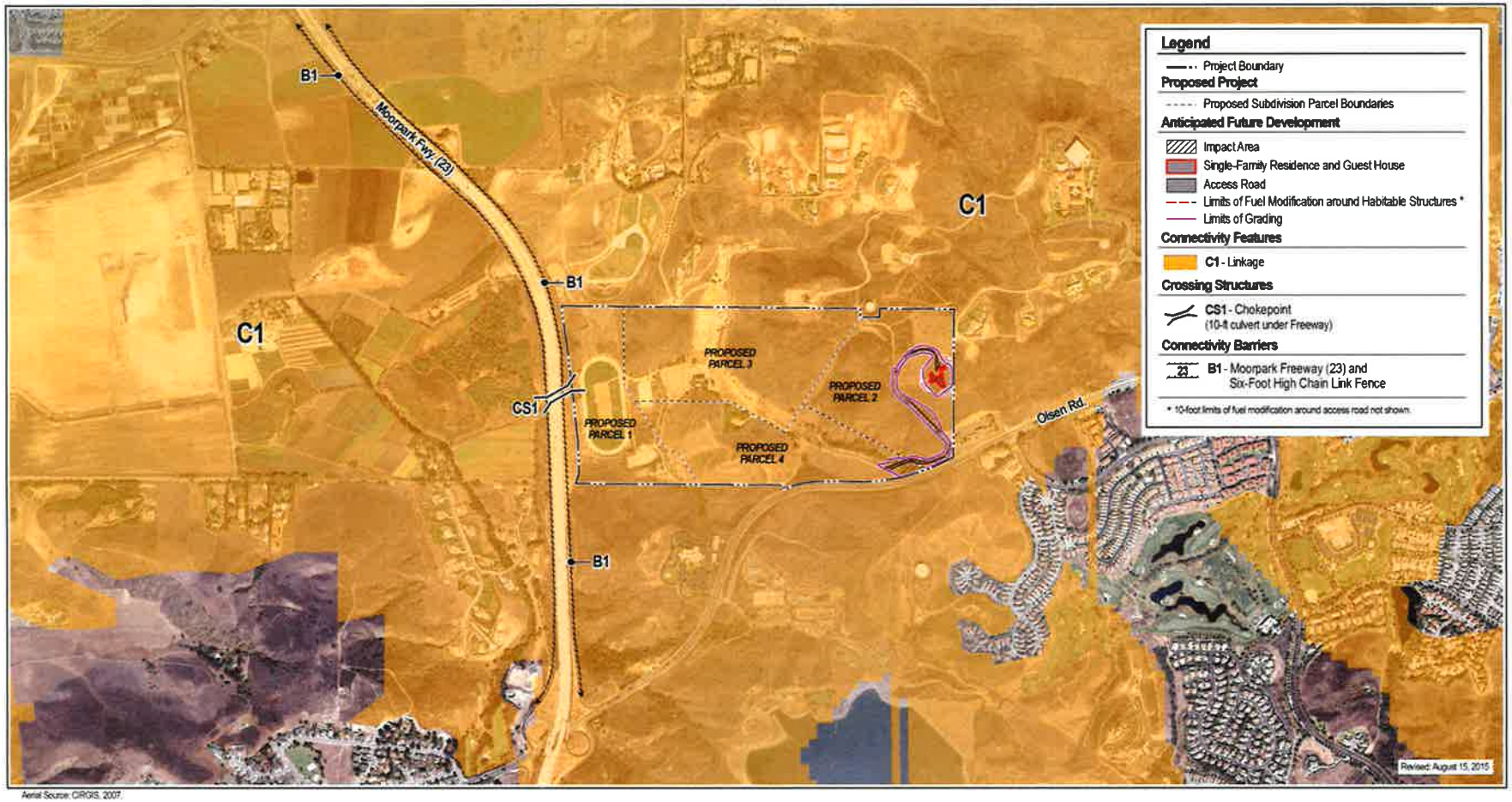
Discussion
None.

Crossing Structures Table

Roadway Crossing Structures						
Map Key (1)	Type of Crossing Structure (2)	Passable? (3)	Functional Group/Species Expected (4)	Species Observed (5)	Evidence	Comments
CS1	10-foot drainage culvert under Moorpark Freeway.	The culvert is open and aiding movement	Large mammals, medium mammals, small mammals, birds and bats, aquatic/riparian reptiles and amphibians, upland reptiles, and mesopredators.	None	Obscure prints in sandy bottom.	Allows passage underneath Hwy 23.

Connectivity Barriers Table

Barriers			
Map Key (1)	Barrier Type (2)	Species/Functional Groups Affected (3)	Comments (4)
B1	Six-foot high chain-link fence on both sides of freeway, and freeway itself.	Large, medium and small mammals, some birds, aquatic/riparian reptiles and amphibians, upland reptiles and mesopredators.	The structure is virtually insurmountable to land-bound wildlife, and poses a significant mortality factor..



Aerial Source: CIRGIS, 2007.

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Wildlife Connectivity Map

0 610 1,220 Feet

FIGURE 6

Section 4: Recommended Impact Assessment & Mitigation

4.1 Sufficiency of Biological Data

Additional biology-related surveys or permits needed prior to issuance of land use permit:

Coastal California Gnatcatcher Protocol Survey

The subject property is located within USFWS-designated Critical Habitat for the coastal California gnatcatcher. California gnatcatchers have been observed in close proximity to the subject property and are presumed to have foraged on-site in the southwestern portion of the property in 2012. The anticipated future development of the single-family residence and access road to the residence would impact Critical Habitat for the California gnatcatcher. Prior to issuance of a grading permit, a protocol gnatcatcher survey shall be prepared by a qualified biologist to determine the presence/absence of individuals or nesting activity within the development footprint and within 500 feet of the development footprint. Based on the results of the Protocol survey, the applicant shall consult with CDFW and USFWS, and provide the County with proof of compliance with Federal Endangered Species Act Consultation requirements (if necessary).

Trustee Agency Permits for Impacts to state and federal stream and wetland Jurisdictional Habitats

The anticipated development of the access road on Parcels 2 and 4 to the single-family residence on proposed Parcel 2 would impact an ephemeral drainage mapped as W2. The applicant shall consult with CDFW, the US Army Corps of Engineers, and the Regional Water Quality Control Board to determine the need for permits for impacts to state and federal stream and wetland jurisdictional habitats.

Oak Tree Permit

The anticipated development of the access road on Parcels 2 and 4 to the single-family residence on proposed Parcel 2 would result in the removal of one or two oak trees that appear to be of sufficient size to be protected under the Ventura County Tree Protection Ordinance. An oak tree report has not been prepared as a part of this ISBA. Therefore, the oak trees have not been surveyed, or tagged. Prior to issuance of a grading permit, the applicant shall commission a certified arborist to conduct a survey of the oak trees pursuant to the requirements of the Ventura Tree Protection Ordinance. If the trees meet the criteria for protection under the Ordinance, the applicant shall obtain an Oak Tree Permit and satisfy the mitigation required therein.

4.2 Impacts and Mitigation

The proposed parcel boundaries, the grading limits for the anticipated future single-family residence, and the 100-foot fuel modification zone that would surround the residence (and associated guest house) are shown on the maps in this report. Although not shown, the fuel modification for the access road (10 feet on either side) is also considered part of the total project impact area.

A. Endangered, Threatened, or Rare Animal or Plant Species, or Their Habitats — Project: PS-M; Cumulative: PS-M

Coastal California Gnatcatcher

The majority of the subject property is located within designated Critical Habitat for the federally Threatened California gnatcatcher, and there are coastal sage scrub habitats on the property that are suitable for this species. According to the County's Initial Study Assessment Guidelines, the loss of Critical Habitat designated by the U.S. Fish and Wildlife Service for a species officially listed as Endangered, Threatened, or Rare under the federal Endangered Species Act is a potentially significant impact. A total of 3.42 acres of suitable coastal sage scrub, of

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Deed Restricted Mitigation Area Map

0 175 350 Feet

FIGURE 7

which 1.60 acres would be within designated Critical Habitat for the California gnatcatcher, would be impacted by development of the single-family residence and access road, which would be a potentially significant impact. The impacts to 3.42 acres of suitable coastal sage scrub habitat would be mitigated pursuant to MM-5, below.

California gnatcatchers have been observed during USFWS protocol surveys in close proximity to the southern boundary of the subject property and are presumed to have been present on-site in the southwestern portion of the property in 2012. Although the current presence or absence of the California gnatcatcher at the site is unknown, it is potentially occurring within the suitable coastal sage scrub present within the anticipated footprints of the single-family residence and the access road. Although development of the single-family residence and access road is not considered preclusive to the continued use of the remaining suitable habitats on-site, or to the movements of the California gnatcatcher, the project could potentially result in direct and indirect impacts to this species, if present.

MM-1 Coastal California Gnatcatcher Surveys

Impact & Mitigation Goal

Avoid and/or minimize the impacts on federally Threatened coastal California gnatcatcher by determining the presence/absence of the coastal California gnatcatcher at the site and complying with CDFW and USFWS requirements to protect the species, if present.

Mitigation Action

The applicant shall, 1) commission a qualified biologist to conduct protocol gnatcatcher surveys of the subject property, 2) consult with CDFW and USFWS over the results of the surveys, 3) comply with the requirements of the CDFW and USFWS consultation, and 4) provide the County with proof of consultation and compliance with consultation requirements (if necessary).

Monitoring and Timing

Prior to issuance of a grading permit.

Other Endangered, Threatened, or Rare Animal or Plant Species

Aside from the potential impacts to the California gnatcatcher described above, the development of this single-family residence and access road on proposed Parcels 2 and 4 is not anticipated to impact Endangered, Threatened, or Rare Animal or Plant Species. A springtime survey was conducted on May 18, 2011 and in Spring 2018, at the appropriate time of the year to detect Lyon's pentachaeta (*Pentachaeta lyonii*), Braunton's milkvetch (*Astragalus brauntonii*), round-leaf filaree (*California macrophylla*), and other plant species of concern, and all are presumed absent within the project footprint, on the basis of those surveys. Based on the limits of disturbance and a letter from the project civil engineer indicating that the proposed development would not alter the existing hydrology that supports the vernal pool, the single-family residence and access road would not directly or indirectly affect habitat for federally-listed California Orcutt grass, or Riverside Fairy Shrimp. Therefore, protocol surveys for those species are deemed not necessary at this time.

Nesting Birds

Nesting birds were not observed during the field surveys on the site. However, grading and other site-preparation activities within the nesting bird season (March 1 through September 1) could potentially impact nesting birds protected under the Migratory Bird Treaty Act (MBTA) and California Department of Fish and Game Code.

The Federal Migratory Bird Treaty Act (MBTA) and the California Department of Fish and Game Code (3503, 3503.5, 3511, 3513 and 3800) protect most native birds. In addition, the federal and state endangered species acts protect some bird species listed as threatened or endangered. Project-related impacts to birds protected by these regulations would occur during the breeding season, because unlike adult birds, eggs and chicks are unable to escape impacts.

CDFG Code 3513 upholds the MBTA by prohibiting any take or possession of birds that are designated by the MBTA as migratory nongame birds except as allowed by federal rules and regulations promulgated pursuant to the MBTA. In addition, there are CDFG Codes (3503, 3503.5, 3511, and 3800), which further protect nesting birds and their parts, including passerine birds, raptors, and state "fully protected" birds.

Through implementation of mitigation measure MM-2, impacts to nesting birds would be reduced to a less than significant level.

MM-2 Nesting Bird Surveys

Impact and Mitigation Goal

Avoidance of Impacts to nesting birds.

Mitigation Action

To the extent feasible, the Applicant shall not remove or otherwise disturb vegetation or conduct any other construction or grading activities on the project site between March 1 to September 15, in order to avoid impacts to nesting birds. If work during the nesting season can not be avoided, prior to construction or site preparation activities, the Applicant shall have a qualified biologist survey all breeding and nesting habitat within 500 feet of the development footprint for breeding and nesting birds. If no breeding/nesting birds are observed site preparation and construction activities may begin. If breeding activities and/or an active nest is located, a buffer shall be established by the biologist and this area shall not be disturbed until the nest becomes inactive, the young have fledged, the young are no longer being fed by the parents, the young have left the area and the young will no longer be impacted by the project.

Monitoring and Timing

Surveys shall be conducted every 2-3 days for two consecutive weeks with the last survey no more than three days prior to project implementation.

B. Wetland Habitats Project: PS-M; Cumulative: PS-M

The anticipated development of the access road to the residence on proposed Parcel 2 would impact the unnamed ephemeral drainage (W2) just north of Olsen Road. The County BIOS maps have identified W2 as "riparian" habitat. The extent of CDFW jurisdictional habitat was delineated for the portion of W2 that would be impacted by the project on June 10, 2015. The boundaries of CDFW jurisdictional habitat are shown on Figure 3, which were recorded in the field to sub-meter accuracy using a Trimble GPS. Based on the results of this delineation and the revised project plan (prepared by T Engineering, March 18, 2015), a total of 0.14 acres (580 linear feet) of CDFW jurisdictional habitat would be permanently impacted, which would consist primarily of coastal sage scrub and chaparral species along with a small number of coast live oaks trees. In addition to the areas that would be permanently impacted, the potential exists for incidental temporary impacts to CDFW jurisdictional habitat to occur during construction activities. These permanent and temporary impacts are considered potentially significant. However, through implementation of MM-3, said impacts would be reduced to a less than significant level.

MM-3 Restoration of Riparian Habitat

Impact and Mitigation Goal

Off-set impacts to jurisdictional streambed and habitat.

Mitigation Action

The applicant shall mitigate for the proposed permanent impacts to 0.14 acres (580 linear feet) as well as any incidental temporary impacts to CDFW jurisdictional streambed and habitat by:

a. restoration of streambeds/riparian habitat onsite and preservation of the restoration area at a 3:1 ratio for permanent impacts and a 1:1 ratio for temporary impacts; or,

b. a contribution made to an off-site restoration project in the same watershed as the project site to restore streambeds/riparian habitat at a 3:1 ratio for permanent impacts and a 1:1 ratio for temporary impacts.

The mitigation site(s) shall be preserved in perpetuity.

Monitoring and Timing

Prior to recordation of the final map.

C. Coastal Habitats Project: N; Cumulative: N

The project site is not located within or adjacent to the coastal zone, nor is there significant habitat connectivity between the survey area and the coastal zone.

D. Wildlife Movement and Connectivity (migration corridors) Project: PS-M; Cumulative: PS-M

The subject property is entirely within a mapped "Landscape Linkage" that crosses the Moorpark freeway (SR 23). The anticipated development of the residence on proposed Parcel 2 and the access roadway on proposed Parcels 2 and 4 would permanently remove vegetation amounting to a combined 3.82 acres of coastal scrub, chaparral, and oak woodland habitat, which may provide habitat or movement opportunities for wildlife. Of the total development area of 9.23 acres, the remainder of 5.41 acres is cleared land. The 9.23 acres of proposed development represents approximately four percent of the total 213-acre property. The proposed project would disturb areas that may currently be used for wildlife movement; however, given the size and location of the improvements, amble opportunities and habitat will remain to support continued use of the site for wildlife movement. With regard to Connectivity Feature CS1, the closest component of the proposed project would be located approximately 3,860 linear feet away. Based on this setback, the proposed improvements are not anticipated to substantially affect access to, or the functionality of the chokepoint under the SR 23 freeway.

Occupancy of the residence and use of the roadway have potential to create new sources of night lighting, noise and human presence that could deter wildlife movement in the vicinity. These impacts would be potentially significant, but reduced to less than significant levels through implementation of mitigation measure MM-4.

MM-4 Wildlife Movement

Impact and Mitigation Goal

Minimize the potential impact of the proposed development on wildlife movement.

Mitigation Action

Development of the proposed project shall be designed to incorporate the following:

- Minimize the removal of natural vegetation to the extent possible;
- Design night lighting to be directional or shielded downward and toward the structure to prevent light spillover into naturally vegetated areas;
- The design and installation of any future fencing shall be permeable to wildlife, e.g., split-rail, or barbed-wire of standard height. Any wildlife-impermeable, or security fencing such as chain-link shall be limited to the perimeter of the building areas, and shall not extend substantially along proposed access roadways.

Monitoring and Timing

Prior to recordation of the final map.

E. Locally Important Species/Communities Project: PS-M; Cumulative: PS-M

Venturan coastal scrub is a Locally Important Community that occurs on the site. The project would result in impacts to 3.42 acres of Venturan coastal scrub. Mitigation measure MM-5 would offset these impacts by the restoration and/or preservation of Ventura coastal scrub at a 2:1 ratio.

MM-5

Impact and Mitigation Goal

Offset impacts to Locally Important Communities, specifically Venturan coastal sage scrub.

Mitigation Action

The Applicant shall provide for the onsite preservation of native scrub habitat at a 2:1 ratio. To accomplish this, the Applicant shall deed restrict the 6.84-acre portion of proposed Parcels 2 and 3 shown on Figure 7, which consists of undeveloped high-quality chamise chaparral and coastal sage scrub habitats as well as a headwaters section of an ephemeral drainage.

Monitoring and Timing

The deed restriction shall be prepared and recorded with the County prior to zoning clearance for ground disturbance.

Small-flowered morning-glory (*Convolvulus simulans*) was observed in large numbers (~3,500 plants) within the proposed access road footprint in 2018. However, mitigation for impacts to this species is not warranted, as this species is being removed from the County's list of Locally Important Plants.

The Locally Important Plant Plummer's mariposa lily (*Calochortus plummerae*) has also been observed onsite and could occur within the project footprint. Among Locally Important Species of Animals, none of the listed Amphibians, Birds, or Fishes has potential to occur on the project site. As documented in the Special Status Species table above, there is potential for Species of Special Concern and a Locally Important reptile to occur on the site. Impacts to these species are potentially significant. Through implementation of mitigation measure MM-6, impacts to Species of Special Concern and Locally Important Species would be considered less than significant.

MM-6 Pre-Construction Wildlife Surveys

Impact and Mitigation Goal

Avoid impacts to Potentially Occurring Species of Special Concern and Locally Important Species.

Mitigation Action

A County-approved biologist who has the appropriate collection permits shall conduct a pre-construction survey of the proposed development footprints to identify the presence of Species of Special Concern, Locally Important Species, and other wildlife. Species of Special Concern and Locally Important Wildlife Species found within the development footprint shall be relocated to nearby, suitable habitat. The County and appropriate Trustee Agencies will be notified of their presence onsite.

Monitoring and Timing

Within one week prior to the start of construction.

Section 5: Photos

Additional photos of the habitats and special-status plant species found in SA2 in Spring 2018 are provided in the attached *Spring 2018 Rare Plant Survey and Natural Community Mapping Report*.

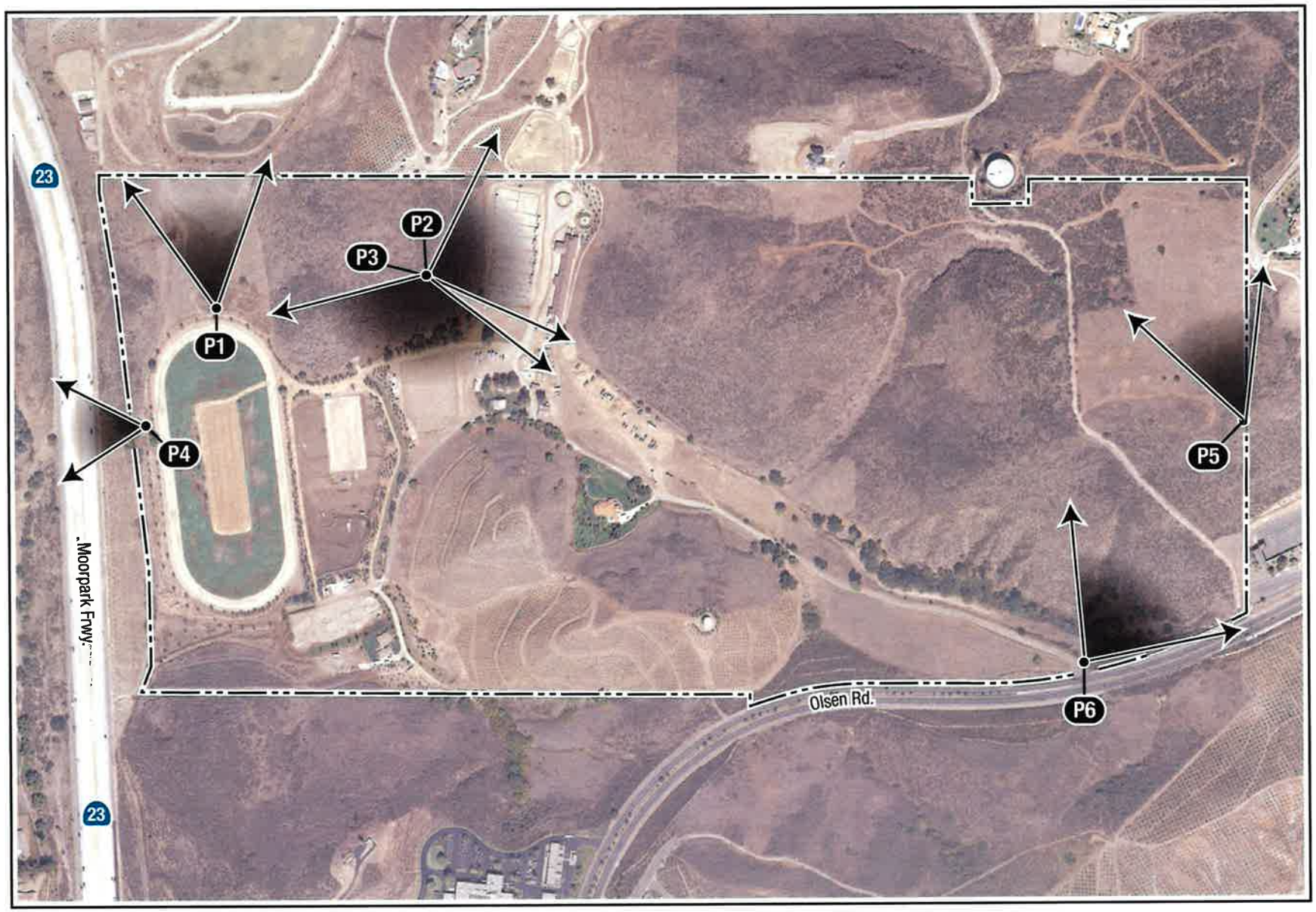
Photos	
Location	
Northwest	
Map Key	
P1	
View Direction	
South Southeast	
Description	
Vernal Pool area	
Location	
Northwest/ Central	
Map Key	
P2	
View Direction	
East	
Description	
Main stable areas, mountains to east	

Photos

Location
Northwest/Central
Map Key
P3
View Direction
South
Description
Central Valley area, race track

Location
West
Map Key
P4
View Direction
West
Description
Ten-foot diameter culvert under SR 23, view inside, view opposite side, NPS wildlife monitoring camera.

Photos	
Location **East** **Map Key** P5 **View Direction** North Northwest **Description** View of cleared area on eastern highland	
Location **Southeast** **Map Key** P6 **View Direction** Northeast **Description** Upper main drainage area proposed for new driveway	



envicom

Photo Locations Map

FEET 0 275 550

FIGURE 8

APPENDIX 1

Summary of Biological Resource Regulations

The Ventura County Planning Division, as "lead agency" under CEQA for issuing discretionary land use permits, uses the relationship of a potential environmental effect from a proposed project to an established regulatory standard to determine the significance of the potential environmental effect. This Appendix summarizes important biological resource regulations which are used by the Division's biologists (consultants and staff) in making CEQA findings of significance:

Sensitive Status Species Regulations
Nesting Bird Regulations
Plant Community Regulations
Waters and Wetlands Regulations
Coastal Habitat Regulations
Wildlife Migration Regulations
Locally Important Species/Communities Regulations

Sensitive Status Species Regulations

Federally Protected Species

Ventura County is home to 29 federally listed endangered and threatened plant and wildlife species. The U.S. Fish and Wildlife Service (USFWS) regulate the protection of federally listed endangered and threatened plant and wildlife species.

FE (Federally Endangered): A species that is in danger of extinction throughout all or a significant portion of its range.

FT (Federally Threatened): A species that is likely to become endangered in the foreseeable future.

FC (Federal Candidate): A species for which USFWS has sufficient information on its biological status and threats to propose it as endangered or threatened under the Endangered Species Act (ESA), but for which development of a proposed listing regulation is precluded by other higher priority listing activities.

FSC (Federal Species of Concern): A species under consideration for listing, for which there is insufficient information to support listing at this time. These species may or may not be listed in the future, and many of these species were formerly recognized as "Category-2 Candidate" species.

The USFWS requires permits for the 'taking' of any federally listed endangered or threatened species. Take is defined by the USFWS as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct; may include significant habitat modification or degradation if it kills or injures wildlife by significantly impairing essential behavioral patterns including breeding, feeding, or sheltering."

The Endangered Species Act (ESA) does not provide statutory protection for candidate species or species of concern, but USFWS encourages conservation efforts to protect these species. USFWS can set up voluntary Candidate Conservation Agreements and Assurances, which provide non-Federal landowners (public and private) with the assurance that if they implement various conservation activities to protect a given candidate species, they will not be subject to additional restrictions if the species becomes listed under the ESA.

State Protected Species

The California Department of Fish and Wildlife (CDFW) regulates the protection of endangered, threatened, and fully protected species listed under the California Endangered Species Act. Some species may be jointly listed under the State and Federal Endangered Species Acts.

SE (California Endangered): A native species or subspecies which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease.

ST (California Threatened): A native species or subspecies that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts required by this chapter. Any animal determined by the commission as "rare" on or before January 1, 1985, is a "threatened species."

SFP (California Fully Protected Species): This designation originated from the State's initial effort in the 1960's to identify and provide additional protection to those animals that were rare or faced possible extinction. Lists were created for fish, mammals, amphibians, reptiles, and birds. Most fully protected species have also been listed as threatened or endangered species under the more recent endangered species laws and regulations.

SR (California Rare): A species, subspecies, or variety of plant is rare under the Native Plant Protection Act when, although not presently threatened with extinction, it is in such small numbers throughout its range that it may become endangered if its present environment worsens. Animals are no longer listed as rare; all animals listed as rare before 1985 have been listed as threatened.

SSC (California Species of Special Concern): Animals that are not listed under the California Endangered Species Act, but which nonetheless 1) are declining at a rate that could result in listing, or 2) historically occurred in low numbers and known threats to their persistence currently exist.

The CDFW requires permits for the taking of any State-listed endangered, threatened, or fully protected species. Section 2080 of the Fish and Game Code prohibits "take" of any species that the California Fish and Game Commission determines to be endangered or threatened. Take is defined in Section 86 of the Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill."

The California Native Plant Protection Act protects endangered and rare plants of California. Section 1908, which regulates plants listed under this act, states: "no person shall import into this state, or take, possess, or sell within this state, except as incident to the possession or sale of the real property on which the plant is growing, any native plant, or any part or product thereof, that the commission determines to be an endangered native plant or rare native plant, except as otherwise provided in this chapter."

The California Endangered Species Act does not provide statutory protection for California species of special concern, but they should be considered during the environmental review process.

California Native Plant Society Listed Species

Plants with CRPR listings 1A, 1B and 2 should always be addressed in CEQA documents. Plants with CRPR listings 3 and 4 do not explicitly qualify for legal protection, but can be addressed in CEQA documents depending on the circumstances and opinion of the biologist conducting the assessment.

CRPR 1A: Plants presumed to be extinct because they have not been seen or collected in the wild in California for many years. This list includes plants that are both presumed extinct in California, as well as those plants which are presumed extirpated in California. A plant is extinct in California if it no longer occurs in or outside of California. A plant that is extirpated from California has been eliminated from California, but may still occur elsewhere in its range.

CRPR 1B: Plants that are rare throughout their range with the majority of them endemic to California. Most of the plants of List 1B have declined significantly over the last century.

CRPR 2: Plants that are rare throughout their range in California, but are common beyond the boundaries of California. List 2 recognizes the importance of protecting the geographic range of widespread species.
Plants identified on CRPR Lists 1A, 1B, and 2 meet the definitions of Sec. 1901, Chapter 10 (Native Plant Protection Act) or Secs. 2062 and 2067 (California Endangered Species Act) of the California Department of Fish and Game Code, and are eligible for state listing. They should be fully considered during preparation of environmental documents relating to CEQA.

CRPR 3: A review list for plants for which there is inadequate information to assign them to one of the other lists or to reject them.

CRPR 4: A watch list for plants that are of limited distribution or infrequent throughout a broader area in California and their vulnerability or susceptibility to threat appears relatively low at this time.

Global and Subnational Rankings

Though not associated directly with legal protections, species have been given a conservation status rank by NatureServe, an international non-profit conservation organization that is the leading source for information about rare and endangered species and threatened ecosystems. The Ventura County Planning Division considers the following ranks as sensitive for the purposes of CEQA impact assessment (G = Global, S = Subnational or State):

G1 or S1 - Critically Imperiled
G2 or S2 – Imperiled
G3 or S3 - Vulnerable to extirpation or extinction

Locally Important Species

Locally important species' protections are addressed in a separate Appendix document, "Locally Important Species/Communities Regulations."

For lists of some of the species in Ventura County that are protected by the above regulations, go to www.ventura.org/rma/planning/bio_resources/index.htm.

Nesting Bird Regulations

The Federal Migratory Bird Treaty Act (MBTA) and the California Department of Fish and Game (CDFG) Code (3503, 3503.5, 3511, 3513 and 3800) protect most native birds. In addition, the federal and state endangered species acts protect some bird species listed as threatened or endangered. Project-related impacts to birds protected by these regulations would occur during the breeding season, because unlike adult birds, eggs and chicks are unable to escape impacts.

The MBTA implements various treaties and conventions between the U.S. and Canada, Japan, Mexico, and Russia for the protection of migratory birds, which occur in two of these countries over the course of one year. The Act maintains that it is unlawful to pursue, hunt, take, capture or kill; attempt to take, capture or kill; possess, offer to or sell, barter, purchase, deliver or cause to be shipped, exported, imported, transported, carried or received any migratory bird, part, nest, egg or product, manufactured or not. Bird species protected under the provisions of the MBTA are identified by the List of Migratory Birds (Title 50 of the Code of Federal Regulations, Section 10.13 as updated by the 1983 American Ornithologists' Union (AOU) Checklist and published supplements through 1995 by the USFWS).

CDFG Code 3513 upholds the MBTA by prohibiting any take or possession of birds that are designated by the MBTA as migratory nongame birds except as allowed by federal rules and regulations promulgated pursuant to the MBTA. In addition, there are CDFG Codes (3503, 3503.5, 3511, and 3800) which further protect nesting birds and their parts, including passerine birds, raptors, and state "fully protected" birds.

NOTE: These regulations protect almost all *native nesting birds*, not just sensitive status birds.

Plant Community Regulations

Plant communities are provided legal protection when they provide habitat for protected species, when the community is in the coastal zone and qualifies as environmentally sensitive habitat area (ESHA), or when the community qualifies as locally important.

Global and Subnational Rankings

Though not associated directly with legal protections, plant communities have been given a conservation status rank by NatureServe, an international non-profit conservation organization that is the leading source for information about rare and endangered species and threatened ecosystems. The Ventura County Planning Division considers the following ranks as sensitive for the purposes of CEQA impact assessment (G = Global, S = Subnational or State):

G1 or S1 - Critically Imperiled
G2 or S2 - Imperiled
G3 or S3 - Vulnerable to extirpation or extinction

CDFW Rare

Rare natural communities are those communities that are of highly limited distribution. These communities may or may not contain rare, threatened, or endangered species. Though the Native Plant Protection Act and the California Endangered Species Act provide no legal protection to plant communities, CDFW considers plant communities that are ranked G1-G3 or S1-S3 (as defined above) to be rare or sensitive, and therefore these plant communities should be addressed during CEQA review.

Environmentally Sensitive Habitat Areas

The Coastal Act specifically calls for protection of "environmentally sensitive habitat areas" or ESHA, which it defines as: "Any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments" (Section 30107.5).

ESHA has been specifically defined in the Santa Monica Mountains. For projects in this location, the Coastal Commission, the agency charged with administering the Coastal Act, has developed a specific three-part test for determining whether habitat there should be considered coastal sage scrub/chaparral ESHA. A memo from a Coastal Commission biologist outlining this test can be found at:
www.ventura.org/rma/planning/pdf/bio_resources/ESHA_Santa_Monica_Mountains.pdf.

Locally Important Communities

The Ventura County Initial Study Assessment Guidelines defines a locally important community as one that is considered by qualified biologists to be a quality example characteristic of or unique to the County or region, with this determination being made on a case-by-case basis. The County has not developed a list of locally important communities, but has deemed oak woodlands to be a locally important community.

Waters and Wetlands Regulations

Numerous agencies control what can and cannot be done in or around streams and wetlands. If a project affects an area where water flows, ponds or is present even part of the year, it is likely to be regulated by one or more agencies. Many wetland or stream projects will require three main permits or approvals (in addition to CEQA compliance). These are:

- 404 Permit (U.S. Army Corps of Engineers)
- 401 Certification (Regional Water Quality Control Board)
- Streambed Alteration Agreement (California Department of Fish and Game)

In addition, the Ventura County General Plan calls for protection of wetlands and there are several other federal, state and local permits that could be required when a project involves disturbance to wetlands or waters. For a more thorough explanation of wetland permitting, see the Ventura County's "Wetland Project Permitting Guide" at www.ventura.org/rma/planning/pdf/prog_servs/bio_resources/FinalPDF.pdf.

404 Permit (U.S. Army Corps of Engineers)

Most projects that involve streams or wetlands will require a 404 Permit from the U.S. Army Corps of Engineers (USACE). Section 404 of the federal Clean Water Act is the primary federal program regulating activities in wetlands. The Act regulates areas defined as "waters of the United States." This includes streams, wetlands in or

next to streams, areas influenced by tides, navigable waters, lakes, reservoirs and other impoundments. For non-tidal waters, USACE jurisdiction extends up to what is referred to as the "ordinary high water mark" as well as to the landward limits of adjacent Corps-defined wetlands, if present. The ordinary high water mark is an identifiable natural line visible on the bank of a stream or water body that shows the upper limit of typical stream flow or water level. The mark is made from the action of water on the stream bank over the course of years.

Permit Triggers: A USACE 404 Permit is triggered by moving (discharging) or placing materials—such as dirt, rock, geotextiles, concrete or culverts—into or within USACE jurisdictional areas. This type of activity is also referred to as a "discharge of dredged or fill material."

401 Certification (Regional Water Quality Control Board)

If your project requires a USACE 404 Permit, then you will also need a Regional Water Quality Control Board (RWQCB) 401 Certification. The federal Clean Water Act, in Section 401, specifies that states must certify that any activity subject to a permit issued by a federal agency, such as the USACE, meets all state water quality standards. In California, the state and regional water boards are responsible for certification of activities subject to USACE Section 404 Permits.

Permit Trigger: A RWQCB 401 Certification is triggered whenever a USACE 404 Permit is required, or whenever an activity could cause a discharge of dredged or fill material into waters of the U.S. or wetlands.

Streambed Alteration Agreement (California Department of Fish and Wildlife)

If your project includes alteration of the bed, banks or channel of a stream, or the adjacent riparian vegetation, then you may need a Streambed Alteration Agreement from the California Department of Fish and Wildlife (CDFW). The California Fish and Game Code, Sections 1600-1616, regulates activities that would alter the flow, bed, banks, channel or associated riparian areas of a river, stream or lake—all considered "waters of the state." The law requires any person, state or local governmental agency or public utility to notify CDFW before beginning an activity that will substantially modify a river, stream or lake.

Permit Triggers: A Streambed Alteration Agreement (SAA) is triggered when a project involves altering a stream or disturbing riparian vegetation, including any of the following activities:

- Substantially obstructing or diverting the natural flow of a river, stream or lake
- Using any material from these areas
- Disposing of waste where it can move into these areas

Some projects that involve routine maintenance may qualify for long-term maintenance agreements from CDFW. Discuss this option with CDFW staff.

Ventura County General Plan

The Ventura County General Plan contains policies which also strongly protect wetland habitats.

Biological Resources Policy 1.5.2-3 states:

> Discretionary development that is proposed to be located within 300 feet of a marsh, small wash, intermittent lake, intermittent stream, spring, or perennial stream (as identified on the latest USGS 7½ minute quad map), shall be evaluated by a County approved biologist for potential impacts on wetland habitats. Discretionary development that would have a significant impact on significant wetland habitats shall be prohibited, unless mitigation measures are adopted that would reduce the impact to a less than significant level; or for lands designated "Urban" or "Existing Community", a statement of overriding considerations is adopted by the decision-making body.

Biological Resources Policy 1.5.2-4 states:

> Discretionary development shall be sited a minimum of 100 feet from significant wetland habitats to mitigate the potential impacts on said habitats. Buffer areas may be increased or decreased upon evaluation and recommendation by a qualified biologist and approval by the decision-making body. Factors to be used in determining adjustment of the 100 foot buffer include soil type, slope stability, drainage patterns, presence or absence of endangered, threatened or rare plants or animals, and compatibility of the proposed development with the wildlife use of the wetland habitat area. The requirement of a buffer

(setback) shall not preclude the use of replacement as mitigation when there is no other feasible alternative to allowing a permitted use, and if the replacement results in no net loss of wetland habitat. Such replacement shall be "in kind" (i.e. same type and acreage), and provide wetland habitat of comparable biological value. On-site replacement shall be preferred wherever possible. The replacement plan shall be developed in consultation with California Department of Fish and Game.

Coastal Habitat Regulations

Ventura County's Coastal Area Plan and the Coastal Zoning Ordinance, which constitute the "Local Coastal Program" (LCP) for the unincorporated portions of Ventura County's coastal zone, ensure that the County's land use plans, zoning ordinances, zoning maps, and implemented actions meet the requirements of, and implement the provisions and polices of California's 1976 Coastal Act at the local level.

Environmentally Sensitive Habitats

The Coastal Act specifically calls for protection of "environmentally sensitive habitat areas" or ESHA, which it defines as: "Any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments" (Section 30107.5).

Section 30240 of the Coastal Act states:

(a) "Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on such resources shall be allowed within such areas."

(b) "Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade such areas, and shall be compatible with the continuance of such habitat areas."

There are three important elements to the definition of ESHA. First, a geographic area can be designated ESHA either because of the presence of individual species of plants or animals or because of the presence of a particular habitat. Second, in order for an area to be designated as ESHA, the species or habitat must be either rare or it must be especially valuable. Finally, the area must be easily disturbed or degraded by human activities.

Protection of ESHA is of particular concern in the southeastern part of Ventura County, where the coastal zone extends inland (~5 miles) to include an extensive area of the Santa Monica Mountains. The Coastal Commission, the agency charged with administering the Coastal Act, developed a specific three-part test for determining whether habitat in the Malibu area of the Santa Monica Mountains should be considered coastal sage scrub/chaparral ESHA. Given that Malibu is immediately adjacent to the Ventura County part of the Santa Monica Mountains, this three-part test can be used for assessing whether coastal sage scrub and chaparral habitat in the Ventura County coastal zone meets the definition of ESHA. A memo from a Coastal Commission biologist outlines this test and can be found at: www.ventura.org/rma/planning/pdf/bio_resources/ESHA_Santa_Monica_Mountains.pdf.

The County's Local Coastal Program outlines other specific protections to environmentally sensitive habitats in the Coastal Zone, such as to wetlands, riparian habitats and dunes. Protections in some cases are different for different segments of the coastal zone.

Copies of the Coastal Area Plan and the Coastal Zoning Ordinance can be found at: www.ventura.org/rma/planning/programs_services/local_coast/local_coast.htm.

Wildlife Migration Regulations

The Ventura County General Plan specifically includes wildlife migration corridors as an element of the region's significant biological resources. In addition, protecting habitat connectivity is critical to the success of special status species and other biological resource protections. Potential project impacts to wildlife migration are analyzed by biologists on a case-by-case basis. The issue involves both a macro-scale analysis—where routes used by large carnivores connecting very large core habitat areas may be impacted—as well as a micro-scale analysis—where a road or stream crossing may impact localized movement by many different animals.

Locally Important Species/Communities Regulations

Locally important species/communities are considered to be significant biological resources in the Ventura County General Plan, thus one of the County's threshold criteria for the evaluation of impacts to biological resources is whether the project impacts locally important species/communities.

Locally Important Species

The following criteria were developed with the assistance of local biologists:

Locally Important Animal Species Criteria

1. Taxa for whom habitat in Ventura County is crucial for their existence either globally or in Ventura County. This includes taxa for whom:
    - Populations in Ventura County represents 10% or more of the known extant global distribution; or
    - In Ventura County, there are less than 6 element occurrences, or less than 1,000 individuals, or less than 2,000 acres.
2. Native taxa that are generally declining throughout their range and/or are in danger of extirpation in Ventura County.

Locally Important Plant Species Criteria

A locally important plant is a taxon that is declining throughout the extent of its range AND has a maximum of five (5) element occurrences in Ventura County.

Locally Important Animal and Plant Species Criteria

In some cases, to be determined on an individual basis, there are taxa whose population(s) do not qualify as locally important species; however, certain locations where a taxon occurs will be defined as locally important. This includes:

- If known, the published type locality for a holotype specimen.
- The edge of a taxon's range. This criterion does not apply to non-native taxa or those taxa whose range and population(s) size is expanding.

The County maintains a list of locally important species, which can be found on the Planning Division website at: www.ventura.org/rma/planning/programs_services/bio_resources/bio_resources.htm. *This list should not be considered comprehensive.* Any species that meets the criteria qualifies as locally important, whether or not it is included on this list.

Locally Important Communities

The Ventura County Initial Study Assessment Guidelines defines a locally important community as one that is considered by qualified biologists to be a quality example characteristic of or unique to the County or region, with this determination being made on a case-by-case basis. The County has not developed a list of locally important communities. Oak woodlands have however been deemed by the Ventura County Board of Supervisors to be a locally important community.

The state passed legislation in 2001, the Oak Woodland Conservation Act, to emphasize that oak woodlands are a vital and threatened statewide resource. In response, the County of Ventura prepared and adopted an Oak Woodland Management Plan that recommended, among other things, amending the County's Initial Study Assessment Guidelines to include an explicit reference to oak woodlands as part of its definition of locally important communities. The Board of Supervisors approved this management plan and its recommendations.

APPENDIX 2

Observed Species Tables*

*Also see the attached *Spring 2018 Rare Plant Survey and Natural Community Mapping Report* for lists of vascular plant species found during the Spring 2018 survey of SA2.

Species Observed			
Scientific Name (Species or Genus)	Common Name	Native (1)	Notes (2)
[1]**PLANTS**			
PLANTS – FERNS AND ALLIES			
Marsileaceae			
Marsilea vestita vestita	clover fern		Reported by Rick Burgess from prior years; reported by RTC (2003), cited by Rincon (2007); not observed in 2010, but evident May 24 2011 (Envicom). Restricted to Vernal Pool.
Pteridaceae			
Pellaea mucronata m.	bird's-foot fern		
Selaginellaceae			
Selaginella bigelovii	Bigelow's spike-moss		
PLANTS - DICOTS			
Adoxaceae			
Sambucus nigra caerulea (Sambucus mexicana)	blue elderberry		
Apiaceae			
Foeniculum vulgare	Fennel	I	
Apocyncaeae			
Asclepias fascicularis	narrow-leaf milkweed		
Amaranthaceae			
Amaranthus albus	tumble pigweed	I	
Amaranthus blitoides	prostrate pigweed	I	
Anacardiaceae			
Rhus integrifolia	Lemonadeberry		
Schinus molle	Peruvian peppertree	I	
Toxicodendron diversilobum	poison-oak		
Asteraceae			
Ambrosia psilostachya	western ragweed		
Artemisia californica	California sagebrush		
Baccharis pilularis	coyote brush		
Baccharis salicifolia	Mulefat		
Brickellia nevinii	Nevin's brickellbush		
Carduus pycnocephalus	Italian thistle	I	
Centaurea melitensis	Tocalote	I	
Cirsium vulgare	bull thistle	I	Reported by Rincon (2007); not observed in 2010.
Corethrogyne filaginifolia (Lessingia filaginifolia filaginifolia)	California-aster		
Deinandra fasciculata (Hemizonia fasciculata)	fascicled tarweed		
Encelia californica	California encelia		
Ericameria palmeri pachylepis	Palmer's goldenbush		
Erigeron canadensis (Conyza Canadensis)	Canada horseweed		
Eriophyllum confertiflorum c.	golden-yarrow		Reported by Rincon (2007); not observed in 2010.
Gnaphalium palustre	lowland cudweed		

[1] For vascular plants, currently accepted scientific names and family assignments are as specified for the 2nd Edition of *The Jepson Manual: Higher Plants of California*, so called "TJM2", in print, but not yet released as of this date, available at Jepson Online Interchange http://ucjeps.berkeley.edu/interchange.htmls. Superseded scientific names used in the first edition (Hickman (ed.) 1993) appear in parentheses.

