

**Low-Effect Habitat Conservation Plan**

**for The Terrace at Scotts Valley**

**in the City of Scotts Valley (Santa Cruz County), California**

*Prepared for:*

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## EXECUTIVE SUMMARY

Apple Homes Development, Inc., a California based corporation (hereafter referred to as "Apple Homes") has applied for a permit pursuant to section 10(a)(1)(B) of the Endangered Species Act of 1973 as amended (16 U.S.C. 153101544, 87 Stat. 884), from the U.S. Fish & Wildlife Service (USFWS) for the incidental take of the endangered Mount Hermon June beetle (MHJB) (*Polyphylla barbata*: Coleoptera: Scarabaeidae). The potential taking would occur incidental to grading and construction of 20 townhomes at a 2.622-acre vacant lot. The project site is comprised of two neighboring parcels (APNs 022-162-69 and 022-162-74) and is located on the southeastern side of Scotts Valley Drive between its intersections with Bean Creek Road and Mount Hermon Road in the City of Scotts Valley (Santa Cruz County), CA. This residential development project is known as The Terrace at Scotts Valley.

Although the project site is situated in a portion of the Zayante Sandhills that historically supported endemic plant communities, extensive residential and commercial development during the past 50 years throughout this portion of the Santa Cruz County has substantially degraded the original native habitat values. Prior to residential and commercial development of this portion of the City of Scotts Valley, portions of this neighborhood supported Ponderosa Pine forest with sand parkland vegetation growing on Zayante sands. Today the primary plant communities at the property are degraded Oak woodland, Ponderosa Pine (*Pinus ponderosa*) forest, annual grassland, and groves of non-native trees. Other native sandhill plants, especially those that would normally grow in the understories of these trees, have been largely replaced by annual grasses and weeds, plus escaped ornamentals used in landscaping.

During a presence-absence survey conducted in 2001, 26 adults of the MHJB were observed at the property. A second presence-absence survey was conducted in 2014 and 6 adults of the MHJB were observed. Due to presence of the MHJB, Apple Homes has applied for a section 10(a)(1)(B) permit and proposes to implement the habitat conservation plan (HCP) described herein, which provides for measures for mitigating adverse effects on the MHJB for activities associated with the site grading and construction of the 20 new townhomes. Apple Homes is requesting issuance of the section 10(a)(1)(B) permit for a period of five (5) years after permit issuance.

This HCP summarizes information about the project and identifies the responsibilities of the USFWS and Apple Homes for implementing the actions described herein to benefit the MHJB. The biological goals of the HCP are:

- a) to avoid and minimize, to the extent practical, take of the MHJB within the project site; and
- b) to replace the degraded MHJB habitat impacted by the construction project at a secure site in perpetuity.

For mitigation, Apple Homes will purchase prior to permit issuance 114,214 (2.622 acres X 43,560 ft.<sup>2</sup>/acre) conservation credits for the endangered MHJB from the Ben Lomond Sandhills Preserve of the Zayante Sandhills Conservation Bank. This conservation bank is operated by PCO, LLC and is located in Ben Lomond, CA. This HCP also describes measures that ensure the elements of the HCP are implemented in a timely manner. Funding sources for implementation of the HCP, actions to be taken for unforeseen events, alternatives to the proposed permit action,

and other measures required by the USFWS are also discussed.

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# Section 1

## Introduction and Background

### 1.1 Overview/Background

This Habitat Conservation Plan (HCP) is for the proposed construction of 20 new, single-family townhomes at a 2.622-acre vacant lot. This proposed project is known as The Terrace at Scotts Valley. The project site (APNs 022-162-69 and 022-162-74) is located on the southeastern side of Scotts Valley Drive, between the intersections at Bean Creek Road and Mount Hermon Road in the City of Scotts Valley (Santa Cruz County), California.