Species Observed			
Hazardia squarrosa grindelioides	sawtooth goldenbush		Reported by Rincon (2007); not observed in 2010.
Hedypnois cretica	Crete weed	I	
Helianthus annuus	Kansas sunflower	I	
Helminthotheca echioides (Picris echioides)	bristly ox-tongue	I	
Hypochaeris glabra	smooth cat's-ear	I	
Isocoma menziesii vernonioides	coast goldenbush		
Lactuca serriola	prickly lettuce	I	
Lasthenia cf. gracilis	Goldfield		
Logfia filaginoides (Filago californica)	California filago		Reported by Rincon (2007) [as *Filago californica*]; not observed in 2010.
Malacothrix saxatilis tenuifolia	cliff-aster		
Matricaria discoidea (Chamomilla suaveolens)	pineapple weed	I	
Micropus californicus	slender cottonweed		
Pseudognaphalium californicum (Gnaphalium californicum)	California everlasting		
Pseudognaphalium microcephalum (Gnaphalium canescens microcephalum)	white everlasting		
Rafinesquia californica	California chicory		
Silybum marianum	milk thistle	I	
Sonchus asper	prickly sow-thistle	I	
Sonchus oleraceus	common sow-thistle	I	
Stephanomeria virgata v.	wand chicory		
Stylocline gnaphaloides	everlasting nest-straw		
Symphyotrichum subulatum parviflorum (Aster subulatus ligulatus)	marsh-aster		North edge of vernal pool, November 2011.
Uropappus lindleyi	silver-puffs		
Xanthium strumarium	Cocklebur		
Boraginaceae			
Amsinckia intermedia (Amsinckia menziesii intermedia)	rancher's fireweed		
Amsinckia menziesii (Amsinckia menziesii m.)	rancher's fireweed		
Cryptantha intermedia	intermediate popcorn flower		
Pectocarya penicillata	popcorn flower		Reported by Rincon (2007); not observed in 2010.
Phacelia cicutaria hispida	caterpillar phacelia		
Plagiobothrys canescens	bracted popcornflower		Reported by Rincon (2007); not observed in 2010.
Plagiobothrys nothofulvus	valley popcornflower		
Brassicaceae			
Brassica nigra	black mustard	I	
Hirschfeldia incana	hoary mustard	I	
Lobularia maritima	sweet-alyssum	I	
Raphanus sativus	wild radish	I	
Sisymbrium orientale	Oriental mustard	I	
Cactaceae			
Cylindropuntia prolifera (Opuntia prolifera)	coast cholla		
Opuntia littoralis l.	coastal prickly pear		
Opuntia oricola	--		
Chenopodiaceae			
Atriplex semibaccata	Australian saltbush	I	
Atriplex cf. *suberecta*	Saltbush	I	
Beta vulgaris	common beet	I	
Chenopodium cf. *album*	lamb's quarters	I	
Chenopodium murale	nettle-leaf goosefoot	I	
Salsola tragus	Russian-thistle	I	

Species Observed			
Cleomaceae			
Peritoma arborea (Isomeris arborea)	Bladderpod		
Convolvulaceae			
Calystegia macrostegia intermedia	chaparral morning-glory		
Convovlulus arvensis	field bindweed	I	
Convolvulus simulans	small-flowered morning-glory		Reported in Vernal Pool by RTC (2003), cited by Rincon (2007); not observed in 2010.
Cuscuta californica c.	Dodder		
Crassulaceae			
Crasssula connata	pygmy crassula		
Dudleya lanceolata	lance-leaf dudleya		
Cucurbitaceae			
Cucurbita foetidissima	coyote melon		
Marah macrocarpa (Marah macrocarpus)	wild cucumber		
Elatinaceae			
Bergia texana	Texas bergia		Reported by Rick Burgess from prior years; not observed in 2010. Restricted to Vernal Pool.
Euphorbiaceae			
Croton setigerus	dove weed		
Euphorbia sp. *(Chamaesyce* sp.*)*	Spurge	I	
Euphorbia albomarginata (Chamaesyce albomarginata)	rattlesnake weed		
Ricinus communis	castor-bean	I	
Fabaceae			
Acmispon glaber g. (Lotus scoparius)	Deerweed		
Acmispon strigosus. (Lotus strigosus)	strigose lotus		
Lupinus bicolor	miniature lupine		
Lupinus succulentus	arroyo lupine		Reported by Rincon (2007); not observed in 2010.
Lupinus truncatus	truncate lupine		
Medicago polymorpha	bur-clover		
Melilotus albus	white sweetclover	I	
Melilotus indicus	Sourclover	I	
Vicia benghalensis	Benghal vetch	I	
Vicia sativa s.	Spring vetch	I	Reported by Rincon (2007); not observed in 2010.
Fagaceae			
Quercus agrifolia a.	coast live oak		
Quercus berberidifolia	California scrub oak		
Geraniaceae			
Erodium cicutarium	red-stem filaree	I	
Grossulariaceae			
Ribes speciosum	Fuchsia-flowering gooseberry		
Juglandaceae			
Juglans californica	California walnut		
Lamiaceae			
Marrubium vulgare	Horehound	I	
Salvia leucophylla	purple sage		
Salvia mellifera	black sage		
Stachys albens	white hedge-nettle		Reported in Vernal Pool by Rincon (2007); not observed in 2010.
Trichostema lanceolata	vinegar weed		
Malvaceae			
Malacothamnus fasciculatus	bush mallow		Reported by Rincon (2007); not observed in 2010.

Species Observed			
Malva parviflora	Cheeseweed	I	
Malvella leprosa	alkali mallow		
Lauraceae			
Persea americana	Avocado	I	
Lythraceae			
Ammannia robusta	robust ammannia		Reported by Rick Burgess from prior years; not observed in 2010. Restricted to Vernal Pool.
Lythrum californicum	California loosestrife		Reported by Rick Burgess from prior years; not observed in 2010. Restricted to Vernal Pool.
Lythrum hyssopifolia (Lythrum hyssopifolium)	hyssop-leaved loosestrife	I	Reported by Rincon (2007); not observed in 2010.
Nyctaginaceae			
Mirabilis laevis crassifolia	wishbone bush		
Onagraceae			
Camissonia strigulosa	strigulose evening-primrose		Reported by Rincon (2007); not observed in 2010.
Epilobium canum c.	hoary California-Fuchsia		
Epilobium ciliatum c.	willow herb		
Epilobium pygmaeum	smooth boisduvalia		
Orobanchaceae			
Castilleja exserta e.	purple owl's-clover		Reported by Rincon (2007); not observed in 2010.
Papaveraceae			
Eschscholzia californica	California poppy		
Phrymaceae			
Mimulus aurantiacus	bush monkeyflower		
Plantaginaceae			
Keckiella cordifolia	heart-leaf-Penstemon		
Plantago erecta	California plantain		
Polemoniaceae			
Gilia angelensis	Angeles gilia		
Platanaceae			
Platanus racemosa r.	western sycamore		Reported by Rincon (2007); not observed in 2010. Possibly misidentified *Platanus acerifolia*, or London planetree
Polygonaceae			
Chorizanthe staticoides	Turkish-rugging		
Eriogonum elongatum e.	wand buckwheat		
Eriogonum fasciculatum foliolosum	California buckwheat		
Polygonum aviculare depressum (Polygonum arenastrum)	yard knotweed	I	
Pterostegia drymarioides	thread stem		Reported by Rincon (2007); not observed in 2010.
Rumex conglomeratus	clustered dock	I	
Rumex crispus	curly dock	I	
Rumex fueginus (Rumex maritimus)	maritime dock		
Ranunculaceae			
Clematis ligusticifolia	virgin's bower		
Rhamnaceae			
Ceanothus megacarpus	bigpod ceanothus		
Ceanothus spinosus	greenbark ceanothus		Reported by Rincon (2007); not observed in 2010.
Rhamnus ilicifolia	holly-leaf redberry		
Rosaceae			
Adenostoma fasciculatum	Chamise		
Cercocarpus betuloides b.	birch-leaf mountain-mahogany		
Heteromeles arbutifolia	Toyon		
Prunus ilicifolia	holly-leaf cherry		

Species Observed			
Rubiaceae			
Galium aparine	annual bedstraw		
Salicaceae			
Populus fremontii f.	Fremont cottonwood		Two individuals adjacent to vernal pool.
Salix lasiolepis l.	arroyo willow		Reported by Rincon (2007); not observed in 2010.
Solanaceae			
Datura wrightii	thorn-apple		
Nicotiana glauca	tree tobacco	I	
Solanum douglasii	Douglas' nightshade		Reported by Rincon (2007); not observed in 2010.
Solanum xanti	chaparral nightshade		
Urticaceae			
Urtica urens	dwarf nettle	I	Reported by Rincon (2007); not observed in 2010.
Verbenaceae			
Phyla nodiflora n.	nodding lippia		Restricted to vernal pool.
Verbena bracteata	bracted verbena		Restricted to vernal pool; collected.
PLANTS - MONOCOTS			
Agavaceae			
Chlorogalum pomeridianum p.	wavy-leaf soapplant		
Hesperoyucca whipplei (Yucca whipplei intermedia)	Whipple's yucca		
Alismataceae			
Echinodorus berteroi	Burhead		Restricted to vernal pool.
Alliaceae			
Allium haematochiton	red-skinned onion		Reported by Rincon (2007); not observed in 2010.
Asphodelaceae			
Asphodelus fistulosus	false asphodel	I	
Cyperaceae			
Bolboschoenus maritimus (Scirpus maritimus)	maritime sedge		Restricted to vernal pool.
Cyperus eragrostis	tall cyperus		
Eleocharis macrostachya	Spikerush		Restricted to vernal pool.
Schoenoplectus saximontanus (Scirpus saximontanus)	Rocky Mountain sedge		Reported by Rick Burgess from prior years, and RTC (2003), cited by Rincon (2007and Rincon (2007): not observed in 2010.
Juncaceae			
Juncus mexicanus	Mexican rush		Restricted to vernal pool.
Liliaceae			
Calochortus catalinae	Catalina mariposa lily		Reported by Rincon (2007); not observed in 2010.
Calochortus plummerae	Plummer's mariposa lily		One fruiting individual in rock outcrop, eastern highland area in 2010; ca 4 individuals in bud May 24, 2011 (Envicom).
Melanthiaceae			
Toxicoscordion fremontii (Zigadenus fremontii)	star-lily		Reported by Rincon (2007) [as *Zigadenus f.*]; not observed in 2010.
Poaceae			
Avena barbata	slender wild oat	I	
Avena fatua	fat oat	I	
Avena sativa	cultivated oat	I	Cultivated in one area.
Bromus diandrus	ripgut grass	I	
Bromus carinatus c.	California brome		
Bromus hordeaceus	soft chess	I	
Bromus madritensis rubens	foxtail chess	I	
Crypsis schoenoides	swamp grass	I	Restricted to vernal pool.
Cynodon dactylon	Bermuda grass	I	

Species Observed			
Lamarckia aurea	Goldentop	I	
Elymus condensatus (*Leymus condensatus*)	giant wildrye		
Elymus triticoides (*Leymus triticoides*)	alkali ryegrass		
Festuca microstachys (*Vulpia microstachys pauciflora*)	few-flowered side-oats		Reported by Rincon (2007); not observed in 2010.
Festuca myuros (*Vulpia myuros m.*)	rattail fescue	I	
Festuca perennis (*Lolium multiflorum*)	Italian ryegrass	I	
Melica imperfecta	coast melic		
Muhlenbergia microsperma	littleseed muhly		
Stipa lepida (*Nassella lepida*)	foothill needlegrass		
Stipa pulchra (*Nassella pulchra*)	purple needlegrass		
Orcuttia californica	California Orcutt grass		Reported by Rick Burgess from prior years; not observed in 2010. Restricted to vernal pool.
Phalaris cf. arundinacea	reed canary grass		
Stipa miliacea (*Piptatherum miliaceum*)	mountain-millet	I	
Polypogon monspeliensis	annual beardgrass	I	
Schismus arabicus	Mediterranean grass	I	
Themidaceae			
Dichelostemma capitatum c.	blue dicks		
Typhaceae			
Typha domingensis	southern cattail		Reported in Vernal Pool by Rincon (2007); not observed in 2010.
PLANTS - BRYOPHYTES			All observations by Carl Wishner.
PLANTS - LIVERWORTS			
Ricciaceae			
Riccia nigrella	--		
Riccia trichocarpa	--		
Targioniaceae			
Targionia hypophylla	--		
PLANTS - MOSSES			
Bartramiaceae			
Anacolia baueri	--		
Bryaceae			
Bryum sp.	--		
Funariaceae			
Funaria hygrometrica	cord moss		
Grimmiaceae			
Grimmia laevigata	--		
Pottiaceae			
Crossidium sp.	--		
Syntrichia sp.	--		
Tortula atrovirens	--		
Weissia controversa	--		
FUNGI			
			Not surveyed.
LICHENS			
			Not surveyed.
ANIMALS			
Invertebrates			
			Not surveyed.
Fish			

Species Observed			
			None present.
[2]Amphibians			
Bufonidae			
Anaxyrus boreas halophilus (Bufo boreas halophilus)	California toad		At vernal pool.
Reptiles			
Phrynosomatidae			
Uta stansburiana	side-blotched lizard		
Birds			
Cathartidae			
Cathartes aura	turkey vulture		Flying overhead.
Ardeidae			
Ardea alba	great egret		At pond north of vernal pool.
Egretta thula	Snowy egret		At pond north of vernal pool.
Anatidae			
Branta canadensis	Canada goose		At pond north of vernal pool.
Anas americana	American wigeon		At pond north of vernal pool.
Bucephala albeola	bufflehead		At pond north of vernal pool.
Oxyura jamaicensis	ruddy duck		At pond north of vernal pool.
Anas platyrhynchos	mallard		Flying overhead. At vernal pool
Accipitridae			
Accipiter cooperi	Cooper's hawk		
Buteo jamaicensis	red-tailed hawk		
Falconidae			
Falco sparverius	American kestrel		
Odontophoridae			
Callipepla californica	California quail		
Charadriidae			
Charadrius vociferus	killdeer		Probably nesting, vernal pool area and other open habitats.
Columbidae			
Columba livia	rock dove		
Patagioenas fasciata (Columba fasciata)	band-tailed pigeon		
Zenaida macroura	mourning dove		
Cuculidae			
Geococcyx californianus	greater roadrunner		
Apodidae			
Aeronautes saxatalis	white-throated swift		Flying overhead.
Trochilidae			
Calypte anna	Anna's hummingbird		
Alcedinidae			
Megaceryle alcyon	Belted kingfisher		At pond north of vernal pool, and using trees along north border of vernal pool.
Picidae			
Melanerpes formicivorus	acorn woodpecker		
Picoides nuttallii	Nuttall's woodpecker		
Colaptes auratus	northern flicker		
Tyrannidae			
Sayornis nigricans	black phoebe		
Sayornis saya	Say's phoebe		
Tyrannus verticalis	western kingbird		
Tyrannus vociferans	Cassin's kingbird		
Corvidae			
Aphelocoma californica	western scrub-jay		
Corvus brachyrhynchos	American crow		
Corvus corax	common raven		

[2] For amphibians and reptiles, current scientific and common names follow Center for North American Herpetology Academic Portal, available at http://www.naherpetology.org/ Scientific names used in other popular references appear in parentheses.

Species Observed			
Hirundinidae			
Stelgidopteryx serripennis	northern rough-winged swallow		
Tachycineta thalassina	violet-green swallow		
Petrochelidon pyrrhonota	cliff swallow		
Hirundo rustica	barn swallow		
Paridae			
Baeolophus inornatus	oak titmouse		Possibly nesting in Oak Woodland habitat on site.
Aegithalidae			
Psaltriparus minimus	bushtit		
Sittidae			
Sitta carolinensis	white-breasted nuthatch		
Troglodytidae			
Thryomanes bewickii	Bewick's wren		
Troglodytes aedon	house wren		
Regulidae			
Regulus calendula	ruby-crowned kinglet		
Polioptilidae			
Polioptila caerulea	blue-gray gnatcatcher		
Turdidae			
Turdus migratorius	American robin		
Sialia mexicana	western bluebird		
Sylviidae			
Chamaea fasciata	wrentit		
Mimidae			
Mimus polyglottos	northern mockingbird		
Toxostoma redivivum	California thrasher		
Sturnidae			
Sturnus vulgaris	European starling	I	
Motacillidae			
Anthus rubescens	American pipit		
Bombycillidae			
Bombycilla cedrorum	cedar waxwing		
Ptiliogonatidae			
Phainopepla nitens	phainopepla		
Parulidae			
Setophaga coronata (*Dendroica coronata*)	Yellow-rumped warbler		
Emberizidae			
Passerculus sandwichensis (*Ammodramus sandwichensis nevadensis*)	savannah sparrow		
Passerella iliaca	fox sparrow		
Pipilo maculatus	spotted towhee		
Melozone crissalis (*Pipilo crissalis*)	California towhee		
Chondestes grammacus	lark sparrow		
Zonotrichia leucophrys	white-crowned sparrow		
Melospiza melodia	song sparrow		
Junco hyemalis oreganus	dark-eyed junco		
Icteridae			
Agelaius phoeniceus	red-winged blackbird		
Sturnella neglecta	western meadowlark		
Molothrus ater	brown-headed cowbird		
Euphagus cyanocephalus	Brewer's blackbird		
Icterus bullockii	Bullock's oriole		
Icterus cucullatus	hooded oriole		
Fringillidae			
Haemorhous mexicanus (*Carpodacus mexicanus*)	house finch		
Spinus psaltria (*Carduelis tristis*)	lesser goldfinch		

Species Observed			
Mammals			
Leporidae			
Sylvilagus audubonii	desert cottontail		Observed.
Sciuridae			
Spermophilus beecheyi	California ground squirrel		Observed.
Geomyidae			
Thomomys bottae	Botta's pocket gopher		Inferred by burrows.
Mephitidae			
Mephitis mephitis	striped skunk		Inferred by odor
Canidae			
Canus latrans	coyote		Inferred by track, scat. Skull
Equiidae			
Equus caballus	horse	I	Observed.
Cervidae			
Odocoileus hemionus	mule deer		Inferred by track, scat.

ENVICOM CORPORATION

October 19, 2018

10241 Norris Avenue
Pacoima, CA 91331

Attn: Mr. Robert Day

Subj: Spring 2018 Rare Plant Survey and Natural Community Mapping for Day Farms Subdivision
County Case No. SD06-0041

Dear Mr. Day:

This letter provides the results of a springtime rare plant survey and natural community mapping conducted by Envicom Corporation in 2018 for the Day Farms Subdivision project located at the Day Creek Ranch, which is north of Olsen Road and east of US 101 in the County of Ventura. The project involves subdividing an approximate 213.46-acre property into four (4) separate parcels. The project also includes a new single-family residence on the eastern portion of proposed Parcel 2, as well as an access roadway to the residence. The subject parcel is APN 594-0-010-035. The project site is situated in the western Simi Hills at elevations ranging from approximately 680 to 1,200 feet.

The rare plant survey updates the prior rare plant survey for the project, which was conducted in 2011 and is now outdated. The natural community mapping updates the prior mapping of the project footprint. The updated mapping follows the National Vegetation Classification system of alliances and associations and is therefore consistent with current County CEQA standards. The rare plant survey and the natural community mapping were conducted within the development footprint including the proposed grading limits and fuel modification zones, as well as within two potential mitigation sites located on proposed Parcels 3 and 4, which were evaluated but ultimately not selected by the County to be deed restricted areas to mitigate project impacts to coastal sage scrub. The survey area is shown on **Figure 1**, Rare Plant Survey and Natural Communities Map, Spring 2018.

In summary, Conejo dudleya was the only plant species considered to be rare, threatened, or endangered that was found during the survey. This species was not found within or near the project footprint. Other noteworthy plant species found during the survey include small-flowered morning-glory (*Convolvulus simulans*) and Catalina mariposa lily (*Calochortus catalinae*), which receive a California Rare Plant Rank (CRPR) 4. Small-flowered morning-glory is also included on the County's Locally Important Plant List, although it is currently proposed to be removed from this list. Small-flowered morning-glory plants and Catalina mariposa lilies were found within the proposed development footprint.

METHODS

A literature review was performed that included relevant lists and databases pertaining to the status and known occurrences of rare plant species and natural communities. Other sources of information included aerial photographs and prior biological studies of the project site. The following sources were among those reviewed prior to the survey or during preparation of this report:

- *Biogeographic Information and Observation System (BIOS),* CDFW, data as of June 13, 2018;
- *California Natural Communities List*, CDFW, January 24, 2018;
- *California Natural Diversity Database (CNDDB) Rarefind 5* report for the 7.5' USGS Simi Valley West quadrangle and adjacent quadrangles, CDFW, data as of June 13, 2018;
- *2017 Locally Important Plant List,* Ventura County Planning Division;
- *DRAFT 2018 Locally Important Plant List,* Ventura County Planning Division;
- *Inventory of Rare and Endangered Vascular Plants of California* report for the 7.5' USGS Simi Valley West quadrangle and adjacent quadrangles, California Native Plant Society (CNPS), data as of June 13, 2018;
- *List of Special Vascular Plants, Bryophytes, and Lichens*, CDFW, April 2018;
- *Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Natural Communities*, CDFW, March 10, 2018; and,
- *United States Fish and Wildlife Service Critical Habitat Mapper*, United States Fish and Wildlife Service (USFWS), data as of June 13, 2018.

The rare plant survey was conducted by Jim Anderson, Senior Biologist, on the following dates and times and in the following conditions:

- April 27, 2018 between the hours of 10:50 a.m. and 6:20 p.m. in warm and overcast to clear conditions (low to mid-60s °F) with winds of 0 to 15 m.p.h.;
- May 11, 2018 between the hours of 10:30 a.m. and 6:00 p.m. in warm and overcast conditions (upper-50s to low-60s °F) with winds of 0 to 10 m.p.h.; and,
- May 23, 2018 between the hours of 1:00 p.m. and 2:00 p.m. in warm and overcast conditions (mid-60s °F) with winds of 5 to 10 m.p.h.

As stated, the survey area included the proposed development footprint as well as two additional patches of coastal sage scrub on proposed Parcels 3 and 4 that were evaluated but ultimately not selected to be deed restricted areas to mitigate for impacts to native habitats. The surveys were performed by slowly walking transects across the site and by investigating particular areas thoroughly, as necessary. The survey methodology resulted in an investigation of all plant communities and habitats within the survey area. An inventory of vascular plants observed was recorded, with all species identified to the taxonomic level necessary to determine their status. Vascular plant species determinations were made using Baldwin et al. (2012).[1] Natural

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

community alliances and associations were mapped during the survey using high-resolution aerial imagery.

As the survey area contains suitable habitat for the federal and state listed Lyon's pentachaeta (*Pentachaeta lyonii*) and is also within the its range, two (2) Lyon's pentachaeta reference populations located in the City of Thousand Oaks and the City of Agoura Hills were visited on April 25, 2018 to ensure the survey of the would be conducted at a time when Lyon's pentacheata would be identifiable. On April 25, 2018, approximately 80% of the plants observed at the reference sites were in bloom and less than 1% had produced seeds. Therefore, the survey timing was adequate for detecting Lyon's pentachaeta at the site.

RESULTS

Proposed Development Footprint

The generalized habitats within the proposed development footprint include chaparral, coastal scrub, and annual grassland. During the survey of these habitats a total of 95 vascular plant species were found, including one (1) fern ally, 72 dicots, and 22 monocots. Of these, 66 species were native and 29 were non-native. A list of the vascular plant species identified within the proposed development footprint is attached to this letter. The natural community alliances and associations within the proposed development footprint are shown on **Table 1**, below. Conservation status ranks are from the CDFW's *California Natural Communities List,* dated January 24, 2018. **Plate 1**, Photos 1A – 1E provides representative photos of the habitats within the proposed development footprint.

Table 1
Natural Communities at Proposed Development Footprint

Habitat Class	Natural Community	Conservation Status Rank
Chaparral	Chamise Alliance (*Adenostoma fasciculatum*)	G5S5
	Toyon Alliance (*Heteromeles arbutifolia*)	G5S3
Coastal Scrub	California Sagebrush Shrubland Alliance (*Artemisia californica*)	G5S5
	California Sagebrush – California Buckwheat – Black Sage Shrubland Association (*Artemisia californica – Eriogonum fasciculatum - Salvia mellifera*)	G4S4
	California Brittle Bush – California Sagebrush Shrubland Association (*Encelia californica – Artemisia californica*)	G4S3
	California Buckwheat Shrubland Alliance (*Eriogonum fasciculatum*)	G5S5
	Black Sage – California Brittle Bush Shrubland Association (*Salvia mellifera – Encelia californica*)	G4S4

Habitat Class	Natural Community	Conservation Status Rank
Herbaceous	Annual Grassland Mapping Unit	Not Ranked
Other Landcover	Paved Road	N/A

GLOBAL RANKING
The global rank (G-rank) is a reflection of the overall status of a natural community throughout its global range. Both Global and State ranks represent a letter+number score that reflects a combination of Rarity, Threat and Trend factors, with weighting being heavier on Rarity than the other two.

G1 - Critically Imperiled—At very high risk of extinction due to extreme rarity (often 5 or fewer occurrences), very steep declines, or other factors.
G2 - Imperiled—At high risk of extinction due to very restricted range, very few occurrences (often 20 or fewer), steep declines, or other factors.
G3 - Vulnerable—At moderate risk of extinction due to a restricted range, relatively few occurrences (often 80 or fewer), recent and widespread declines, or other factors.
G4 - Apparently Secure—Uncommon but not rare; some cause for long-term concern due to declines or other factors.
G5 - Secure—Common; widespread and abundant.

STATE RANKING
The state rank (S-rank) is assigned much the same way as the global rank, but state ranks refer to the imperilment status only within California's state boundaries.

S1 - Critically Imperiled—Critically imperiled in the state because of extreme rarity (often 5 or fewer occurrences) or because of factor(s) such as very steep declines making it especially vulnerable to extirpation from the state.
S2 - Imperiled—Imperiled in the state because of rarity due to very restricted range, very few occurrences (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the state.
S3 - Vulnerable—Vulnerable in the state due to a restricted range, relatively few occurrences (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation from the state.
S4 - Apparently Secure—Uncommon but not rare in the state; some cause for long-term concern due to declines or other factors.
S5 - Secure—Common, widespread, and abundant in the state.

The site of the proposed residence is a plateau area that has been cleared and is now annual grassland. This area appears to be mowed routinely for fuel reduction purposes. There are several small chamise shrubs (*Adenostoma fasciculatum*) scattered throughout this area at low cover, which provide evidence of its original condition. The annual grassland consists primarily of non-native species, including invasive weeds, such as wild oats (*Avena* spp.), red brome (*Bromus madritensis* ssp. *rubens*), and red-stemmed filaree (*Erodium cicutarium*), but it also contains native species, such as common fiddleneck (*Amsinckia intermedia*), valley popcorn flower (*Plagiobothrys canescens*), slender tarplant (*Deinandra fasciculata*), and shiny peppergrass (*Lepidium nitidum*). There are patches of thin, rocky soils as well, which support lower plant densities and more native herbs when compared to the deeper surrounding soils. These rocky patches support large numbers of common goldfields (*Lasthenia gracilis*), as well as some Bigelow's spike moss (*Selaginella bigelovii*) and native herbs such as California aster (*Corethrogyne filaginifolia*), Angel's gilia (*Gilia angelensis*), and pygmy weed (*Crassula*

connata). These areas were carefully searched for Lyon's pentachaeta, as they provide apparently suitable habitat for this rare species, but it was not found. Just south of the plateau area is a rocky ridgeline that supports a band of open chamise chaparral with an understory that consists primarily of non-native grasses and native and non-native forbs. An exposed, south-facing slope located just south of this ridgeline also contains additional rocky habitats and patches of open California buckwheat scrub (*Eriogonum fasciculatum*), as well as more annual grassland.

The majority of the access road alignment is comprised of non-native annual grassland as well as the existing paved road. Native coastal sage scrub occurs at some locations along the moderately steep road alignment, and the principal species of the coastal scrub in this area are black sage (*Salvia mellifera*), California buckwheat, and California brittle bush (*Encelia californica*). These stands have an open to intermittent canopy and contain an herbaceous layer that consists primarily of non-native grasses. These slopes are dry and exposed, and native herbs are not well represented. Turkish rugging (*Chorizanthe staticoides*), wishbone bush (*Mirabilis laevis* var. *crassifolia*), and blue dicks (*Dichelostemma capitatum*) were among the native herbs found in this area. There is a much denser stand of coastal sage scrub within the access road footprint on the north-facing slope near Olsen Road, which is comprised of California sagebrush, California buckwheat, black sage, and purple sage (*Salvia leucophylla*). A dry ephemeral drainage runs through the development footprint along the base of this slope. The south-facing hillside on the opposite side of the drainage supports a more open stand of coastal scrub with a different species composition, which includes for example California buckwheat, California brittle bush, chaparral yucca (*Hesperoyucca whipplei*), and a small number of coast prickly-pear (*Opuntia littoralis*). There is also a stand of chaparral surrounding the drainage, which extends onto the slope to the north. This stand is characterized by large sclerophyllous shrubs including toyon (*Heteromeles arbutifolia*) and lemonade berry (*Rhus integrifolia*).

Rare, Threatened, and Endangered Species

As stated, no species considered to be rare, threatened, or endangered were found within the proposed development footprint during the survey.

Ventura County Locally Important Plant Species

One (1) plant species included on the County's Locally Important Plant List was found during the survey, small-flowered morning-glory (*Convolvulus simulans*). This species is currently proposed for removal from this list, although we understand this has not been formally approved at this time.

Small-flowered Morning-glory

Small-flowered morning-glory is an annual herb in the morning-glory family (Convolvulaceae), which grows on clay soils and on serpentinite seeps within openings in chaparral and coastal scrub, as well as within valley and foothill grassland. At this site, the species occurs on heavy clay soils in annual grassland in the southern portion of the proposed access road footprint. The occupied habitats are relatively flat. Plant species associated with small-flowered morning-glory at the site include non-native grasses and forbs such as common wild oat (*Avena fatua*), soft chess

(*Bromus hordeacous*), red brome, and tocalote (*Centaurea melitensis*). Figure 1 shows the location where this species was found. It is well distributed throughout this area, although at varying densities. An estimated 3,500 plants were found within the project footprint. A representative photo of the small-flowered morning-glory at the site is provided as Photo 1F.

California Rare Plant Rank (CRPR) 4 Species

Two (2) CRPR 4 plants occur at the site, including Catalina mariposa lily (*Calochortus catalinae*) [CRPR 4.2] and small flowered morning-glory [CRPR 4.2]. CRPR 4 plants are not rare, but rather are included on a "watch list" of species with limited distribution. CRPR 4 species do not meet criteria for listing as Threatened or Endangered under the California Endangered Species Act. Another CRPR 4 species, Plummer's mariposa lily (*Calochortus plummerae*), was found in rocky habitats in the project footprint in low numbers during prior rare plant surveys of the site, but it was not seen during this survey. Perhaps the bulbs of this species if still present within the project footprint did not emerge from dormancy this year due to the low rainfall.

Catalina Mariposa Lily

Catalina mariposa lily is a perennial bulbiferous herb in the lily family (Liliaceae), which occurs in chaparral, cismontane woodland, coastal scrub, and valley and foothill grassland in parts of coastal southern California. Catalina mariposa lily was found in low numbers in herbaceous habitats as well as along the margins of the chaparral and coastal scrub at several locations at the site. This species is relatively common in suitable habitats in the region. Due to their unprotected status, Catalina mariposa lilies were not mapped during the survey.

Potential Mitigation Sites

The generalized habitats within the two potential mitigation sites that were surveyed and mapped include coastal sage scrub. As stated in the introduction, these sites were evaluated but ultimately not selected by the County as deed restricted areas to mitigate project impacts to coastal sage scrub. During the survey of these areas, a total of 74 vascular plant species were found, including two (2) ferns and fern allies, 56 dicots, and 16 monocots. Of these, 56 species were native and 18 were non-native. A list of the vascular plant species identified within these areas is attached to this letter. The potential mitigation sites consist of one (1) natural community type, which is shown in **Table 2**, below. The conservation status rank is from the CDFW's *California Natural Communities List,* dated January 24, 2018.

Table 2
Natural Communities at Potential Mitigation Sites

Habitat Class	Natural Community*	Conservation Status Rank
Coastal Sage Scrub	Purple Sage - California Sagebrush Shrubland Association (*Salvia leucophylla - Artemisia californica*)	G4S4
* See the footnote in Table 1 for an explanation of global and state rankings.		

The potential mitigation sites are shown on Figure 1. The potential mitigation sites are naturally vegetated moderately steep and generally north facing slopes underlain by volcanic clay-loam soils. Vegetation consists of coastal sage scrub dominated by purple sage and California sagebrush with a dense to intermittent shrub canopy. Other native shrub species such as poison oak (*Toxicodendron diversilobum*), sawtoothed goldenbush (*Hazardia squarrosa*), toyon, and blue elderberry (*Sambucus nigra* ssp. *caerulea*) were also present, but at relatively low cover. There are occasional herbaceous openings in the scrub, which contain both native and non-native grasses and forbs, especially giant wildrye (*Elymus condensatus*), coast melic grass (*Melica imperfecta*), coast morning-glory (*Calystegia macrostegia* ssp. *cyclostegia*), rip-gut brome (*Bromus diandrus*), and red brome. **Plate 2**, Photo 2A and Photo 2B provide an overview as well as a closer view of the habitats at the largest potential mitigation site #1, respectively, and Photo 2C provides a representative view of the habitats at potential mitigation site #2.

Both of the potential mitigation sites are relatively pristine and do not appear to have been mechanically disturbed. Also, they are not within required brush clearance zones. Although not directly connected to other scrub habitats (they are surrounded primarily by orchards and annual grassland) these areas are the most intact and highest quality coastal sage scrub on the property, in terms of shrub density and native herb cover and diversity. Although the non-native herb cover is significant in some areas, it is not as prevalent as in the other coastal sage scrub habitats at the site. Furthermore, the largest patch contains a federally Threatened species, which is discussed below.

Rare, Threatened, and Endangered Species

As stated, one (1) plant species considered to be rare, threatened, or endangered was found within one of the potential mitigation areas during the survey, Conejo dudleya.

Conejo Dudleya

Conejo dudleya is a perennial succulent herb in the Stonecrop family (Crassulaceae), which occurs on rocky or gravelly clay or volcanic rock substrates in coastal scrub and grassland habitats. It is listed as Threatened under the Federal Endangered Species Act and also receives a CRPR of 1B.2. The species has a highly localized distribution. Provided conditions are suitable, the plant grows a rosette of succulent leaves from an underground stem and flowers from May to July. The above ground portion of the plant withers each summer. At this site, the species occurs on upper hill slopes on clay loam soils in herbaceous openings in coastal sage scrub both on and near shallow volcanic outcrops. The occupied habitats are moderately sloped and generally north facing. Plant species associated with the Conejo dudleya include non-native herbs such as ripgut brome, red brome, tocalote, rattail fescue (*Festuca myuros*), and red-stemmed filaree, and native shrubs such as California buckwheat, deerweed (*Acmispon glaber*), purple sage, and California sagebrush. It is also associated with Bigelow's spike moss and several native bryophytes and lichens. Figure 1 shows the locations where this species was found along with the number of individual plants at each location. A representative photo of the Conejo dudleya at the site is provided as Photo 2D.

Ventura County Locally Important Plant Species

No Ventura County Locally Important Plants were found within the potential mitigation sites during the survey.

California Rare Plant Rank (CRPR) 4 Species

Several Catalina mariposa lilies (*Calochortus catalinae*) [CRPR 4.2] were found within both potential mitigation sites. Due to their unprotected status, these lilies were not mapped during the survey.

If you have further questions, please contact me at Envicom Corporation at (818) 879-4700.

Sincerely,

Jim Anderson
Senior Biologist

Attachments:

- Vascular Plants Observed, Proposed Development Footprint
- Vascular Plants Observed, Potential Mitigation Sites
- Figure 1, Rare Plant Survey and Natural Communities Map, Spring 2018
- Plate 1, Habitats and Special-Status Plants within Proposed Development Footprint
- Plate 2, Habitats and Special-Status Plants within Potential Mitigation Sites

Vascular Plants Observed
Proposed Development Footprint
Spring 2018
* indicates a non-native or introduced species

GROUP **Family** ***Scientific Name***	**Common Name**
FERNS AND ALLIES	
Selaginellaceae (Spike-moss Family)	
Selaginella bigelovii	Bigelow's spike moss
FLOWERING PLANTS-DICOTS	
Adoxaceae (Muskroot Family)	
Sambucus nigra ssp. *caerulea*	blue elderberry
Amaranthaceae (Amaranth Family)	
**Amaranthus albus*	tumbleweed
Anacardiaceae (Sumac or Cashew Family)	
Rhus integrifolia	lemonade berry
Apiaceae (Carrot Family)	
**Foeniculum vulgare*	sweet fennel
Sanicula crassicaulis	Pacific sanicle
Apocynaceae (Dogbane Family)	
Asclepias fascicularis	narrowleaf milkweed
Asteraceae (Sunflower family)	
Artemisia californica	California sagebrush
Baccharis pilularis	coyote brush
Baccharis salicifolia	mulefat
**Centaurea melitensis*	tocalote
Corethrogyne filaginifolia	California aster
Deinandra fasciculata	slender tarplant
Encelia californica	California encelia
Erigeron canadensis	horseweed
Eriophyllum confertiflorum	golden yarrow
**Hedypnois rhagadioloides*	Crete weed
**Hypochaeris glabra*	smooth cat's-ear
Isocoma menziesii var. *vernonioides*	coast goldenbush
Lasthenia gracilis	common goldfields
Malacothrix saxatilis	cliff aster
Pseudognaphalium microcephalum	felt-leaf everlasting
**Sonchus asper*	prickly sow-thistle
Stebbinsoseris heterocarpa	grassland silver puffs
Stephanomeria sp.	aster
Uropappus lindleyi	silver puffs

GROUP **Family** ***Scientific Name***	**Common Name**
Boraginaceae (Borage or Waterleaf Family)	
Amsinckia intermedia	common fiddleneck
Eucrypta chrysanthemifolia	common eucrypta
Pectocarya linearis spp. *ferocula*	slender pectocarya
Phacelia cicutaria var. *hispida*	caterpillar phacelia
Plagiobothrys canescens	valley popcorn flower
Brassicaceae (Mustard Family)	
**Brassica nigra*	black mustard
**Hirschfeldia incana*	hoary mustard
Lepidium nitidum	shiny peppergrass
**Lepidium strictum*	prostrate peppergrass
**Sisymybrium irio*	London rocket
Thysanocarpus laciniatus	narrowleaf fringe-pod
Cactaceae (Cactus Family)	
Opuntia littoralis	coastal prickly-pear
Caprifoliaceae (Honeysuckle Family)	
Lonicera subspicata var. *denudata*	chaparral honeysuckle
Chenopodiaceae (Goosefoot Family)	
**Salsola australis*	southern Russian thistle
Cleomaceae (Spiderflower Family)	
Peritoma arborea	bladderpod
Convolvulaceae (Morning-glory Family)	
Calystegia macrostegia ssp. *cyclostegia*	coast morning-glory
**Convolvulus arvensis*	bindweed
Convolvulus simulans (California Rare Plant Rank 4, Ventura County Locally Important Plant – proposed for delisting)	small flowered morning-glory
Cuscuta californica	chaparral dodder
Crassulaceae (Stonecrop Family)	
Crassula conata	pygmy weed
Cucurbitaceae (Gourd Family)	
Marah macrocarpa	wild cucumber
Euphorbiaceae (Spurge Family)	
Croton setiger	turkey mullein
Euphorbia polycarpa	prostrate spruge
Fabaceae (Legume Family)	
Acmispon glaber	deerweed
Lupinus succulentus	succulent lupine

GROUP **Family** ***Scientific Name***	**Common Name**
**Medicago polymorpha*	common bur clover
**Vicia sativa*	spring vetch
Fagaceae (Oak Family)	
Quercus agrifolia	coast live oak
Geraniaceae (Geranium Family)	
**Erodium cicutarium*	red-stemmed filaree
Grossulariaceae (Gooseberry Family)	
Ribes speciosum	fuchsia flowered gooseberry
Lamiaceae (Mint Family)	
**Marrubium vulgare*	horehound
Salvia leucophylla	purple sage
Salvia mellifera	black sage
Malvaceae (Mallow Family)	
Malacothamnus fasciculatus	bush mallow
**Malva parviflora*	cheeseweed
Montiaceae (Miner's Lettuce Family)	
Calandrinia ciliata	red maids
Nyctaginaceae (Four o'clock Family)	
Mirabilis laevis var. *crassifolia*	wishbone bush
Polemoniaceae (Phlox Family)	
Gilia angelensis	Angel's gilia
Polygonaceae (Buckwheat Family)	
Chorizanthe staticoides	Turkish rugging
Eriogonum elongatum	wand buckwheat
Eriogonum fasciculatum	California buckwheat
**Rumex crispus*	curly dock
Rosaceae (Rose Family)	
Adenostoma fasciculatum	chamise
Heteromeles arbutifolia	toyon
Rubiaceae (Madder Family)	
Galium nuttallii	climbing bedstraw
Solanaceae (Nightshade family)	
**Nicotiana glauca*	tree tobacco
Solanum xanti	purple nightshade
FLOWERING PLANTS-MONOCOTS	
Agavaceae (Century Plant Family)	
Chlorogalum pomeridianum	wavyleaf soap plant
Hesperoyucca whipplei	chaparral yucca
Alliaceae (Onion or Garlic Family)	
Allium haematochiton	red-skinned onion

GROUP **Family** ***Scientific Name***	**Common Name**
Asphodelaceae (Asphodel Family)	
**Asphodelus fistulosus*	onion-leaved asphodel
Liliaceae (Lily Family)	
Calochortus catalinae [California Rare Plant Rank 4.2]	Catalina mariposa lily
Poaceae (Grass Family)	
**Avena barbata*	slender wild oat
**Avena fatua*	common wild oat
**Bromus diandrus*	ripgut brome
**Bromus hordeaceus*	soft chess
**Bromus madritensis* ssp. *rubens*	red brome
Elymus condensatus	giant wildrye
Festuca microstachys	small fescue
**Festuca myuros*	rattail fescue
**Hordeum murinum*	foxtail barley
**Lamarckia aurea*	goldentop
Melica imperfecta	coast melic grass
Muhlenbergia microsperma	littleseed muhly
Poa secunda	bluegrass
**Schismus barbatus*	Mediterranean grass
Stipa lepida	foothill needlegrass
Stipa pulchra	purple needlegrass
Themidaceae (Brodiaea Family)	
Dichelostemma capitatum	blue-dicks

Vascular Plants Observed
Potential Mitigation Sites
Spring 2018
* indicates a non-native or introduced species

GROUP **Family** ***Scientific Name***	**Common Name**
FERNS AND ALLIES	
Pteridaceae (Brake Family)	
Pellaea andromedifolia	coffee fern
Selaginellaceae (Spike-moss Family)	
Selaginella bigelovii	Bigelow's spike moss
FLOWERING PLANTS-DICOTS	
Adoxaceae (Muskroot Family)	
Sambucus nigra ssp. *caerulea*	blue elderberry
Anacardiaceae (Sumac or Cashew Family)	
**Schinus molle*	Peruvian pepper
Toxicodendron diversilobum	poison oak
Apiaceae (Carrot Family)	
Apiastrum angustifolium	wild celery
Asteraceae (Sunflower family)	
Acourtia microcephala	sacapellote
Artemisia californica	California sagebrush
Baccharis pilularis	coyote brush
Brickellia californica	California brickelbush
**Carduus pycnocephalus*	Italian thistle
**Centaurea melitensis*	tocalote
Encelia californica	California encelia
Erigeron foliosus var. *foliosus*	fleabane aster
Eriophyllum confertiflorum	golden yarrow
Hazardia squarrosa	sawtoothed goldenbush
**Hypochaeris glabra*	smooth cat's-ear
**Lactuca serriola*	prickly lettuce
Lasthenia gracilis	common goldfields
Malacothrix saxatilis	cliff aster
Pseudognaphalium californicum	California everlasting
Rafinesquia californica	California chicory
**Sonchus asper*	prickly sow-thistle
Stephanomeria sp.	aster
Uropappus lindleyi	silver puffs
Boraginaceae (Borage or Waterleaf Family)	
Amsinckia intermedia	common fiddleneck
Eucrypta chrysanthemifolia	common eucrypta

GROUP **Family** ***Scientific Name***	**Common Name**
Phacelia cicutaria var. *hispida*	caterpillar phacelia
Brassicaceae (Mustard Family)	
**Brassica nigra*	black mustard
**Hirschfeldia incana*	hoary mustard
**Sisymybrium orientale*	Oriental mustard
Thysanocarpus laciniatus	narrowleaf fringe-pod
Cleomaceae (Spiderflower Family)	
Peritoma arborea	bladderpod
Convolvulaceae (Morning-glory Family)	
Calystegia macrostegia ssp. *cyclostegia*	coast morning-glory
Crassulaceae (Stonecrop Family)	
Dudleya lanceolata	lanceleaf live-forever
Dudleya parva [Federally Threatened, California Rare Plant Rank 1B.2]	Conejo dudleya
Cucurbitaceae (Gourd Family)	
Marah macrocarpa	wild cucumber
Fabaceae (Legume Family)	
Acmispon glaber	deerweed
Lathyrus vestitus var. *vestitus*	chaparral sweet pea
Lupinus sparsiflorus	Coulter's lupine
Geraniaceae (Geranium Family)	
**Erodium cicutarium*	red-stemmed filaree
Grossulariaceae (Gooseberry Family)	
Ribes speciosum	fuchsia flowered gooseberry
Lamiaceae (Mint Family)	
Salvia leucophylla	purple sage
Nyctaginaceae (Four o'clock Family)	
Mirabilis laevis var. *crassifolia*	wishbone bush
Onagraceae (Evening-Primrose Family)	
Epilobium canum ssp. *canum*	California fuchsia
Orobanchaceae (Broomrape Family)	
Castilleja exserta ssp. *exserta*	purple owl's clover
Papaveraceae (Poppy Family)	
Eschscholzia californica	California poppy
Polemoniaceae (Phlox Family)	
Gilia angelensis	Angel's gilia
Polygonaceae (Buckwheat Family)	
Eriogonum elongatum	wand buckwheat
Eriogonum fasciculatum	California buckwheat

GROUP **Family** ***Scientific Name***	**Common Name**
Pterostegia drymarioides	thread stem
Rosaceae (Rose Family)	
Cercocarpus betuloides var. *betuloides*	birchleaf mountain mahogany
Heteromeles arbutifolia	toyon
Rubiaceae (Madder Family)	
Galium angustifolium ssp. *angustifolium*	narrowleaf bedstraw
Galium aparine	annual bedstraw
Galium nuttallii	climbing bedstraw
Solanaceae (Nightshade family)	
Solanum douglasii	white nightshade
Solanum xanti	purple nightshade
FLOWERING PLANTS-MONOCOTS	
Agavaceae (Century Plant Family)	
Chlorogalum pomeridianum	wavyleaf soap plant
Hesperoyucca whipplei	chaparral yucca
Liliaceae (Lily Family)	
Calochortus catalinae [California Rare Plant Rank 4.2]	Catalina mariposa lily
Poaceae (Grass Family)	
**Avena barbata*	slender wild oat
**Avena fatua*	common wild oat
**Bromus diandrus*	ripgut brome
**Bromus hordeaceus*	soft chess
**Bromus madritensis* ssp. *rubens*	red brome
Elymus condensatus	giant wildrye
Festuca microstachys	small fescue
**Festuca myuros*	rattail fescue
**Festuca perenne*	Italian ryegrass
**Hordeum murinum*	foxtail barley
Melica imperfecta	coast melic grass
Stipa lepida	foothill needlegrass
Themidaceae (Brodiaea Family)	
Dichelostemma capitatum	blue-dicks

DAY FARMS SUBDIVISION – COUNTY CASE NO. SD06-0041

envicom

Rare Plant Survey and Natural Communities Map, Spring 2018

0 175 350 Feet

PAGE 1

Photo 1A – The photo provides a representative view of the plateau area, which is the location of the proposed single-family residence. This area consists of a mosaic of non-native annual grassland and patches of thin, rocky soils.

Photo 1B – This photo provides a view of the open chamise chaparral (*Adenostoma fasciculatum*) that grows along the rocky ridgeline in the southern portion of the grading footprint for the proposed single-family residence.

Photo 1C – This photo shows coastal sage scrub within the grading footprint for the proposed access road. This patch consists primarily of California brittle bush (*Encelia californica*) and California sagebrush (*Artemisia california*).

Photo 1D – This photo is representative of the dense annual grassland that occurs within much of the grading footprint for both the access road and residential pad area.

Photo 1E – The dense mixed coastal sage scrub within the southern portion of the grading limits for the access road is shown. This stand consists primarily of *Artemisia californica, Eriogonum fasciculatum, Salvia mellifera,* and *Salvia leucophylla,* and is located just north of Olsen Road.

Photo 1F – The flowering plant in this photo is small-flowered morning-glory (*Convolvulus simulans*), which grows on clay soils in annual grassland in the southern portion of the grading footprint for the proposed access road. It is proposed to be removed from the County's Locally Important Plant list.

DAY FARMS SUBDIVISION – COUNTY CASE NO. SD06-0041

envicom

Habitats and Special-Status Plants within Proposed Development Footprint

PLATE 1

Photo 2A – This photo provides an overview of Potential Mitigation Site 1.

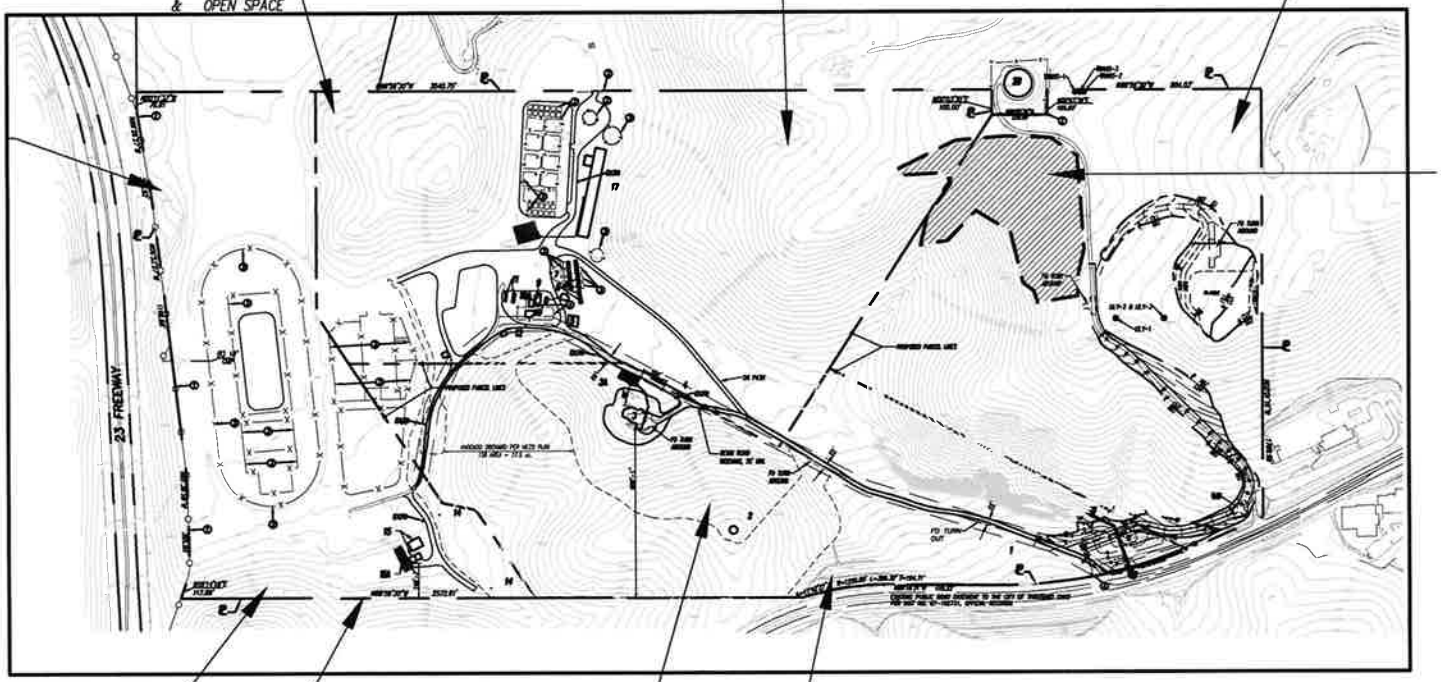
Photo 2B – The coastal sage scrub habitat at Potential Mitigation Site 1 is shown.

Photo 2C – The coastal sage scrub habitat at Potential Mitigation Site 2 is shown.

Photo 2D – Conejo dudleya (*Dudleya parva*) is shown, which is listed as Threatened under the Federal Endangered Species Act. This rare species occurs in openings in coastal sage scrub within Potential Mitigation Site 1.

EXHIBIT 1:

EXISTING DEVELOPMENT OR USES WITHIN DEVELOPMENT RESTRICTED AREAS



PROJECT: 2127 OLSEN ROAD
OWNER: ROBERT DAY
DATE: 10/25/2018

ENGINEERING GROUP, INC.
2219 E. THOUSAND OAKS BLVD., SUITE 405 (818) 383-3656
THOUSAND OAKS, CA. 91362 (805)419-4893 FAX

Mountain Geology, Inc.

CONSULTING ENGINEERING GEOLOGISTS

REPORT OF ENGINEERING GEOLOGIC STUDY

PROPOSED RESIDENTIAL DEVELOPMENT
PROPOSED PARCEL # 2 - TENTATIVE PARCEL MAP # 5513

APN 500-0-393-165
APPROXIMATELY 213.5 ACRES
VICINITY OF OLSEN ROAD AND THE FILLMORE (23) FREEWAY
COUNTY OF VENTURA, CALIFORNIA

PREPARED FOR BOB AND LAURA DAY
c/o
LIBERTY INVESTMENTS, INC.

APRIL 1, 2006 MGI Project No.: JH5927

Mitigated Negative Declaration
SD06-0041
Attachment 8 - Geologic Report

5158 COCHRAN ST. • SIMI VALLEY, CA 93063 • (805) 522-5174 • FAX (805) 582-1228

Mountain Geology, Inc.

CONSULTING ENGINEERING GEOLOGISTS

April 1, 2006

MGI Project No.: JH5927

Bob and Laura Day
c/o Liberty Investments, Inc.
P.O. Box 789
Moorpark, CA 93020

SUBJECT: REPORT OF ENGINEERING GEOLOGIC STUDY, PROPOSED RESIDENTIAL DEVELOPMENT, PROPOSED PARCEL # 2 - TENTATIVE PARCEL MAP # 5513, APN 500-0-393-165, APPROXIMATELY 213.5 ACRES, VICINITY OF OLSEN ROAD AND THE FILLMORE (23) FREEWAY, COUNTY OF VENTURA, CALIFORNIA

Dear Mr. and Mrs. Day,

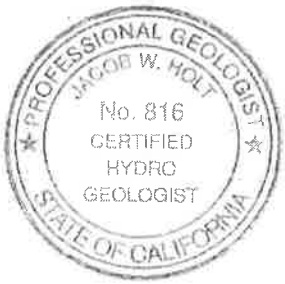
Mountain Geology, Inc. (MGI) is pleased to report the findings of our engineering geologic study performed with respect to the proposed residential development (Proposed Parcel # 2 - Tentative Parcel Map # 5513) located in the County of Ventura, California. Work performed as part of our engineering geologic study was in general accordance with the authorized scope of work presented in our proposal, dated January 3rd, 2006, which was formally authorized by you on January 17th, 2006.

This report summarizes our scope of work and presents the results of our research, our analyses and interpretation of surficial and subsurface geologic data, and presents our engineering geologic conclusions and recommendations concerning the subject property and the proposed project. Based on the results of our engineering geologic study, it is currently our opinion that the proposed project is feasible from an engineering geologic standpoint provided the recommendations presented in this report, and those presented by the Project Geotechnical Engineer and Project Heath Specialist, are properly incorporated in the design and implemented during construction.

We appreciate the opportunity to provide you with our professional engineering geologic services. It is strongly recommended that you read this report from cover to cover in order to understand the assumptions and limitations of this study and to avoid taking a finding or recommendation out-of-context. Please avoid misunderstandings or misinterpretation of this report by calling the undersigned with any questions you may have.

Respectfully Submitted,
MOUNTAIN GEOLOGY, INC.

Jake W. Holt
PG 7404, CEG 2282, CHG 816 exp. 11-30-06
Senior Project Engineering Geologist



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INTRODUCTION

General Remarks and Purpose

The following report summarizes findings of our engineering geologic study concerning the subject property. The purpose of this study was to determine and evaluate the geologic conditions of the subject property with respect to the proposed residential development of the site. Our engineering geologic study of the subject property was performed in conjunction with a geotechnical engineering study of the site by CalWest Geotechnical. To clarify, MGI is the *Project Engineering Geologist* and CalWest Geotechnical is the *Project Geotechnical Engineer* with respect to the proposed project.

Proposed Development

Information concerning the proposed development was provided by the client. In addition, a tentative parcel map/preliminary grading plan, prepared by LC Engineering Group, Inc., was provided. This information and plan review was the basis for our engineering geologic study. Based on the current plan, it is our understanding that it is proposed to construct a custom single-family residence, guest house, swimming pool, and access road on the subject property. The proposed structures and planned access road are illustrated on the *Preliminary Geologic Maps* which are attached to this report as Plates 1, 2, and 3.

Grading will be required for the development of the site and will include cutting and filling during pad, access road, and driveway construction. Retaining walls may be utilized, if desired, to support excavated areas and future compacted fill. Conventional foundations will be utilized for support of the proposed structures per the recommendations of the Project Geotechnical Engineer, CalWest Geotechnical. Formal plans have not been prepared and await, in part, the conclusions and recommendations of this report.

Sewers are not currently available to service the subject property. Thus, it is our understanding that it is proposed to construct a private sewage disposal system on the subject property in order to serve the proposed residence and guest house. The proposed private sewage disposal system will most likely consist of a septic tank and seepage pit(s) per the recommendations of the Project Geotechnical Engineering or Project Environmental Health Specialist. Formal private sewage disposal system plans have not been prepared and await, in part, the conclusions and recommendations of this report.

Scope of Work

Our engineering geologic study of the subject property was conducted during January through March of 2006 and included the following tasks:

- Review of the site development plans which were provided to our office.
- Research and review of available County files and archives for geologic data pertinent to the subject property and adjacent area.

- A preliminary site reconnaissance by MGI's Project Engineering Geologist which included checking site access for exploration equipment and marking the proposed exploratory locations. Subsequent to the preliminary site reconnaissance, Underground Service Alert (USA) was notified so that they, or their designated locators, could mark any known underground utility lines within our designated area of exploration.

- Review of selected aerial photographs, published engineering geologic references, and available published and unpublished engineering geologic and geotechnical engineering reports. The references cited or utilized as part of this study are listed in the REFERENCES section of this report.

- Excavation and logging of 12 test pits (i.e. Test Pits # 26-37) within the subject property. The test pits were excavated with a rubber-tire backhoe and a track-mounted excavator. When completed with our examination and logging of the aforementioned exploratory excavations, the excavations were backfilled with the spoils generated from the excavation process. The backfilling of the exploratory excavations did not involve "certified compaction" performed under the observation of the Project Geotechnical Engineer. The detailed geologic logs test pit excavations are presented in Appendix A.

- Geologic field mapping of the surficial deposits and/or outcrops located within and adjacent to the subject property.

- Preparation of a site-specific *Preliminary Geologic Maps* (scale: 1" equals 150' and 1" equals 50') which utilize the current tentative parcel map/grading and drainage plan, prepared by LC Engineering Group, Inc., as a topographic base. The *Preliminary Geologic Maps* illustrates the proposed project, the locations of MGI's exploratory excavations, locations of any previous exploratory excavations located within or near the subject property, the locations of the geologic cross-sections constructed as part of this study, and the interpreted geologic conditions of the site based on the findings of our engineering geologic study. The *Preliminary Geologic Maps* are attached to this report as Plates 1, 2, and 3.

- Preparation of site-specific *Geologic Sections H-H', I-I', and J-J'* (scale: 1" equals 50') which illustrate the topographic and interpreted geologic and hydrogeologic conditions of selected portions of the subject property based on the findings of our engineering geologic study. The locations and orientations of the geologic sections are typically intended to illustrate the interpreted geologic and hydrogeologic conditions underlying the "worst-case" or steepest slope of the area of the proposed project for use by the Project Geotechnical Engineer. However, the locations and orientations of the geologic sections may also illustrate other portions of the site or specific geologic conditions deemed pertinent to this study. *Geologic Sections H-H', I-I', and J-J'* are attached to this report as Plates 4 and 5.

- Analysis of the geologic and hydrogeologic data obtained from the aforementioned tasks.

- Preparation of this report that presents our engineering geologic findings, conclusions, and recommendations with respect to the subject property and proposed project.

- All aspects of this study were performed by, or under the direct supervision of, a State of California Certified Engineering Geologist.

SITE DESCRIPTION

Site Location

The subject property currently consists of a large (approximately 213.5 acres) and rectangular-shaped hillside and alluvial property located in the Thousand Oaks area of the County of Ventura, California. Specifically, the property is located south of Tierra Rejada Road, west of the City of Simi Valley, adjacent and east of the Fillmore (23) Freeway, on the northwest and downslope side of Olsen Road in a sparsely populated area (see Figure 1). Access to the proposed building site of Proposed Parcel # 2 from Olsen Road is via an existing asphalt driveway.

Regional Geomorphology

The property is situated at the margin between the Simi Hills and the Tierra Rejada Valley (see Figure 2). The geomorphic conditions of this area have been sculpted by factors associated with geographic location, underlying geologic conditions, tectonics, climate, erosion, and man. Based on our observations of the area, and our review of the *United States Geological Survey (USGS) Topographic Map of the Simi Valley West Quadrangle,* the general topographic conditions of the surrounding area consists of northeast/southwest-trending strike ridges which have been incised by northwest- and southeast–trending drainage courses (see Figure 2).

Site Geomorphology

Locally, the area of the proposed of the subject property is situated on the crest and southern flank of a northeast/southwest-trending strike ridge. The existing topographic conditions of the project area, as well as the surrounding area, are illustrated on the *Preliminary Geologic Maps* which are attached to this report as Plates 1, 2, and 3.

Past grading in the area of the proposed project appears to have consisted of minor cutting and filling associated with the construction of the existing access road. Slope gradients in the area of the proposed project vary from nearly horizontal to as steep as 1.5(h):1(v) in the walls of some the nearby drainage courses.

Existing Structures

Existing structures are not present in the area of the proposed project. However, equestrian structures (i.e. barns, stables, and arena areas) are present on the central and western portions of the subject property. In addition, a single-family residence is currently under construction on the

central portion of the subject property. It should be noted that some of these area have previously been the focus of engineering geologic studies performed by MGI (2004a, 2004b, and 2005)

Site Drainage

Site drainage is by sheet flow runoff via the existing contours and is directed towards the canyon bottoms. Street drainage along the existing asphalt driveway is presently uncontrolled.

Site Vegetation

Vegetation in the area of the proposed project consists of natural grasses, shrubs, and sparse trees.

PREVIOUS STUDIES

General

Available engineering geologic/geotechnical engineering records on file at our office and the County of Ventura Public Works Agency were researched as part of our engineering geologic study of the subject property. Pertinent engineering geologic and geotechnical engineering data presented in the available reports was utilized, as deemed appropriate, in our engineering geologic analysis of the site and preparation of this report. The references cited or utilized as part of this study are listed in the REFERENCES section of this report.

Subject Property

The property was previously explored by Mountain Geology, Inc. (MGI, 2004a) and West Coast Geotechnical (WCG, 2004). Specifically, MGI and WCG performed a preliminary engineering geologic and geotechnical engineering study of the subject property in February and March of 2004 with respect to the proposed construction of a custom single-family residence on the central portion of the subject property. Our studies included, in part, the excavation, logging, and sampling of 16 test pits within the site. Geologic information obtained from our previous study is illustrated on the *Preliminary Geologic Map # 1* which is attached to this report as Plate 1. To briefly summarize, MGI and WCG concluded that the site was suitable for the proposed residential development provided the presented recommendations were implemented during design and construction. The detailed findings, conclusions, and recommendations of this study are presented in the referenced reports which are on file at the County of Ventura Public Works Agency.

In addition, Mountain Geology, Inc. (MGI, 2004b) and West Coast Geotechnical (WCG) performed a supplemental preliminary engineering geologic and geotechnical engineering study of the subject property in September of 2004 with respect to the previously proposed grading of an arena and water tank area. Our supplemental studies included, in part, the excavation, logging, and sampling of an additional 9 test pits (i.e. Test Pits # 17-26) within the site. Geologic information obtained from our previous study is illustrated on the *Preliminary Geologic Map # 1* which is attached to this report as Plate 1. To briefly summarize, MGI and WCG concluded that

the site was suitable for the proposed grading provided the presented recommendations were implemented during design and construction. The detailed findings, conclusions, and recommendations of this study are presented in the referenced reports which are on file at the County of Ventura Public Works Agency.

Rough-grading was performed on the central portion of the subject property from November of 2004 through September of 2005 under the observation and approval of MGI (2005) and CalWest Geotechnical. The grading operation consisted of cutting and filling associated with the construction of fill-slopes, cut-slopes, and certified building pads on the central portion of the subject property with respect to the proposed construction of a single-family residence, water tank, and equestrian area. The engineering geologic details of the rough-grading operation are presented in the referenced as-built engineering geologic report which is on file at the County of Ventura Public Works Agency.

GEOLOGIC CONDITIONS

Regional Geologic Setting

The subject property is located within the Ventura Basin, a subunit of the Transverse Ranges geologic province of California. The general geologic structures and conditions of the Transverse Ranges geologic province are a direct result of lateral and compressional tectonics. Due to the bend in the San Andreas Fault, located to the northeast, this region of California is experiencing compressional stresses in addition to right-lateral strike-slip motion associated with the Pacific and North American plate boundary. This stress has produced a region characterized by east/west-trending mountain ranges, valleys, geologic structures, and numerous active faults which is in contrast to the overall north/northwest structural trend elsewhere in the state. Faulting of the region, due to the relatively high compressional forces, is primarily thrust or reverse-dip-slip faulting usually with lateral components.

The Ventura basin subunit is an elongated east-trending structural trough bordered on the north by the Santa Ynez and Topa Topa Mountains, on the south by the Santa Monica Mountains and Channel Islands, and on the east by the San Gabriel fault (Irvine, 1991). It is characterized by a very thick, nearly continuous sequence of Upper Cretaceous through Quaternary sedimentary rocks that has been deformed into a series of east-west trending folds associated with thrust and reverse faults.

Regional Geologic Mapping

Part of our engineering geologic study of the subject property involved the review of available geologic publications and regional geologic maps as the review of regional geologic data is often very useful in determining and analyzing the geologic conditions of a particular site. A brief summary of the pertinent data presented by available geologic publications and regional geologic maps is as follows:

Regional geologic mapping by Dibblee (1992) indicates that the low-lying canyon areas of the subject property are underlain by alluvial deposits (**Qa**) of Quaternary age with the slope and ridge areas of the site being underlain by bedrock consisting predominately of andesite and basaltic flows and breccias (**Tcva** and **Tcvb**) mapped as part of the Conejo Volcanics of middle Miocene age. Dibblee's mapping indicates that vague stratification (i.e. bedding) is present within the underlying bedrock which dips shallowly towards the northwest. Faults are not mapped by Dibblee to traverse the subject property (see Figure 3).

Regional geologic mapping by the CDMG (1972) indicates that the low-lying canyon areas of the subject property are underlain by alluvial deposits (**Qal**) of Quaternary age with the slope and ridge areas of the site being underlain by bedrock consisting andesite and basaltic flows, breccias, and volcaniclastic sedimentary rocks (**Tcv**) mapped as part of the Conejo Volcanics of middle Miocene age. Their mapping also indicates that vague stratification (i.e. bedding) is present within the underlying bedrock which dips shallowly towards the northwest. Faults are not mapped by the CDMG to traverse the subject property (see Figure 4).

Site Geology

The geologic conditions (i.e. lithologies and structure) beneath the subject property have been interpreted and characterized based upon our review of published and unpublished geologic references, review of available engineering geologic and geotechnical engineering reports, our observations of isolated exposures available during surface mapping of the site and adjacent area, and the findings of our subsurface exploration. It should be noted that our interpretations of the geologic conditions of the subject property involve projections of data and require that geologic conditions remain reasonably constant between points of observation and/or exposure.

Geologic Units

Based on the findings of our engineering geologic study, the geologic units (i.e. earth materials) underlying the area of the proposed project consist of fill, soil, and alluvium over extrusive igneous bedrock. The mapped distribution of the geologic units underlying the subject property, based on the geologic data collected to date, is presented on the *Preliminary Geologic Maps* which are attached to this report as Plates 1, 2, and 3.

Uncertified Artificial Fill (af)

A minor amount of fill, which was generated during grading of the existing access road, is present on the downslope side of portions of road within the subject property. Based on the findings of the exploration phase of our engineering geologic study, the fill consists of an admixture of soil and bedrock and is described as clayey silt and sandy silt with gravel which is mottled dark yellowish brown and dusky brown, dry to slightly moist, and medium stiff. The gravel component consists of angular, cobble- to small boulder-size clasts of andesite. It should be noted that based on the findings of our engineering geologic study of the subject property, the existing artificial fill was not placed under geotechnical control or supervision and is thus considered uncertified.

Soil

Natural residual soil overlies the bedrock on the subject property. Based on the findings of the exploration phase of our engineering geologic study, the soil is described as clayey silt which is dusky brown, moderate brown, and dark reddish brown, dry to slightly moist, and medium stiff to stiff.

Alluvium (Qal)

Natural alluvial deposits are present in the canyon areas of the subject property. Based on the findings of our previous engineering geologic studies of the subject property (MGI, 2004a and 2004b), the alluvium consists of silty sand and clayey sand with gravel which is dark yellowish brown to moderate brown and dark reddish brown, massive, slightly moist, and is medium dense to very dense. The gravel component consists of subangular to subrounded, pebble-size clasts of andesite.

Landslide Debris (Qls)

Relatively shallow and localized landslides have been mapped on the eastern portion of the subject property by MGI during our engineering geologic studies of the site. The presence of the mapped landslide masses, and their lateral limits, was determined by our geologic field mapping of the subject property. Based on field observations, the mapped landslides appear to be relatively shallow failures of the soil and weathered bedrock. Factors contributing the cause of these landslides appear to be concentrated drainage on slopes over-steepened by erosion. The mapped limits of landslide debris within the subject property, based on geologic data obtained to date, are illustrated on the *Preliminary Geologic Maps* which are attached to this report as Plates 1, 2, and 3. To clarify, landslide debris does not underlie the area of the proposed project.

Bedrock (Tcv)

Bedrock underlying the area of the proposed project of the subject property consists of andesite and basalt mapped as part of the Conejo Volcanics of middle Miocene age. The andesite and basalt bedrock is exposed on outcrops and cut slopes within the subject property and was encountered in the test pits of our engineering geologic study.

The andesite bedrock is moderate brown, moderate reddish brown, light bluish gray, and pale purple, thickly bedded to massive, strong to very strong, hard to very hard, slightly to moderately fractured, and moderately weathered to slightly weathered with depth. The basalt bedrock is moderate brown to dusky yellowish brown, massive, slightly friable to strong, hard to very hard, slightly to moderately fractured, and moderately weathered to slightly weathered with depth.

Geologic Structure

The earth materials present within the subject property are common to this area of Ventura County and the geologic structure is generally consistent with regional trends.

Bedding

Bedding is the arrangement of a sedimentary rock in layers which is also referred to as stratification. A *bedding plane* is defined as the division plane in sedimentary or stratified rock that separates each successive layers, or beds, from the one above and below. The term may also be applied to a layered arrangement in sediment, igneous bedrock, or metamorphic bedrock.

The volcanic bedrock underlying the subject property is generally massive. However, mapping by MGI and others within the site indicates that the underlying volcanic bedrock is vaguely stratified with occasional and faint bedding which dips towards the northwest. It should be noted that MGI is of the opinion that the faint bedding within the underlying volcanic bedrock does not represent a plane of weakness. Never the less, the locations, depths (if obtained from a subsurface excavation), and orientations of the mapped bedding planes are presented on the *Preliminary Geologic Maps* which are attached to this report as Plates 1, 2, and 3. The structural interpretation of bedding within the underlying bedrock is illustrated on the geologic section(s) based on the measured true and/or calculated apparent dip of bedding.

Joints

A *joint plane* is the surface of a fracture or parting at which no appreciable movement has occurred parallel to the fracture, and only slight movement has occurred normal to the fracture. Joint surfaces can be systematic with subparallel orientations and regular spacing or non-systematic which irregular orientations, shape, and spacing. A *joint set* is a group of joint surfaces which are more or less parallel. A *joint system* is two or more *joint sets* which are subparallel to each other and intersect. Joints may be unfilled; that is, the fracture may be open and void of mineral infilling or an open joint surface may be occupied with some form of mineral infilling. Joints can occur in bedrock as well as in unlithified sedimentary deposits. The development of joint surfaces in bedrock is most commonly in response to burial, unburial, application of regional deformational forces, application of local deformational forces, and the cessation of regional or local deformational forces.

Joint planes mapped within the underlying bedrock dip steeply in various directions. The locations, depths (if obtained from a subsurface excavation), and orientations of the mapped joint planes are presented on the *Preliminary Geologic Maps* which are attached to this report as Plates 1, 2, and 3. The mapped joint surfaces are also illustrated, where appropriate, on the geologic section(s) based on the measured true and/or calculated apparent dip of the joint.

Shears

Shear is defined as a ductile deformation resulting from stresses that cause contiguous parts of a body, or material, to slide relative to each other in a direction parallel to their contact. A shear plane is defined as the surface or zone along which differential movement, by shear, has taken place. It should be noted that a shear plane is also synonymous with the definition of a fault. However, the term shear plane or shear zone is used when movement is interpreted to be in the "micro-sense" as compared to a "macro-sense" of displacement associated with a fault or fault zone. The development of a shear plane or shear zone in subsurface materials is most commonly

related to regional or local faulting and folding. Simply, the subsurface stresses and pressures associated with faulting and folding can deform the adjacent bedrock or portions thereof. The deformation and/or movement at the shear surface often results in the presence of a zone of gouge or breccia typically consisting of clay, silt, or pulverized material derived form the surrounding parent material. Shear planes can develop within bedrock along pre-existing parting surfaces such as bedding, foliation, or joints planes but can also develop between parting planes, within massive bedrock, and/or in orientations which cross-cut the pre-existing bedrock structures. Shear planes can also develop during mass slope movements such as landslide. In instances where the basal failure surface of a landslide (i.e. landslide plane) did not fail along a pre-existing shear surface, the pressures and stresses at the basal surface of a slope failure can form a shear plane by the grinding of subsurface materials as the landslide develops followed by decomposition of the materials at the shear surface aided by the interaction between the sheared materials and groundwater.

Significant or mapable shear planes were not identified within the underlying bedrock during our engineering geologic study of the subject property.

Folds

Analysis of structural geologic data obtained during our engineering geologic study indicates that a significant fold feature is not present within the subsurface of the subject property.

Faults

A *fault* is a fracture, or zone of closely related fractures, along which there has been significant relative displacement of the materials, on opposite sides of the fault, in a direction parallel to the fracture. Sudden movement along a fault releases energy in the form of seismic waves and is commonly known as an earthquake. A fault can be present as a single plane of fracture or shear, or a broad zone of deformation or distributed tectonic movement ranging in width from a few feet to several miles. A *fault trace* is the line formed by the intersection of a fault with the Earth's surface.

Faults are classified as either active, potentially active, or inactive. The State of California defines an "active" fault as a fault that has exhibited surface displacement within the Holocene epoch of geologic time (i.e. the last 11,000 years). Potentially active faults are defined by the State of California as those which display evidence of surface displacement movement in the Pleistocene epoch of geologic time (i.e. between 11,000 and 1.6 million years before present). Inactive faults are those which do not display evidence of surface displacement within the Pleistocene and Holocene (i.e. the last 1.6 million years).

The Alquist-Priolo Special Studies Act of 1972, with subsequent amendments and revisions (i.e. name revision in 1993 to the Alquist-Priolo Earthquake Fault Zoning Act), prohibits locating most structures planned for human occupancy across known active faults. This state law was a direct result of the 1971 San Fernando Earthquake, which was associated with extensive surface fault ruptures that damaged numerous homes, commercial buildings, and other structures. Under the Act, the State Geologist designates "California Earthquake Fault Zones", previously known

as "Special Studies Zones", around faults that are known to be *sufficiently active* and *well-defined*. A *sufficiently active* fault is defined as a fault that has exhibited surface displacement, along one or more of its segments or branches, within the Holocene epoch of geologic time (i.e. the last 11,000 years). A *well-defined* fault is defined as a fault whose trace is clearly detectable by a trained Geologist as a physical feature at or just below the ground surface. Most new development projects located within designated California Earthquake Fault Zones are required to demonstrate the absence of active faults underneath building areas. Furthermore, the Act specifies that it be assumed that active faults underlie the area located within 50 feet of the fault splays which are illustrated on the California Earthquake Fault Zone maps. No structures planned for human occupancy shall be permitted in this setback area unless detailed geologic investigation of this area indicates that active faults are not present. It should be noted that most local City and/or County governmental agencies are permitted to, and have adopted policies and/or criteria which are stricter than those established by the Act. Specifically, most local City and/or County governmental agencies prohibit the construction of a structure planned for human occupancy within 50 feet of an active fault once the exact location of the fault has been determined by a detailed geologic study.

The subject property is not located within a California Earthquake Fault Zone (see Figure 6) and no known potentially active or active faults cross the site.

HYDROGEOLOGY

Introduction

Hydrogeology is defined as the application of the science of geology to the study of the occurrence, distribution, quantity, movement, and quality of water below the surface of the earth and the interrelationship between the geologic conditions and groundwater. With respect to proposed project and our engineering geologic study of the subject property, our hydrogeologic analysis of the site primarily involved the determination of the presence and distribution of groundwater (current and/or historic) within the subsurface in order to perform accurate engineering geologic and geotechnical analysis of the site so that proper recommendations (mitigative or otherwise) can be made by MGI, the Project Geotechnical Engineer, and/or the Project Environmental Health Specialist with respect to the proposed project.

Current and historic groundwater conditions of the subject property were determined by our observations and measurements in our exploratory excavations of this engineering geologic study and our review of the referenced engineering geologic publications and reports. Off-site groundwater interpretations, performed when necessary by MGI as part of our preparation of the geologic sections, are based collectively on the groundwater conditions observed within the subject property, our review of groundwater data presented in the referenced engineering geologic publications and reports, and our analysis of the regional topographic and geologic conditions of the area.

If groundwater was encountered by MGI in the exploratory excavations, the excavations remained open for at least 24 hours so that groundwater readings could be performed during this period in order to accurately establish static groundwater levels.

Groundwater Defined

All water that is present beneath the surface of the Earth is referred to as subsurface water or *groundwater*. Groundwater most commonly occurs in two different zones within the subsurface. One zone, which usually occurs immediately below the ground surface, contains both water and air in the available pore space of the surrounding sediment or rock materials and is referred to as the *unsaturated zone*. And most often, the zone located beneath the *unsaturated zone* is an area in which all the available pore space is filled with water. This zone is referred to as the *saturated zone*. In the *unsaturated zone*, groundwater is most often present as moisture which is retained within the surrounding sediment or rock as a film on the grain surfaces or water which is percolating downward through the subsurface towards the *saturated zone*.

In the subsurface, groundwater can be unconfined, confined, semi-confined, or perched. A *confining bed* is a rock unit or layer which has a low hydraulic conductivity and thus restricts the movement of groundwater. The presence of a *confining bed*, or beds, within the subsurface can result in the presence of a confined, semi-confined, or perched groundwater condition.

In an unconfined subsurface condition, the upper surface of the saturated zone is referred to as the *potentiometric surface*. The *potentiometric surface* is commonly referred to as the "level of groundwater" or "groundwater table" and is the elevation in the subsurface at which the hydraulic pressure of the subsurface water is equal to atmospheric pressure. This is also the level or elevation at which water will be observed in a well, or exploratory excavation, which penetrates into the saturated zone. In a confined subsurface condition, the saturated zone is overlain by a *confining bed* and the upper surface of the saturated zone is referred to as the *piezometric surface*. The *piezometric surface* usually possesses a hydraulic pressure which is greater than atmospheric pressure and is the level or elevation at which water will be observed in a well, or subsurface excavation, which penetrates through the *confining bed* into the saturated zone.

Factors controlling the presence, elevation, and movement of groundwater include regional climatic conditions, geomorphology, distance to rivers, lakes, and oceans, geologic structure, hydraulic conductivity of the subsurface materials, dynamic characteristics of the water, strength of the gravitational field, irrigation, and land use. Thus, the presence, elevation, and movement of groundwater can vary significantly over short distances and can also fluctuate. Therefore, groundwater levels at the time of construction and during the life of the structures may vary from the observations or conditions encountered at the time of our field exploration.

Observed Site Groundwater Conditions

Based on the findings of our engineering geology study, unconfined conditions are interpreted to the present within the subsurface of the subject property. Thus, the underlying level of groundwater, for purposes of this study, shall be is referred to as the *potentiometric surface*.

The underlying potentiometric surface was not encountered during our engineering geologic study of the subject property to the maximum depth explored (i.e. 11 feet below existing grade). In addition, seeps, springs, or perched water was not observed within the site during our study.

Historic Site Groundwater Conditions

Evidence of a historically high potentiometric surface, including seeps, springs, or perched water, was not observed during our engineering geologic study of the subject property to the maximum depth explored. In addition, the referenced Seismic Hazard Evaluation Report for the Simi Valley West Quadrangle does not indicate the presence of a "*Historically Shallow Groundwater Level*" within the subsurface in the area of the proposed project (DOC DMG; now referred to as the California Geological Survey - CGS, 1997 – revised 2001).

Highest Anticipated Site Groundwater Conditions

As previously stated, the underlying potentiometric surface, or evidence of a historically high potentiometric surface, was not encountered during our engineering geologic study of the subject property to the maximum depth explored (i.e. 11 feet below existing grade). In addition, seeps, springs, or perched water was not observed within the site during our study.

Based on the findings of our study, the underlying potentiometric surface is interpreted to be in excess of 50 feet below existing grade in the area of the proposed building pad of the subject property. While it is known that the presence, elevation, and movement of groundwater can vary significantly over short distances and can also fluctuate; based upon the location, elevation, topographic and geologic conditions of the subject property, the underlying potentiometric surface is not currently anticipated to rise to an elevation higher than this interpretation.

It should be noted that the underlying potentiometric surface is interpreted to be at a shallower depth in the alluvial areas of the subject property.

Anticipated Path of Sewage Effluents

At this time, it is our understanding that it is currently planned to construct the seepage pit(s) of the proposed private sewage disposal system in close proximity to the proposed custom single-family residence and guest house of the subject property. Based on information provided to this office, deep subsurface exploration and percolation testing shall be performed in the area of the proposed seepage pit(s) by the Project Geotechnical Engineer. Once completed, the details concerning the subsurface exploration, testing, and design of the private sewage disposal system shall be provided by the Project Geotechnical Engineer.

In the interim, the following general engineering geologic findings and conclusions are presented concerning the proposed private sewage disposal system based on the findings of our engineering geologic study of the subject property.

The underlying bedrock should provide adequate absorption of effluent as required by the local regulatory agency for the design and use of a seepage pit-type private sewage disposal system; however, more than one seepage pit may be required.

Anticipated paths of future effluents are vertically downward through fractures in the underlying bedrock downward to the potentiometric surface interface. Based upon the findings of our engineering geologic study of the subject property, mounding on a confining bed or boundary, or daylighting of sewage effluent is not anticipated to occur.

The installation of the proposed private sewage disposal system and the discharge of effluents on the site is not anticipated to create or cause adverse conditions to the site or adjacent properties due to the favorable geologic structure and the favorable effect of the recommended capping depth. Please refer to the **RECOMMENDATIONS** section of this report for general engineering geologic recommendations concerning the proposed private sewage disposal system.

SEISMIC CONSIDERATIONS

Introduction

Earthquakes create the greatest hazard to life and property in California. This is due to their frequency of occurrence and their numerous and widespread effects in the region. The primary negative effects of earthquakes to life and property include *surface fault rupture* and *ground shaking*. However, there are also numerous secondary effects associated with earthquakes which are equally hazardous. These include phenomena known as *ground failures* and *triggered water movements*. Ground failures are induced by earthquake motion and typically involve the loss of strength or failure of the underlying materials. Examples of seismically-induced ground failure include *liquefaction*, *landsliding*, *ground lurching*, *rockfall*, *bedrock shattering*, and *differential settlement*. Seismically-triggered water movements include *tsunamis* and *seiches*.

A seismic hazard evaluation was performed as part of our engineering geologic study of the subject property in order to access the hazards to the site and proposed project from the aforementioned primary and secondary earthquake effects. A thorough discussion of earthquakes, the potential hazards, our method of analysis, and our opinions concerning the hazard risk follows this introduction. If a particular hazard was determined to be present within the site, appropriate disclosure and/or recommendations for mitigation have been provided. In addition, this section also provides the recommended structural *Seismic Design Criteria* with respect to the proposed project.

Earthquakes

In order to perform a seismic hazard evaluation concerning a particular site, an understanding of earthquakes, among other things, is required. When significant and rapid movement along a fault occurs in the subsurface, seismic energy is released in the form of waves in all directions from the source. The propagation of seismic waves through the subsurface and interaction of these waves with the subsurface materials causes ground shaking which is commonly known as an

earthquake. The point on the fault where rupture initiates in the subsurface is referred to as the *focus* or *hypocenter* of an earthquake. The hypocenter is described by its depth, its location in latitude and longitude, its date and time of occurrence, and its magnitude (a measure of the amount of energy radiated as seismic waves). The term *epicenter*, which is more commonly used to refer to an earthquake location, is the point on the earth's surface directly above the hypocenter. The description of an epicenter is the same as for a hypocenter except the depth is omitted. Vibrations produced by earthquakes are detected, recorded, and measured by instruments called *seismographs*. These devices may amplify ground motions beneath the instruments to over 1 million times, transcribing the ground motion into a zig-zag or wiggly trace called a *seismogram*. From the data expressed in seismograms, the time, epicenter, and focal depth of an earthquake can be determined. Also, estimates can be made of its relative size and amount of energy it released.