This HCP has been prepared pursuant to the requirements of section 10(a) of the Federal Endangered Species Act (ESA). The HCP is intended to provide the basis for issuance of a section 10(a)(1)(B) permit to Apple Homes Development, Inc. (hereafter "Apple Homes"), the permit applicant, to authorize incidental take (see section 4) of the Mount Hermon June beetle (MHJB) (*Polyphylla barbata*: Coleoptera: Scarabaeidae), a federally-listed endangered species, that may potentially result from the grading and construction activities at the aforementioned project site. The U.S. Fish & Wildlife Service (USFWS) has concluded that the project site provides habitat for this beetle. Apple Homes requests a permit for a period of five (5) years commencing on the date of permit issuance.

This HCP provides an assessment of the existing habitat conditions at the project site for the MHJB, evaluates the effects of the proposed project on this beetle, and presents a conservation program to offset habitat losses and/or direct harm to this beetle that could result from site preparation, construction, habitat restoration, and habitat management activities at the project site. The biological goal of this HCP are to avoid and minimize, to the extent practical, take of the MHJB within the project site and to replace the MHJB habitat impacted by the development of the parcel at a secure site in perpetuity. Specifically, a total of 114,214 (2.622 acres X 43,560 ft.<sup>2</sup>/acre) MHJB conservation credits will be purchased prior to permit issuance from the Ben Lomond Sandhills Preserve of the Zayante Sandhills Conservation Bank. Because habitat quality at the Ben Lomond Sandhills Preserve is superior to that at the project site, and habitat at the conservation bank is protected in perpetuity via a conservation easement, this mitigation solution will provide greater long term conservation value to the MHJB and its habitat than would on-site mitigation.

## 1.2 Permit Holder/Permit Duration

Apple Homes Development, Inc. will be the holder of the section 10(a) permit. Mr. Chris Perri is the representative for Apple Homes. Mr. Perri can be contacted via mail at 15 Sherman Court, Scotts Valley, CA 95066, or via telephone and fax at (831) 464-3380, via cell phone at (831) 239-9269, or via email at [applehomesdevelopment@gmail.com](mailto:applehomesdevelopment@gmail.com).

Since there may be delays in securing local permits and the sale of townhomes upon completion of construction, Apple Homes requests a permit for a period of five (5) years commencing on the date of permit issuance.

## 1.3 Permit Boundary/Covered Lands

Apple Homes requests an incidental take permit to authorize take of the MHJB within the project's impact area, which is the full property measuring 2.622 acres. The project site is located in the City of Scotts Valley, CA in a neighborhood that has both commercial and residential properties. The current site address is 400 Glen Canyon Road but upon completion of project construction the access and new address will be on Scotts Valley Dr. The site is located on the southeastern side of Scotts Valley Drive, between its intersections with Bean Creek Road and Mount Hermon Road. The Terrace at Scotts Valley project site is located within the boundaries of the Felton 7.5' U.S. Geological Survey (USGS) topographic quadrangle, specifically in Township 10S, Range 2W, Section 24 of the Mt. Diablo Meridian (Figure 1).

The requested permit boundaries ("covered lands") are the same as the property boundaries of the 2.622-acre project site (APNs 022-162-69 and 022-162-74). These boundaries are illustrated in Figure 1.

## 1.4 Species to be Covered by Permit

The following insect species is referred to as a "covered species" in this HCP and its related incidental take permit.

<u>Covered Species</u>	<u>Federal Status/State Status</u>
Mount Hermon June beetle ( <i>Polyphylla barbata</i> )	Federally Endangered/ no State status

## **1.5 Regulatory Framework**

### **1.5.1 Federal Endangered Species Act**

Section 9 of the Endangered Species Act (ESA) and Federal regulations pursuant to section 4(d) of the ESA prohibit the take of endangered and threatened species, respectively, without special exemption. "Take" is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Harm is further defined by the USFWS to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering. Harass is defined by the USFWS as intentional or negligent actions that create the likelihood of injury to listed species by annoying them to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of the carrying out of an otherwise lawful activity.

Pursuant to section 11(a) and (b) of the ESA, any person who knowingly violates section 9 of the ESA or any permit, certificate, or regulation related to section 9, may be subject to civil penalties of up to \$25,000 for each violation or criminal penalties up to \$50,000 and/or imprisonment of up to one year.