The strength of an earthquake is generally expressed in two ways: *magnitude* and *intensity*. The magnitude is a measure that depends on the seismic energy radiated by the earthquake as recorded on seismographs. An earthquake's magnitude is expressed in whole numbers and decimals (i.e. 6.7). The intensity at a specific location is a measure that depends on the effects of the earthquake on buildings, land features, and people. Intensity is expressed in Roman numerals or whole numbers (i.e. VI or 6). Although there is only one magnitude for a specific earthquake, there may be many values of intensity for that earthquake at different sites.

Earthquake Magnitude

With respect to earthquake *magnitude*, several magnitude scales have been developed by seismologists in order to quantify the "size" of an earthquake event. However, the most commonly used scale today is the Moment Magnitude (Mw) scale, jointly developed in 1978 by Dr. Thomas C. Hanks of the United States Geological Survey (USGS) and Dr. Hiroo Kanamori, a professor at CalTech. Moment Magnitude is related to the physical size of fault rupture and the movement (displacement) across the fault, and is thus a more uniform measure of the strength of an earthquake. The seismic moment of an earthquake is determined by the strength or resistance of rocks to faulting (shear modulus) multiplied by the fault area undergoing slip and by the average displacement that occurs across the fault during the earthquake. The seismic moment determines the energy that can be radiated by an earthquake and hence the seismogram recorded by a modern seismograph. A seismologist determines the seismic moment of an earthquake from a seismogram by using a computer to plot the seismogram's amplitude of motion as a function of period (wave length). The amplitude of the long period motions in a seismogram, when corrected for the distance from the earthquake, is a measure of the seismic moment for that earthquake. The Moment Magnitude of an earthquake is defined relative to the seismic moment for that event (DOC CGS, 2002).

Earthquake Intensity

The use of an *intensity scale* is a subjective way to categorize the effects of an earthquake by observing the impact on structures, land features, and people. The intensity of an earthquake at a particular site is affected by the earthquake magnitude, the distance between the site and the

hypocenter of the earthquake, the geologic conditions between the site and the hypocenter, site topographic conditions, and the geologic and groundwater conditions of the site. A range of intensity values is produced by an earthquake, typically with the highest intensity generated at or near the epicenter and lower intensities progressing outward from the epicenter. Intensity generally increases with increasing magnitude and decreases with increasing distance from the epicenter. Intensity is also usually greater in areas underlain by unconsolidated alluvium than areas underlain by bedrock. In 1902, the Italian seismologist Mercalli devised an intensity scale on a I to XII range. The *Mercalli Intensity Scale* was modified in 1931 by American seismologists Harry O. Wood and Frank Neumann to take into account modern structural features. The *Modified Mercalli Intensity Scale* measures the intensity of an earthquake's effects in a given locality and is perhaps much more meaningful to the layperson because it is based on observations of earthquake effects at specific places. It should be noted that because the data used for assigning intensities is obtained from direct accounts for the earthquake's effects at numerous towns, considerable time (weeks to months) is sometimes needed before an intensity map can be assembled for a particular earthquake (DOC CGS, 2002).

Ground Acceleration

For purposes of geotechnical and structural analysis and design, the quantification of the intensity of ground shaking is typically required. As previously discussed, when an earthquake occurs, seismic energy is released in the form of waves in all directions from the source. The propagation of seismic waves through the subsurface and interaction of these waves with the subsurface materials causes motion at the ground surface, or ground shaking. As seismic waves propagate away from the source, they generally attenuate as they travel through various geologic materials within the subsurface. However, certain topographic, geologic, and groundwater conditions can locally amplify the seismic waves. The degree of ground shaking at a particular site is typically quantified in terms of *ground acceleration* which is measured as a percentage of the acceleration of gravity (g). Ground acceleration can be in the horizontal and/or vertical directions. Synonymous with intensity, the ground acceleration at a particular site is affected by the earthquake magnitude, the distance between the site and the hypocenter of the earthquake, the geologic conditions between the site and the hypocenter, site topographic conditions, and the geologic and groundwater conditions of the site. However, the influence and interaction of all these parameters on site response is not well understood at this time. In general, ground accelerations produced by an earthquake are typically the highest at or near the epicenter with lower ground accelerations occurring in areas progressing outward from the epicenter. However, variations in ground conditions within short distances can lead to substantial differences in ground accelerations between two close sites. For example, ground acceleration is usually greater in areas underlain by unconsolidated alluvium than areas underlain by bedrock. In addition, topography can also affect ground acceleration. Specifically, anomalously high ground accelerations have been recorded in ridge-top locations which are underlain by hard bedrock. The anomalous high ground accelerations are attributed to the "focusing" of seismic waves due to the topographic conditions.

Surface Fault Rupture

Surface Fault Rupture Defined

Surface fault rupture occurs when movement along a fault is sufficient to cause a rupture where the fault or fault zone intersects the earth surface. Surface fault rupture typically occurs along the causative fault during earthquakes which are of magnitude 5.5 and larger. However, surface fault rupture was documented for the magnitude 3.6 El Centro earthquake of 1966 (Jennings, 1975). Surface fault rupture may also occur by *fault creep*. *Fault creep* is generally defined as the very slow and uniform movement along a fault. Fault creep may be of tectonic origin or can be induced by withdrawal of subsurface fluids. Tectonic fault creep may be triggered or aseismic. Triggered fault creep is movement that occurs along a particular fault when there is an earthquake centered on a nearby fault. Aseismic fault creep is fault movement that occurs without accompanying earthquakes and is typically caused by the withdrawal of subsurface fluids such as water or oil.

When associated with normal dip-slip and strike-slip faults, the surface fault rupture typically occurs as a single break or is confined to a narrow zone. This is typically not the case for reverse dip-slip and thrust faults. When the dip of the fault surface is shallow (i.e. less than 45 degrees), surface rupture associated with reverse faulting is often characterized by relatively short segments of synthetic and antithetic faulting that occur over a broad area of the hanging wall.

The primary danger associated with surface fault rupture deals with the proximity of structures to the area of surface rupture. Specifically, a structure could be destroyed or could suffer severe structural damage if located over an area of surface fault rupture.

Surface Fault Rupture Hazard

Based on the findings of our engineering geologic study, the subject property is not located within a California Earthquake Fault Zone (see Figure 6) and no known potentially active or active faults traverse the site. Thus, MGI has concluded that the possibility of surface fault rupture within the subject property is extremely low.

Distributed Surface Deformation Hazard

As previously stated in this report, MGI considers the potential risk for surface fault rupture beneath the residence footprint to be low. However the proposed building site and remaining portions of the subject property, as well as the surrounding area, are located in relatively close proximity to potentially active and active faults. Surface fault rupture and strong ground shaking in this tectonic environment may be accompanied by vertical or horizontal distortion within a few meters to several hundred meters of the main fault (Ziony, 1985; Lazarete et. al. 1994). This surface deformation can be expressed both as distributed minor offsets on subsidiary and isolated faults in the area, as well as broad areas of doming or subsidence in response to folding in the underlying sedimentary strata or rock. Usually, the distortion is minor in comparison with the amount of offset experienced along the causative fault (Ziony, 1985).

It should be noted that there is currently no practical way to accurately analyze and/or predict the location or quantity of distributed surface deformation. The potential hazard posed by surface deformation at this site is characteristic of the risk posed at sites in similar tectonic environments. This hazard is not typically evaluated or mitigated for commercial and residential developments and is not specifically addressed in the building code. If desired, the potential hazard can be reduced by ground improvements, strengthened or deepened foundations, and flexible utility connections.

Ground Shaking

Introduction

In populated areas, the greatest potential for property damage and loss of life during an earthquake is from ground shaking. Based on the tectonic environment of this region of the world, a ground shaking hazard exists throughout all of California, especially in the Southern California area which is located within the range of influence of several fault systems that are considered potentially active or active. Thus, there is a significant potential that the site will experience slight to very strong ground shaking during the design life of the proposed structures.

Ground Shaking Hazard Analysis

Estimating the potential ground shaking at a particular site requires knowledge of the faults surrounding the site, the magnitude of earthquakes that each fault can generate, and the attenuation or magnification of ground acceleration that may occur as seismic waves propagate from an earthquake hypocenter to a site. Mathematical attenuation relationships are typically used to model how the amplitudes of ground motions decrease with distance from the hypocenter.

Our ground shaking hazard analysis of the site involved utilizing available computer databases, software, and published resources to perform an on-site historical, deterministic, and probabilistic evaluation of ground motion. Specifically, we used earthquake ground motion data presented by the California Geological Survey (CGS) and data obtained utilizing the computer programs EQSEARCH and EQFAULT (Blake, 2000a and 2000b).

It should be noted that the estimated ground accelerations given below are only approximations based on available fault data and attenuation relationships which do not account for the possibility of the amplification of ground motion due to the location and orientation of the causative earthquake fault as well as local topographic, geologic, and groundwater conditions. Also, it is possible that unknown active faults (namely "blind thrust faults"), not accounted for in the ground shaking hazard analysis, underlie the Southern California region which are capable of producing large earthquakes. Specifically, the 1994 Northridge (Mw 6.7) earthquake occurred on a previously unrecognized fault. Upon further investigation, it was discovered that the seismic hazard from blind thrust faults in the southern California region may be very high. Specifically, the ground shaking hazard caused by an earthquake along a blind thrust fault is greater than that from a strike-slip fault of the same magnitude because the low angle of dip of the thrust fault places the fault plane at shallow depths underlying a larger area. Also, the ground motion

generated by movement along a blind thrust fault is more vertical than horizontal. These faults are believed to be undetected under much of the Los Angeles Basin and the Santa Clara Valley. It follows that there is also a possibility of strong ground motion within the site should an earthquake occur due to movement along an unknown fault.

Historical Seismicity Analysis

The program EQSEARCH (Blake, 2000a) estimates the peak horizontal ground acceleration (PHGA) at a specified site using a database of historical earthquakes and specified attenuation relationships. If an earthquake hypocenter is found within a user-selected radius, the closest distance between the site and digitized hypocenter is computed and then the specified attenuation relationship is used to compute the estimated PHGA or the estimated repeatable horizontal high ground acceleration (RHGA) experienced at the site for that particular earthquake event. Modified Mercalli intensities are also computed for the site for each earthquake. The output consists of a map showing the locations of the earthquake epicenters and a tabulation of the latitude, longitude, date and time of the event, depth, magnitude, site acceleration, site intensity, and the distance between the site and the epicenter for each earthquake event. EQSEARCH is an analysis of the historical seismicity of the site.

The historical seismicity analysis of our engineering geologic study utilized the EQSEARCH program to determine all the historical earthquakes with magnitudes ranging from 4.0 to 9.0 within a 50-mile radius over the past 100 years. Based on the computer analysis, the largest historical earthquake within the specified search radius and time period occurred on January 17, 1994 (the Northridge Earthquake) with an epicenter located approximately 17.1 miles from the subject property. The earthquake had a magnitude of 6.7 (Mw) which produced an estimated peak horizontal ground acceleration at the subject property of .133 g. The estimated earthquake intensity at the site for that earthquake was VIII on the Modified Mercalli Scale. The complete results and maps generated by the EQSEARCH program are included in Appendix B.

It should be noted that the computed PHGA is an estimate of past ground motion based on mean attenuation behavior and may not reflect actual accelerations experienced at a given site. In addition, the computed historical PHGA does not give an accurate estimate of the PHGA that the site may experience in the future. Current design practices use a deterministically or probabilistically derived ground acceleration which is usually higher than those generated by the historical analysis.

Deterministic Seismic Hazard Analysis

Two terms are now used to describe earthquakes with respect to estimating future ground motion and for seismic structural design. They are the maximum capable earthquake (MCE) and design basis earthquake (DBE). The MCE refers to the maximum earthquake that appears capable of occurring under the presently known tectonic framework. In California (located in Seismic Zone 4), it is also referred to as the earthquake which will produce ground motion that has only a 10% probability of being exceed in 100 years. The DBE refers to the earthquake that will produce ground motion that has only a 10% probability of being exceeded in 50 years.

The program EQFAULT (Blake, 2000b) estimates the peak horizontal ground acceleration (PHGA) at a specified site using a database of digitized potentially active and active faults and specified attenuation relationships. Maximum capable earthquakes are assigned to each fault. If a fault is found within a user-selected radius, the closest distance between the site and digitized fault is computed and then the specified attenuation relationship is used to compute the PHGA or the repeatable horizontal high ground acceleration (RHGA). Modified Mercalli intensities are also computed for the site for each fault. The output consists of a map showing the locations of the faults, a plot of the computed accelerations as a function of the distance to the fault, a plot of the earthquake magnitudes and distances to the faults, and a tabulation of the calculated distances between nearby faults and the site, estimated maximum earthquake magnitude, as well as the estimated ground acceleration and site intensities for the maximum earthquake event for each fault. Please note that the EQFAULT program utilizes the California Division of Mines and Geology (now referred to as the California Geological Survey – CGS) data catalog of digitized California faults for calculating site/fault distance. The locations of these fault zones, defined in the computer database, are each represented by a single surface and do not necessarily coincide with the zones shown on the California Earthquake Fault Zone maps, where the fault zones may include a main trace and several splays. As such, the calculated distance does may not necessarily represent the actual horizontal distance from the subject property to the surface trace of the particular fault. The results of EQFAULT are a deterministic analysis of the seismicity of the site.

The deterministic seismic hazard analysis of our engineering geologic study utilized the EQFAULT program in order to estimate the PHGA at the subject property caused by maximum capable earthquakes along faults located within a 50-mile search radius of the site. Based upon the deterministic analysis, the estimated maximum PHGA that may impact the site is .601 g based upon a magnitude 6.7 (Mw) earthquake on the Simi-Santa Rosa Fault. The calculated horizontal distance between this fault and the subject property is 3.1 miles and the estimated earthquake intensity at the site is X. The complete results and maps generated by the EQFAULT program are included in Appendix B.

Probabilistic Seismic Hazard Analysis (PSHA)

The California Building Code (CBC, 2001) states that the design basis ground motion required for the design of structures is a ground motion that has a 10% (minimum) probability of being exceeded in 50 years which corresponds to a 475-year average return period. In order to estimate this ground motion, a probabilistic seismic hazard analysis (PSHA) was performed for the site using design basis ground motion data presented by the California Geological Survey (CGS).

The referenced Seismic Hazard Evaluation Report for the Simi Valley West Quadrangle provides an estimated site acceleration of approximately 0.51 g for unweighted magnitudes and firm rock site conditions (DOC DMG; now referred to as the California Geological Survey - CGS, 1997-revised 2001).

Based on the USGS/CGS probabilistic seismic hazards assessment model (revised 2003), the site is within an area having a computed peak ground acceleration of 0.573 g for firm rock site conditions with a 10% probability of being exceeded in 50 years.

Repeatable High Horizontal Ground Acceleration (RHGA)

It should be noted that the ground accelerations generated from the deterministic and probabilistic seismic hazard analysis are estimated **peak** horizontal ground accelerations based upon maximum capable or design-level earthquake events. Analyses performed by the Project Geotechnical and/or Structural Engineer may require a value different from the peak as input. Ploessel and Slosson (1974) indicate that the several repeatable high ground accelerations (RHGA) below the peak, along with the duration of the ground motion, better approximate a design acceleration than the maximum or peak acceleration. For sites within 20 miles of the earthquake epicenter, Ploessel and Slosson (1974) found the RHGA as 65% of the peak ground acceleration. However, a more recent study has shown that the RHGA is about 75% of the peak ground acceleration regardless of the distance between the site and seismic event (Naeim and Anderson, 1993).

With respect to the geotechnical analysis and structural design performed in association with the proposed project, the Project Geotechnical and/or Structural Engineer shall determine which of the presented ground accelerations or design parameters to utilize.

Estimated Duration of Strong Ground Shaking

The degree of damage incurred by a structure during an earthquake typically depends on the intensity and the duration of the ground shaking. More often than not, the damage caused by an earthquake is not due to the peak ground acceleration but to the duration of the strong ground motion. This is due to the fact that moderate to high ground accelerations over a longer period of time produce higher velocities and thus higher relative displacements in the structure.

The Simi-Santa Rosa Fault is the closest known potentially active or active fault to the subject property. Should the estimated maximum capable earthquake (Mw 6.7) occur on this fault, the duration of strong ground shaking (sustained site acceleration > 0.05 g) is estimated to be 20 to 30 seconds.

If needed, the duration of strong ground shaking within the subject property, caused by earthquakes along other faults, can be estimated utilizing the following table.

Distance from Site (km)	Moment Magnitude (Mw)		
	6	7	8
10	12 sec.	26 sec.	34 sec.
50	3 sec.	22 sec.	28 sec.
100	0	4 sec.	6 sec.

*Compiled from table of Estimated Duration of Strong Ground Shaking as a function of distance and magnitude from Bolt and others (1975). Data assumes seismic wave frequency of > 2 Hz.

Secondary Effects Due to Seismic Activity

The intensity and duration of ground shaking during an earthquake, in combination with the geomorphic and subsurface geologic and groundwater conditions, can result in a number of phenomena classified as *ground failure* or *triggered water movements*. Ground failures are induced by earthquake motion and typically involve the loss of strength or failure of the underlying materials. Examples of seismically-induced ground failure include *liquefaction, landsliding, ground lurching, rockfall, bedrock shattering,* and *differential settlement.* Seismically-triggered water movements include *tsunamis* and *seiches.*

Liquefaction

Liquefaction Defined

In general, liquefaction is described a phenomena in which subsurface stresses produced by ground shaking cause a loss of shear strength in the underlying soil. Specifically, seismic motion of saturated and cohesionless soils can increase the pore water pressure to a level near or equal to the total stresses acting on the soil which results in a soil have little or no shear strength. Under these conditions, the soil can behave as a viscous fluid. Liquefied soils may thereby acquire a high degree of mobility leading to damaging ground deformations.

The liquefaction susceptibility of subsurface soils is related to the gradation and relative density characteristics of the soil, the in-situ stresses prior to ground motion, and the depth to the saturated zone, among other factors. As a general rule, sites susceptible to liquefaction are those which are in seismically active areas, contain cohesionless soils with a relative density less than about 70%, and have a groundwater level, or highest anticipated groundwater level (including perched conditions) within 50 feet of the surface.

Closely related to liquefaction is phenomena known as *lateral spreading, ground oscillation, flow failure, reduction of bearing strength, ground fissuring,* and *sand boils.* Manifestations of these phenomena within a site during and earthquake can also cause damage to structures.

Liquefaction Hazard Zones

The Seismic Hazards Mapping Act of 1990 (Public Resources Code, Chapter 7.8, Division 2) directs the California Department of Conservation, Division of Mines and Geology (now referred to as the California Geological Survey – CGS) to delineate Seismic Hazard Zones. The purpose of the Act is to reduce the threat to public health and safety and to minimize the loss of life and property by identifying and mitigating seismic hazards including liquefaction, earthquake-induced landsliding, and ground shaking. Cities, counties, and state agencies are directed to use the Seismic Hazard Zone maps developed by CGS in their land-use planning and permitting processes. The Act requires that site-specific geotechnical investigations be performed prior to permitting most urban development projects located within the Seismic Hazard Zones. They must withhold development permits for a site within a zone until the geologic and soil conditions of the project site are investigated and appropriate mitigation measures, if any, are incorporated into development plans. The Act also requires sellers (and their agents) of real property within a mapped hazard zone to disclose at the time of sale that the property lies within such a zone.

Evaluation and mitigation of seismic hazards are to be conducted under guidelines adopted by the California State Mining and Geology Board.

The designated liquefaction hazard zones are described as: "Areas where historic occurrence of liquefaction, or local geological, geotechnical and groundwater conditions indicate a potential for permanent ground displacements such that mitigation as defined in the Public Resources Code Section 2693(c) would be required."

The area of the proposed project of the subject property is not located within a liquefaction hazard zone as designated by the CGS (see Figure 7).

Liquefaction Potential

Due to the level of groundwater within the subject property, underlying geologic conditions, distance to potentially active and/or active faults, and estimated duration of strong ground shaking, MGI is currently of the opinion that there is no potential for liquefaction of the underlying bedrock.

It should be noted that a quantitative determination of the liquefaction hazard of the subject property was not performed as part of our engineering geologic study and is not considered necessary with respect to the proposed project.

Seismically-Induced Landsliding

Seismically-Induced Landsliding Defined

Seismically-induced (i.e. earthquake-induced) induced landslides are slope failures that occur where the forces generated by earthquake motion act to induce downslope failure of the subsurface materials.

Seismically-Induced Landsliding Hazard Zones

The Seismic Hazards Mapping Act of 1990 (Public Resources Code, Chapter 7.8, Division 2) directs the California Department of Conservation, Division of Mines and Geology (now referred to as the California Geological Survey – CGS) to delineate Seismic Hazard Zones. The purpose of the Act is to reduce the threat to public health and safety and to minimize the loss of life and property by identifying and mitigating seismic hazards including liquefaction, earthquake-induced landsliding, and ground shaking. Cities, counties, and state agencies are directed to use the Seismic Hazard Zone maps developed by CGS in their land-use planning and permitting processes. The Act requires that site-specific geotechnical investigations be performed prior to permitting most urban development projects located within the Seismic Hazard Zones. They must withhold development permits for a site within a zone until the geologic and soil conditions of the project site are investigated and appropriate mitigation measures, if any, are incorporated into development plans. The Act also requires sellers (and their agents) of real property within a mapped hazard zone to disclose at the time of sale that the property lies within such a zone. Evaluation and mitigation of seismic hazards are to be conducted under guidelines adopted by the California State Mining and Geology Board.

The designated earthquake-induced landslide hazard zones are described as: "Areas where previous occurrence of landslide movement, or local topographic, geological, geotechnical and subsurface water conditions indicate a potential for permanent ground displacements such that mitigation as defined in the Public Resources Code Section 2693(c) would be required."

The area of the proposed project of the subject property is not located within an earthquake-induced landslide hazard zone as designated by the CGS (see Figure 7).

Seismically-Induced Landsliding Potential

A quantitative determination of the seismically-induced landsliding potential within the project area shall be performed, as necessary or required, by the Project Geotechnical Engineer, CalWest Geotechnical

Ground Lurching

Ground lurching is defined as the phenomena where the forces generated by earthquake motion cause failure of a cliff, bluff, stream/river bank, or artificial embankment usually in the direction in which it is unsupported. This type of ground failure most commonly occurs when the aforementioned topographic settings are underlain by low density and fine-grained soils which are saturated.

Based on the topographic and underlying geologic conditions of the subject property, MGI is of the opinion that there is no potential for ground lurching in the area of the proposed project.

Rockfall

During an earthquake, the associated ground motion is often strong enough to dislodge cobble- to boulder-size clasts present on the surface of a slope. Cobble- to boulder-size clasts can also be generated if a surficial exposure of bedrock shatters due to earthquake motion. If the adjacent topographic terrain is steep enough, the dislodged clasts may travel in the downslope direction which is commonly known as a *rockfall*. Aside from being earthquake-induced, rockfalls can also occur during periods of precipitation if the soil supporting a clast gives way. The destructive power of a rockfall typically depends on the size and shape of the falling clast(s), the height from which the rockfall originates, the steepness of slope, and the amount and type of vegetation present on the slope. If conditions are right, a rockfall can cause severe damage to a structure and is also a hazard to life and limb.

Based on the topographic and underlying geologic conditions of the subject property, MGI is of the opinion that there is no threat of rockfalls, earthquake-induced or otherwise, which could have an adverse effect on the proposed project.

Bedrock Shattering

Bedrock shattering is defined as the phenomena where the earthquake motion causes the underlying bedrock to intensely fracture and/or dilate. This type of ground failure most

commonly occurs on slopes or ridges underlain by very hard bedrock and at which there is a local "focusing" of seismic waves.

Based on the topographic and underlying geologic conditions of the subject property, MGI is of the opinion that there is a threat of bedrock shattering which could have an adverse effect on the proposed project. However, it should be noted that there is currently no practical way to accurately analyze and/or predict the location or degree of bedrock shattering during an earthquake. The potential hazard posed by surface deformation at this site is characteristic of the risk posed at sites in similar tectonic environments. This hazard is not typically evaluated or mitigated for commercial and residential developments and is not specifically addressed in the building code. If desired, the potential hazard can be reduced by ground improvements, strengthened and/or deepened foundations, and flexible utility connections at the site.

Seismically-Induced Differential Settlement

During an earthquake, the associated ground shaking combined with certain geologic conditions can cause varying degrees of settlement of the subsurface materials. Granular soils, in particular, are susceptible to settlement during seismic shaking. It should be noted that a qualitative or quantitative determination of the hazard of seismically-induced differential settlement within the site pertains to geotechnical engineering and shall be performed, as necessary, by the Project Geotechnical Engineer, CalWest Geotechnical.

Tsunamis

Tsunamis are large waves or ocean surges caused by offshore earthquakes, large underwater landslides, and submarine volcanic eruptions which can travel for thousands of miles from the source. Some scientists also speculate that there is also a threat of a large tsunami being generated in the event that a meteorite impacts the ocean. However, based on known historical data, tsunamis are typically earthquake-induced. From the point of origin, the tsunami waves travel outward in all directions at speeds up to 450 miles per hour. In the open ocean, the tsunami waves may be imperceptible to an observer. However, as the waves approach the coastline, the shallowing sea floor decreases the wave speed which causes the waves to grow in height. If the wave energy and resulting wave heights are substantial, significant destruction and death can occur upon their impact with a populated coastline. Most recently, the December 26, 2004 Sumatra-Andaman Islands earthquake (Mw 9.0) generated a series of large tsunami waves in the Indian Ocean which devastated coastline areas and killed over 225,000 people from south Asia to east Africa. As recently evident in the Indian Ocean, tsunamis typically arrive as a series of successive "crests" (high water levels) and "troughs" (low water levels). These successive crests and troughs can occur anywhere from 5 to 90 minutes apart. However, they usually occur 10 to 45 minutes apart. Recent studies indicate that there is no upper limit of the height of a tsunami wave and heights of more than 100 feet have been previously recorded. Areas at greatest risk of the effects of a tsunami are typically those located within one mile of the shoreline and an elevation less than 50 feet above sea level.

In California, tsunamis may be generated by earthquakes occurring at the Peru-Chile trench, the Columbia-Ecuador trench, the Aleutian trench, and any one of the local offshore faults. One

such tsunami was generated by the 1812 Santa Barbara earthquake which reportedly generated ten 10- to 12-foot-high sea waves at Gaviota. The 1927 Point Arguello earthquake produced sea wave on the order of 6 feet high. The 1964 Alaskan earthquake generated tsunamis which hit Crescent City, California with waves having a run-up height of 19.7 feet above mean sea level (Bolt and others, 1977). The same earthquake reportedly produced sea waves of less than 4 feet in the Los Angeles Harbor.

It is thought that the topography of the seafloor off the coast of southern California and the presence of the Channel Islands tend to reduce the risk of a large tsunami impacting this area of California. However, should a large earthquake occur due to movement along one of the aforementioned faults, or a large underwater landslide or submarine volcanic eruption occur in the Pacific Ocean, it is possible for a tsunami to develop, travel towards, and impact the coast of southern California.

However, due to the elevation and site/coast distance of the subject property, MGI is of the opinion that there is no threat of inundation and damage to the site should a large tsunami develop and collide with the west coast.

Seiches

Seiches are large waves or oscillations of the surface of a lake or reservoir caused by earthquakes, large underwater landslides, or large landslides which fail into the lake or reservoir. Seiches can cause damage to structures and flooding along the shoreline and can also cause damage or "overtopping" of a dam. For example, in 1963 a large landslide into Vaiont Reservoir, located in Italy, caused a seiche that traveled 800 feet up the opposite bank of the lake and swept over both abutments of the dam. The resulting downstream flow of water and flooding completely destroyed the town of Longarone and killed almost 3,000 people. On a smaller scale, seiches have also been generated in swimming pools during an earthquake. If the swimming pool is large enough, a seiche from a swimming pool could possibly flood and/or cause structural damage to an adjacent structure. At the time of this study, MGI is not aware of any catastrophic damage to a residential structure, and resulting loss of life, due to a seiche occurring in a lake or reservoir located in the southern California area.

Since the subject property is not located adjacent to a lake or reservoir, MGI is of the opinion that there is no threat of inundation and damage to the site from a seiche.

Seismic Design Criteria

The 2001 California Building Code (CBC) is often followed for seismic structural design. Lateral forces due to earthquake loading may be calculated utilizing formulas presented in the 2001 CBC. The 2001 CBC states that the procedures and limitations for the design of structures shall be determined considering such factors as seismic zoning, site characteristics, occupancy, configuration, structural system, and height. The 2001 CBC also states that the minimum design strength shall be based on the design seismic forces determined in accordance with the static lateral force procedure of Section 1630.

With respect to the seismic structural design associated with the proposed project, the *seismic zoning* and *site characteristics* are typically provided by the Project Engineering Geologist and/or the Project Geotechnical Engineer for use by the Project Structural Engineer. The *seismic zone* for a particular site is determined based on the zoning presented by Figure 16-2 of the 2001 CBC. Based on this figure, all of California is located within Seismic Zones 3 and 4 with the majority of southern California being located in Seismic Zone 4. The seismic zone of a site determines the Seismic Zone Factor (Z) which is assigned to the structure in accordance with Table 16-I of the 2001 CBC. One of the site characteristics needed for seismic structural design is *soil profile type*. The 2001 CBC states that each site shall be assigned a soil profile type based on properly substantiated geotechnical data utilizing the prescribed site categorization procedures set forth by Section 1636 and Table 16-J of the 2001 CBC. For reference, a copy of Table 16-J is provided below.

2001 CBC TABLE 16-J - SOIL PROFILE TYPES

Soil Profile Type	Soil Profile Name / Generic Description	Average Soil Properties for Top 100 feet (30, 480mm) of Soil Profile		
		Shear Wave Velocity, v_s feet/second (m/s)	Standard Penetration Test , N [or N_{ch} for cohesionless soil layers] (blows/foot)	Undrained Shear Strength, s_U psf (kPa)
S_A	Hard Rock	> 5,000 (1,500)	----	----
S_B	Rock	2,500 to 5,000 (760 to 1,500)		
S_C	Very Dense Soil and Soft Rock	1,200 to 2,500 (360 to 760)	> 50	> 2,000 (100)
S_D	Stiff Soil Profile	600 to 1,200 (180 to 360)	15 to 20	1,000 to 2,000 (50 to 100)
S_E[1]	Soft Soil Profile	< 600 (180)	< 15	< 1,000 (50)
S_F	Soil Requiring Site-Specific Evaluation. See Section 1629A.3.1 of 2001 CBC.			

NOTES: [1]Soil Profile Type S_E also includes any soil profile with more than 10 feet (3048 mm) of soft clay defined as a soil with a plasticity index, PI > 20, $w_{mc} \geq 40$ percent, and s_u 500 psf (24 kPa). The Plasticity Index, PI, and the moisture content, w_{mc}, shall be determined in accordance with approved national standards.

Additional site characteristics needed for seismic structural design include the *near-source factors*. The 2001 CBC states that in Seismic Zone 4, each site shall be assigned near-source factors in accordance with Table 16-S and Table 16-7. The near-source factors are determined based on the seismic source type specified by Table 16-U and the minimum horizontal distance measured from the site to the surface projection of the seismic source (i.e. the fault plane). The appropriate seismic source type and site-fault distance were determined by our review of the California Division of Mines and Geology fault maps (CDMG, 1998) and the UBCSEIS computer program (Blake, 1998). With the appropriate seismic zone factor, soil profile type, and near-source factors, the *seismic response coefficients* can then be calculated by the Project Structural Engineer in accordance with Tables 16-Q and 16-R of the 2001 CBC.

It should be noted that most structures of the type of the proposed project are designed using the Static Force Procedure specified in Section 1630 of the 2001 CBC. If this procedure is to be utilized, it is our opinion, based on the findings of our engineering geologic study, that the

Project Structural Engineer should incorporate the recommended seismic parameter values presented in the following chart.

2001 CBC Table No.	Seismic Parameter	Recommended Value
Figure 16-2	Seismic Zone	Zone 4
16-I	Seismic Zone Factor	Z = 0.4
16-J	Soil Profile Type	S_c
16-Q	Seismic Coefficient	Ca = 0.40 Na
16-R	Seismic Coefficient	Cv = 0.56 Nv
16-S	Near-Source Factor	Na = 1.3
16-T	Near-Source Factor	Nv = 1.6

It should be noted that conformance with the presented criteria for seismic structural design does not constitute any kind of warranty, guarantee, or assurance that significant structural damage, or ground failure, will not occur in the event of a maximum level earthquake. The primary goal of the code-required minimum seismic design is to protect life and limb, and catastrophic failure, and **NOT** to avoid all damage, as such design may be economically prohibitive. The Project Structural Engineer and owner must decide if the level of risk associated with utilizing the minimum required code values is acceptable and, if not, assign appropriate seismic values above the minimum code values for use in the structural design.

SITE/SLOPE STABILITY

Past Slope Performance (Landslides and Rain Damage)

Based on the findings of our engineering geologic study, the area of the proposed project is free from any recent rain-related damage such as landslides or mudflows. However, as stated in the **Site Geology** section of this report, shallow landslides underlie portions of the subject property. The mapped limits of these landslide masses are illustrated on the *Preliminary Geologic Maps* which are attached to this report as Plates 1, 2, and 3. To clarify, landslide debris does not underlie the area of the currently proposed project.

Quantitative Surficial and Gross Stability

This engineering geologic study did not include quantitative engineering analysis or calculations associated with a determination of surficial and/or gross slope stability. A quantitative determination of slope stability of the subject property and/or the project area shall be performed, as necessary, by the Project Geotechnical Engineer, utilizing the geologic map(s) and geologic section(s) which are included herein.

CONCLUSIONS

General Findings

Based on the findings of our engineering geologic study, and our experience with similar projects, MGI has concluded that the proposed project is feasible from an engineering geologic standpoint, provided the recommendations presented in this report, and those presented by the Project Geotechnical Engineer, are properly incorporated into the plans and implemented during construction.

Geologic Conditions

The engineering geologic conditions, hydrogeologic conditions, and geologic hazards of the subject property that can impact the engineering analysis and/or design requirements associated with the proposed project are described in detail in the previous sections of this report. It is recommended that the property owner, developer, Project Engineers (i.e. Geotechnical, Civil, and/or Structural), Project Architect, and Contractor be familiar with and fully understand the site engineering geologic conditions, hydrogeologic conditions, and geologic hazards presented in this report as well as the following engineering geologic recommendations concerning the proposed project.

Final Project Conclusion

Based upon the findings of our engineering geologic study, the proposed project will be free from geologic hazards such as landslides, slippage, settlement and the proposed project will not have an adverse effect upon the stability of the site or adjacent properties provided: 1.) The recommendations of the Project Engineering Geologist and Project Geotechnical Engineer are properly incorporated into the plans and implemented during construction; and 2.) The subject property and proposed structures are properly maintained.

RECOMMENDATIONS

Grading

General

General engineering geologic guidelines are presented below to provide a basis for quality control during site grading. We recommend that all structural fills be placed and compacted under continuous observation and testing by the Project Geotechnical Engineer in accordance with the following requirements and those presented by the Project Geotechnical Engineer.

Demolition of Existing Structures

If the demolishing the existing structures is necessary as part of the proposed project, the Contractor should locate all existing foundations, floor slabs, debris pits, uncontrolled fills, and subsurface structures. These soils and structures should be removed completely. The resulting excavations should be cleaned of all loose or organic material, the exposed native soils should be

scarified to a depth of 8 inches and compacted, and the excavation shall be backfilled under the observation of the Project Geotechnical Engineer. In areas to receive fill or to support structures, deeper removals may be required, if deemed necessary by the Project Geotechnical Engineer.

Site Preparation

It is recommended that all brush, vegetation, loose soil, and other deleterious materials be removed prior to fill placement. The general depth of stripping shall be sufficiently deep to remove the root systems and organic topsoils. A careful search shall be made for subsurface trash, abandoned masonry, abandoned tanks and septic systems, and other debris (including uncertified fill) during grading. All such materials, which are not acceptable fill material, shall be removed prior to fill placement. The removal of trees and large shrubs shall include complete removal of their root structures.

Fill-Slopes

Proposed fill-slopes shall be limited to heights and gradients specified by the local regulatory agency and the Project Geotechnical Engineer. For reference, a typical 2(h):1(v) fill-slope keyway, benching, and subdrain detail is included in Appendix C.

Cut-Slopes

Proposed cut-slopes shall be limited to heights and gradients specified by the local regulatory agency and the Project Geotechnical Engineer.

Based on the findings of our engineering geologic study, northwest-facing cut slopes (if planned) may unsupport or "daylight" bedding planes of the underlying sedimentary bedrock. If a proposed cut-slope unsupports or "daylights" bedding planes of the sedimentary bedrock, the cut shall be trimmed to the angle of bedding or shall be supported by an engineered retaining wall or buttress fill as specified by the Project Geotechnical Engineer.

Removal Bottoms, Keyways, and Benches

In areas to receive compacted fill, the existing earth materials shall be removed and recompacted as structural fill as specified by the Project Geotechnical Engineer.

Removal bottom, keyway, and bench excavations constructed during grading shall expose competent bedrock in the bottom and shall be observed and approved by the Project Engineering Geologist prior to fill placement. Keyways constructed at the toes of fill-slopes shall be a minimum of 2 feet deep into competent bedrock, as measured on the downhill side of the keyway, and shall be a minimum of 15 feet wide. The exposed, approved bottom of a removal area, keyway, or bench shall be scarified, mixed, and moisture conditioned to a minimum depth of 8 inches or as specified by the Project Geotechnical Engineer. During construction of removal bottom, keyway, and bench excavations, a careful search shall be made for zones of loose soil and uncertified fill. The bottom of removal areas should be proof-rolled, in the presence of the Project Engineering Geologist and Project Geotechnical Engineer, with appropriate rubber-tire mounted heavy construction equipment or a loaded dump truck to detect loose, yielding soils that

must be removed to stable material. If encountered, these loose zones shall be properly removed to the firm underlying soil or bedrock and properly backfilled and compacted as directed by the Project Geotechnical Engineer.

Over-Excavation of Cut Portion of Building Pad

If a cut/fill line of a graded pad traverses the footprint of a proposed structure, it is recommended that the cut portion of the pad underlying the proposed structure be over-excavated and replaced with compacted fill in order to provide a uniform foundation condition. The cut portion of the pad shall be over-excavated to a minimum depth of 5 feet below finished grade for a minimum lateral distance of 5 feet beyond the footprint of the structure or as specified by the Project Geotechnical Engineer. For reference, a typical over-excavation beneath buildings detail is included in Appendix C.

Bottom Stabilization

If earth materials with a high moisture content, or shallow groundwater is encountered in a removal bottom, keyway, or bench excavation, additional stabilization of the bottom may be required. If the bottom is unstable, the use of track-mounted equipment and/or excavators should be considered to reduce the potential for disturbing the soils in the excavations near the groundwater level. If the bottom is highly disturbed, deeper removals may be required. Acceptable stabilization methods include using (1) float rock worked into the soft soils and encapsulated with a filter fabric, (2) geofabric, such as Mirafi Fabric 600X, with a 24-inch-wide overlap, or (3) a combination of the above. Some compaction effort shall be used when working thin lifts of float rock into the excavation bottom. A 12- to 24-inch thick zone may be required to adequately bridge an unstable bottom when using geofabric, and this zone is not to be included in the required thickness of fill beneath either slabs or footings unless it meets the compaction requirements. Another alternative is to stabilize the bottom by drying out the soils with the use of either lime or cement additives (about 5% by weight), moisture conditioning, mixing, and compacting to a minimum relative compaction of 90%.

Subdrains

The installation of subdrains is recommended in association with the construction of any proposed fill-slopes, buttress fill-slopes, and canyon fills. During construction of a fill-slope, it is recommended that a subdrain be installed in the bottom of the keyway excavation and at the heal of bench excavations as necessary so that the fill-slope is provided a subdrain at vertical intervals not exceeding 20 feet. If topographic and/or property line constraints prevent the installation of subdrain in the bottom of the keyway excavation, the subdrain should be placed at the heal of the lowest removal bench. The canyon "cleanouts" constructed in association with a canyon fill shall also be provided with a subdrain for the entire length of the cleanout.

The subdrain shall consist of a 4-inch-diameter (minimum) Schedule 40, or better, perforated PVC pipe with the perforations placed downward surrounded in a minimum of 3 cubic feet, per linear foot, of ¾-inch-diameter durable aggregate. *Accordion* or similar type pipe is not acceptable for subdrain pipe. The gravel and perforated pipe shall be wrapped with geosynthetic

fabric such as Mirafi 140, or approved equivalent, in order to protect the subdrain from clogging. The subdrain shall be daylighted utilizing a solid pipe to the slope face or to a location specified by the Project Civil Engineer. In locations where seasonal or constant water flow from a subdrain is anticipated, the subdrain outlet should be connected to the surficial drainage control system of the site (if feasible), to a storm drain, or to the street as specified by the Project Civil Engineer.

Suitable Fill Material

The suitability of the on-site soils for use as compacted fill, and the requirements for any import material desired to be utilized as compacted fill, shall be determined and/or provided by the Project Geotechnical Engineer.

Fill Placement and Testing

All fill placed within the subject property shall contain a moisture content and be compacted to a degree as specified by, and shall be performed under the observation of, the Project Geotechnical Engineer. If either the moisture content or relative compaction does not meet the criteria of approval of the Project Geotechnical Engineer, the Contractor shall rework the fill until it does meet the prescribed criteria.

Inclement Weather and Construction Delays

If construction delays or the weather result in the surface of the fill drying, the surface shall be scarified and moisture conditioned before slabs are constructed or before the next layer of fill is added. Each new layer of fill shall be placed on a rough surface so planes of weakness are not created in the fill.

During periods of wet weather and before stopping work, all loose material shall be spread and compacted, surfaces shall be sloped to drain to areas where water can be removed, and erosion protection or drainage provisions shall be made in accordance with plans provided by the Project Civil Engineer. After the rainy period, the Project Engineering Geologist and Project Geotechnical Engineer shall review the site for authorization to resume grading and to provide any specific recommendations that may be required. As a minimum, however, surface materials previously compacted before the wet weather shall be scarified, brought to the proper moisture content, and recompacted prior to placing additional fill.

During foundation construction, including any concrete flatwork, construction sequences shall be scheduled to reduce the time interval between subgrade preparation and concrete placement to avoid drying and cracking of the subgrade or the surface shall be covered or periodically wetted to prevent drying and cracking. If the surficial soils dry out due to delays between grading and foundation construction, it may be necessary to recondition the surficial soils (scarification, moisture condition, and recompaction) just prior to foundation and slab construction.

Utility Trench Backfill

The backfilling of utility trenches shall be performed as required by the local regulatory agency and the Project Geotechnical Engineer.

Pavement Areas

Removal depths and subgrade criteria for pavement areas (if proposed) shall be specified by the Project Geotechnical Engineer.

Foundations

Design Criteria

Foundations shall be designed by the Project Structural Engineer as per the detailed design criteria provided by the Project Geotechnical Engineer.

Recommended Foundation Bearing Material

Based on the findings of our engineering geologic study of the subject property, the recommended bearing material for the proposed residence and guest house is the underlying **bedrock** or future **certified compacted fill** per the recommendations of the Project Geotechnical Engineer. The desired bearing material can be reached with conventional foundation systems following site grading.

Slabs On Grade

Design Criteria

It is recommended that any proposed slabs on grade be reinforced. Slabs on grade shall be designed by the Project Structural Engineer as per the detailed design criteria provided by the Project Geotechnical Engineer.

It should be noted that cracking of concrete slabs on grade can occur and is relatively common. Steel reinforcement and crack control joints are intended to reduce the risk of concrete slab cracking, as is the use of fiber reinforced concrete and proper concrete curing. If cracks develop in concrete slabs during construction (for example, due to shrinkage), your Structural Engineer shall evaluate the integrity of the slab and determine if the design has been compromised. Also, concrete slabs are generally not perfectly level, but they should be within tolerances included in the project specifications.

It should be noted that even soils with low expansion characteristics can lift exterior flatwork such as walkways, patio slabs, and decking. This lifting will likely vary over the area covered by the flatwork, causing differential slab movements that could result in either a safety hazard or an obstruction to outwardly opening doors. Therefore, we recommend that exterior walkways and patio areas abutting the structure be doweled into the structure at entrances and at joints to prevent differential movement of such flatwork due to soil expansion.

If interior or exterior tile flooring is planned over slabs on grade, it is recommended that special care be taken in the slab design, construction, and the tile installation process as a crack in the slab on grade will moist likely translate to the overlying tile. If tile flooring is desired, the slab designer shall consider additional steel reinforcement, above minimum requirements, in the design of the concrete slab on grade where tile will be installed. Furthermore, the tile installer shall consider installation methods, such as using a vinyl crack isolation membrane (i.e. a slip sheet) between the tile and concrete slab, to reduce the potential for tile cracking.

Moisture Barrier

We recommend that a ten-mil (or thicker) plastic moisture barrier be used under all proposed slabs on grade. The moisture barrier shall be placed between a 4-inch thick bed of clean sand which contains less than 5% fines. Seams of the moisture barrier shall be overlapped and sealed. Where pipes extend through the moisture barrier, the barrier shall be sealed to the pipes. Tears or punctures in the moisture barrier shall be completely repaired prior to placement of concrete.

Retaining Walls

Design Criteria

Retaining wall design criteria shall be provided by the Project Geotechnical Engineer.

Recommended Bearing Material

Based on the findings of our engineering geologic study of the subject property, the recommended bearing material for any proposed retaining walls is the underlying dense **bedrock** or future **certified compacted fill** per the recommendations of the Project Geotechnical Engineer. The desired bearing material can be reached with conventional foundation systems following site grading.

Retaining Wall Backfilling and Drainage

General engineering geologic guidelines with respect to retaining wall backfilling and wall drainage are presented below to provide a basis for quality control during the backfilling of any site retaining wall. Retaining walls shall be provided with a proper drainage system and backfill placed and compacted under continuous observation and testing by the Project Geotechnical Engineer in accordance with the following requirements and those presented by the Project Geotechnical Engineer.

Retaining walls shall be provided with adequate waterproofing, as specified by the Project Architect, in order to mitigate the potential for efflorescence on the face of the walls. Except for the upper two feet, the area immediately adjacent to a retaining wall shall be provided with a subdrainage system. The subdrainage system shall consist of 1 foot wide (minimum) zone of ¾-inch-diameter durable aggregate placed around and above a subdrain pipe located at the base of the wall. The subdrain pipe shall consist of a 4-inch-diameter (minimum) Schedule 40, or better, perforated PVC pipe with the perforations placed downward. *Accordion* or similar type pipe is not acceptable for subdrain pipe. The gravel and perforated pipe shall be protected from

clogging with the use of geosynthetic fabric such as Mirafi 140, or approved equivalent, placed between the gravel and the adjacent certified backfill or natural material. If the installation and/or daylighting of a retaining wall subdrain pipe is not feasible, adequately spaced weep holes may be installed at the base of the wall in lieu of a perforated subdrain pipe. The top two feet of the retaining wall shall be backfilled with less permeable compacted fill to reduce infiltration. A concrete-lined V-shaped drainage swale shall be constructed behind retaining walls with ascending backslopes in order to intercept runoff and debris. A typical retaining wall backfilling and drainage detail is included in Appendix C.

During grading and backfilling operations adjacent to any retaining wall, heavy equipment shall not be allowed to operate within 5 feet laterally of the wall or within a lateral distance equal to the wall height, whichever is greater, in order to avoid developing excessive lateral pressures. Within this zone, only hand-operated equipment shall be used to compact the backfill.

Recommended Retaining Wall Freeboard

Rear yard retaining walls should be provided with a minimum of 1 foot of freeboard for slough protection. It should be noted that additional retaining wall freeboard may be required if deemed necessary by the Project Geotechnical Engineer or Project Civil Engineer.

Swimming Pool and Spa

Design Criteria

If the construction of a swimming pool and/or spa is desired as part of the proposed project, the swimming pool/spa shell shall be designed by the Project Structural Engineer as per the detailed design criteria provided by the Project Geotechnical Engineer.

Recommended Bearing Material

The proposed swimming pool/spa shell shall be supported entirely upon the underlying **bedrock** or future **certified compacted fill** per the recommendations of the Project Geotechnical Engineer. If during construction, variations in the earth materials are observed in the "deep end" versus the "shallow end" of the pool, or between the pool bottom versus the spa bottom, it may be required to deepen portions of the excavation, utilize deepened footings for support, or remove and recompact the swimming pool/spa bottom in order to insure that the entire swimming pool/spa bottom is supported entirely upon uniform and competent material.

Swimming Pool and Spa Subdrainage

The swimming pool/spa should be provided with a subdrain system or a hydrostatic pressure relief valve. The subdrain system, if utilized or required, should consist of a 4-inch-diameter Schedule 40, or better, perforated PVC pipe encased in 2 cubic feet per lineal foot of ¾-inch-diameter durable aggregate running the longitudinal length of the pool. Where the subdrain exits from beneath the pool shell, a non-perforated (solid) pipe should extend to an outlet discharge location specified by the Project Civil Engineer.

Swimming Pool and Spa Decking

The swimming pool/spa decking should be cast free of the swimming pool bond beam via an expansion joint. Water stops should be provided between the bond beam and the pool deck. Please refer to the previous **"Slabs On Grade"** section of this report for recommendations concerning the design and construction of the swimming pool/spa decking.

Foundation Setback Distances

Proposed Residence and Guest House

Residential structures built on or near a descending slope which is 3(h):1(v) or steeper shall be founded to a depth such that the horizontal distance from the bottom of the footing to the slope face is equal to 1/3 the height of the adjacent descending slope. For a descending slope which is steeper than 1(h):1(v), the slope face shall be assumed to be a 1(h):1(v) plane as projected upward from the toe of the slope. The minimum required horizontal foundation setback distance is 5 feet and the maximum is 40 feet.

Proposed Retaining Walls

Retaining walls built on or near a descending slope which is 3(h):1(v) or steeper shall be founded to a depth such that the horizontal distance from the bottom of the footing to the slope face is equal to 1/3 the height of the adjacent descending slope. For a descending slope which is steeper than 1(h):1(v), the slope face shall be assumed to be a 1(h):1(v) plane as projected upward from the toe of the slope. The minimum required horizontal foundation setback distance is 5 feet and the maximum is 40 feet.

Proposed Swimming Pool and Spa

Swimming pools and spas built on or near a descending slope which is 3(h):1(v) or steeper shall be founded to a depth such that the horizontal distance from the bottom of the pool/spa or footing to the slope face is equal to 1/6 the height of the adjacent descending slope. For a descending slope which is steeper than 1(h):1(v), the slope face shall be assumed to be a 1(h):1(v) plane as projected upward from the toe of the slope. The minimum required horizontal foundation setback distance is 2.5 feet and the maximum is 20 feet.

Greater Foundation Setback Distances

Examples of the code-required foundation setback distances are presented on the *Examples of Slope Setback Requirements* sheet which is included in Appendix C. It should be noted that greater foundation setback distances than those required by the code, resulting in deeper foundation depths, may be required as part of the proposed project if deemed necessary by the Project Geotechnical Engineer.

Rear Yard Setbacks

Proposed Residence

The proposed residence shall be provided with a level setback area which complies with the current building code. The clearance between the rear wall of the structure and toe of the ascending rear yard slope (equal or steeper than 3(h):1(v)) shall be equal to 1/2 the height of the ascending rear yard slope to a maximum of 15 feet and a minimum of 3 feet. For an ascending slope which is steeper than 1(h):1(v), the toe of the slope shall be assumed to be the point where a 1(h):1(v) plane intersects the ground surface as projected downward from the top of the slope.

Proposed Swimming Pool and Spa

The proposed swimming pool and spa shall be provided with a level setback area which complies with the current building code. The clearance between the water line of the pool/spa and toe of the ascending rear yard slope (equal or steeper than 3(h):1(v)) shall be equal to 1/4 the height of the ascending rear yard slope to a maximum of 7.5 feet and a minimum of 1.5 feet. For an ascending slope which is steeper than 1(h):1(v), the toe of the slope shall be assumed to be the point where a 1(h):1(v) plane intersects the ground surface as projected downward from the top of the slope.

Greater Rear Yard Setback Distances

Examples of the code-required level rear yard setback distances are presented on the *Examples of Slope Setback Requirements* sheet which is included in Appendix C. It should be noted that greater rear yard setback distances than those required by the code may be required as part of the proposed project if required by the local regulatory agency or if deemed necessary by the Project Geotechnical Engineer or Project Civil Engineer.

Drainage

General

The proper control of all surface runoff is and must remain a crucial element of site maintenance. Proper drainage and irrigation control within the site are important in order to reduce the potential for damaging ground/foundation movements due to hydroconsolidation, soil expansion or shrinkage, and landslides. It is recommended that the Project Civil Engineer and Landscape Architect be retained to prepare a detailed grading, drainage, and landscaping plan which utilize the following general engineering geologic guidelines, and any recommendations of the Project Geotechnical Engineer, with respect to site drainage control, landscaping, and irrigation.

Drainage Control During Grading or Construction

During grading or construction, proper drainage shall be provided away from the building site, footings, and temporary excavations. This is especially important when construction takes place during the rainy season. A storm water erosion control plan should be prepared by the Project Civil Engineer and implemented during the rainy season as required by the local regulatory agency.

Fine Grading

The project area shall be fine graded so as to provide positive drainage away from footings in compliance with the local regulatory agency's grading requirements or a minimum gradient of 2%, whichever is greater, for a distance of at least 6 feet away from foundations for soil covered areas in order to reduce the risk of water ponding adjacent to foundations. For concrete slabs-on-grade abutting foundations, the concrete shall be sloped at a minimum gradient of 1% for a distance of at least 6 feet away from the foundation.

Drainage Control Devices

All pad drainage shall be collected and diverted away from proposed buildings and foundations in non-erosive devices as specified by the Project Civil Engineer. Pad drainage shall not be allowed to flow uncontrolled over slopes. Rain gutters and downspouts should be provided, properly maintained, and discharge directly into a drainage system or over paved areas which are sloped to the street. A drainage system consisting of area drains, catch basins, and connecting lines shall be provided to capture landscape and hardscape sheet flow discharge water. All drainage system piping shall be watertight and discharge directly to the street, storm drain, or to a location specified by the Project Civil Engineer.

Underground Water and Drainage Lines

All underground water lines and drainage lines shall be absolutely leak free. It is recommended that water mains, irrigation lines, and drainage lines be periodically checked for leaks for early detection of water infiltrating the underlying soils that could cause detrimental soil movements. If a leak is detected at any time, it must be repaired immediately.

Site Vegetation and Irrigation

Seepage of surface irrigation water or the spread of extensive root systems into the subgrade of footings, slabs, or pavements can cause differential movements resulting in distress and/or damage to the adjacent structures. Trees and large shrubbery shall not be planted so that roots grow under foundations and flatwork when they reach maturity.

Where landscaping is planned adjacent to structures or paved areas, it is recommended that design measures be taken by the Project Civil Engineer and Landscape Architect to restrict excessive landscape water from infiltrating the subgrade supporting foundations or the subgrade and base supporting paved areas. Design alternatives to restrict the infiltration of excessive landscape water for vegetation located adjacent to structures and paved areas include the implementation of landscape watering plans, the use of higher gradient ground slopes near structures and paved areas, the use of drains to collect and transmit excess irrigation water to drainage structures, or installing a *French Drain* extending at least 12 inches below the subgrade along the edge of the structure or pavement.

Care shall be taken to not over- or under-irrigate the site. Landscape watering shall be held to a minimum while maintaining a uniformly moist condition without allowing the soil to dry out. Irrigation systems should be turned off when significant rain is in the forecast. During extreme

hot and dry periods, adequate watering may be necessary to keep soil from separating or pulling back from the foundations or slabs.

Maintenance

Cracks in paved surfaces shall be sealed to limit infiltration of surface waters. Site area drains, catch basins, roof gutters, and downspouts should be inspected periodically to insure that they are not clogged, damaged, and that they are functioning properly.

Slope Maintenance

A rigorous slope maintenance program should be adopted to maintain the existing and any proposed slopes. The following recommendations should provide guidelines for maintenance of the slopes:

- The slopes should be landscaped. An experienced Landscape Architect could be consulted for recommendations regarding the type of landscape to use on the slope that would help to reduce surface erosion and would need minimum amount of irrigation such as drought resistance plants. Trees with rooting systems that could severely disturb the outer slope materials should be avoided and/or removed.

- The moisture content of the slope outer face materials should be maintained close to the optimum throughout the year. Excessive watering or drying of the slope face must be avoided. Irrigation systems should be turned off when significant rain is in the forecast.

- Proper surface drainage should be maintained. Drainage swales should be inspected and cleaned before the rainy season. Any erosion around and underneath the swales should be repaired to prevent further undermining of the subgrade around the swales.

- If slope subdrain outlets are present on a slope, their locations should be carefully noted and extreme care should be taken to insure that the subdrain outlets do not become buried or blocked. Measures should be undertaken to insure that rodents or small animals can not enter or reside in a subdrain outlet. If a subdrain outlet becomes buried or blocked, it must be located and/or the obstruction must be removed immediately so that water may freely drain from the subdrainage system. It should be noted that a buried or blocked subdrain outlet could prevent groundwater from draining from within the slope thus causing the saturation of the earth materials as well as a rise in the hydrostatic pressures within the slope. This condition could possibly lead to failure of the slope.

- Burrowing by rodents disturbs the surficial materials and surface drainage conditions. If burrowing rodents are observed on or within the slope, they should be exterminated immediately and any disturbance to the slope should be corrected.

Private Sewage Disposal

As previously stated in this report, it is our understanding that it is currently planned to construct the seepage pit(s) of the proposed private sewage disposal system in close proximity to the proposed custom single-family residence and guest house of the subject property. Based on information provided to this office, deep subsurface exploration and percolation testing shall be performed in the area of the proposed seepage pit(s) by the Project Geotechnical Engineer. Once completed, the details concerning the subsurface exploration, testing, and design of the private sewage disposal system shall be provided by the Project Geotechnical Engineer.

In the interim, the following general engineering geologic recommendations are presented concerning the proposed private sewage disposal system based on the findings of our engineering geologic study of the subject property.

The proposed private sewage disposal system shall be designed by the Project Environmental Health Specialist or Project Engineer in accordance with the requirements of the local regulatory agency and the following engineering geologic recommendations. The exact locations, elevations, and construction specifications of all the components of the proposed private sewage disposal system shall be provided by the Project Environmental Health Specialist or Project Engineer.

The bottom of any seepage pit should be a minimum of ten (10) feet above the underlying groundwater level.

The proposed seepage pit(s) should be sealed in the upper portion to avoid percolation into the surficial materials. Specifically, the seepage pit(s) shall be capped at a minimum vertical distance of five (5) feet below existing grade, finished grade, three (3) feet below the soil-bedrock contact, future compacted fill-bedrock contact, or at a depth which maintains a 15 foot minimum horizontal distance as measured from the cap to the face of any descending slope, whichever is determined to be the greater distance or depth. It shall be noted that the currently recommended capping depth shall be considered a minimum based on the geologic data obtained to date and actual site conditions observed during construction may warrant a greater capping depth.

It is recommended that seepage pit excavations be observed by the Project Engineering Geologist and County Inspector to verify that the encountered conditions are as anticipated and that proper construction and sealing practices have been followed. The Project Engineering Geologist shall submit a final observation notice or report stating that the seepage pit(s) has been completed in compliance with our recommendations.

Excavation Characteristics

Very hard, cemented layers are present within the bedrock at random locations and depths and may be encountered during foundation excavation. Should a very hard cemented layer be encountered, the use of very heavy excavation equipment, hi-impact chipping hammers, or coring may be necessary.

Temporary Excavations

All temporary excavations, including overexcavations and utility trench excavations should comply with Cal/OSHA and any other applicable regulatory agency requirements. Excavations deeper than 5 feet shall be constructed as specified by the Project Geotechnical Engineer. No surcharge loads should be placed, nor should equipment operate, within a setback distance from the top of excavation side slopes equal to the depth of excavations. Although not anticipated, excavations encountering groundwater or seepage should be immediately brought to the attention of the Project Engineering Geologist and Project Geotechnical Engineer. All excavations shall be stabilized within 30 days of initial excavation. Water should not be allowed to pond near the top of the excavation, nor be allowed to flow toward it.

Site Observations and Testing

Prior to the start of site preparation and/or construction, we recommend that a pre-construction meeting be held with the owner or developer, contractor, project engineers, City or County Inspector, and MGI to discuss the project. In addition, we recommend that MGI be retained to perform the following tasks prior to and/or during construction.

- Review grading, drainage, and foundation plans to verify that the recommendations contained in this report have been properly incorporated into the project plans and specifications. If MGI is not provided the opportunity to review these documents, we can take no responsibility for misinterpretation of our findings, conclusions, and recommendations.

- Review private sewage disposal system plans to verify that the recommendations contained in this report have been properly incorporated into the project plans and specifications. If MGI is not provided the opportunity to review these documents, we can take no responsibility for misinterpretation of our findings, conclusions, and recommendations.

- Observe and advise during all grading activities including, but not limited to, site preparation, observation of all removal bottom, keyway, bench excavations and backcuts, observation of cut-slopes, and observation of the placement of slope subdrains and/or canyon cleanout subdrains and outlets.

- Observe all foundation excavations prior to the placement of steel and concrete to confirm that the footing excavations are properly embedded into the recommended bearing material and that the excavations are free of loose and disturbed materials. All footing excavations into certified compacted fill, as well as the subgrade for any slabs on grade, shall be observed by the Project Geotechnical Engineer before steel is placed.

- Observe the installation of all retaining wall subdrains and outlets.

- Observe all swimming pool and spa excavations prior to the placement of steel and concrete to confirm that the excavations are properly embedded into the recommended bearing material and that the excavations are free of loose and disturbed materials.

- Observe the seepage pit excavations prior to the placement of liners, perforated pipe, gravel, cap, and fill cover.

- All fill which is placed for engineering purposes shall be observed and tested by the Project Geotechnical Engineer to confirm proper site preparation, suitability of removal excavations, scarification, selection of suitable fill materials, and placement and compaction of fill.

Should any site observation reveal any unforeseen geologic or geotechnical hazard, the Project Engineering Geologist and/or Project Geotechnical Engineer will recommend treatment. Please advise MGI at least 24 hours prior to any required site observation. A complete set of approved plans should be provided to the Project Engineering Geologist and Project Geotechnical Engineer prior to site grading and/or construction, and a set of signed and approved plans should be available on-site for review.

Responsibilities and Site Control

As a reminder, MGI is not a licensed Land Surveyor, Civil Engineer, or Contractor and MGI can not perform the duties of a Land Surveyor, Civil Engineer, or Contractor. As such, the client, property owner, and/or developer should fully understand and acknowledge that MGI is not responsible for the performance of work by third parties including, but not limited to, the project surveyor, civil engineer, grading contractor, construction contractor, and/or subcontractors. MGI's observation of the work of other parties on a project shall not relieve such parties of their responsibility to perform their work in accordance with applicable plans, specifications, and safety requirements. It should be noted that continuous or periodic monitoring by MGI's employees does not mean that MGI is observing or verifying all site work. In addition, the engineering geologic observation services performed by MGI do not include establishing or verifying "lines and grades." MGI will only make on-site observations appropriate to the field services provided by MGI and will not relieve others of their responsibilities to perform, observe, or test the work.

It should be clearly understood and acknowledged that it is the responsibility of the client, property owner, developer, and/or their authorized agent(s) to insure that the engineering geologic information and recommendations provided by MGI in association with the project are properly and thoroughly conveyed to the project architect(s), engineer(s), and/or contractor(s) so that they may be properly incorporated into the plan and that the necessary steps are taken to see that the contractor(s) carries out such recommendations in the field. MGI is not and will not be responsible for the acts, errors, or omissions of contractors or other parties associated with the project and the subject site.

Plan Review

This engineering geologic study was performed and this report was prepared on the basis of the furnished project plans and/or information. Formal plans should be reviewed by MGI. Should the plans differ substantially from the provided plans or information, additional engineering geologic exploration and analysis may be required.

ASSUMPTIONS and LIMITATIONS

General

This report presents the results of our engineering geologic study concerning the subject property and the proposed project. It is strongly recommended that this report be read in its entirety in order for the reader to completely and clearly understand MGI's engineering geologic findings, conclusions, and recommendations concerning the subject property and the proposed project. In addition, it is also recommended that the following sections be carefully read and completely understood as they provide information concerning the assumptions of this study and the limitations of this report. It should be noted that the following "Assumptions and Limitations" also pertain to any future addendum, supplemental, update, or final engineering geologic reports prepared by MGI concerning the subject property and proposed project as well as any additional or revised "Assumptions and Limitations" presented therein. Any questions the reader may have concerning any portion of this report, or any portion of any future addendum, supplemental, update, or final reports concerning the site should be presented to MGI prior to use of this or future reports.

Report Intent

It is the intent of this report to aid in the design and completion of the described project. Implementation of the advice presented in the "Conclusions" and "Recommendations" sections of this report is intended to reduce risk associated with the proposed project and should not be construed to imply total performance of the project. As previously stated, this report is issued with the understanding that it is the sole responsibility of the client, or their authorized agent(s), to insure that the engineering geologic information and recommendations provided in this report are conveyed to the project architect, engineers, and contractors so that they may be properly incorporated into the plan and that the necessary steps are taken to see that the contractor carries out such recommendations in the field.

Report Use

MGI has prepared this report concerning the subject property for the exclusive use of the client and their authorized agents and shall not be considered transferable. Prior to use by others, the subject site and this report must be reviewed by our office. Following review, additional work may be required to update and/or supplement this report. In addition, this report should not be utilized in order to form an opinion concerning the geologic/geotechnical conditions of the adjacent or surrounding properties as the findings presented in this report apply only to the explored area of the subject property and may not accurately reflect the underlying conditions of the surrounding area and/or the adjacent properties.

This report is not intended for use as a bid document. Any company or person using this report for bidding or construction purposes shall perform such independent investigation, as they deem necessary, to satisfy themselves as to the surficial and subsurface conditions of the project site.

Accuracy of Topographic Base Map(s)

The engineering geologic and geotechnical engineering analysis of a particular site and subsequent conclusions and recommendations with respect to a proposed project are, in some cases, highly dependent on certain factors which include, but are not limited to, the topographic conditions of the subject site, the adjacent slopes, and/or the locations of property lines. It should be noted that, at the time of this study, it is MGI's assumption that the provided topographic survey, grading plan, and/or site plan (utilized as a base for the geologic map(s) and geologic section(s) constructed as part of this study) accurately present the current topographic conditions of the site, adjacent slopes, and also accurately depict the locations of the existing structures (if present), easements, property lines, proposed structures, and/or proposed grades. It should be clearly understood that MGI's use of the provided topographic survey, grading plan, or site plan does not imply or verify the accuracy of the provided topographic survey, grading plan, or site plan. If at a time subsequent to the completion of this engineering geologic study and report, a revision is made to the site topographic survey, grading plan, or site plan, the findings, conclusions, and recommendations of this report may be partially invalidated, wholly invalidated, or revised. In addition, supplemental engineering geologic exploration and analysis concerning the subject property and proposed project may also be necessary upon our review of the revised topographic survey, grading plan, or site plan.

Locations of Exploratory Excavations

The locations and elevations of the exploratory excavations of this study, as presented on the various geologic illustrations contained in this report, were determined by use of a steel tape, brunton pocket transit, and interpolation between contours, topographic features, fixed monuments and/or structures illustrated on the supplied topographic map. The locations and elevations of the exploratory excavations of other consultants, if applicable, were approximately determined by our review and analysis of the various geologic maps and illustrations presented in the referenced reports containing the exploration data. The presented locations and elevations should be considered accurate only to the degree implied by the method used. If a more accurate method of determining the locations and elevations of the exploratory excavations was performed as part of this study, the particular method and degree of accuracy was discussed in the "Scope of Work" section of this report.

Variation in Subsurface Conditions

The engineering geologic conclusions and recommendations contained within this report concerning the proposed project are based on the findings of the tasks described in the "Introduction" section of this report with the assumption that the subsurface conditions within the site do not deviate appreciably from those observed or encountered during our geologic study. In view of the general geologic conditions described herein, based on our limited observations of the site and/or surrounding area, it should be understood that there is a possibility that different

subsurface conditions exist within the site and/or adjacent area. Simply, if observation or exploration was performed at a particular location, it may not be indicative of the portions of the site not observed or explored. The nature and extent of variations in subsurface conditions may not become evident until grading or construction. As such, it should be clearly understood that it is the responsibility of the client, their authorized agent(s), or contractor(s) to bring any deviations or unexpected conditions observed during grading or construction to the attention of the Project Engineering Geologist and the Project Geotechnical Engineer of record. In this way, supplemental recommendations can be made with a minimum delay to the project.

Site Risks

It should be noted that all building sites are subject to a certain degree of risk that cannot be wholly identified and/or entirely eliminated. Building sites are subject to many detrimental engineering geologic and/or geotechnical hazards including, but not limited to, the effects of water infiltration, erosion, concentrated drainage, settlement, expansive soil movement, expansive bedrock movement, seismic shaking, fault rupture, landsliding, and slope creep. Risks from these hazards can typically be reduced by employing qualified engineering geologic and geotechnical engineering professionals. However, even with a thorough subsurface exploration and testing program performed by a qualified engineering geologist and/or geotechnical engineer, significant variability of the underlying earth materials may be present within the site. In addition, it is possible that latent (hidden) geologic hazards are present within the site which are concealed by earth materials, vegetation, existing structures, and hardscaping. If such defects are present, they are beyond the evaluation of the Project Engineering Geologist and/or the Project Geotechnical Engineer. In addition, the level of risk and/or the potential for negative site effects from many geologic/geotechnical hazards are highly dependent on the property owner or developer properly developing and maintaining the site, drainage facilities, slopes, and by correcting any deficiencies found during occupancy or use of the property. It should be clearly understood that owner and/or developer is responsible for retaining appropriate and qualified design professionals and contractors in developing the property and for properly maintaining the site and structures. Retaining the services of an engineering geologic and/or geotechnical engineering consultant shall not be construed to relieve the owner, developer, or contractors of their responsibilities or liabilities.

Hazardous Materials

It should be clearly understood that the identification, sampling, testing, excavation, handling, and/or disposal of any hazardous materials, that may or may not be present within the site, is beyond the scope of this study. In the event such materials are discovered by additional site studies or are encountered during grading or construction, appropriate environmental studies and site mitigation/remediation work may be required. In addition, the client and/or property owner shall acknowledge and/or accept that MGI has neither created nor contributed to the creation or existence of any hazardous, radioactive, toxic, irritant, pollutant, substance or constituent, or otherwise dangerous conditions at the site. All site generated non-hazardous and/or hazardous materials, including but not limited to samples, soil/rock cuttings, drilling fluids, decontamination fluids, development fluids, and used disposable protective gear and equipment are the property of the client and/or property owner.

Additional Work

Please be aware that the contract fee for our services to perform an engineering geologic study and prepare this report does not include additional work that may be required in association with the proposed project such as responses to report and/or plan review letters prepared by the building department or appropriate regulatory agency in association with you obtaining a grading/building permit, meetings, plan review by this firm, grading observations, footing observations, and/or any necessary geologic observation of the site with respect to the proposed project. Where additional services are requested or required, you will be billed on an hourly basis for our engineering geologic observation, exploration, consultation, and/or analysis pursuant to MGI's *Fee Schedule* contained in the executed proposal and contract.

Report Expiration

The findings, conclusions, and recommendations of this report are valid as of the date of issuance. However, it should be noted that changes in the surficial or subsurface conditions of a property may occur with the passage of time due to natural processes or works of man within the site or the adjacent area. Furthermore, changes in industry standards periodically occur due to code revisions, legislation, and broadening of knowledge. Accordingly, the findings, conclusions, and/or recommendations of this report may be invalidated wholly or partially by changes outside our control. Therefore, this report is subject to our review and remains valid for a maximum period of one (1) year from the date of issuance unless MGI issues a written opinion of its continued validity thereafter.

Warrantee

The professional opinions and engineering geologic advice contained in this report are based on MGI's understanding of the proposed project, MGI's evaluation of available information, and MGI's general experience in the field of engineering geology. It should be noted that MGI does not guarantee the engineering geologic interpretations presented in this report, only that the methods of this engineering geologic study and the professional engineering geologic opinions and advice provided in this report are generally consistent with the standard of care of the engineering geologic profession at this time for studies performed in the same locality and under similar project conditions. Simply, no warranty is expressed, implied, is made, or intended concerning this report, by furnishing of this report, or by any other oral or written statement by MGI.

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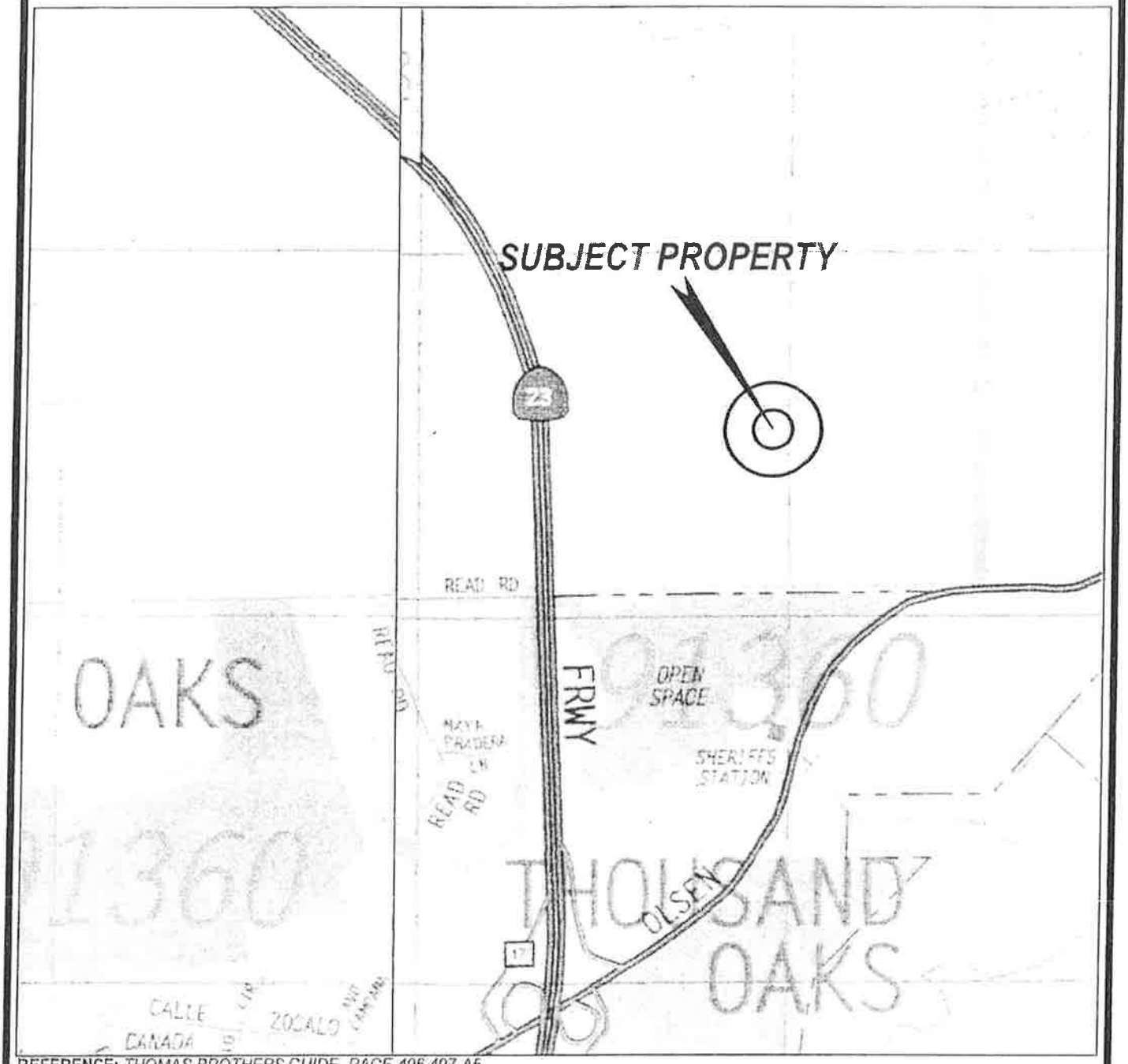
FIGURES

SITE LOCATION MAP



REFERENCE: *THOMAS BROTHERS GUIDE, PAGE 496,497-A5*

0 500 1000 1500 2000 3000 feet

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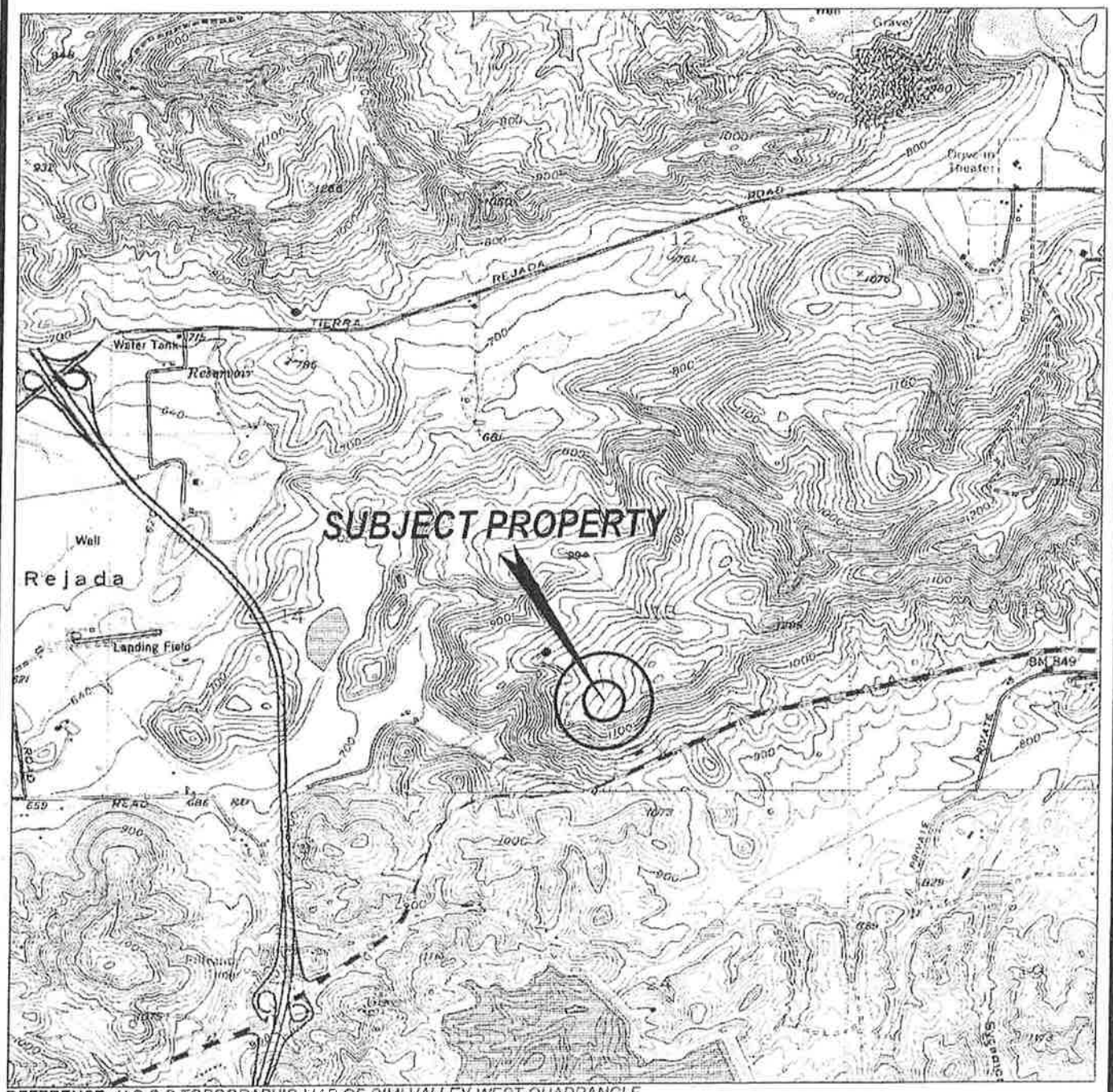
JOB NUMBER: JH 5927

JOB NAME: DAY

FIGURE 1

SITE LOCATION MAP



REFERENCE: *U.S.G.S TOPOGRAPHIC MAP OF SIMI VALLEY WEST QUADRANGLE*

0 1000 2000 3000 4000 6000 feet

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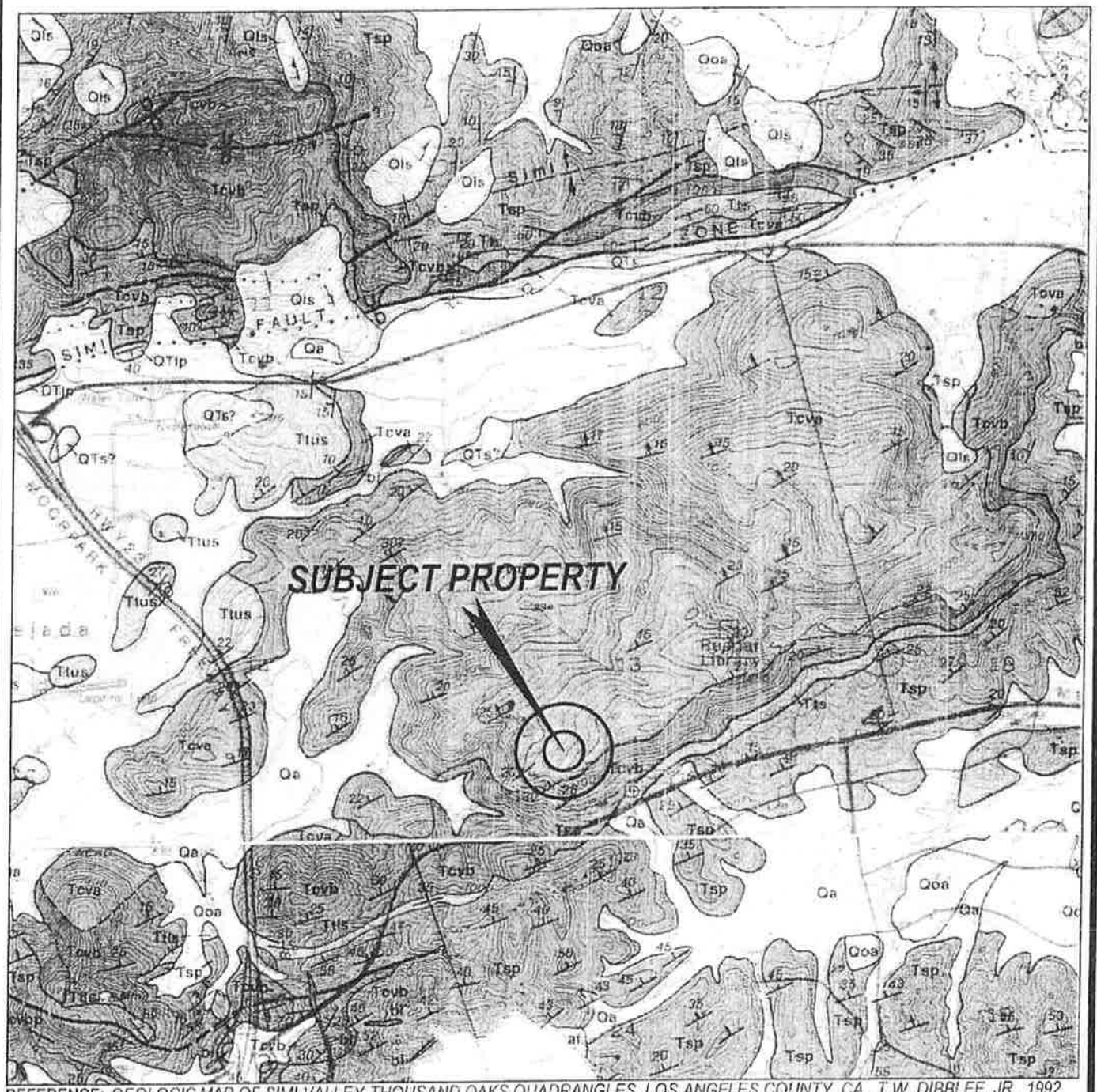
FIGURE 2

REGIONAL GEOLOGIC MAP



REFERENCE: *GEOLOGIC MAP OF SIMI VALLEY-THOUSAND OAKS QUADRANGLES, LOS ANGELES COUNTY, CA., T.W. DIBBLEE, JR., 1992*

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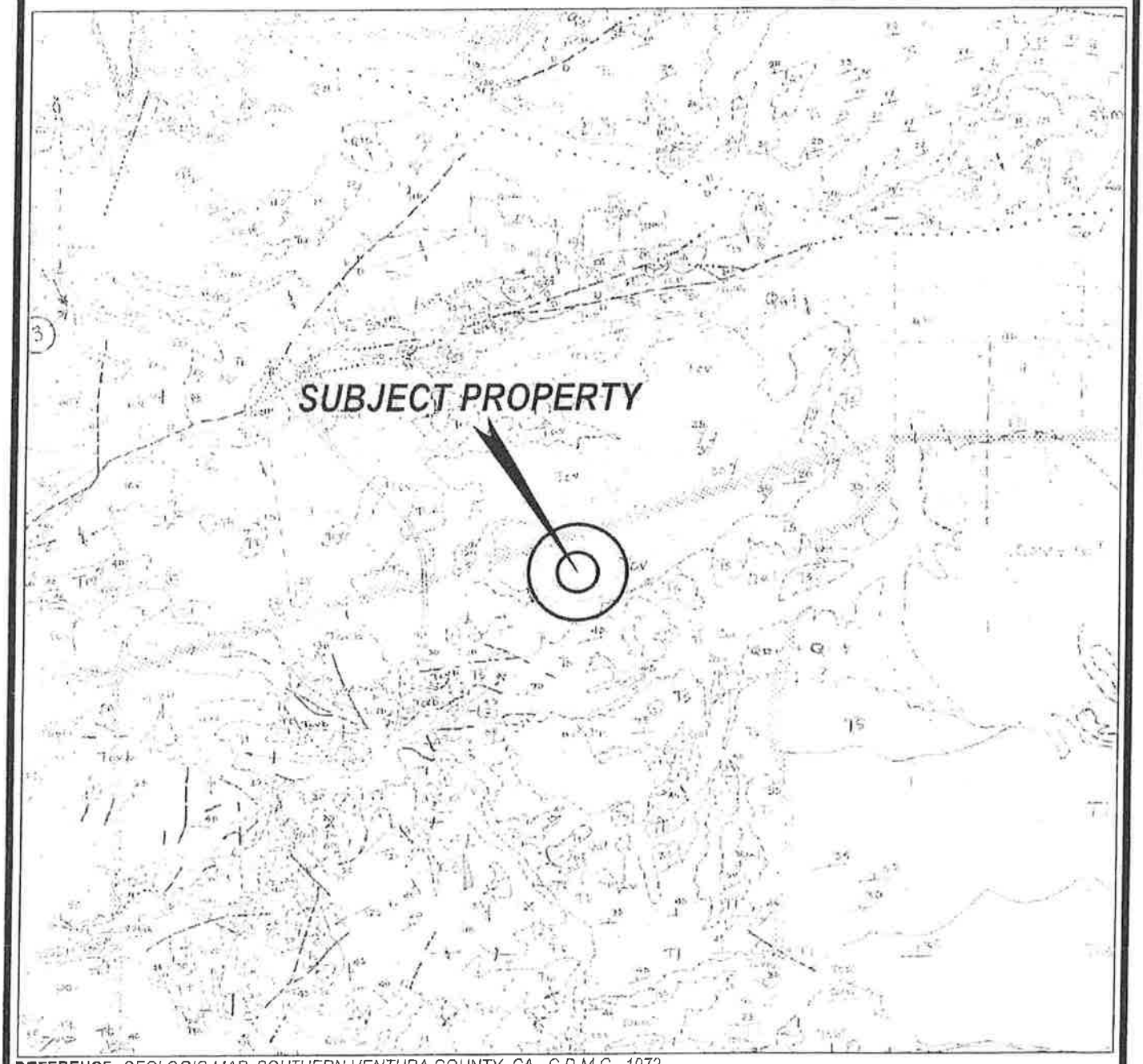
FIGURE 3