Individuals and state and local agencies proposing an action that is expected to result in the take of federally listed species are encouraged to apply for an incidental take permit under section 10 (a)(1)(B) of the ESA to be in compliance with the law. Such permits are issued by the USFWS when take is not the intention of and is incidental to otherwise legal activities. An application for an incidental take permit must be accompanied by a habitat conservation plan, commonly referred to as an HCP. The regulatory standard under section 10 (a)(1)(B) of the ESA is that the effects of authorized incidental take must be minimized and mitigated to the maximum extent practicable. Under section 10 (a)(1)(B) of the ESA, a proposed project also must not appreciably reduce the likelihood of the survival and recovery of the species in the wild, and adequate funding for a plan to minimize and mitigate impacts must be ensured.

Section 7 of the ESA requires Federal agencies to ensure that their actions, including issuing permits, do not jeopardize the continued existence of listed species or destroy or adversely modify listed species' critical habitat. "Jeopardize the continued existence of..." pursuant to 50 CFR 402.2, means to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species. Issuance of an incidental take permit under section 10 (a)(1)(B) of the ESA by the USFWS is a

Federal action subject to section 7 of the ESA. As a Federal agency issuing a discretionary permit, the USFWS is required to consult with itself (i.e., conduct an internal consultation). Delivery of the HCP and a section 10 (a)(1)(B) permit application initiates the section 7 consultation process within the USFWS.

The requirements of section 7 and section 10 substantially overlap. Elements unique to section 7 include analyses of impacts on designated critical habitat, analyses of impacts on listed plant species, if any, and analyses of indirect and cumulative impacts on listed species. Cumulative effects are effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area, pursuant to section 7 (a)(2) of the ESA. The action area is defined by the influence of direct and indirect impacts of covered activities. The action area may or may not be solely contained within the HCP boundary. These additional analyses are included in this HCP to meet the requirements of section 7 and to assist the USFWS with its internal consultation.

#### **1.5.1.1. The Section 10(a)(1)(B) Process - HCP Requirements and Guidelines.**

The section 10(a)(1)(B) process for obtaining an incidental take permit has three primary phases:

- 1) the HCP development phase;
- 2) the formal permit processing phase; and
- 3) the post-issuance phase.

During the HCP development phase, the project applicant prepares a plan that integrates the proposed project or activity with the protection of listed species. An HCP submitted in support of an incidental take permit application must include the following information:

- impacts likely to result from the proposed taking of the species for which permit coverage is requested;
- measures that will be implemented to monitor, mitigate for, and minimize impacts;
- funding that will be made available to undertake such measures;
- procedures to deal with unforeseen circumstances;
- alternative actions considered that would not result in take; and
- additional measures the USFWS may require as necessary or appropriate for

purposes of the plan.

The HCP development phase concludes and the permit-processing phase begins when a complete application package is submitted to the appropriate permit-issuing office of USFWS. The complete application package for a low-effect HCP consists of:

- 1) an HCP;
- 2) a completed permit application;
- 3) an Implementing Agreement (IA), if applicable; and
- 4) a \$100 permit fee from the applicant.

The USFWS must publish a Notice of Availability of an HCP and its permit application package in the Federal Register to allow for public comment. The USFWS also prepares an Intra-Service Section 7 Biological Opinion; and prepares a Set of Findings, which evaluates the Section 10(a)(1)(B) permit application in the context of permit issuance criteria (see below). An Environmental Action Statement, Environmental Assessment, or Environmental Impact Statement serves as the USFWS's record of compliance with the National Environmental Policy Act (NEPA), which has gone out for a 30-day, 60-day, or 90-day public comment period; and prepare an Environmental Action Statement, a brief document that serves as the USFWS's record of compliance with NEPA for categorically excluded actions (see below). An implementing agreement is not required for a low-effect HCP. A section 10 (a)(1)(B) incidental take permit is granted upon determination by USFWS that all requirements for permit issuance have been met. Statutory criteria for issuance of an incidental take the permit specify that:

- the taking will be incidental;
- the impacts of incidental take will be minimized and mitigated to the maximum extent practicable;
- adequate funding for the HCP and procedures to handle unforeseen circumstances will be provided;
- the taking will not appreciably reduce the likelihood of survival and recovery of the species in the wild;
- the applicant will provide additional measures that USFWS requires as being necessary or appropriate; and
- the USFWS has received assurances, as may be required, that the HCP will be

implemented.

During the post-issuance phase, the permittee and other responsible entities implement the HCP and the USFWS monitors the permittee's compliance with the HCP and the long-term progress and success of the HCP. The public is notified of permit issuance through publication in the Federal Register.

### **1.5.2 National Environmental Policy Act**

The purpose of the National Environmental Policy Act (NEPA) is two-fold: to ensure that Federal agencies examine environmental impacts of their actions (in this case deciding whether to issue an incidental take permit) and to utilize public participation. NEPA serves as an analytical tool on direct, indirect, and cumulative impacts of the proposed project alternatives to help the USFWS decide whether to issue an incidental take permit (ITP or section 10(a)(1)(B) permit). NEPA analysis must be done by the USFWS for each HCP as part of the incidental take permit application process.

### **1.5.3 National Historic Preservation Act**

All Federal agencies are required to examine the cultural impacts of their actions (e.g., issuance of a permit). This may require consultation with the State Historic Preservation Office (SHPO) and appropriate American Indian tribes. All incidental take permit applicants are requested to submit a Request for Cultural Resources Compliance form to the USFWS. To complete the compliance, in certain cases the applicants may need to complete cultural resource surveys and possibly mitigation.

### **1.5.4 California Endangered Species Act (CESA)**

The California Endangered Species Act (CESA) provides for the designation of native species or subspecies of fish, wildlife, and plants as endangered or threatened (CESA Sections 2062-2067). However, insects are specifically excluded as a type of animal that may be designated as endangered or threatened species. Thus the MHJB is not listed under CESA and this HCP will not further address CESA permitting requirements.

### **1.5.5 California Environmental Quality Act (CEQA)**

In many ways the California Environmental Quality Act, commonly known as CEQA (Public Resources Code Section 21000 *et seq.*), is analogous at the State level as NEPA is to the Federal level. CEQA requires State and local governmental agencies to complete an environmental review of discretionary projects that might impact environmental resources.

CEQA differs from NEPA in that it requires that a project's significant environmental impacts be reduced to a less than significant level through the adoption of feasible avoidance, minimization, and/or mitigation measures, unless overriding considerations are identified and documented. With regard to wildlife and plants, those that are already listed by any State or Federal governmental agency are presumed to be endangered for the purposes of CEQA (Section 15380) and impacts to such species and their habitats may be considered significant.

The project presented in this HCP may be subject to CEQA review, with the City of Scotts Valley as the lead agency. The City's CEQA review is currently in progress.