REGIONAL GEOLOGIC MAP



REFERENCE: *GEOLOGIC MAP, SOUTHERN VENTURA COUNTY, CA., C.D.M.G., 1972*

0 2000 4000 6000 8000 12000 feet

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Fax: (805) 582-1228
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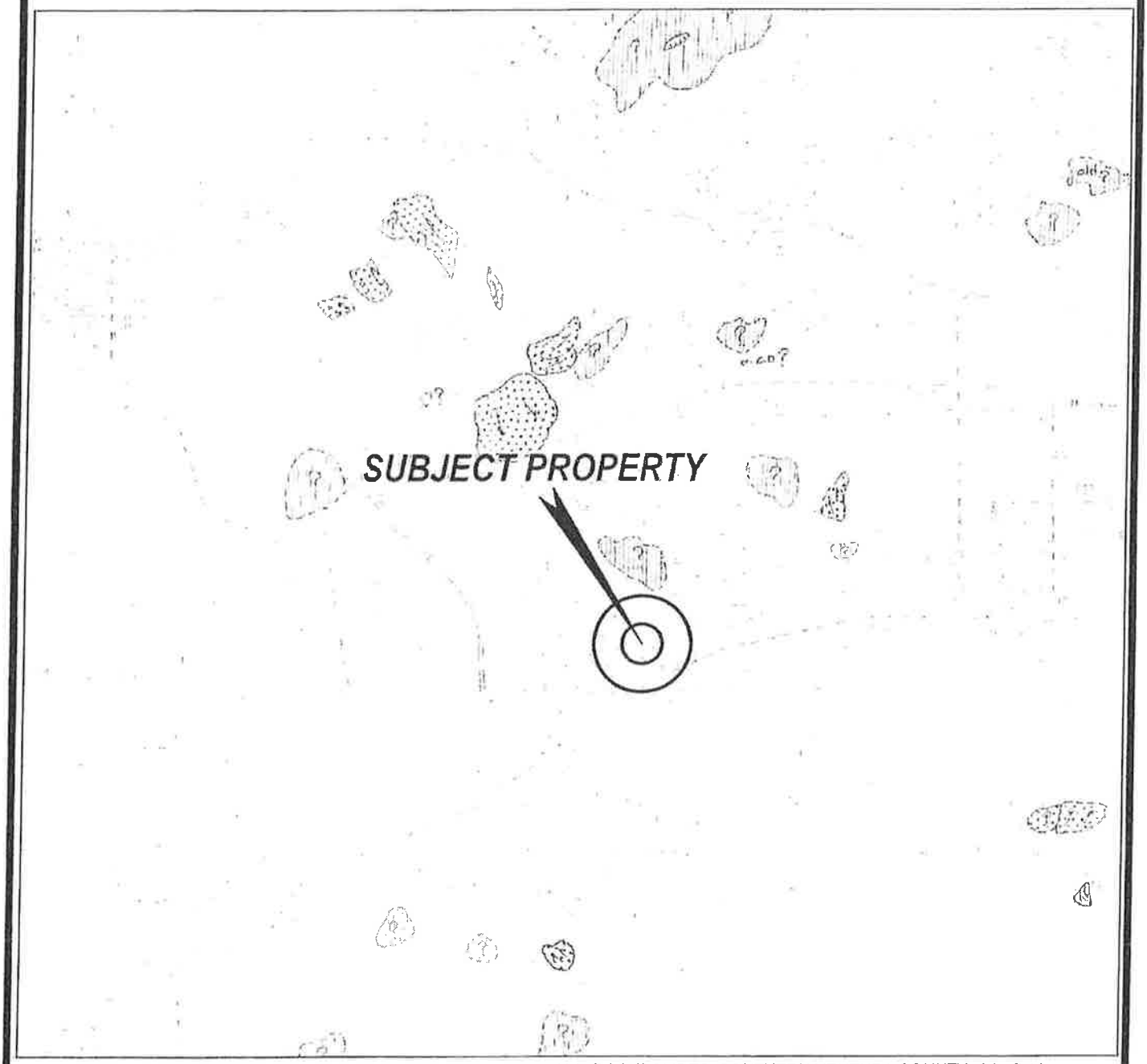
JOB NUMBER: JH 5927

JOB NAME: DAY

FIGURE 4

REGIONAL LANDSLIDE MAP



REFERENCE: *RECONNAISANCE PHOTO-INTERPRETATION MAP OF MAJOR LANDSLIDES, SOUTHERN VENTURA COUNTY, CA., D.M. MORTON, 1972*

0 2000 4000 6000 8000 12000 feet

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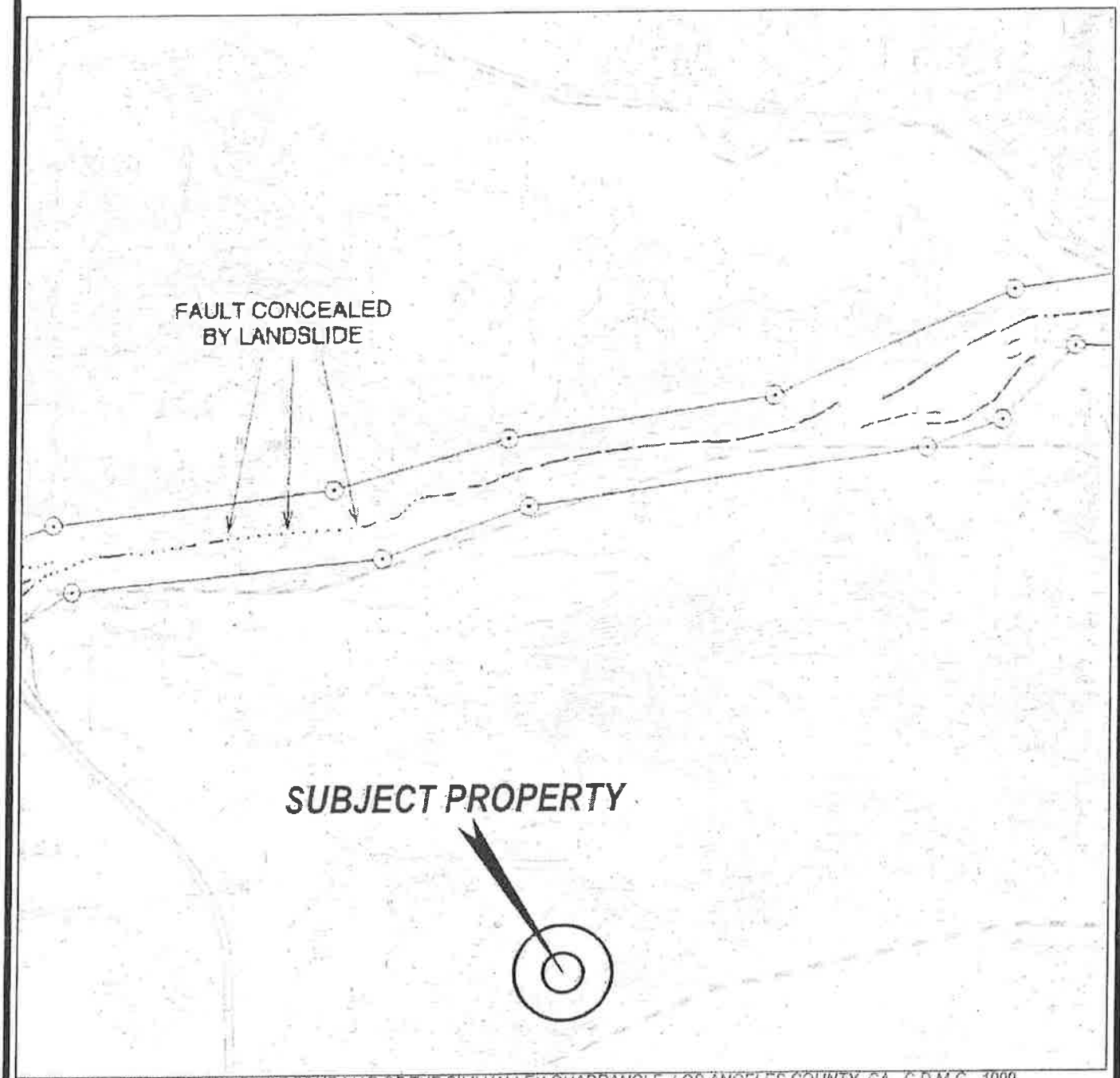
JOB NAME: DAY

FIGURE 5

EARTHQUAKE FAULT ZONE MAP



REFERENCE: *EARTHQUAKE FAULT ZONE MAP OF THE SIMI VALLEY QUADRANGLE, LOS ANGELES COUNTY, CA., C.D.M.G., 1999*

0 1000 2000 3000 4000 6000 feet

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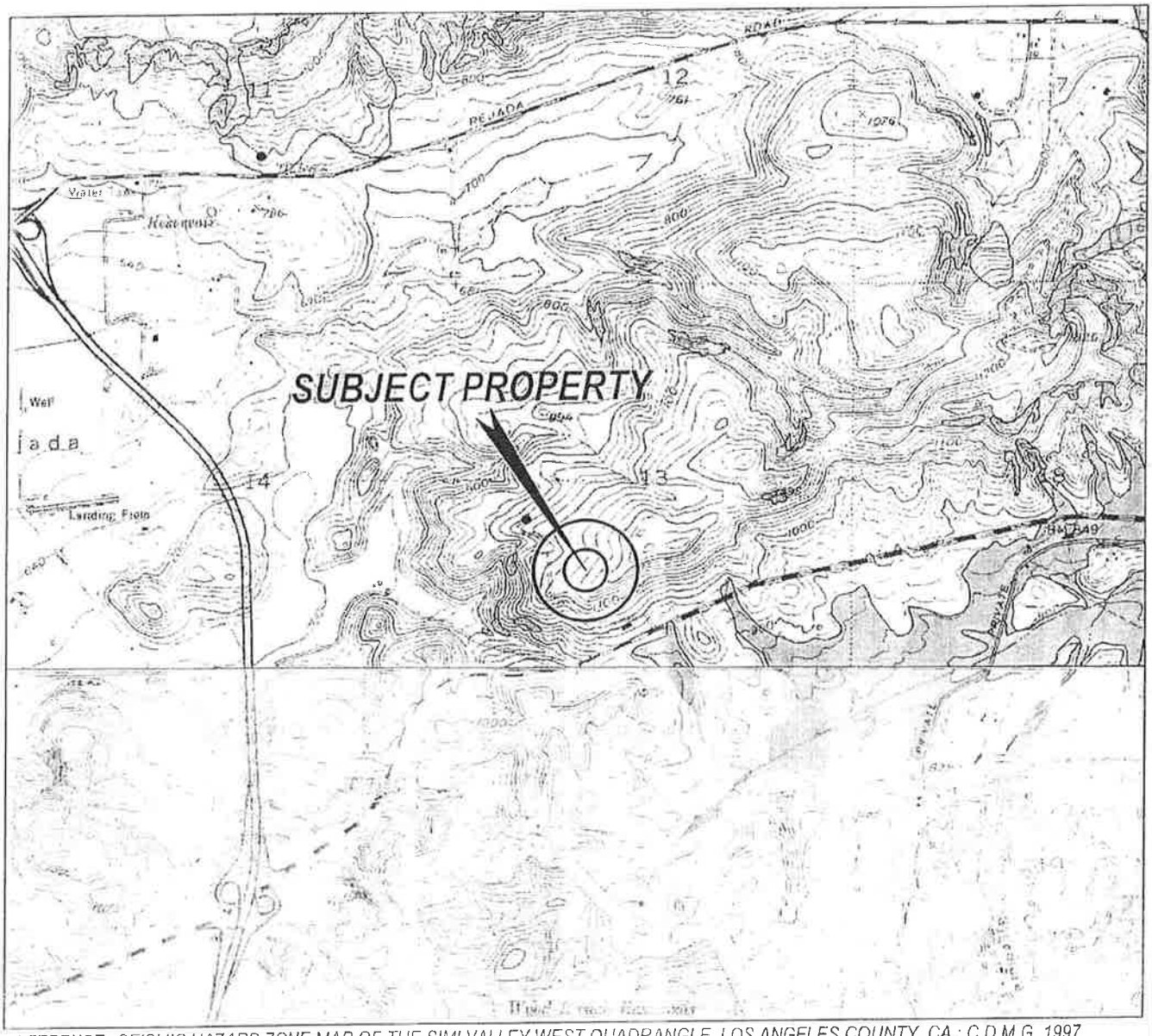
JOB NUMBER: JH 5927

JOB NAME: DAY

FIGURE 6

SEISMIC HAZARD MAP



REFERENCE: *SEISMIC HAZARD ZONE MAP OF THE SIMI VALLEY WEST QUADRANGLE, LOS ANGELES COUNTY, CA.: C.D.M.G. 1997*

0 1000 2000 3000 4000 6000 feet

Liquefaction: *Areas where occurance of liquefaction, or local geological, geotechnical and groundwater conditions indicate a potencial for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required.*

Earthquake-induced Landslides: *Areas where previous occurrence of landslide movement, or local topographic, geological and subsurface water conditions indicate a potencial for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required.*

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JOB NUMBER: JH 5927

JOB NAME: DAY

FIGURE 7

APPENDIX A

LOGS OF EXPLORATORY EXCAVATIONS

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LOG OF TEST PIT #26 (Tp-26)

Bob and Laura Day
Olsen Rd. and 23 Fwy.
County of Ventura, CA

Engineering Geologic Study

JH 5927

Date Started	2-1-2006	Weather Conditions	Cool - Clear Skies
Date Completed	2-1-2006	Logged by	Brett Scott
Digging Method	Backhoe		
Digging Company	Buzza Backhoe Service		
Sampled by	Cal West Geotechnical		

Sample Condition: Remoulded; Undisturbed; Lost; Rock Core

Sampler Type: SS Split Spoon; ST Shelby Tube; PS Piston Sampler; DC Diamond Core Bar

Depth in Feet	Surf. Elev. 916	USCS	Graphic	Sample Depth	Sampler Type	Blow Count	Dry Density (pcf)	Moisture Content (%)	DESCRIPTION	Depth to Groundwater	ATTITUDES
0	916	ML							0-3.5' SOIL CLAYEY SILT; dusky brown, slightly moist, medium stiff to stiff, rootlets		
1	915										
2	914										
3	913										
4	912	VL							3.5'-5.5' BEDROCK (Conejo Volcanics - Tcv) ANDESITE; moderate brown to light bluish gray, massive, strong to very strong, hard, slightly to moderately fractured, slightly to moderately weathered, blocky with depth, minor caliche stringers		
5	911										
6	910										
7	909										
8	908										
9	907										
10	906										
11											

Total Depth: 5.5 feet
No groundwater
No fill
No Caving

Surface Conditions: Level knob

Notes: Test pit backfilled with spoils after downhole logging

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LOG OF TEST PIT #27 (Tp-27)

Bob and Laura Day
Olsen Rd. and 23 Fwy.
County of Ventura, CA
Engineering Geologic Study
JH 5927

Date Started	: 2-1-2006	Weather Conditions	: Cool - Clear Skies
Date Completed	: 2-1-2006	Logged by	: Brett Scott
Digging Method	: Backhoe		
Digging Company	: Buzza Backhoe Service		
Sampled by	: Cal West Geotechnical		

Sample Condition: Remoulded; Undisturbed; Lost; Rock Core
Sampler Type: SS Split Spoon; ST Shelby Tube; PS Piston Sampler; DC Diamond Core Bar.

Depth in Feet	Surf. Elev. 963	USCS	Graphic	Sample Depth	Sampler Type	Blow Count	Dry Density (pcf)	Moisture Content (%)	DESCRIPTION	Depth to Groundwater	ATTITUDES
0	963								0-3' FILL (af) CLAYEY SILT with occasional SAND; Mottled dark yellowish brown and dusky brown, dry to slightly moist, medium stiff, rootlets		
1	962	ML									
2	961										
3	960	ML							3'-4' SOIL CLAYEY SILT; dusky brown, dry, medium stiff to stiff		
4	959	VL							4'-8' BEDROCK (Conejo Volcanics - Tcv) BASALT; moderate brown to dusky yellowish brown, massive @ 4'-6' slightly friable, moderately hard, moderately fractured to fractured, moderately weathered to weathered @ 6'-8' moderately strong to strong, increasingly hard with depth, slightly to moderately fractured, slightly to moderately weathered		
5	958										
6	957										
7	956										
8	955										
9	954										
10	953										
11											

Total Depth: 8 feet
No groundwater
3 feet of fill
No Caving

Surface Conditions: Level pad area

Notes: Test pit backfilled with spoils after downhole logging

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LOG OF TEST PIT #28 (Tp-28)

Bob and Laura Day
Olsen Rd. and 23 Fwy.
County of Ventura, CA

Engineering Geologic Study

JH 5927

Date Started	: 2-1-2006	Weather Conditions	: Cool - Clear Skies
Date Completed	: 2-1-2006	Logged by	: Brett Scott
Digging Method	: Backhoe		
Digging Company	: Buzza Backhoe Service		
Sampled by	: Cal West Geotechnical		

Sample Condition: Remoulded; Undisturbed; Lost; Rock Core

Sampler Type: SS Split Spoon; ST Shelby Tube; PS Piston Sampler; DC Diamond Core Bar

Depth in Feet	Surf. Elev. 1122	USCS	Graphic	Sample Depth	Sampler Type	Blow Count	Dry Density (pcf)	Moisture Content (%)	DESCRIPTION	Depth to Groundwater	ATTITUDES
0	1122	ML							0-1' FILL (af) SANDY SILT with COBBLES; Mottled dark yellowish brown and dusky brown, dry, medium stiff, cobbles consist of cobble to small boulder size clasts of andesite		
1	1121	VL							1'-1.25' BEDROCK (Conejo Volcanics - Tcv) ANDESITE; moderate reddish brown to light bluish gray and moderate brown, massive, strong, hard to very hard, slightly fractured, slightly weathered, slightly vesicular Refusal @ 1.25' with CASE 580 backhoe		
2	1120										
3	1119										
4	1118										
5	1117										
6	1116										
7	1115										
8	1114										
9	1113										
10	1112										
11											

Total Depth: 1.25 feet
No groundwater
1 foot of fill
No Caving

Surface Conditions: Moderately level area along access road

Notes: Test pit backfilled with spoils after downhole logging

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LOG OF TEST PIT #29 (Tp-29)

Bob and Laura Day
Olsen Rd. and 23 Fwy.
County of Ventura, CA

Engineering Geologic Study

JH 5927

Date Started	: 2-1-2006	Weather Conditions	: Cool - Clear Skies
Date Completed	: 2-1-2006	Logged by	: Brett Scott
Digging Method	: Backhoe		
Digging Company	: Buzza Backhoe Service		
Sampled by	: Cal West Geotechnical		

Sample Condition: Remoulded; Undisturbed; Lost; Rock Core

Sampler Type: SS Split Spoon; ST Shelby Tube; PS Piston Sampler; DC Diamond Core Bar.

Depth in Feet	Surf. Elev. 1122	USCS	Graphic	Sample Depth	Sampler Type	Blow Count	Dry Density (pcf)	Moisture Content (%)	DESCRIPTION	Depth to Groundwater	ATTITUDES
0	1122	SM							0-1' FILL (af) SILTY SAND; moderate brown, dry, stiff, SAND is fine-grained		
1	1121	VL							1'-1.25' BEDROCK (Conejo Volcanics - Tcv) ANDESITE; moderate reddish brown to light bluish gray and moderate brown, massive, strong, hard to very hard, slightly fractured, slightly weathered, slightly vesicular Refusal @ 1.25' with CASE 580 backhoe		
2	1120										
3	1119										
4	1118										
5	1117										
6	1116										
7	1115										
8	1114										
9	1113										
10	1112										
11											

Total Depth: 1.25 feet
No groundwater
1 foot of fill
No Caving

Surface Conditions: Moderately level area along access road

Notes: Test pit backfilled with spoils after downhole logging

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LOG OF TEST PIT #30 (Tp-30)

Bob and Laura Day
Olsen Rd. and 23 Fwy.
County of Ventura, CA
Engineering Geologic Study
JH 5927

Date Started	: 2-1-2006	Weather Conditions	: Cool - Clear Skies
Date Completed	: 2-1-2006	Logged by	: Brett Scott
Digging Method	: Backhoe		
Digging Company	: Buzza Backhoe Service		
Sampled by	: Cal West Geotechnical		

Sample Condition: Remoulded; Undisturbed; Lost; Rock Core

Sampler Type: SS Split Spoon; ST Shelby Tube; PS Piston Sampler; DC Diamond Core Bar

Depth in Feet	Surf. Elev. 1150	USCS	Graphic	Sample Depth	Sampler Type	Blow Count	Dry Density (pcf)	Moisture Content (%)	DESCRIPTION	Depth to Groundwater	ATTITUDES
0	1150	ML							0-1' SOIL CLAYEY SILT; dusky brown, dry, medium stiff to stiff		
1	1149	VL							1'-2.25' BEDROCK (Conejo Volcanics - Tcv) ANDESITE; moderate reddish brown to light bluish gray and moderate brown, massive, strong, hard to very hard, slightly vesicular -1' to 2' - moderately fractured, moderately weathered -2' to 2.25' - slightly fractured, slightly weathered -Refusal @ 2.25' with CASE 580 backhoe		
2	1148										
3	1147										
4	1146										
5	1145										
6	1144										
7	1143										
8	1142										
9	1141										
10	1140										
11											

Total Depth: 2.25 feet
No groundwater
No fill
No Caving

Surface Conditions: Moderately level area sloping to the northwest

Notes: Test pit backfilled with spoils after downhole logging

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LOG OF TEST PIT #31 (Tp-31)

Bob and Laura Day
Olsen Rd. and 23 Fwy.
County of Ventura, CA

Engineering Geologic Study

JH 5927

Date Started	: 2-1-2006	Weather Conditions	: Cool - Clear Skies
Date Completed	: 2-1-2006	Logged by	: Brett Scott
Digging Method	: Backhoe		
Digging Company	: Buzza Backhoe Service		
Sampled by	: Cal West Geotechnical		

Sample Condition: Remoulded; Undisturbed; Lost; Rock Core

Sampler Type: SS Split Spoon; ST Shelby Tube; PS Piston Sampler; DC Diamond Core Bar.

Depth in Feet	Surf. Elev. 1160	USCS	Graphic	Sample Depth	Sampler Type	Blow Count	Dry Density (pcf)	Moisture Content (%)	DESCRIPTION	Depth to Groundwater	ATTITUDES
0	1160	ML							0-1.5' SOIL CLAYEY SILT; dusky brown, dry, medium stiff to stiff		
1	1159										
2	1158	VL							1'-3.5' BEDROCK (Conejo Volcanics - Tcv) ANDESITE; moderate reddish brown to light bluish gray and moderate brown, massive, strong, hard to very hard, slightly vesicular -1.5' to 2.5' - moderately fractured, moderately weathered -2.5' to 3.5' - slightly to moderately fractured, slightly to moderately weathered		
3	1157										
4	1156								-Refusal @ 3.5' with CASE 580 backhoe		
5	1155										
6	1154										
7	1153										
8	1152										
9	1151										
10	1150										
11											

Total Depth: 3.5 feet
No groundwater
No fill
No Caving

Surface Conditions: Moderately level area sloping to the northwest

Notes: Test pit backfilled with spoils after downhole logging

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LOG OF TEST PIT #32 (Tp-32)

Bob and Laura Day
Olsen Rd. and 23 Fwy.
County of Ventura, CA

Engineering Geologic Study

JH 5927

Date Started	: 2-1-2006	Weather Conditions	: Cool - Clear Skies
Date Completed	: 2-1-2006	Logged by	: Brett Scott
Digging Method	: Backhoe		
Digging Company	: Buzza Backhoe Service		
Sampled by	: Cal West Geotechnical		

Sample Condition: Remoulded; Undisturbed; Lost; Rock Core

Sampler Type: SS Split Spoon; ST Shelby Tube; PS Piston Sampler; DC Diamond Core Bar

Depth in Feet	Surf. Elev. 1188	USCS	Graphic	Sample Depth	Sampler Type	Blow Count	Dry Density (pcf)	Moisture Content (%)	DESCRIPTION	Depth to Groundwater	ATTITUDES
0	1188	ML							0-1' SOIL CLAYEY SILT; dusky brown, dry, medium stiff to stiff		
1	1187	VL							1'-2.25' BEDROCK (Conejo Volcanics - Tcv) ANDESITE; moderate reddish brown to light bluish gray and moderate brown, massive, strong, hard to very hard, slightly vesicular 1' to 2' - moderately fractured, moderately weathered 2' to 2.25' - slightly fractured, slightly weathered Refusal @ 2.25' with CASE 580 backhoe		
2	1186										
3	1185										
4	1184										
5	1183										
6	1182										
7	1181										
8	1180										
9	1179										
10	1178										
11											

Total Depth: 2.25 feet
No groundwater
No fill
No Caving

Surface Conditions: Moderately level area sloping to the northwest

Notes: Test pit backfilled with spoils after downhole logging

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LOG OF TEST PIT #33 (Tp-33)

Bob and Laura Day
Olsen Rd. and 23 Fwy.
County of Ventura, CA
Engineering Geologic Study
JH 5927

Date Started	: 2-1-2006	Weather Conditions	: Cool - Clear Skies
Date Completed	: 2-1-2006	Logged by	: Brett Scott
Digging Method	: Backhoe		
Digging Company	: Buzza Backhoe Service		
Sampled by	: Cal West Geotechnical		

Sample Condition: Remoulded; Undisturbed; Lost; Rock Core

Sampler Type: SS Split Spoon; ST Shelby Tube; PS Piston Sampler; DC Diamond Core Bar.

Depth in Feet	Surf. Elev. 1136	USCS	Graphic	Sample Depth	Sampler Type	Blow Count	Dry Density (pcf)	Moisture Content (%)	DESCRIPTION	Depth to Groundwater	ATTITUDES
0	1136								0-2' SOIL CLAYEY SILT; dusky brown, dry, medium stiff to stiff		
1	1135	ML									
2	1134								2'-4' BEDROCK (Conejo Volcanics - Tcv) ANDESITE; moderate reddish brown to light bluish gray and moderate brown, massive, strong, hard to very hard, slightly fractured, slightly weathered, slightly vesicular		
3	1133	VL							2'-3' is moderately fractured, moderatley weathered		
4	1132								Refusal @ 4' with CASE 580 backhoe		
5	1131										
6	1130										
7	1129										
8	1128										
9	1127										
10	1126										
11											

Total Depth: 4 feet
No groundwater
No fill
No Caving

Surface Conditions: Moderately level area sloping northwest

Notes: Test pit backfilled with spoils after downhole logging

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LOG OF TEST PIT #34 (Tp-34)

Bob and Laura Day
Olsen Rd. and 23 Fwy.
County of Ventura, CA

Engineering Geologic Study

JH 5927

Date Started	: 3-15-2006	Weather Conditions	: Cool - Clear Skies
Date Completed	: 3-15-2006	Logged by	: Brett Scott
Digging Method	: Excavator		
Digging Company	: Sanchez Earth Works		
Sampled by	: Cal West Geotechnical		

Sample Condition: Remoulded; Undisturbed; Lost; Rock Core

Sampler Type: SS Split Spoon; ST Shelby Tube; PS Piston Sampler; DC Diamond Core Bar.

Depth in Feet	Surf. Elev. 1168	USCS	Graphic	Sample Depth	Sampler Type	Blow Count	Dry Density (pcf)	Moisture Content (%)	DESCRIPTION	Depth to Groundwater	ATTITUDES
0	1168								0-2' SOIL CLAYEY SILT; moderate brown to dark reddish brown, dry, stiff		
1	1167	ML									
2	1166								2'-11' BEDROCK (Conejo Volcanics - Tcv) ANDESITE; grayish blue to light brown and pale purple, medium bedded to massive, very strong, hard to very hard, slightly fractured to fractured, moderately weathered, manganese staining, filled joints		Bedding @2' N 40 E, 12 NW Joint @2' N 10 W, 69 NE
3	1165										
4	1164										Joint @4' N 48 E, 14 NW
5	1163										
6	1162										
7	1161	VL									
8	1160										
9	1159										
10	1158										
11											

Total Depth: 11 feet
No groundwater
No fill
No Caving

Surface Conditions: Moderately level area sloping northwest

Notes: Test pit left open for percolation test

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LOG OF TEST PIT #35 (Tp-35)

Bob and Laura Day
Olsen Rd. and 23 Fwy.
County of Ventura, CA

Engineering Geologic Study

JH 5927

Date Started	: 3-15-2006	Weather Conditions	: Cool - Clear Skies
Date Completed	: 3-15-2006	Logged by	: Brett Scott
Digging Method	: Excavator		
Digging Company	: Sanchez Earth Works		
Sampled by	: Cal West Geotechnical		

Sample Condition: Remoulded; Undisturbed; Lost; Rock Core

Sampler Type: SS Split Spoon; ST Shelby Tube; PS Piston Sampler; DC Diamond Core Bar

Depth in Feet	Surf. Elev. 1168	USCS	Graphic	Sample Depth	Sampler Type	Blow Count	Dry Density (pcf)	Moisture Content (%)	DESCRIPTION	Depth to Groundwater	ATTITUDES
0	1168										
		ML							0-1' SOIL CLAYEY SILT; moderate brown to dark reddish brown, dry, stiff		
1	1167								1'-11' BEDROCK (Conejo Volcanics - Tcv) ANDESITE; grayish blue to light brown and pale purple, medium bedded to massive, very strong, hard to very hard, slightly fractured to fractured, moderately weathered, manganese staining, filled joints		
2	1166										
3	1165										Joint @3' N 57 E, 89 NW
4	1164										
5	1163										
6	1162	VL									Joint @6' N 5 W, 84 SW
7	1161										
8	1160										Joint @8' N 63 W, 88 SW
9	1159										
10	1158										
11											

Total Depth: 11 feet
No groundwater
No fill
No Caving

Surface Conditions: Moderately level area sloping northwest

Notes: Test pit left open for percolation test

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LOG OF TEST PIT #36 (Tp-36)

Bob and Laura Day
Olsen Rd. and 23 Fwy.
County of Ventura, CA
Engineering Geologic Study
JH 5927

Date Started	: 3-15-2006	Weather Conditions	: Cool - Clear Skies
Date Completed	: 3-15-2006	Logged by	: Brett Scott
Digging Method	: Excavator		
Digging Company	: Sanchez Earth Works		
Sampled by	: Cal West Geotechnical		

Sample Condition: Remoulded; Undisturbed; Lost; Rock Core

Sampler Type: SS Split Spoon; ST Shelby Tube; PS Piston Sampler; DC Diamond Core Bar.

Depth in Feet	Surf. Elev. 1168	USCS	Graphic	Sample Depth	Sampler Type	Blow Count	Dry Density (pcf)	Moisture Content (%)	DESCRIPTION	Depth to Groundwater	ATTITUDES
0	1168										
		ML							0-1.5' SOIL CLAYEY SILT; moderate brown to dark reddish brown, dry, stiff		
1	1167										
									1.5'-11' BEDROCK (Conejo Volcanics - Tcv)		
2	1166								ANDESITE; grayish blue to light brown and pale purple, medium bedded to massive, very strong, hard to very hard, slightly fractured to fractured, moderately weathered, manganese staining, filled joints		Joint @2' N 20 W, 51 NE
3	1165										Joint @3' N 70 W, 84 SW
4	1164										
5	1163										
6	1162	VL									
7	1161										
8	1160										
9	1159										
10	1158										
11											

Total Depth: 11 feet
No groundwater
No fill
No Caving

Surface Conditions: Moderately level area sloping northwest

Notes: Test pit left open for percolation test

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LOG OF TEST PIT #37 (Tp-37)

Bob and Laura Day
Olsen Rd. and 23 Fwy.
County of Ventura, CA
Engineering Geologic Study
JH 5927

Date Started	: 3-15-2006	Weather Conditions	: Cool - Clear Skies
Date Completed	: 3-15-2006	Logged by	: Brett Scott
Digging Method	: Excavator		
Digging Company	: Sanchez Earth Works		
Sampled by	: Cal West Geotechnical		

Sample Condition: Remoulded; Undisturbed; Lost; Rock Core
Sampler Type: SS Split Spoon; ST Shelby Tube; PS Piston Sampler; DC Diamond Core Bar.

Depth in Feet	Surf. Elev. 1168	USCS	Graphic	Sample Depth	Sampler Type	Blow Count	Dry Density (pcf)	Moisture Content (%)	DESCRIPTION	Depth to Groundwater	ATTITUDES
0	1168								0-2' SOIL CLAYEY SILT; moderate brown to dark reddish brown, dry, stiff		
1	1167	ML									
2	1166								2'-11' BEDROCK (Conejo Volcanics - Tcv) ANDESITE; grayish blue to light brown and pale purple, medium bedded to massive, very strong, hard to very hard, slightly fractured to fractured, moderately weathered, manganese staining, filled joints		
3	1165										
4	1164										Joint @ 4' N 5 W, 76 NE Joint @ 4' N 85 W, 82 NE
5	1163										Joint @ 5' N 15 E, 79 SE
6	1162										
7	1161	VL									
8	1160										
9	1159										
10	1158										
11											

Total Depth: 11 feet
No groundwater
No fill
No Caving

Surface Conditions: Moderately level area sloping northwest

Notes: Test pit left open for percolation test

03-30-2006 C:\test pits and borings\JH 5927 - Tp37.bor

APPENDIX B

SEISMIC ANALYSIS DATA OUTPUT

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*                    *
*    E Q F A U L T   *
*                    *
*    Version 3.00    *
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DETERMINISTIC ESTIMATION OF
PEAK ACCELERATION FROM DIGITIZED FAULTS

JOB NUMBER: JH 5927
DATE: 03-30-2006

JOB NAME: DAY

CALCULATION NAME: BOB AND LAURA DAY

FAULT-DATA-FILE NAME: CDMGFLTE.DAT

SITE COORDINATES:
SITE LATITUDE: 34.2527
SITE LONGITUDE: 118.8326

SEARCH RADIUS: 50 mi

ATTENUATION RELATION: 9) Bozorgnia Campbell Niazi (1999) Hor.-Hard Rock-Uncor.
UNCERTAINTY (M=Median, S=Sigma): M Number of Sigmas: 0.0
DISTANCE MEASURE: cdist
SCOND: 1
Basement Depth: 5.00 km Campbell SSR: 0 Campbell SHR: 1
COMPUTE PEAK HORIZONTAL ACCELERATION

FAULT-DATA FILE USED: CDMGFLTE.DAT

MINIMUM DEPTH VALUE (km): 3.0

DETERMINISTIC SITE PARAMETERS

ABBREVIATED FAULT NAME	APPROXIMATE DISTANCE mi	(km)	ESTIMATED MAX. EARTHQUAKE EVENT MAXIMUM EARTHQUAKE MAG. (Mw)	PEAK SITE ACCEL. g	EST. SITE INTENSITY MOD. MERC.
ANACAPA-DUME	14.2	(22.9)	7.3	0.253	IX
BIG PINE	38.8	(62.4)	6.7	0.039	V
CHANNEL IS. THRUST (Eastern)	26.0	(41.9)	7.4	0.154	VIII
CLAMSHELL-SAWPIT	43.9	(70.6)	6.5	0.034	V
COMPTON THRUST	34.9	(56.2)	6.8	0.066	VI
ELYSIAN PARK THRUST	38.7	(62.3)	6.7	0.054	VI
GARLOCK (West)	40.1	(64.6)	7.1	0.052	VI
HOLLYWOOD	25.9	(41.7)	6.4	0.063	VI
HOLSER	12.5	(20.1)	6.5	0.168	VIII
M.RIDGE-ARROYO PARIDA-SANTA ANA	25.2	(40.6)	6.7	0.082	VII
MALIBU COAST	13.7	(22.1)	6.7	0.174	VIII
MONTALVO-OAK RIDGE TREND	25.5	(41.1)	6.6	0.085	VII
NEWPORT-INGLEWOOD (L.A.Basin)	30.4	(48.9)	6.9	0.063	VI
NORTH CHANNEL SLOPE	48.8	(78.6)	7.1	0.048	VI
NORTHRIDGE (E. Oak Ridge)	11.0	(17.7)	6.9	0.291	IX
OAK RIDGE (Onshore)	8.5	(13.6)	6.9	0.334	IX
OAK RIDGE(Blind Thrust Offshore)	25.1	(40.4)	6.9	0.110	VII
PALOS VERDES	25.0	(40.3)	7.1	0.094	VII
PLEITO THRUST	41.6	(66.9)	7.2	0.064	VI
RAYMOND	35.9	(57.7)	6.5	0.044	VI
RED MOUNTAIN	28.6	(46.1)	6.8	0.075	VII
SAN ANDREAS - 1857 Rupture	35.5	(57.1)	7.8	0.105	VII
SAN ANDREAS - Carrizo	35.5	(57.1)	7.2	0.066	VI
SAN ANDREAS - Mojave	36.2	(58.2)	7.1	0.059	VI
SAN CAYETANO	11.8	(19.0)	6.8	0.222	IX
SAN GABRIEL	19.9	(32.1)	7.0	0.116	VII
SANTA CRUZ ISLAND	43.1	(69.3)	6.8	0.045	VI
SANTA MONICA	19.3	(31.1)	6.6	0.106	VII
SANTA SUSANA	9.7	(15.6)	6.6	0.241	IX
SANTA YNEZ (East)	22.9	(36.9)	7.0	0.098	VII
SANTA YNEZ (West)	48.5	(78.1)	6.9	0.035	V
SIERRA MADRE	30.9	(49.7)	7.0	0.080	VII
SIERRA MADRE (San Fernando)	21.0	(33.8)	6.7	0.103	VII
SIMI-SANTA ROSA	3.1	(5.0)	6.7	0.601	X
VENTURA - PITAS POINT	19.1	(30.8)	6.8	0.125	VII
VERDUGO	24.7	(39.8)	6.7	0.084	VII

-END OF SEARCH-

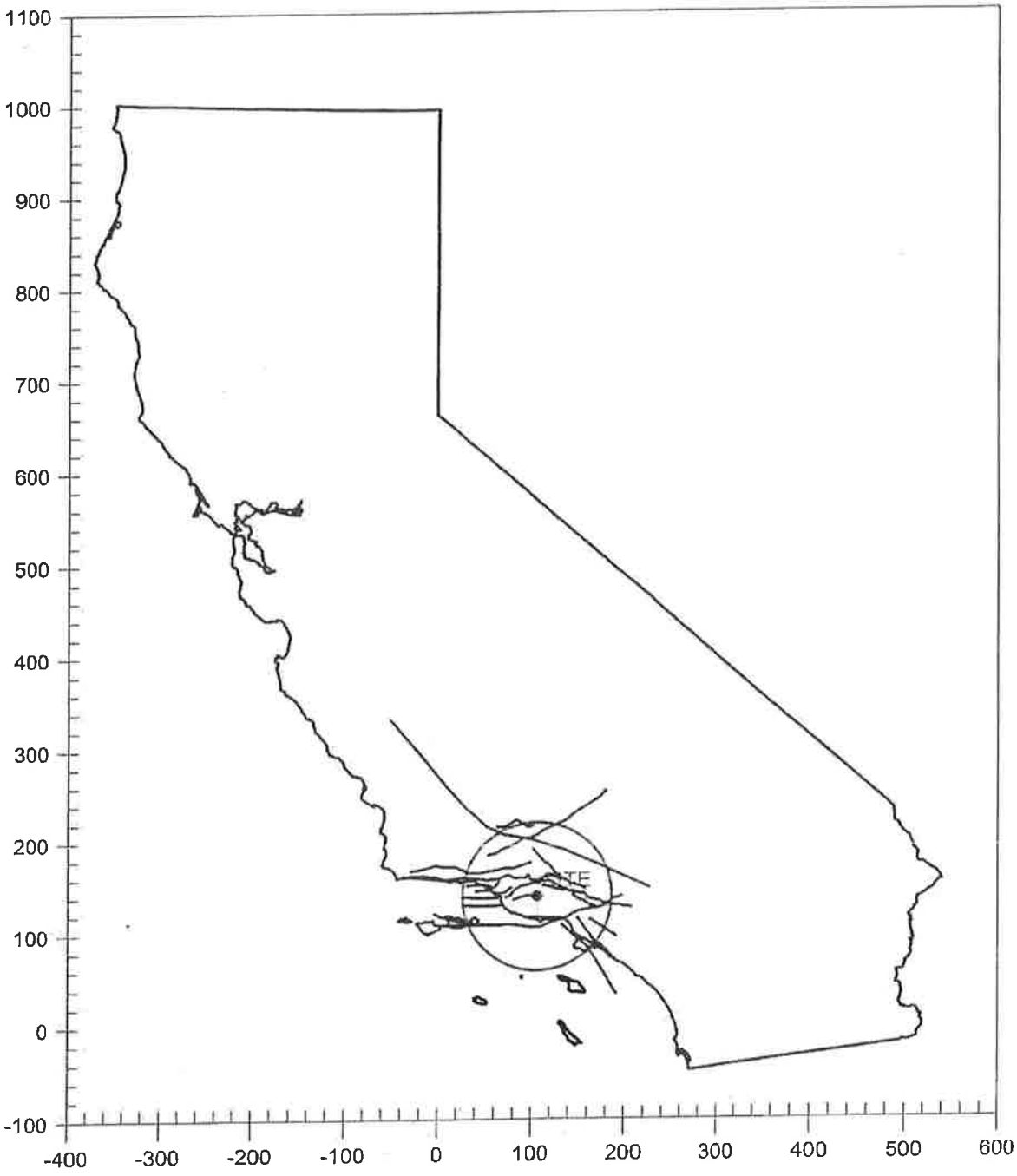
36 FAULTS FOUND WITHIN THE SPECIFIED SEARCH RADIUS.

THE SIMI-SANTA ROSA FAULT IS CLOSEST TO THE SITE.
IT IS ABOUT 3.1 MILES (5.0 km) AWAY.