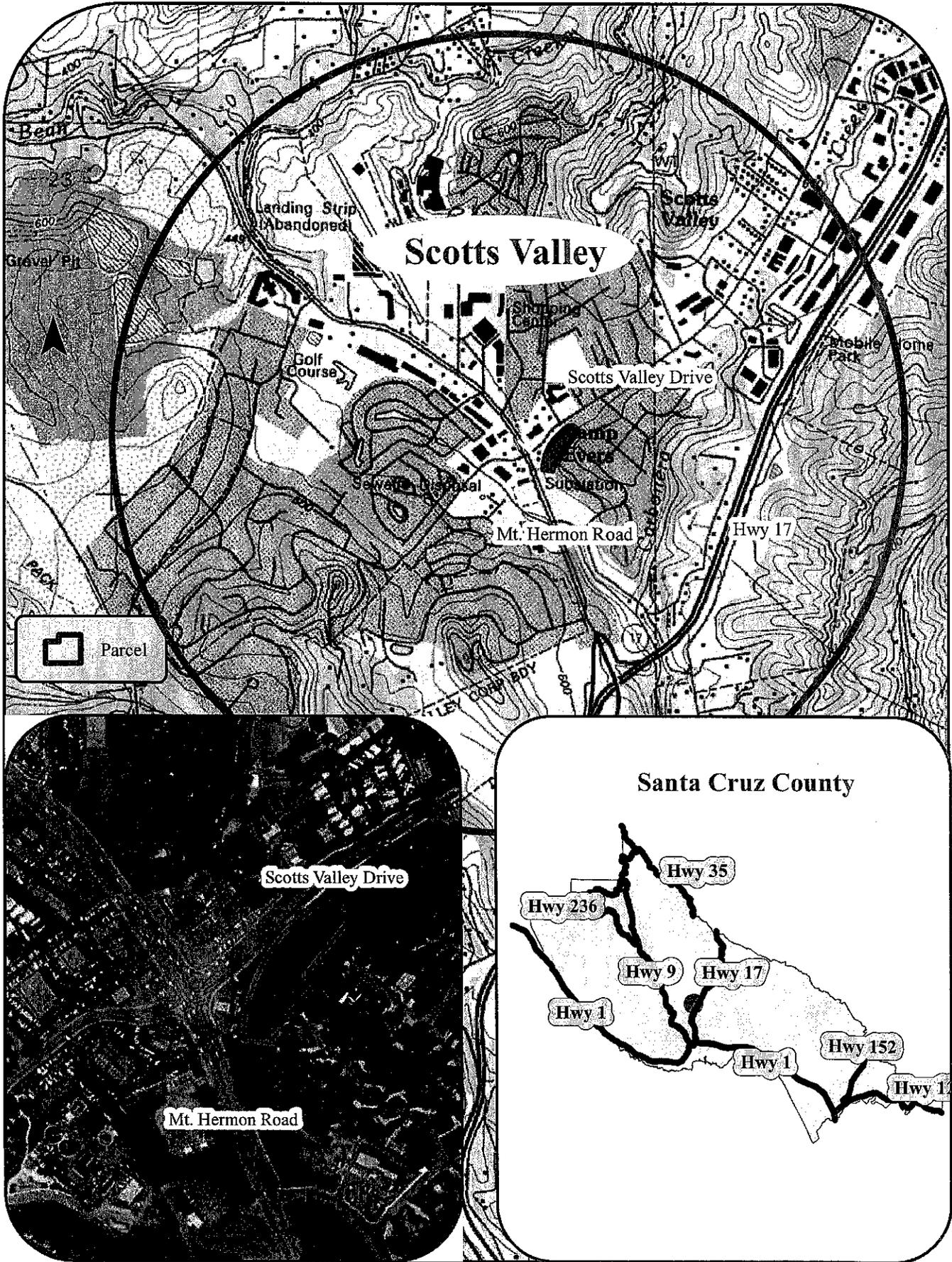
### **1.5.6 California Public Resources Code**

Public Resources Code 4291 requires homeowners living in or adjacent to forest or brush-covered lands to maintain a firebreak of not less than 30 feet on all sides around all structures, or to the property line, whichever is nearer. The Scotts Valley Fire District enforces this code in the City of Scotts Valley and surrounding areas. See Section 7.1.6 of this HCP for a discussion of how this code affects the management of habitat at the project site.

### **1.5.7 City of Scotts Valley Tree Ordinance**

Native trees that currently grow at the project site include Ponderosa Pine (*Pinus ponderosa*), Pacific madrone (*Arbutus menziesii*), and Coast Live Oaks (*Quercus agrifolia*). Non-native trees that currently grow at the site include acacia (*Acacia* sp.), walnut (*Juglans* sp.), and plum (*Prunus* sp.). Arborist James P. Allen & Associates inventoried and mapped the trees and identified those that will be removed due to poor health or other concerns. Temporary fencing will be used throughout the grading and construction periods to protect those trees that will be conserved and maintained as part of future landscaping for the new townhomes. The proposed project will mitigate for the anticipated impacts to these trees as described in Section 5.2.2.2 of this HCP and the attached tree report (Appendix A). The City of Scotts Valley generally requires impacted trees to be mitigated by planting 2 replacement trees for each impacted tree at the project site. If this is not possible due to space constraints or some other factor, then the applicant can pay a fee to the City's tree fund as determined by the City.