LARGEST MAXIMUM-EARTHQUAKE SITE ACCELERATION: 0.6006 g

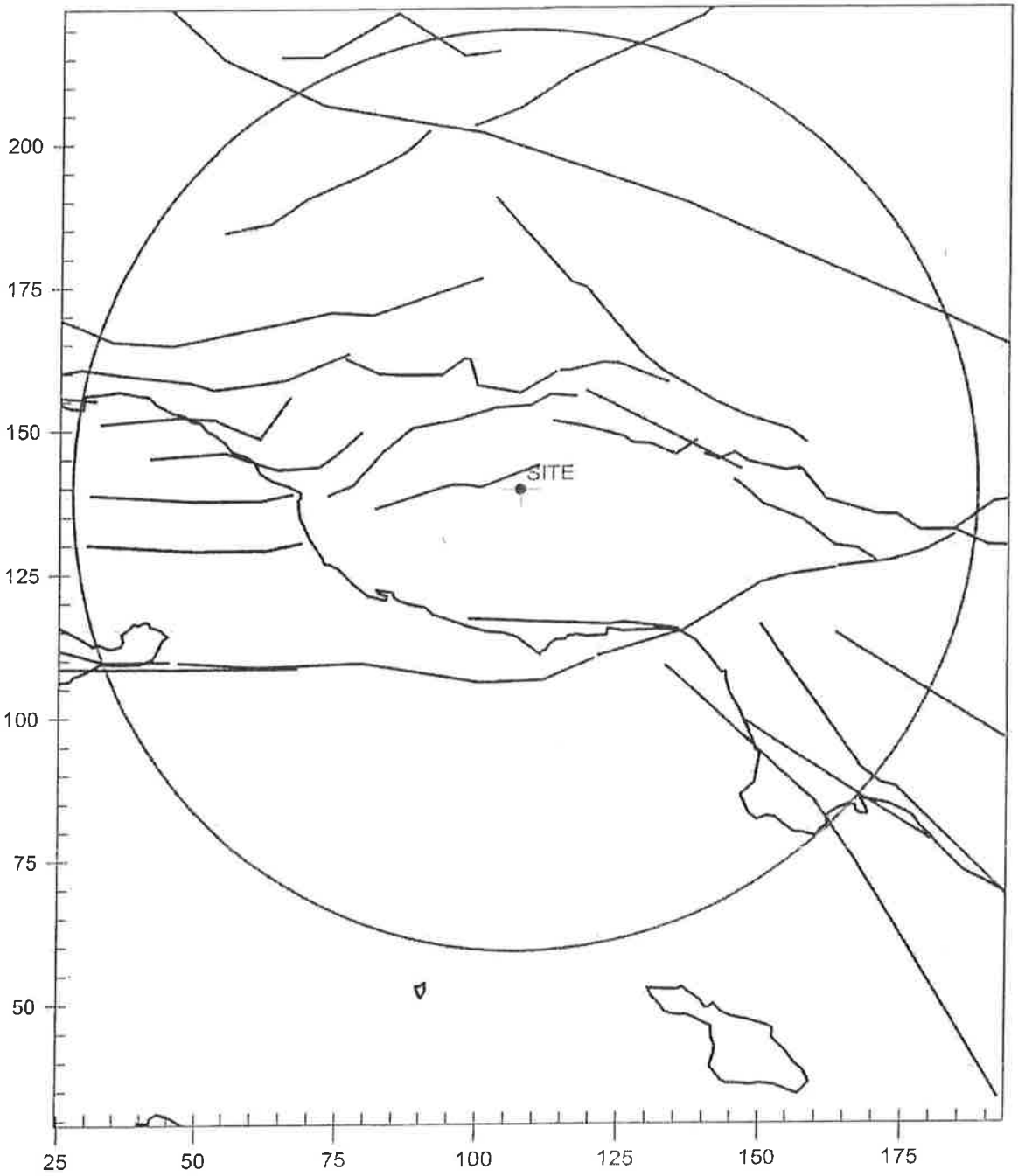
CALIFORNIA FAULT MAP

DAY



CALIFORNIA FAULT MAP

DAY



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ESTIMATION OF
PEAK ACCELERATION FROM
CALIFORNIA EARTHQUAKE CATALOGS

JOB NUMBER: JH 5927
DATE: 03-30-2006

JOB NAME: DAY

EARTHQUAKE-CATALOG-FILE NAME: ALLQUAKE.DAT

SITE COORDINATES:
SITE LATITUDE: 34.2527
SITE LONGITUDE: 118.8326

SEARCH DATES:
START DATE: 1906
END DATE: 2006

SEARCH RADIUS:
50.0 mi
80.5 km

ATTENUATION RELATION: 9) Bozorgnia Campbell Niazi (1999) Hor.-Hard Rock-Uncor.
UNCERTAINTY (M=Median, S=Sigma): M Number of Sigmas: 0.0
ASSUMED SOURCE TYPE: DS [SS=Strike-slip, DS=Reverse-slip, BT=Blind-thrust]
SCOND: 1 Depth Source: A
Basement Depth: 5.00 km Campbell SSR: 0 Campbell SHR: 1
COMPUTE PEAK HORIZONTAL ACCELERATION

MINIMUM DEPTH VALUE (km): 3.0

EARTHQUAKE SEARCH RESULTS

FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi [km]
DMG	34.1000	118.8000	05/10/1911	1340 0.0	0.0	4.00	0.026	V	10.7(17.2)
MGI	34.0000	119.0000	12/14/1912	0 0 0.0	0.0	5.70	0.050	VI	19.9(32.0)
MGI	34.2000	119.2000	06/16/1914	1052 0.0	0.0	4.60	0.018	IV	21.3(34.2)
DMG	34.0000	118.5000	11/08/1914	1140 0.0	0.0	4.50	0.013	III	25.8(41.5)
MGI	33.8000	118.5000	06/18/1915	15 5 0.0	0.0	4.00	0.006	II	36.6(58.9)
MGI	34.1000	118.2000	05/02/1916	1432 0.0	0.0	4.00	0.005	II	37.6(60.6)
DMG	34.9000	118.9000	10/23/1916	244 0.0	0.0	6.00	0.022	IV	44.9(72.2)
DMG	34.7000	119.0000	10/23/1916	254 0.0	0.0	5.50	0.023	IV	32.3(52.0)
MGI	34.0000	118.2000	02/13/1917	13 5 0.0	0.0	4.60	0.008	III	40.1(64.6)
T-A	34.4200	118.9200	03/29/1917	8 6 0.0	0.0	4.30	0.027	V	12.6(20.2)
DMG	34.2500	119.5000	04/13/1917	359 0.0	0.0	4.50	0.008	III	38.1(61.3)
DMG	34.2500	119.5000	04/21/1917	659 0.0	0.0	4.00	0.005	II	38.1(61.3)
MGI	34.0000	118.2000	06/26/1917	424 0.0	0.0	4.00	0.005	II	40.1(64.6)
MGI	34.0000	118.2000	06/26/1917	2115 0.0	0.0	4.60	0.008	III	40.1(64.6)
MGI	34.0000	118.2000	06/26/1917	2120 0.0	0.0	4.60	0.008	III	40.1(64.6)
MGI	34.0000	118.2000	06/26/1917	2130 0.0	0.0	4.60	0.008	III	40.1(64.6)
DMG	34.0000	118.5000	03/06/1918	1820 0.0	0.0	4.00	0.009	III	25.8(41.5)
MGI	34.0000	118.5000	03/08/1918	1230 0.0	0.0	4.00	0.009	III	25.8(41.5)
MGI	34.0000	118.5000	11/19/1918	2018 0.0	0.0	5.00	0.020	IV	25.8(41.5)
MGI	34.0000	118.4000	02/22/1920	1610 0.0	0.0	4.60	0.012	III	30.3(48.7)
DMG	34.0000	118.5000	06/22/1920	248 0.0	0.0	4.90	0.018	IV	25.8(41.5)
MGI	34.0000	118.3000	06/22/1920	2035 0.0	0.0	4.00	0.006	II	35.1(56.5)
MGI	34.0000	118.5000	06/23/1920	1220 0.0	0.0	4.00	0.009	III	25.8(41.5)
MGI	34.0000	118.3000	06/30/1920	350 0.0	0.0	4.00	0.006	II	35.1(56.5)
MGI	34.0800	118.2600	07/16/1920	18 8 0.0	0.0	5.00	0.014	III	34.8(56.0)
MGI	34.1000	118.3000	07/16/1920	2022 0.0	0.0	4.60	0.011	III	32.2(51.8)
MGI	34.1000	118.3000	07/16/1920	2127 0.0	0.0	4.60	0.011	III	32.2(51.8)
MGI	34.1000	118.3000	07/16/1920	2130 0.0	0.0	4.60	0.011	III	32.2(51.8)
MGI	34.1000	118.3000	07/26/1920	1215 0.0	0.0	4.00	0.007	II	32.2(51.8)
DMG	34.5000	119.5000	12/05/1920	1158 0.0	0.0	4.50	0.007	II	41.7(67.1)
MGI	34.2000	118.0000	01/09/1921	530 0.0	0.0	4.60	0.007	II	47.7(76.7)
MGI	34.1000	118.2000	04/21/1921	1538 0.0	0.0	4.00	0.005	II	37.6(60.6)
MGI	34.4000	119.3000	08/12/1925	1845 0.0	0.0	4.00	0.008	II	28.5(45.9)
DMG	34.0000	119.5000	02/18/1926	1818 0.0	0.0	5.00	0.011	III	41.9(67.5)
MGI	34.0000	119.5000	05/03/1926	1353 0.0	0.0	4.30	0.006	II	41.9(67.5)
DMG	34.5000	119.5000	06/29/1926	2321 0.0	0.0	5.50	0.016	IV	41.7(67.1)
MGI	34.3000	119.3000	09/28/1926	1749 0.0	0.0	4.00	0.008	III	26.9(43.2)
MGI	34.0000	118.4000	01/29/1927	2324 0.0	0.0	4.00	0.007	II	30.3(48.7)
MGI	34.0000	118.4000	02/07/1927	429 0.0	0.0	4.60	0.012	III	30.3(48.7)
MGI	34.3000	119.3000	05/15/1927	1120 0.0	0.0	4.00	0.008	III	26.9(43.2)
DMG	34.0000	118.5000	08/04/1927	1224 0.0	0.0	5.00	0.020	IV	25.8(41.5)
MGI	33.9000	118.2000	10/08/1927	1914 0.0	0.0	4.60	0.007	II	43.6(70.2)
MGI	33.8000	118.3000	12/31/1928	1045 0.0	0.0	4.00	0.005	I	43.7(70.2)
DMG	33.9000	118.1000	07/08/1929	1646 6.7	13.0	4.70	0.007	II	48.5(78.0)
MGI	34.1000	118.0000	01/27/1930	2026 0.0	0.0	4.60	0.006	II	48.7(78.4)
DMG	34.5000	119.5000	08/05/1930	1125 0.0	0.0	5.00	0.011	III	41.7(67.1)
DMG	33.9500	118.6320	08/31/1930	04036.0	0.0	5.20	0.026	V	23.8(38.4)
MGI	34.0000	118.4000	10/01/1930	040 0.0	0.0	4.60	0.012	III	30.3(48.7)

EARTHQUAKE SEARCH RESULTS

FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi [km]
DMG	33.7700	118.4800	04/24/1931	182754.8	0.0	4.40	0.007	II	39.0(62.7)
DMG	33.8000	118.3000	11/03/1931	16 5 0.0	0.0	4.00	0.005	I	43.7(70.2)
DMG	33.8500	118.2670	03/11/1933	629 0.0	0.0	4.40	0.006	II	42.7(68.6)
DMG	33.8500	118.2670	03/11/1933	1425 0.0	0.0	5.00	0.010	III	42.7(68.6)
DMG	33.8830	118.3170	03/11/1933	1457 0.0	0.0	4.90	0.011	III	39.0(62.8)
DMG	33.9500	118.1330	10/25/1933	7 046.0	0.0	4.30	0.006	II	45.1(72.6)
DMG	33.8670	118.2000	11/13/1933	2128 0.0	0.0	4.00	0.004	I	44.9(72.3)
DMG	33.6330	118.4000	10/17/1934	938 0.0	0.0	4.00	0.004	I	49.4(79.6)
DMG	34.7170	118.9670	06/11/1935	1810 0.0	0.0	4.00	0.007	II	33.0(53.0)
DMG	34.3800	118.6230	10/29/1936	223536.1	10.0	4.00	0.018	IV	14.8(23.9)
DMG	34.8350	118.9880	11/29/1936	55445.3	10.0	4.00	0.005	II	41.2(66.2)
DMG	33.7590	118.2530	08/31/1938	31814.2	10.0	4.50	0.006	II	47.6(76.5)
DMG	34.3330	119.5830	10/02/1938	1845 0.0	0.0	4.00	0.005	II	43.2(69.5)
DMG	33.9030	118.4310	11/29/1938	192115.8	10.0	4.00	0.006	II	33.3(53.6)
DMG	34.0000	118.4170	12/07/1938	338 0.0	0.0	4.00	0.008	II	29.5(47.4)
DMG	34.9110	118.9730	02/23/1939	84551.7	10.0	4.50	0.006	II	46.1(74.3)
DMG	34.8850	119.0020	02/23/1939	91846.7	10.0	4.50	0.007	II	44.7(71.9)
DMG	34.8430	119.0260	03/07/1939	195331.8	10.0	4.00	0.005	II	42.2(67.9)
DMG	34.9030	119.0380	05/08/1939	248 5.3	10.0	4.50	0.006	II	46.4(74.7)
DMG	33.7830	118.2000	12/27/1939	192849.0	0.0	4.70	0.007	II	48.6(78.2)
DMG	33.9830	118.3000	02/11/1940	192410.0	0.0	4.00	0.006	II	35.7(57.4)
DMG	34.6000	118.9000	05/18/1940	91512.0	0.0	4.00	0.010	III	24.3(39.1)
DMG	33.7670	118.4500	10/11/1940	55712.3	0.0	4.70	0.009	III	40.0(64.4)
DMG	33.7830	118.4170	10/12/1940	024 0.0	0.0	4.00	0.005	II	40.2(64.7)
DMG	33.7830	118.4170	10/14/1940	205111.0	0.0	4.00	0.005	II	40.2(64.7)
DMG	33.7830	118.4170	11/01/1940	725 3.0	0.0	4.00	0.005	II	40.2(64.7)
DMG	33.7830	118.4170	11/02/1940	25826.0	0.0	4.00	0.005	II	40.2(64.7)
DMG	33.9670	118.0500	01/30/1941	13446.9	0.0	4.10	0.004	I	48.9(78.7)
DMG	34.3670	119.5830	07/01/1941	75054.8	0.0	5.90	0.021	IV	43.5(70.0)
DMG	34.3330	119.5830	07/01/1941	819 0.0	0.0	4.00	0.005	II	43.2(69.5)
DMG	34.3330	119.5830	07/01/1941	821 0.0	0.0	4.00	0.005	II	43.2(69.5)
DMG	34.3330	119.5830	07/01/1941	830 0.0	0.0	4.00	0.005	II	43.2(69.5)
DMG	34.3330	119.5830	07/01/1941	848 0.0	0.0	4.00	0.005	II	43.2(69.5)
DMG	34.3330	119.5830	07/01/1941	858 0.0	0.0	4.00	0.005	II	43.2(69.5)
DMG	34.3330	119.5830	07/01/1941	9 5 0.0	0.0	4.00	0.005	II	43.2(69.5)
DMG	34.3330	119.5830	07/01/1941	945 0.0	0.0	4.00	0.005	II	43.2(69.5)
DMG	34.3330	119.5830	07/01/1941	1025 0.0	0.0	4.00	0.005	II	43.2(69.5)
DMG	34.3330	119.5830	07/01/1941	1820 0.0	0.0	4.00	0.005	II	43.2(69.5)
DMG	34.3330	119.5830	07/01/1941	2354 0.0	0.0	4.50	0.007	II	43.2(69.5)
DMG	34.3330	119.5830	07/02/1941	2219 0.0	0.0	4.00	0.005	II	43.2(69.5)
DMG	34.3330	119.5830	07/03/1941	1926 0.0	0.0	4.00	0.005	II	43.2(69.5)
DMG	34.3330	119.5830	07/12/1941	1618 0.0	0.0	4.50	0.007	II	43.2(69.5)
DMG	34.3330	119.5830	09/08/1941	31245.0	0.0	4.50	0.007	II	43.2(69.5)
DMG	34.3330	119.5830	09/08/1941	31423.0	0.0	4.00	0.005	II	43.2(69.5)
DMG	34.3330	119.5830	09/14/1941	14518.0	0.0	4.00	0.005	II	43.2(69.5)
DMG	34.3330	119.5830	09/15/1941	137 2.0	0.0	4.00	0.005	II	43.2(69.5)
DMG	34.8670	118.9330	09/21/1941	1953 7.2	0.0	5.20	0.012	III	42.8(68.9)
DMG	34.3330	119.5830	09/25/1941	51256.0	0.0	4.00	0.005	II	43.2(69.5)

EARTHQUAKE SEARCH RESULTS

FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi [km]
DMG	33.8170	118.2170	10/22/1941	65718.5	0.0	4.90	0.009	III	46.3(74.5)
DMG	33.7830	118.2500	11/14/1941	84136.3	0.0	5.40	0.013	III	46.5(74.8)
DMG	34.3330	119.5830	11/18/1941	18 810.0	0.0	4.00	0.005	II	43.2(69.5)
DMG	34.3330	119.5830	11/21/1941	1656 3.0	0.0	4.00	0.005	II	43.2(69.5)
DMG	34.4830	118.9830	09/03/1942	14 6 1.0	0.0	4.50	0.021	IV	18.1(29.1)
DMG	34.4830	118.9830	09/04/1942	63433.0	0.0	4.50	0.021	IV	18.1(29.1)
DMG	34.6830	119.0000	04/06/1943	223624.0	0.0	4.00	0.007	II	31.2(50.2)
DMG	34.2670	119.5170	04/12/1944	153310.0	0.0	4.00	0.005	II	39.1(62.9)
DMG	33.8670	118.2170	06/19/1944	0 333.0	0.0	4.50	0.007	II	44.1(71.0)
DMG	33.8670	118.2170	06/19/1944	3 6 7.0	0.0	4.40	0.006	II	44.1(71.0)
DMG	34.4170	118.8330	06/01/1946	11 631.0	0.0	4.10	0.026	V	11.3(18.2)
DMG	34.0170	118.9670	04/16/1948	222624.0	0.0	4.70	0.025	V	18.0(29.0)
DMG	33.9390	118.2050	01/11/1950	214135.0	0.4	4.10	0.005	II	41.9(67.4)
DMG	34.6670	118.8330	01/24/1950	215659.0	0.0	4.00	0.008	II	28.6(46.0)
DMG	34.6170	119.0830	02/26/1950	0 622.0	0.0	4.70	0.014	III	28.9(46.5)
DMG	34.1500	119.3500	08/22/1950	224758.0	0.0	4.20	0.008	III	30.4(48.9)
DMG	34.9500	118.8670	07/21/1952	121936.0	0.0	5.30	0.011	III	48.2(77.5)
DMG	34.8670	119.0170	07/21/1952	2153 9.0	0.0	4.30	0.006	II	43.7(70.3)
DMG	34.8670	118.8670	07/22/1952	74455.0	0.0	4.10	0.005	II	42.5(68.3)
DMG	34.9000	119.0500	07/22/1952	143018.0	0.0	4.30	0.005	II	46.4(74.6)
DMG	34.9670	118.9500	07/30/1952	11 255.0	0.0	4.10	0.004	I	49.8(80.1)
DMG	34.9000	118.9500	08/01/1952	13 430.0	0.0	5.10	0.011	III	45.2(72.7)
DMG	34.8830	119.0330	08/20/1952	84747.0	0.0	4.20	0.005	II	45.0(72.4)
DMG	34.5190	118.1980	08/23/1952	10 9 7.1	13.1	5.00	0.011	III	40.6(65.3)
DMG	34.9500	118.9500	10/16/1952	1222 7.0	0.0	4.30	0.005	II	48.6(78.2)
DMG	34.9500	119.0170	11/11/1952	181225.0	0.0	4.10	0.004	I	49.3(79.3)
DMG	34.9670	118.9500	11/27/1952	153641.0	0.0	4.00	0.004	I	49.8(80.1)
DMG	34.3170	119.7000	10/21/1953	16 238.0	0.0	4.00	0.004	I	49.7(79.9)
DMG	34.9330	119.0670	02/10/1954	235838.0	0.0	4.50	0.006	II	48.8(78.6)
DMG	33.9170	119.5000	08/26/1954	1348 3.0	0.0	4.80	0.008	III	44.6(71.8)
DMG	34.5000	119.1170	11/17/1954	23 351.0	0.0	4.40	0.014	IV	23.5(37.9)
DMG	34.9280	118.9700	01/15/1955	1 3 6.7	9.1	4.30	0.005	II	47.3(76.1)
DMG	33.9900	119.0580	05/29/1955	164335.4	17.4	4.10	0.012	III	22.2(35.8)
DMG	34.5290	118.6440	02/07/1956	21656.5	16.0	4.20	0.013	III	21.9(35.2)
DMG	34.5860	118.6130	02/07/1956	31638.6	2.6	4.60	0.014	IV	26.2(42.1)
DMG	33.6040	119.1050	03/25/1956	332 2.3	8.2	4.20	0.005	II	47.4(76.3)
DMG	34.1180	119.2200	03/18/1957	185628.0	13.8	4.70	0.017	IV	24.0(38.6)
DMG	34.8410	119.2400	01/11/1958	23 847.4	10.8	4.00	0.004	I	46.8(75.2)
DMG	34.3490	119.4920	07/14/1958	52555.3	16.0	4.70	0.009	III	38.2(61.5)
DMG	34.9410	118.9870	11/15/1961	53855.5	10.7	5.00	0.009	III	48.3(77.8)
DMG	34.9220	119.1030	01/09/1963	6 4 3.8	8.7	4.00	0.004	I	48.7(78.4)
DMG	34.9520	118.9760	03/03/1963	02557.9	13.9	5.00	0.009	III	47.6(76.6)
DMG	34.9450	118.9680	03/04/1963	201042.3	8.5	4.00	0.004	I	48.4(77.9)
DMG	34.2680	118.4450	08/30/1964	225737.1	15.4	4.00	0.011	III	22.1(35.6)
DMG	34.4850	118.5210	07/16/1965	74622.4	15.1	4.00	0.010	III	23.9(38.5)
DMG	33.6320	118.4670	01/08/1967	73730.4	11.4	4.00	0.004	I	47.7(76.8)
DMG	33.6630	118.4130	01/08/1967	738 5.3	17.7	4.00	0.004	I	47.3(76.1)
DMG	34.2120	119.6910	06/26/1968	181111.2	13.9	4.00	0.004	I	49.1(79.0)

EARTHQUAKE SEARCH RESULTS

FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi	[km]
DMG	34.1830	119.6460	06/29/1968	63320.9	8.4	4.00	0.004	I	46.7	(75.1)
DMG	34.2500	119.6540	06/29/1968	153242.8	14.6	4.10	0.004	I	46.9	(75.4)
DMG	34.2530	119.6980	06/29/1968	191221.3	9.5	4.20	0.005	I	49.4	(79.5)
DMG	34.2670	119.5670	06/29/1968	191357.0	10.0	4.40	0.007	II	41.9	(67.5)
DMG	34.2450	119.5880	06/29/1968	203633.6	1.8	4.00	0.005	II	43.1	(69.4)
DMG	34.2540	119.6280	07/08/1968	91837.2	15.7	4.00	0.004	I	45.4	(73.0)
DMG	34.2550	119.6140	07/31/1968	224445.3	15.0	4.00	0.004	I	44.6	(71.8)
DMG	34.5650	118.1130	02/28/1969	45612.4	5.3	4.30	0.005	II	46.3	(74.5)
DMG	34.4110	118.4010	02/09/1971	14 041.8	8.4	6.40	0.059	VI	26.9	(43.3)
DMG	34.4110	118.4010	02/09/1971	14 1 8.0	8.0	5.80	0.037	V	26.9	(43.3)
DMG	34.4110	118.4010	02/09/1971	14 133.0	8.0	4.20	0.010	III	26.9	(43.3)
DMG	34.4110	118.4010	02/09/1971	14 140.0	8.0	4.10	0.009	III	26.9	(43.3)
DMG	34.4110	118.4010	02/09/1971	14 150.0	8.0	4.50	0.013	III	26.9	(43.3)
DMG	34.4110	118.4010	02/09/1971	14 154.0	8.0	4.20	0.010	III	26.9	(43.3)
DMG	34.4110	118.4010	02/09/1971	14 159.0	8.0	4.10	0.009	III	26.9	(43.3)
DMG	34.4110	118.4010	02/09/1971	14 2 3.0	8.0	4.10	0.009	III	26.9	(43.3)
DMG	34.4110	118.4010	02/09/1971	14 230.0	8.0	4.30	0.011	III	26.9	(43.3)
DMG	34.4110	118.4010	02/09/1971	14 231.0	8.0	4.70	0.015	IV	26.9	(43.3)
DMG	34.4110	118.4010	02/09/1971	14 244.0	8.0	5.80	0.037	V	26.9	(43.3)
DMG	34.4110	118.4010	02/09/1971	14 325.0	8.0	4.40	0.012	III	26.9	(43.3)
DMG	34.4110	118.4010	02/09/1971	14 346.0	8.0	4.10	0.009	III	26.9	(43.3)
DMG	34.4110	118.4010	02/09/1971	14 4 7.0	8.0	4.10	0.009	III	26.9	(43.3)
DMG	34.4110	118.4010	02/09/1971	14 434.0	8.0	4.20	0.010	III	26.9	(43.3)
DMG	34.4110	118.4010	02/09/1971	14 439.0	8.0	4.10	0.009	III	26.9	(43.3)
DMG	34.4110	118.4010	02/09/1971	14 444.0	8.0	4.10	0.009	III	26.9	(43.3)
DMG	34.4110	118.4010	02/09/1971	14 446.0	8.0	4.20	0.010	III	26.9	(43.3)
DMG	34.4110	118.4010	02/09/1971	14 541.0	8.0	4.10	0.009	III	26.9	(43.3)
DMG	34.4110	118.4010	02/09/1971	14 550.0	8.0	4.10	0.009	III	26.9	(43.3)
DMG	34.4110	118.4010	02/09/1971	14 710.0	8.0	4.00	0.008	III	26.9	(43.3)
DMG	34.4110	118.4010	02/09/1971	14 730.0	8.0	4.00	0.008	III	26.9	(43.3)
DMG	34.4110	118.4010	02/09/1971	14 745.0	8.0	4.50	0.013	III	26.9	(43.3)
DMG	34.4110	118.4010	02/09/1971	14 8 4.0	8.0	4.00	0.008	III	26.9	(43.3)
DMG	34.4110	118.4010	02/09/1971	14 8 7.0	8.0	4.20	0.010	III	26.9	(43.3)
DMG	34.4110	118.4010	02/09/1971	14 838.0	8.0	4.50	0.013	III	26.9	(43.3)
DMG	34.4110	118.4010	02/09/1971	14 853.0	8.0	4.60	0.014	III	26.9	(43.3)
DMG	34.3610	118.3060	02/09/1971	141021.5	5.0	4.70	0.012	III	30.9	(49.8)
DMG	34.4110	118.4010	02/09/1971	141028.0	8.0	5.30	0.024	V	26.9	(43.3)
DMG	34.3390	118.3320	02/09/1971	141612.9	11.1	4.10	0.008	III	29.2	(46.9)
DMG	34.3570	118.4060	02/09/1971	141950.2	11.8	4.00	0.009	III	25.4	(40.8)
DMG	34.3440	118.6360	02/09/1971	143436.1	-2.0	4.90	0.043	VI	12.9	(20.7)
DMG	34.3870	118.3640	02/09/1971	143917.8	-1.6	4.00	0.008	III	28.3	(45.5)
DMG	34.4330	118.3980	02/09/1971	144017.4	-2.0	4.10	0.009	III	27.7	(44.6)
DMG	34.3080	118.4540	02/09/1971	144346.7	6.2	5.20	0.029	V	21.9	(35.3)
DMG	34.3350	118.3310	02/09/1971	155820.7	14.2	4.80	0.015	IV	29.2	(46.9)
DMG	34.4570	118.4270	02/09/1971	161926.5	-1.0	4.20	0.010	III	27.1	(43.6)
DMG	34.3700	118.3020	02/10/1971	31212.0	0.8	4.00	0.007	II	31.3	(50.4)
DMG	34.4110	118.3290	02/10/1971	5 636.0	4.7	4.30	0.009	III	30.7	(49.4)
DMG	34.4260	118.4140	02/10/1971	518 7.2	5.8	4.50	0.013	III	26.7	(43.0)

EARTHQUAKE SEARCH RESULTS

FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi	[km]
DMG	34.3840	118.4550	02/10/1971	113134.6	6.0	4.20	0.012	III	23.4	(37.6)
DMG	34.3990	118.4190	02/10/1971	134953.7	9.7	4.30	0.011	III	25.7	(41.3)
DMG	34.3610	118.4870	02/10/1971	143526.7	4.4	4.20	0.014	III	21.1	(33.9)
DMG	34.3960	118.3660	02/10/1971	173855.1	6.2	4.20	0.009	III	28.4	(45.7)
DMG	34.4460	118.4360	02/10/1971	185441.7	8.1	4.20	0.010	III	26.2	(42.2)
DMG	34.3970	118.4390	02/21/1971	55052.6	6.9	4.70	0.017	IV	24.6	(39.5)
DMG	34.3920	118.4270	02/21/1971	71511.7	7.2	4.50	0.014	IV	25.0	(40.3)
DMG	34.3530	118.4560	03/07/1971	13340.5	3.3	4.50	0.016	IV	22.6	(36.3)
DMG	34.3560	118.4740	03/25/1971	2254 9.9	4.6	4.20	0.013	III	21.7	(34.9)
DMG	34.2960	118.4640	03/30/1971	85443.3	2.6	4.10	0.012	III	21.2	(34.2)
DMG	34.2860	118.5150	03/31/1971	145222.5	2.1	4.60	0.022	IV	18.3	(29.4)
DMG	34.4280	118.4130	04/01/1971	15 3 3.6	8.0	4.10	0.009	III	26.8	(43.1)
DMG	34.2840	118.5280	04/02/1971	54025.0	3.0	4.00	0.015	IV	17.5	(28.2)
DMG	34.2650	118.5770	04/15/1971	111432.0	4.2	4.20	0.021	IV	14.6	(23.5)
DMG	34.3680	118.3140	04/25/1971	1448 6.5	-2.0	4.00	0.007	II	30.6	(49.3)
DMG	34.2730	118.5320	06/21/1971	16 1 8.5	4.1	4.00	0.015	IV	17.2	(27.7)
DMG	34.7840	118.9020	07/27/1972	03117.4	8.0	4.40	0.008	II	36.9	(59.4)
DMG	34.0650	119.0350	02/21/1973	144557.3	8.0	5.90	0.069	VI	17.4	(27.9)
DMG	33.9860	119.4750	08/06/1973	232917.0	16.9	5.00	0.011	III	41.1	(66.1)
DMG	34.3990	118.4730	03/09/1974	05431.9	24.4	4.70	0.018	IV	22.9	(36.8)
DMG	34.4310	118.3690	08/14/1974	144555.2	8.2	4.20	0.009	III	29.2	(46.9)
PAS	34.3470	118.6560	04/08/1976	152138.1	14.5	4.60	0.037	V	12.0	(19.3)
PAS	34.3800	118.4590	08/12/1977	21926.1	9.5	4.50	0.015	IV	23.0	(37.1)
PAS	34.4630	118.4090	09/24/1977	212824.3	5.0	4.20	0.009	III	28.2	(45.3)
PAS	33.9060	119.1660	05/23/1978	91650.8	6.0	4.00	0.007	II	30.6	(49.2)
PAS	34.3470	119.6960	08/13/1978	225453.4	12.8	5.10	0.009	III	49.7	(79.9)
PAS	33.9440	118.6810	01/01/1979	231438.9	11.3	5.00	0.023	IV	23.0	(37.0)
PAS	33.9330	118.6690	10/17/1979	205237.3	5.5	4.20	0.012	III	24.0	(38.6)
PAS	33.6710	119.1110	09/04/1981	155050.3	5.0	5.30	0.013	III	43.2	(69.5)
PAS	33.6300	119.0200	10/23/1981	172816.9	12.0	4.60	0.007	II	44.3	(71.3)
PAS	33.6370	119.0560	10/23/1981	191552.5	6.3	4.60	0.007	II	44.4	(71.4)
PAS	34.0540	118.9640	04/13/1982	11 212.2	16.6	4.00	0.017	IV	15.6	(25.2)
PAS	34.5410	118.9890	06/12/1984	02752.4	11.7	4.10	0.012	III	21.8	(35.1)
USG	34.4180	119.4680	09/07/1984	11 345.2	9.5	4.00	0.005	II	38.0	(61.1)
PAS	34.0160	118.9880	10/26/1984	172043.5	13.3	4.60	0.022	IV	18.6	(29.9)
PAS	34.3780	119.0350	04/03/1985	4 449.8	27.9	4.00	0.018	IV	14.4	(23.2)
PAS	34.0610	118.0790	10/01/1987	144220.0	9.5	5.90	0.020	IV	45.0	(72.5)
PAS	34.0490	118.1010	10/01/1987	144541.5	13.6	4.70	0.008	II	44.1	(71.0)
PAS	34.0760	118.0900	10/01/1987	1448 3.1	11.7	4.10	0.005	II	44.1	(71.0)
PAS	34.0600	118.1000	10/01/1987	1449 5.9	11.7	4.70	0.008	II	43.9	(70.7)
PAS	34.0520	118.0900	10/01/1987	151231.8	10.8	4.70	0.008	II	44.6	(71.8)
PAS	34.0500	118.0870	10/01/1987	155953.5	10.4	4.00	0.004	I	44.8	(72.2)
PAS	34.0730	118.0980	10/04/1987	105938.2	8.2	5.30	0.013	III	43.8	(70.4)
PAS	34.0770	118.0470	02/11/1988	152555.7	12.5	4.70	0.007	II	46.5	(74.8)
PAS	34.2510	119.6220	03/23/1988	84247.0	16.4	4.00	0.004	I	45.0	(72.5)
PAS	34.9430	118.7430	06/10/1988	23 643.0	6.8	5.40	0.012	III	47.9	(77.1)
PAS	34.1490	118.1350	12/03/1988	113826.4	13.3	4.90	0.010	III	40.5	(65.1)
PAS	33.9190	118.6270	01/19/1989	65328.8	11.9	5.00	0.020	IV	25.9	(41.6)

EARTHQUAKE SEARCH RESULTS

FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi	[km]
GSP	34.0300	118.1800	06/12/1989	165718.4	16.0	4.40	0.007	II	40.3	(64.9)
GSP	34.0200	118.1800	06/12/1989	172225.5	16.0	4.10	0.005	II	40.6	(65.3)
GSP	34.2620	118.0020	06/28/1991	144354.5	11.0	5.40	0.013	III	47.4	(76.3)
GSP	34.2500	117.9900	06/28/1991	170055.5	9.0	4.30	0.005	II	48.1	(77.4)
GSP	34.5000	118.5600	07/05/1991	174157.1	11.0	4.10	0.011	III	23.1	(37.1)
GSP	34.2130	118.5370	01/17/1994	123055.4	18.0	6.70	0.133	VIII	17.1	(27.5)
GSP	34.2610	118.5340	01/17/1994	123939.8	14.0	4.50	0.022	IV	17.0	(27.4)
GSP	34.2690	118.5760	01/17/1994	125546.8	16.0	4.10	0.019	IV	14.7	(23.6)
GSP	34.2540	118.5450	01/17/1994	130627.9	0.0	4.60	0.026	V	16.4	(26.4)
GSP	34.3170	118.4550	01/17/1994	132644.7	2.0	4.70	0.019	IV	22.0	(35.4)
GSB	34.2850	118.6240	01/17/1994	135602.4	19.0	4.70	0.040	V	12.1	(19.5)
GSP	34.3310	118.4420	01/17/1994	141430.3	1.0	4.50	0.016	IV	22.9	(36.9)
GSP	34.3040	118.4730	01/17/1994	150703.2	2.0	4.20	0.014	III	20.8	(33.5)
GSP	34.3740	118.6220	01/17/1994	155410.8	12.0	4.80	0.034	V	14.6	(23.6)
GSP	34.2280	118.5730	01/17/1994	175608.2	19.0	4.60	0.029	V	14.9	(24.0)
GSP	34.3110	118.4560	01/17/1994	193534.3	2.0	4.00	0.011	III	21.9	(35.2)
GSP	34.3680	118.6370	01/17/1994	194353.4	13.0	4.10	0.021	IV	13.7	(22.0)
GSG	34.4080	118.5590	01/17/1994	200205.4	0.0	4.00	0.013	III	18.9	(30.5)
GSB	34.3010	118.5650	01/17/1994	204602.4	9.0	5.20	0.044	VI	15.6	(25.1)
GSG	34.3040	118.7220	01/17/1994	221922.3	10.0	4.00	0.039	V	7.2	(11.6)
GSG	34.3340	118.4840	01/17/1994	223152.1	10.0	4.20	0.014	IV	20.7	(33.2)
GSP	34.3260	118.6980	01/17/1994	233330.7	9.0	5.60	0.115	VII	9.2	(14.8)
GSB	34.3430	118.6660	01/17/1994	234925.4	8.0	4.30	0.031	V	11.4	(18.3)
GSP	34.3790	118.5630	01/18/1994	003935.0	7.0	4.40	0.020	IV	17.7	(28.4)
GSP	34.3770	118.6980	01/18/1994	004308.9	11.0	5.20	0.063	VI	11.5	(18.5)
GSB	34.3580	118.6220	01/18/1994	040126.8	1.0	4.50	0.028	V	14.0	(22.6)
GSB	34.3330	118.6230	01/18/1994	072356.0	14.0	4.30	0.026	V	13.2	(21.2)
GSP	34.2180	118.6070	01/18/1994	113509.9	12.0	4.20	0.024	V	13.1	(21.1)
GSB	34.3190	118.5580	01/18/1994	132444.1	1.0	4.50	0.024	IV	16.3	(26.3)
GSP	34.3790	118.5610	01/18/1994	152346.9	7.0	4.80	0.027	V	17.8	(28.6)
GSP	34.2450	118.4710	01/18/1994	155144.9	12.0	4.00	0.012	III	20.6	(33.2)
GSB	34.3600	118.5710	01/19/1994	044048.0	2.0	4.50	0.023	IV	16.7	(26.8)
GSP	34.3650	118.7080	01/19/1994	044314.5	12.0	4.10	0.029	V	10.5	(16.9)
GSP	34.2870	118.4660	01/19/1994	071406.2	11.0	4.00	0.012	III	21.0	(33.9)
GSP	34.3040	118.7370	01/19/1994	091310.9	13.0	4.10	0.046	VI	6.5	(10.5)
GSP	34.2150	118.5100	01/19/1994	140914.8	17.0	4.50	0.020	IV	18.6	(29.9)
GSP	34.2920	118.4660	01/19/1994	144635.2	6.0	4.00	0.012	III	21.1	(33.9)
GSB	34.3790	118.7110	01/19/1994	210928.6	14.0	5.50	0.085	VII	11.1	(17.9)
GSP	34.3780	118.6180	01/19/1994	211144.9	11.0	5.10	0.043	VI	15.0	(24.1)
GSB	34.3000	118.4660	01/21/1994	183915.3	10.0	4.70	0.020	IV	21.2	(34.1)
GSB	34.3100	118.4740	01/21/1994	184228.8	7.0	4.20	0.014	III	20.8	(33.5)
GSP	34.3010	118.4520	01/21/1994	185244.2	7.0	4.30	0.014	IV	22.0	(35.3)
GSP	34.2970	118.4580	01/21/1994	185344.6	7.0	4.30	0.014	IV	21.6	(34.7)
GSB	34.2990	118.4280	01/23/1994	085508.7	6.0	4.20	0.012	III	23.3	(37.5)
GSB	34.3450	118.5520	01/24/1994	041518.8	6.0	4.80	0.028	V	17.2	(27.7)
GSP	34.3590	118.6290	01/24/1994	055024.3	12.0	4.30	0.025	V	13.7	(22.1)
GSP	34.3630	118.6270	01/24/1994	055421.1	10.0	4.20	0.022	IV	14.0	(22.5)
GSP	34.2740	118.5630	01/27/1994	171958.8	14.0	4.60	0.027	V	15.4	(24.9)

EARTHQUAKE SEARCH RESULTS

FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi [km]
GSP	34.3740	118.4950	01/28/1994	200953.4	0.0	4.20	0.014	III	21.0(33.8)
GSP	34.3050	118.5790	01/29/1994	112036.0	1.0	5.10	0.043	VI	14.9(24.0)
GSP	34.2780	118.6110	01/29/1994	121656.4	2.0	4.30	0.027	V	12.8(20.5)
GSP	34.2990	118.4390	02/03/1994	162335.4	8.0	4.20	0.012	III	22.7(36.5)
GSP	34.2910	118.4760	02/06/1994	131926.9	11.0	4.10	0.013	III	20.5(33.0)
GSP	34.3570	118.4800	02/25/1994	125912.6	1.0	4.10	0.012	III	21.4(34.4)
GSP	34.2310	118.4750	03/20/1994	212012.3	13.0	5.30	0.034	V	20.5(32.9)
GSP	34.3120	118.3930	05/25/1994	125657.1	7.0	4.40	0.013	III	25.4(40.9)
GSP	34.3110	118.3980	06/15/1994	055948.6	7.0	4.20	0.011	III	25.1(40.4)
GSP	34.2930	118.3890	12/06/1994	034834.5	9.0	4.50	0.014	III	25.5(41.0)
GSP	34.0490	118.9150	02/19/1995	212418.1	15.0	4.30	0.023	IV	14.8(23.9)
GSP	34.3940	118.6690	06/26/1995	084028.9	13.0	5.00	0.044	VI	13.5(21.7)
GSP	34.3620	118.6150	03/20/1996	073759.8	13.0	4.10	0.020	IV	14.5(23.4)
GSP	34.3540	118.7040	05/01/1996	194956.4	14.0	4.10	0.030	V	10.1(16.3)
GSP	34.4810	119.3530	10/23/1996	220929.4	14.0	4.20	0.007	II	33.6(54.0)
GSP	34.3690	118.6720	04/26/1997	103730.7	16.0	5.10	0.054	VI	12.2(19.6)
GSP	34.3770	118.6490	04/27/1997	110928.4	15.0	4.80	0.038	V	13.5(21.8)
GSP	34.3970	118.6090	07/22/1999	095724.0	11.0	4.00	0.016	IV	16.2(26.0)
GSP	34.9180	119.0200	12/24/2000	010421.9	14.0	4.40	0.006	II	47.2(75.9)
GSP	34.2840	118.4040	01/14/2001	022614.1	8.0	4.30	0.012	III	24.5(39.5)
GSP	34.2890	118.4030	01/14/2001	025053.7	8.0	4.00	0.009	III	24.6(39.6)
GSP	34.0590	118.3870	09/09/2001	235918.0	4.0	4.20	0.009	III	28.8(46.3)
GSP	33.9220	118.2700	10/28/2001	162745.6	21.0	4.00	0.005	II	39.4(63.5)
GSP	34.3610	118.6570	01/29/2002	055328.9	14.0	4.20	0.026	V	12.5(20.1)
GSP	33.6660	119.3300	03/16/2002	213323.8	7.0	4.60	0.006	II	49.5(79.7)
GSP	34.3810	119.4350	07/24/2004	125519.9	3.0	4.30	0.008	II	35.5(57.1)

-END OF SEARCH-

314 EARTHQUAKES FOUND WITHIN THE SPECIFIED SEARCH AREA.

TIME PERIOD OF SEARCH: 1906 TO 2006

LENGTH OF SEARCH TIME: 101 years

THE EARTHQUAKE CLOSEST TO THE SITE IS ABOUT 6.5 MILES (10.5 km) AWAY.

LARGEST EARTHQUAKE MAGNITUDE FOUND IN THE SEARCH RADIUS: 6.7

LARGEST EARTHQUAKE SITE ACCELERATION FROM THIS SEARCH: 0.133 g

COEFFICIENTS FOR GUTENBERG & RICHTER RECURRENCE RELATION:

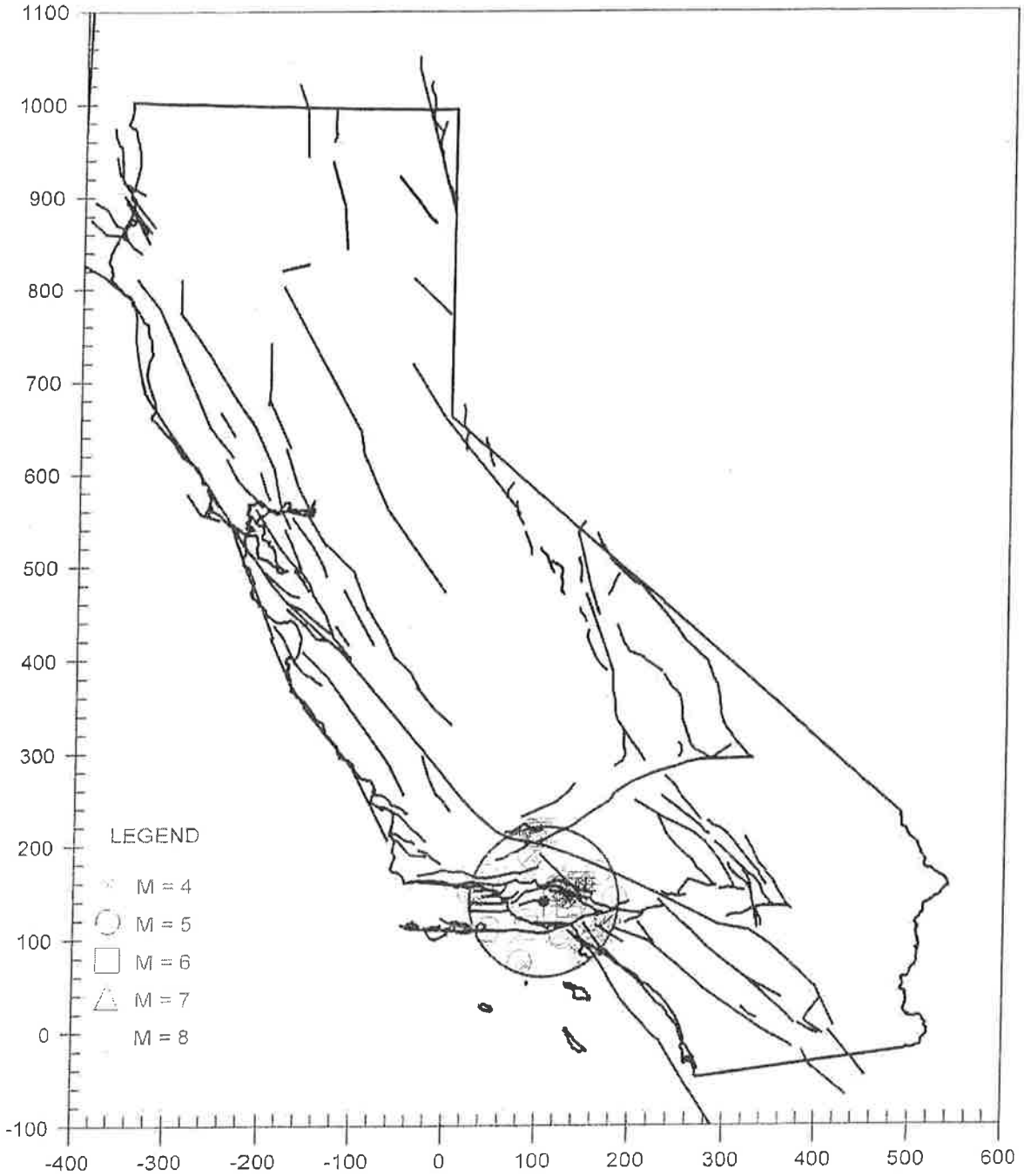
a-value= 4.588
b-value= 1.005
beta-value= 2.315

TABLE OF MAGNITUDES AND EXCEEDANCES:

Earthquake Magnitude	Number of Times Exceeded	Cumulative No. / Year
4.0	314	3.14000
4.5	126	1.26000
5.0	44	0.44000
5.5	13	0.13000
6.0	3	0.03000
6.5	1	0.01000

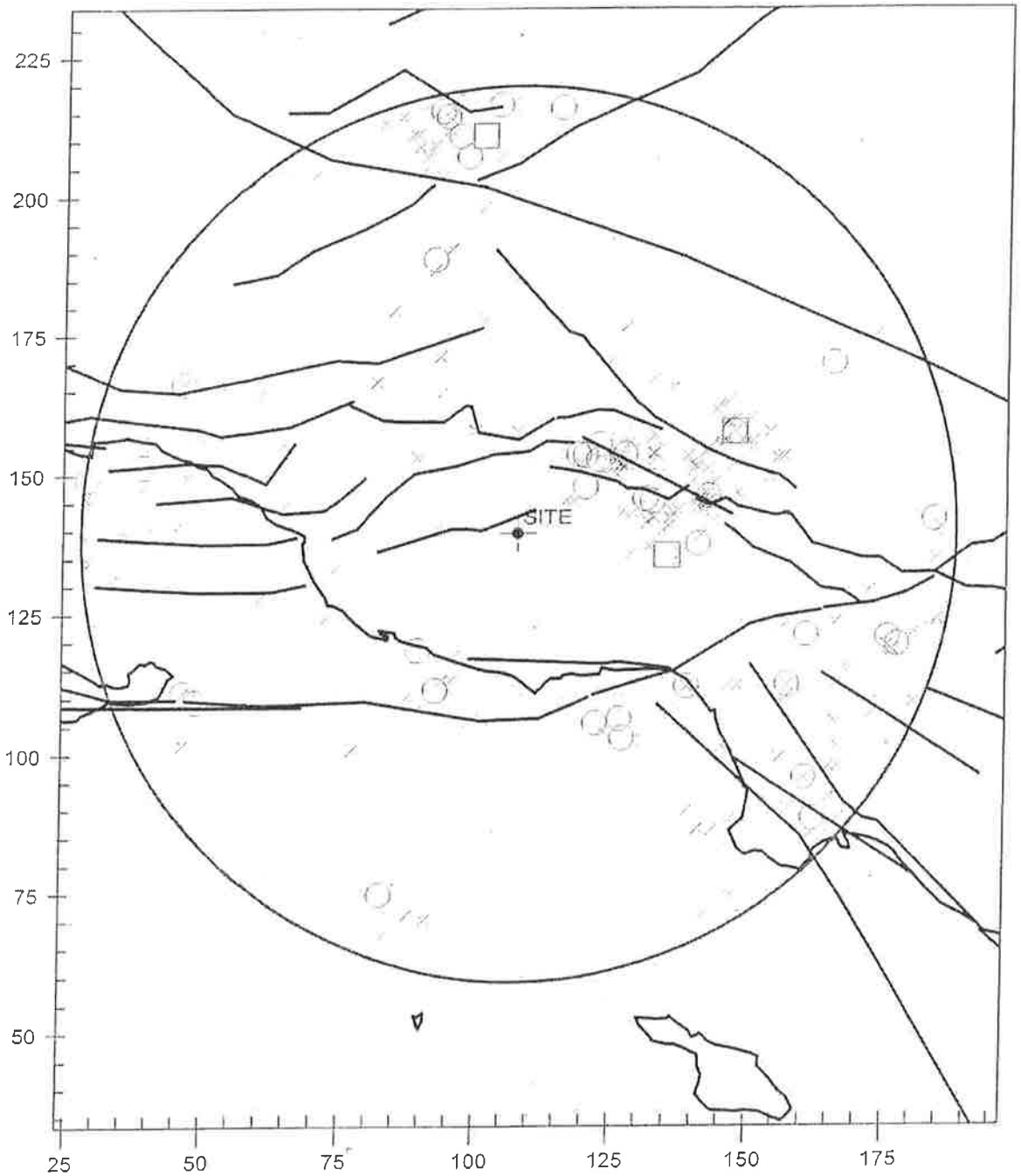
EARTHQUAKE EPICENTER MAP

DAY



EARTHQUAKE EPICENTER MAP

DAY



****
* U B C S E I S *
* Version 1.03 *
****

COMPUTATION OF 1997
UNIFORM BUILDING CODE
SEISMIC DESIGN PARAMETERS

JOB NUMBER: JH 5927 DATE: 03-30-2006

JOB NAME: DAY

FAULT-DATA-FILE NAME: CDMGUBCR.DAT

SITE COORDINATES:
SITE LATITUDE: 34.2527
SITE LONGITUDE: 118.8326

UBC SEISMIC ZONE: 0.4

UBC SOIL PROFILE TYPE: SC

NEAREST TYPE A FAULT:
NAME: SAN ANDREAS - 1857 Rupture
DISTANCE: 57.0 km

NEAREST TYPE B FAULT:
NAME: SIMI-SANTA ROSA
DISTANCE: 2.9 km

SELECTED UBC SEISMIC COEFFICIENTS:
Na: 1.2
Nv: 1.5
Ca: 0.48
Cv: 0.82
Ts: 0.682
To: 0.136

****
* CAUTION: The digitized data points used to model faults are *
* limited in number and have been digitized from small- *
* scale maps (e.g., 1:750,000 scale). Consequently, *
* the estimated fault-site-distances may be in error by *
* several kilometers. Therefore, it is important that *
* the distances be carefully checked for accuracy and *
* adjusted as needed, before they are used in design. *
****

SUMMARY OF FAULT PARAMETERS

ABBREVIATED FAULT NAME	APPROX. DISTANCE (km)	SOURCE TYPE (A,B,C)	MAX. MAG. (Mw)	SLIP RATE (mm/yr)	FAULT TYPE (SS,DS,BT)
SIMI-SANTA ROSA	2.9	B	6.7	1.00	DS
OAK RIDGE (Onshore)	10.4	B	6.9	4.00	DS
SANTA SUSANA	13.3	B	6.6	5.00	DS
SAN CAYETANO	16.9	B	6.8	6.00	DS
HOLSER	17.6	B	6.5	0.40	DS
MALIBU COAST	20.2	B	6.7	0.30	DS
ANACAPA-DUME	22.4	B	7.3	3.00	DS
SANTA MONICA	29.6	B	6.6	1.00	DS
VENTURA - PITAS POINT	30.2	B	6.8	1.00	DS
SAN GABRIEL	32.0	B	7.0	1.00	SS
SIERRA MADRE (San Fernando)	33.0	B	6.7	2.00	DS
SANTA YNEZ (East)	35.7	B	7.0	2.00	SS
VERDUGO	37.9	B	6.7	0.50	DS
M.RIDGE-ARROYO PARIDA-SANTA ANA	39.0	B	6.7	0.40	DS
PALOS VERDES	40.3	B	7.1	3.00	SS
HOLLYWOOD	40.5	B	6.5	1.00	DS
RED MOUNTAIN	44.3	B	6.8	2.00	DS
NEWPORT-INGLEWOOD (L.A.Basin)	47.6	B	6.9	1.00	SS
SIERRA MADRE (Central)	49.4	B	7.0	3.00	DS
SAN ANDREAS - 1857 Rupture	57.0	A	7.8	34.00	SS
RAYMOND	57.1	B	6.5	0.50	DS
BIG PINE	62.3	B	6.7	0.80	SS
GARLOCK (West)	64.6	A	7.1	6.00	SS
PLEITO THRUST	66.6	B	6.8	2.00	DS
SANTA CRUZ ISLAND	69.2	B	6.8	1.00	DS
CLAMSHELL-SAWPIT	70.9	B	6.5	0.50	DS
SANTA YNEZ (West)	78.0	B	6.9	2.00	SS
ELSINORE-WHITTIER	80.5	B	6.8	2.50	SS
SAN JOSE	88.9	B	6.5	0.50	DS
WHITE WOLF	89.9	B	7.2	2.00	DS
CUCAMONGA	97.3	A	7.0	5.00	DS
CHINO-CENTRAL AVE. (Elsinore)	99.9	B	6.7	1.00	DS
SANTA ROSA ISLAND	101.9	B	6.9	1.00	DS
NEWPORT-INGLEWOOD (Offshore)	111.9	B	6.9	1.50	SS
ELSINORE-GLEN IVY	118.5	B	6.8	5.00	SS
SAN ANDREAS - Southern	120.2	A	7.4	24.00	SS
LOS ALAMOS-W. BASELINE	120.8	B	6.8	0.70	DS
SAN JACINTO-SAN BERNARDINO	121.7	B	6.7	12.00	SS
CLEGHORN	125.9	B	6.5	3.00	SS
GARLOCK (East)	136.8	A	7.3	7.00	SS
CORONADO BANK	137.5	B	7.4	3.00	SS
LIONS HEAD	138.1	B	6.6	0.02	DS
NORTH FRONTAL FAULT ZONE (West)	142.7	B	7.0	1.00	DS
SAN JUAN	143.7	B	7.0	1.00	SS
SAN LUIS RANGE (S. Margin)	145.1	B	7.0	0.20	DS
LENWOOD-LOCKHART-OLD WOMAN SPRGS	145.8	B	7.3	0.60	SS

SUMMARY OF FAULT PARAMETERS

ABBREVIATED FAULT NAME	APPROX. DISTANCE (km)	SOURCE TYPE (A,B,C)	MAX. MAG. (Mw)	SLIP RATE (mm/yr)	FAULT TYPE (SS,DS,BT)
HELENDALE - S. LOCKHARDT	148.5	B	7.1	0.60	SS
SAN JACINTO-SAN JACINTO VALLEY	149.0	B	6.9	12.00	SS
ELSINORE-TEMECULA	152.4	B	6.8	5.00	SS
CASMALIA (Orcutt Frontal Fault)	154.8	B	6.5	0.25	DS
So. SIERRA NEVADA	162.5	B	7.1	0.10	DS
GRAVEL HILLS - HARPER LAKE	168.8	B	6.9	0.60	SS
LOS OSOS	174.3	B	6.8	0.50	DS
ROSE CANYON	179.8	B	6.9	1.50	SS
BOSGRI	183.9	B	7.3	2.50	SS
BLACKWATER	184.2	B	6.9	0.60	SS
SAN JACINTO-ANZA	185.1	A	7.2	12.00	SS
LITTLE LAKE	185.7	B	6.7	0.70	SS
NORTH FRONTAL FAULT ZONE (East)	186.1	B	6.7	0.50	DS
LANDERS	192.2	B	7.3	0.60	SS
ELSINORE-JULIAN	193.5	A	7.1	5.00	SS
RINCONADA	193.7	B	7.3	1.00	SS
CALICO - HIDALGO	194.1	B	7.1	0.60	SS
PINTO MOUNTAIN	195.1	B	7.0	2.50	SS
JOHNSON VALLEY (Northern)	199.5	B	6.7	0.60	SS
TANK CANYON	211.4	B	6.5	1.00	DS
EMERSON So. - COPPER MTN.	213.2	B	6.9	0.60	SS
BURNT MTN.	223.6	B	6.5	0.60	SS
EUREKA PEAK	224.6	B	6.5	0.60	SS
PISGAH-BULLION MTN.-MESQUITE LK	224.7	B	7.1	0.60	SS
PANAMINT VALLEY	228.6	B	7.2	2.50	SS
OWENS VALLEY	229.1	B	7.6	1.50	SS
SAN JACINTO-COYOTE CREEK	231.2	B	6.8	4.00	SS
OWL LAKE	234.4	B	6.5	2.00	SS
EARTHQUAKE VALLEY	238.7	B	6.5	2.00	SS
SAN ANDREAS (Creeping)	251.1	B	5.0	34.00	SS
INDEPENDENCE	259.2	B	6.9	0.20	DS
DEATH VALLEY (South)	267.4	B	6.9	4.00	SS
ELSINORE-COYOTE MOUNTAIN	268.4	B	6.8	4.00	SS
SAN JACINTO - BORREGO	269.3	B	6.6	4.00	SS
DEATH VALLEY (Graben)	273.8	B	6.9	4.00	DS
HUNTER MTN. - SALINE VALLEY	278.4	B	7.0	2.50	SS
SUPERSTITION MTN. (San Jacinto)	302.0	B	6.6	5.00	SS
BRAWLEY SEISMIC ZONE	304.4	B	6.5	25.00	SS
ELMORE RANCH	305.6	B	6.6	1.00	SS
BIRCH CREEK	306.3	B	6.5	0.70	DS
SUPERSTITION HILLS (San Jacinto)	307.8	B	6.6	4.00	SS
DEATH VALLEY (Northern)	311.9	A	7.2	5.00	SS
WHITE MOUNTAINS	316.4	B	7.1	1.00	SS
ELSINORE-LAGUNA SALADA	320.0	B	7.0	3.50	SS
ROUND VALLEY (E. of S.N.Mtns.)	333.6	B	6.8	1.00	DS
IMPERIAL	334.7	A	7.0	20.00	SS

SUMMARY OF FAULT PARAMETERS

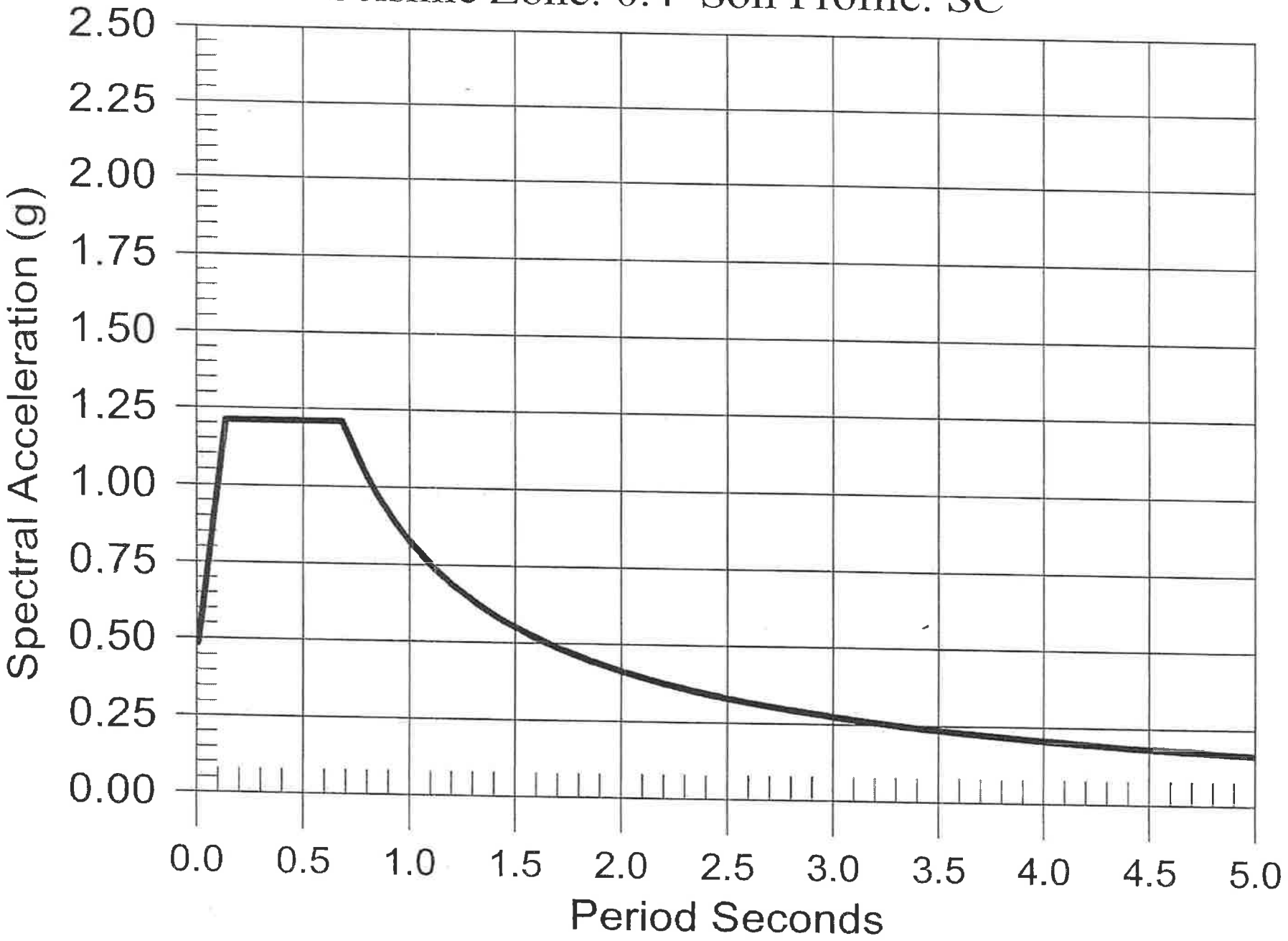
ABBREVIATED FAULT NAME	APPROX. DISTANCE (km)	SOURCE TYPE (A,B,C)	MAX. MAG. (Mw)	SLIP RATE (mm/yr)	FAULT TYPE (SS,DS,BT)
ORTIGALITA	337.5	B	6.9	1.00	SS
DEEP SPRINGS	338.7	B	6.6	0.80	DS
CALAVERAS (So.of Calaveras Res)	340.7	B	6.2	15.00	SS
MONTEREY BAY - TULARCITOS	341.4	B	7.1	0.50	DS
PALO COLORADO - SUR	342.2	B	7.0	3.00	SS
FISH SLOUGH	347.3	B	6.6	0.20	DS
QUIEN SABE	354.4	B	6.5	1.00	SS
DEATH VALLEY (N. of Cucamongo)	356.7	A	7.0	5.00	SS
HILTON CREEK	356.9	B	6.7	2.50	DS
ZAYANTE-VERGELES	371.8	B	6.8	0.10	SS
HARTLEY SPRINGS	376.7	B	6.6	0.50	DS
SAN ANDREAS (1906)	377.0	A	7.9	24.00	SS
SARGENT	377.5	B	6.8	3.00	SS
MONO LAKE	410.2	B	6.6	2.50	DS
SAN GREGORIO	416.3	A	7.3	5.00	SS
MONTE VISTA - SHANNON	427.0	B	6.5	0.40	DS
HAYWARD (SE Extension)	428.1	B	6.5	3.00	SS
GREENVILLE	429.5	B	6.9	2.00	SS
ROBINSON CREEK	439.4	B	6.5	0.50	DS
CALAVERAS (No.of Calaveras Res)	448.1	B	6.8	6.00	SS
HAYWARD (Total Length)	448.1	A	7.1	9.00	SS
ANTELOPE VALLEY	477.0	B	6.7	0.80	DS
CONCORD - GREEN VALLEY	496.8	B	6.9	6.00	SS
GENOA	498.6	B	6.9	1.00	DS
RODGERS CREEK	534.6	A	7.0	9.00	SS
WEST NAPA	536.2	B	6.5	1.00	SS
POINT REYES	551.0	B	6.8	0.30	DS
HUNTING CREEK - BERRYESSA	560.2	B	6.9	6.00	SS
MAACAMA (South)	597.5	B	6.9	9.00	SS
COLLAYOMI	615.2	B	6.5	0.60	SS
BARTLETT SPRINGS	620.3	A	7.1	6.00	SS
MAACAMA (Central)	638.7	A	7.1	9.00	SS
MAACAMA (North)	698.6	A	7.1	9.00	SS
ROUND VALLEY (N. S.F.Bay)	706.7	B	6.8	6.00	SS
BATTLE CREEK	742.4	B	6.5	0.50	DS
LAKE MOUNTAIN	764.7	B	6.7	6.00	SS
GARBERVILLE-BRICELAND	780.6	B	6.9	9.00	SS
MENDOCINO FAULT ZONE	835.1	A	7.4	35.00	DS
LITTLE SALMON (Onshore)	844.1	A	7.0	5.00	DS
CASCADIA SUBDUCTION ZONE	847.6	A	8.3	35.00	DS
MAD RIVER	848.3	B	7.1	0.70	DS
McKINLEYVILLE	858.5	B	7.0	0.60	DS
FICKLE HILL	860.2	B	6.9	0.60	DS
TRINIDAD	860.4	B	7.3	2.50	DS
TABLE BLUFF	864.2	B	7.0	0.60	DS
LITTLE SALMON (Offshore)	877.7	B	7.1	1.00	DS

SUMMARY OF FAULT PARAMETERS

ABBREVIATED FAULT NAME	APPROX. DISTANCE (km)	SOURCE TYPE (A,B,C)	MAX. MAG. (Mw)	SLIP RATE (mm/yr)	FAULT TYPE (SS,DS,BT)
BIG LAGOON - BALD MTN.FLT.ZONE	897.6	B	7.3	0.50	DS

DESIGN RESPONSE SPECTRUM

Seismic Zone: 0.4 Soil Profile: SC

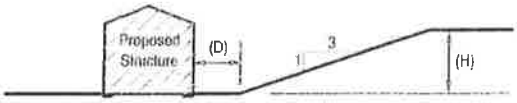


APPENDIX C

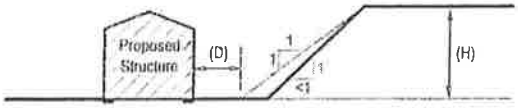
TYPICAL DETAILS and DIAGRAMS

(Based on 2001 CBC 1806.5)

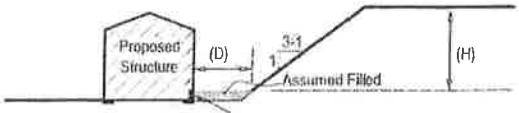
Ascending Slopes 3(H):1(V) or Steeper



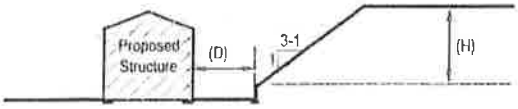
(D)=(H)/2, MIN 3ft., MAX 15ft.



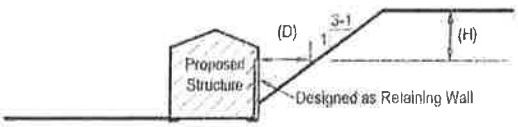
(D)=(H)/2, MIN 3ft., MAX 15ft.



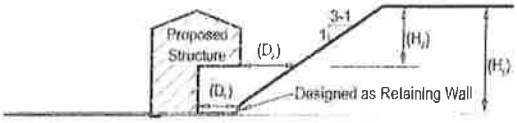
(D)=(H)/2, MIN 3ft., MAX 15ft.
Designed as Retaining Wall



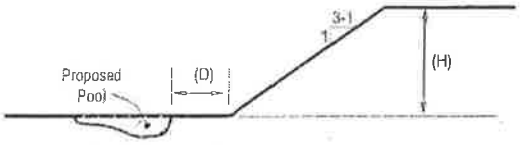
(D)=(H)/2, MIN 3ft., MAX 15ft.



(D)=(H)/2, MIN 3ft., MAX 15ft.

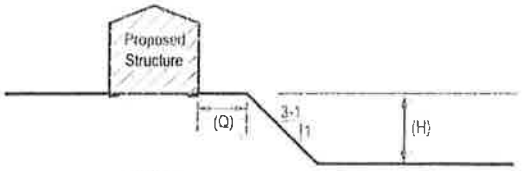


(D,)=(H,)/2, MIN 3ft., MAX 15ft.
(D,)=(H,)/2, MIN 3ft., MAX 15ft.

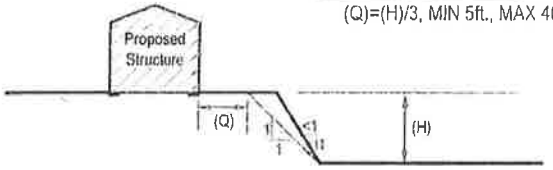


(D)=(H)/4, MIN 1.5ft., MAX 7.5ft.

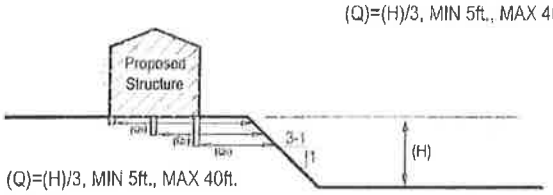
Descending Slopes 3(H):1(V) or Steeper



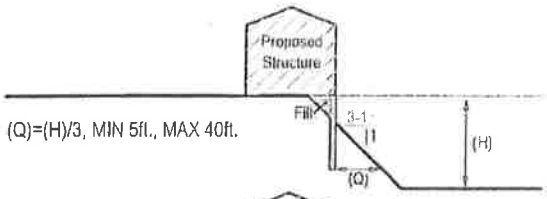
(Q)=(H)/3, MIN 5ft., MAX 40ft.



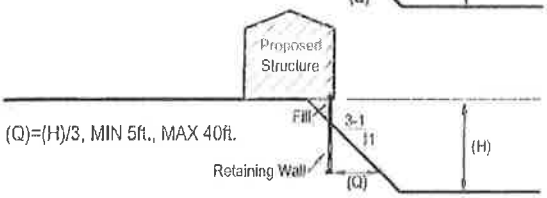
(Q)=(H)/3, MIN 5ft., MAX 40ft.



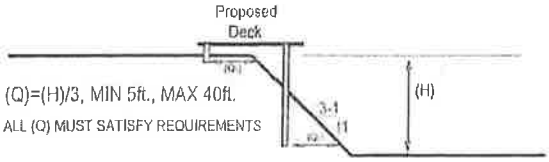
(Q)=(H)/3, MIN 5ft., MAX 40ft.
ALL (Q) MUST SATISFY REQUIREMENTS



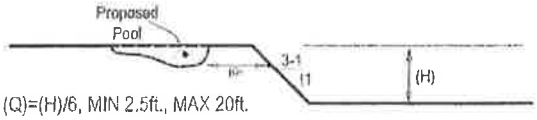
(Q)=(H)/3, MIN 5ft., MAX 40ft.



(Q)=(H)/3, MIN 5ft., MAX 40ft.



(Q)=(H)/3, MIN 5ft., MAX 40ft.
ALL (Q) MUST SATISFY REQUIREMENTS



(Q)=(H)/6, MIN 2.5ft., MAX 20ft.

Examples of Slope Setback Requirements

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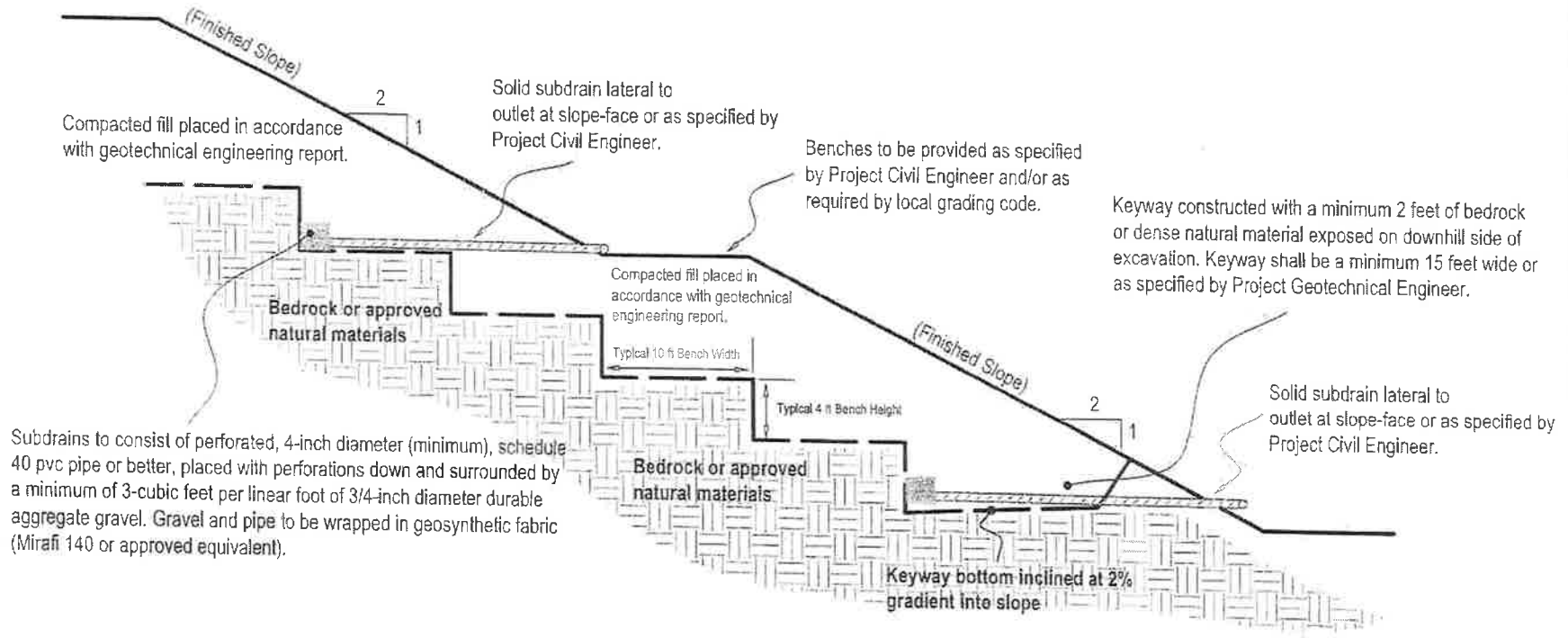
(Section 3316.1, 2001 CBC) The faces of cut- and fill-slopes shall be prepared and maintained to control against erosion. This control may consist of effective planting. The protection for the slopes shall be installed as soon as practicable and prior to calling for final approval.



SUBDRAIN RUN LENGTH	MINIMUM PIPE DIAMETER
0 - 200 ft	4 inches
200 - 400 ft	6 inches
400 - 800 ft	8 inches

Typical 2(H): 1(V) Fill-Slope, Keyway, Benching, and Subdrain Detail

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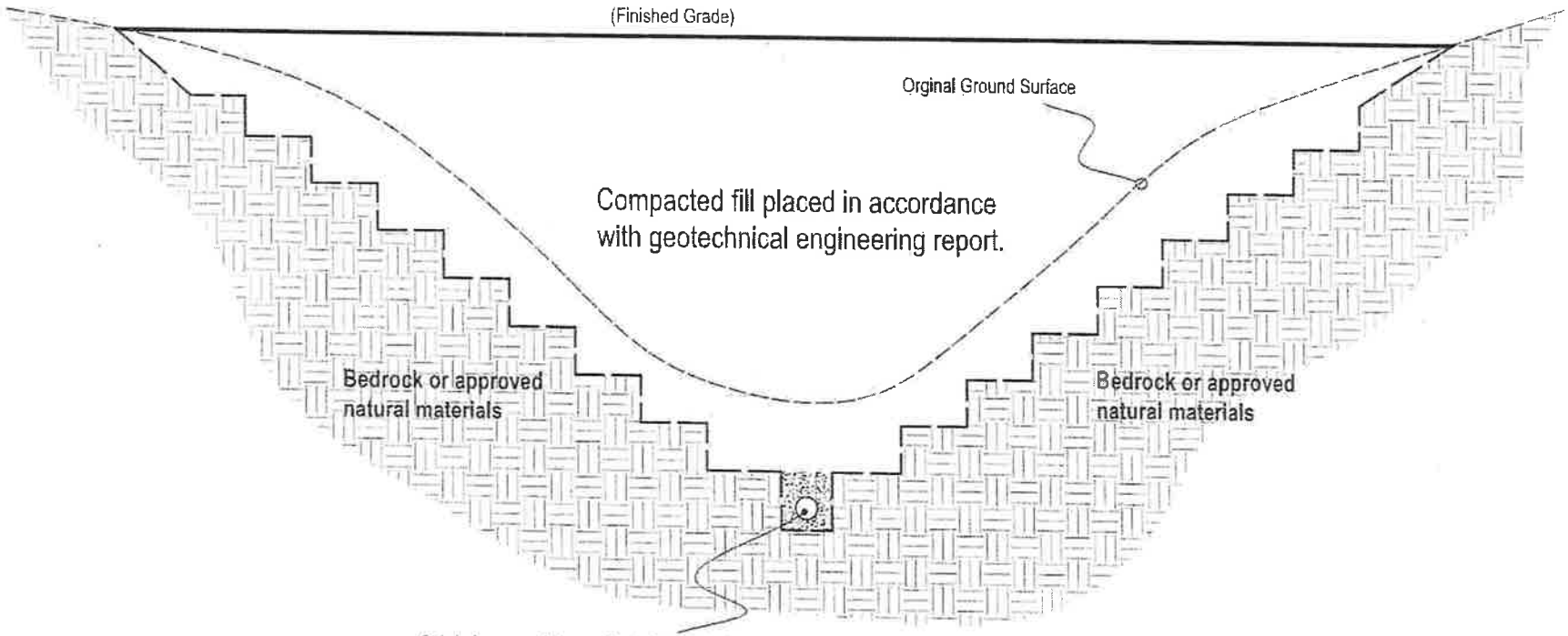

Subdrain to consist of perforated, 4-inch diameter (minimum), schedule 40 pvc pipe or better, placed with perforations down and surrounded by a minimum of 3-cubic feet per linear foot of 3/4-inch diameter durable aggregate gravel. Gravel and pipe to be wrapped in geosynthetic fabric (Mirafi 140 or approved equivalent).

SUBDRAIN RUN LENGTH	MINIMUM PIPE DIAMETER
0 - 200 ft	4 inches
200 - 400 ft	6 inches
400 - 800 ft	8 inches

Typical Canyon Fill and Subdrain Detail

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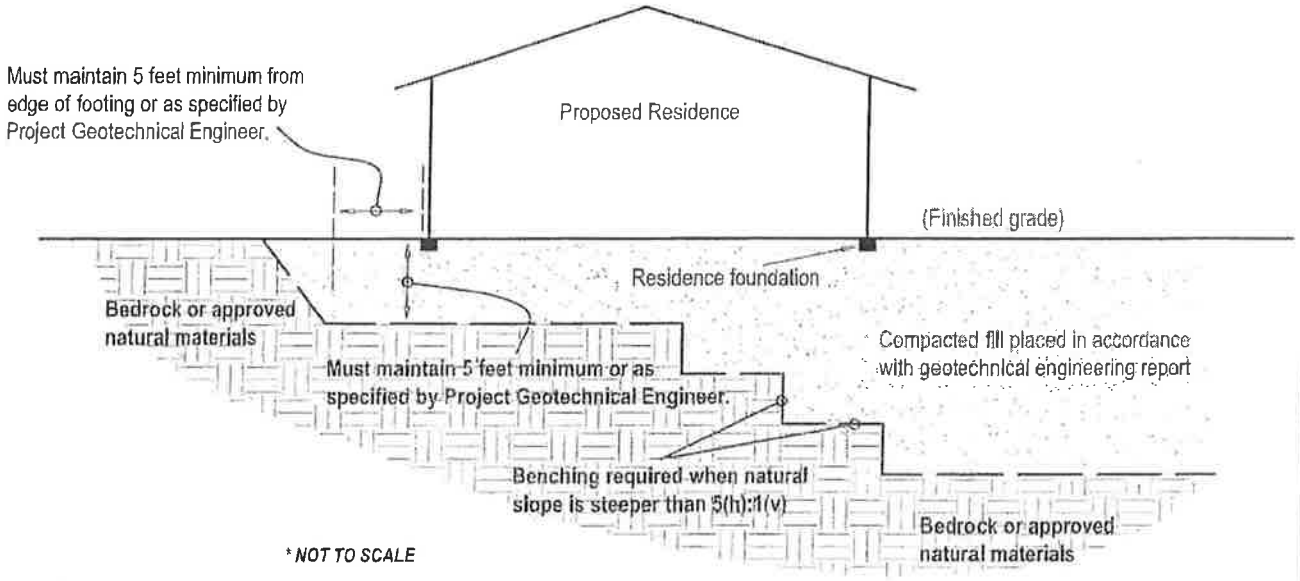

Typical Over-Excavation Beneath Buildings

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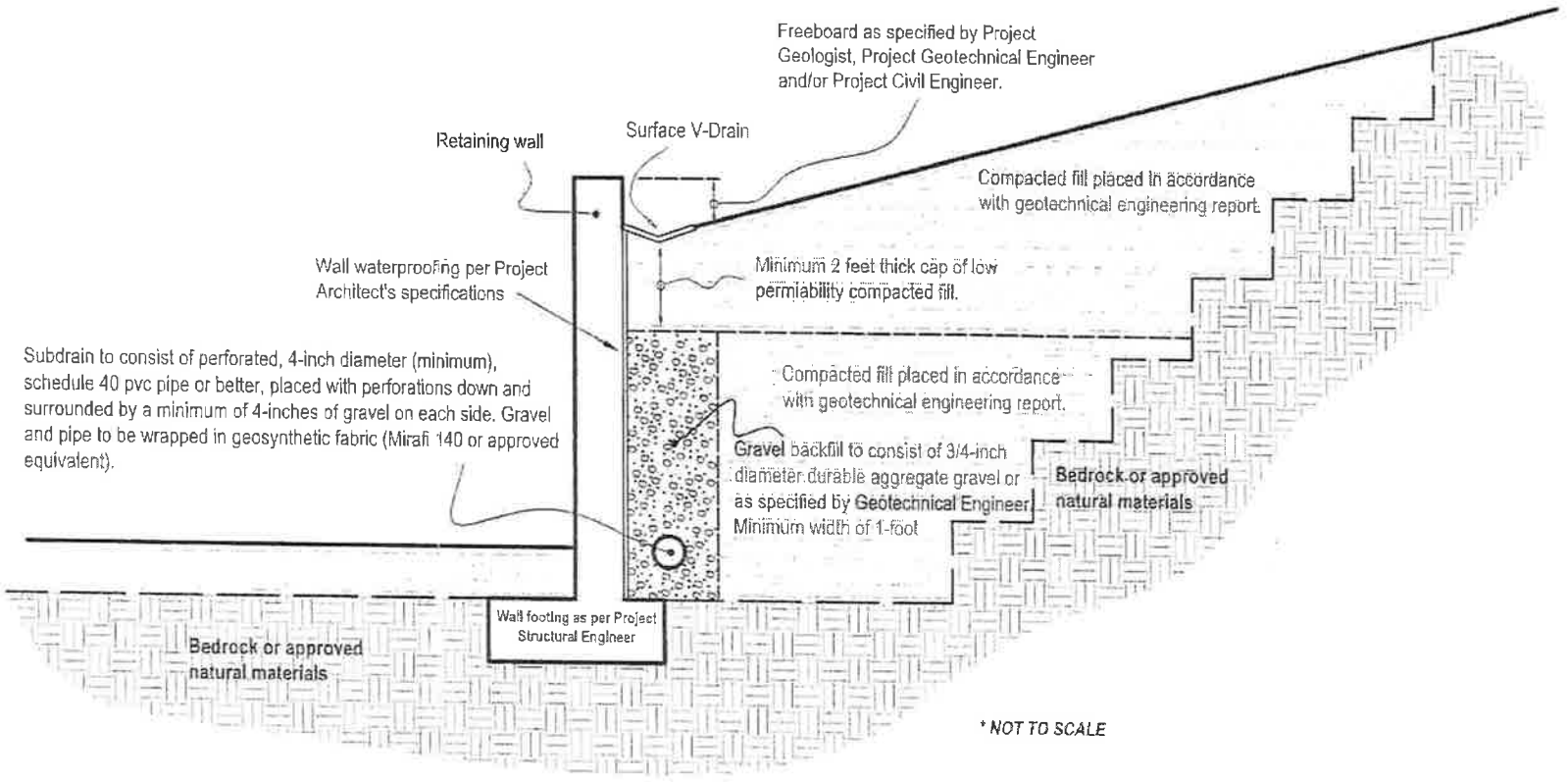

SUBDRAIN RUN LENGTH	MINIMUM PIPE DIAMETER
0 - 200 ft	4 inches
200 - 400 ft	6 inches
400 - 800 ft	8 inches

Typical Retaining Wall Drainage and Backfill Detail

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Parcel Map Waiver / Large Lot Subdivision (LLS)
Day Farms, LLC.
Case No. SD06-0041

Attachment 9- Works Cited

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