Figure 1. Location map for The Terrace at Scotts Valley



## Section 2

# Project Description/Activities Covered by Permit

### 2.1 Project Description

The project site is currently a vacant lot with no existing buildings. Twenty (20) single-family townhomes will be built at the project site. The “impact area”, where ground disturbing activities such as vegetation removal, grading, excavation, construction, and revegetation will occur, is the same as the boundaries of the entire 2.622 acre project site. Figure 2, prepared by C2G Civil Consultants Group, illustrates the existing topography, the project’s site plan, and the limits of grading. The new townhomes will have a common driveway that accesses Scotts Valley Drive at its intersection with Bean Creek Road.

The new townhomes will be plumbed with domestic water and sanitary sewer. Since the sanitary sewer lines drain to a public sewer line, no septic or cesspool systems will be required. Electrical power is fed from overhead power lines. Likewise natural gas is also provided by the local utility provider via underground connection at the property line. All trenching for the connection of underground utilities will occur within the impact area.

To the extent practical, native Pacific Madrone, Coast Live Oak and Ponderosa Pine trees will be protected during grading and construction activities and incorporated into future landscaping. The arborist’s tree report (Appendix A) provides details on the specific trees to be protected and maps that illustrate their locations at the project site. The maintained trees will not be disturbed except as needed to conform to any fire clearance regulations of the Scotts Valley Fire District.

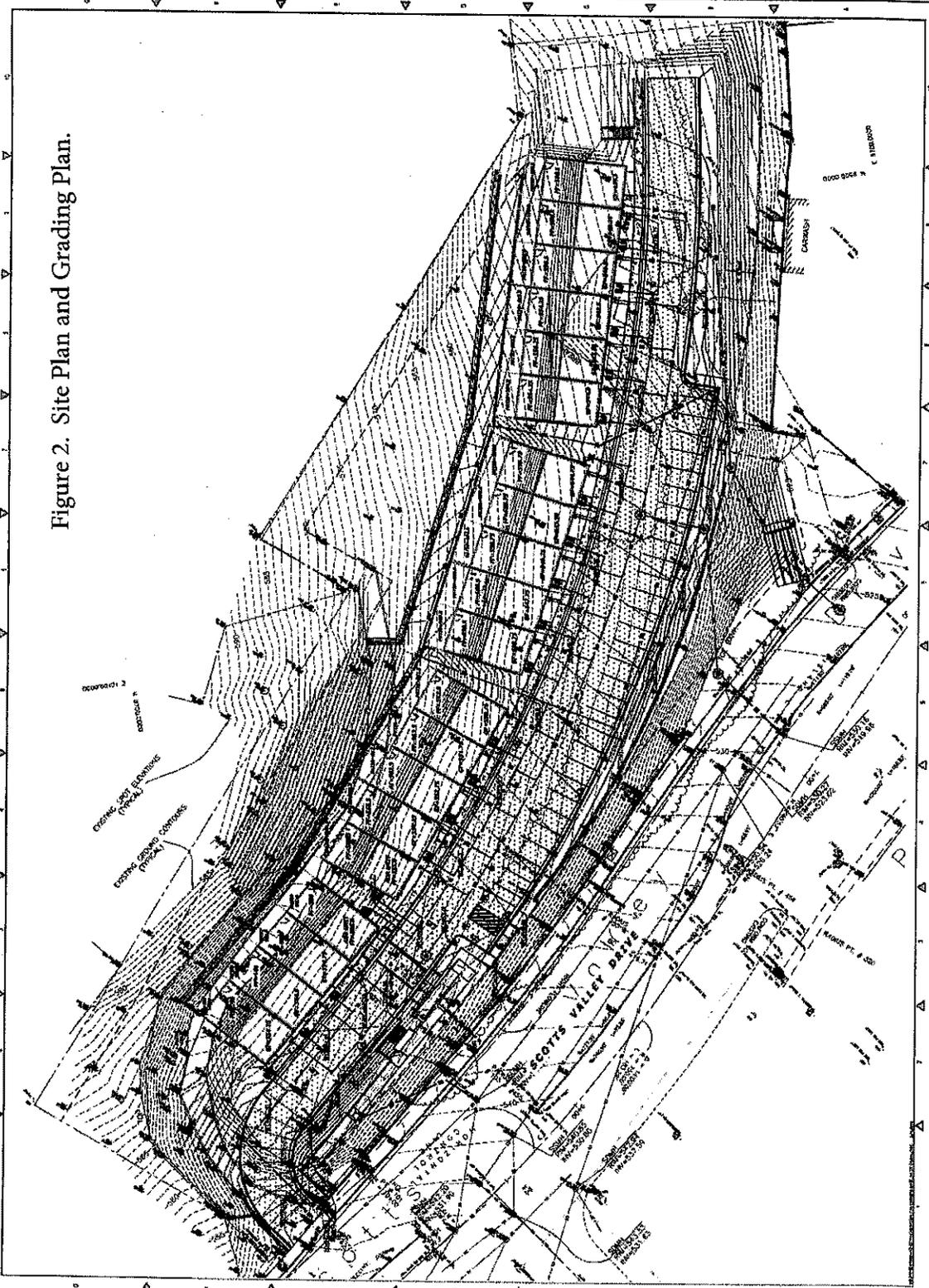
Table 1 itemizes the expected areas of ground disturbance for each of the aforementioned features of this project. Ground disturbing activities included grading to prepare the site for construction and the removal of exotics to prepare the undeveloped portions of the site for revegetation after all construction activities have been completed.

<b>Table 1. Estimated Ground Disturbance</b>		
<b>Project Activity</b>	<b>Area of Ground Disturbance</b>	
	<b>Square feet</b>	<b>Acres</b>
Grading	102,714	2.358
Exotics removal and revegetation	11,500	0.264
<b><i>Totals</i></b>	<b><i>114,214</i></b>	<b><i>2.622</i></b>

## **2.2 Activities Covered by Permit**

An incidental take permit is requested to cover impacts to the MHJB that could result from removal of existing vegetation, grading, excavation, construction, and revegetation at the site. All covered activities are further described in Section 4 of this HCP, which assess their impacts on the covered species.

Figure 2. Site Plan and Grading Plan.



## **Section 3**

# **Environmental Setting/Biological Resources**

### **3.1 Environmental Setting**

#### **3.1.1 Climate**

The greater Scotts Valley area is characterized by a Mediterranean climate. In the plan area, the summer temperature range is generally from 45°F to 95 °F and average is 68 °F. Winter temperature range from 36 °F to 65 °F and average is 51 °F.

Annual precipitation is 44 inches. Most precipitation falls as rain, although some localities may also receive some fog drip. The rainy season is from October to May, with the majority of the rainfall occurring between December and March.

#### **3.1.2 Topography/Geology**

Topography slopes generally from the rear of the property towards Scotts Valley Drive with elevations ranging from 523 to 587 feet. Nearly all of property, 2.562 acres, is characterized by Pfeiffer gravelly sandy loam soil, while Elder sandy loam soil encompasses 0.060 acre (Bowman and Estrada 1980). Zayante sandy soils occur nearby on the west side of Mt. Hermon Road, so the soils on-site are probably more transitional between these three soils types rather than pure.

#### **3.1.3 Hydrology/Streams, Rivers, Drainages**

The project site lies with the San Lorenzo River basin. Carbonero Creek lies approximately 1,300 ft. east of the project site. No wetlands or wetland habitats occur on site.

#### **3.1.4 Existing Land Use**

The project site is an undeveloped lot located in a neighborhood of the City of Scotts Valley that supports a mixture of residential and commercial properties. Surrounding properties support single-family homes, a gas station, an office building, and vacant land.

### **3.1.5 Habitats**

Native habitat values at the project site have been degraded as various non-native plants, exotics, and ornamentals have colonized the site. Native plant communities include degraded remnants of Ponderosa Pine forest (18% of the site) and Coast Live Oak woodland (23%), while annual grassland (41%) and non-native tree groves (18%), consisting primarily Acacia plus a few scattered oaks, are also present. Figure 4 is a map of the plant communities and was prepared by the Biotic Resources Group (2014). See Appendix B for the entire Biological Report.

## **3.2 Covered Wildlife Species: Mount Hermon June Beetle (*Polyphylla barbata*: Coleoptera, Scarabaeidae)**

### **3.2.1 Status and Distribution**

The MHJB is a federally-listed endangered species. Throughout most of its range, the primary threats to the beetle are sand mining and urbanization. In a few instances, other types of land uses, such as agricultural conversion, recreation activities, plus pesticide use, alteration of fire cycles, and possibly even collectors, have also threatened the beetle. For these reasons, the beetle was recognized as an endangered species by the USFWS (1997) in 1997 and a recovery plan was published by the USFWS (1998) in 1998. Critical habitat has not yet been proposed by the USFWS for the MHJB. The beetle has also referred to by the common name of Barbate June beetle.

The State of California does not recognize insects as endangered or threatened species pursuant to the State's Fish & Game Code. However, the MHJB does receive consideration under the California Environmental Quality Act (CEQA) since it satisfies the definition of a rare species under this statute.

The MHJB is restricted to areas in and around the Zayante sandy soils that are found in the Scotts Valley-Mount Hermon-Felton-Ben Lomond-Santa Cruz area of the Santa Cruz Mountains. During the summer of 2008 it was also observed at a couple of locations in the Bonny Doon area (Arnold, pers. Observ.; McGraw, 2009). Historically, MHJB localities were referred to as sandhills (Cazier 1938; Young 1988), but more recently this area has been called the Zayante Sandhills (USFWS 1998). Arnold (2004) reviewed museum specimens and other reported records for the beetle and determined that it had been observed at about 70 locations within this area.

### **3.2.2 Habitat Characteristics**

Habitats in and around the Zayante sandhills where MHJB has been found include

Northern Maritime chaparral, Mixed Oak woodland, Ponderosa Pine forest, Sand Parkland (which is a mixture of the aforementioned habitats with a shrub/subshrub and grass/forb understory), and mixed Deciduous-Evergreen forest. In addition, adults have been found in disturbed sandy areas where remnants of these habitats still occur. Ponderosa Pine occurs at all known MHJB locations and for this reason has been a presumed larval food plant of the beetle. However, recent analyses of partially-digested plant fragments in fecal pellets of MHJB larvae by Kirsten Hill (2005) indicate that larvae feed on other plant species. Even if Ponderosa Pine is not a food plant, it is a useful indicator of suitable habitat for the MHJB.

### **3.2.3 Occurrences at the Project Area**

Arnold (2001) conducted a presence-absence survey at the Scotts Valley Meadows project site and identified 26 adults of the MHJB there. In 2014 and 6 adults of the MHJB were observed during a single night of surveying (Arnold 2014). Appendix C contains copies of both survey reports. For this reason, the MHJB is known to occur at The Terrace of Scotts Valley project site. Additionally, it has been found at other nearby properties in the surrounding neighborhood (BUGGY Data Base 2014; California Natural Diversity Data Base 2014).

### **3.2.4 Life History**

Adult males measure about 0.75 inch in length and females are slightly longer. The adult male has a black head and dark brown elytra (leathery forewings) that are covered with brown hairs. The elytra also have stripes that are broken and irregular rather than continuous and well-defined as in related species of June beetles. Larvae are grub-shaped (scarabaeiform) and vary in color from cream to pale yellow for the body segments and darker brown for the head.

The MHJB is univoltine, i.e., it has only one generation per year. As its common name suggests, adult emergence and seasonal activity normally starts in May or June and continues through about mid-August; although, seasonal activity may vary from year to year depending on weather conditions. Adults are crepuscular, being active between about 8:45 and 9:30 pm. Adult males actively fly low to the ground in search of females, which are flightless. Presumably the female emits a pheromone for the males to find her.

Lifespan data from a brief capture-recapture study suggest that adult males live no longer than one week (Arnold 2004). Dispersal data from the same capture-recapture study indicate that most adult males are quite sedentary, with home ranges of no more than a few acres. Similar data on lifespan and dispersal of females is lacking at this time since they are less frequently observed.

Specific life history information for the MHJB is unknown, but can be inferred from

related species. Presumably the entire life cycle (egg, larva, pupa, and adult) takes two to three years to complete. The majority of the life cycle is spent as a subterranean larval stage that feeds on plant roots (Furniss and Carolin 1977).

### 3.3 Other Zayante Sandhills Endangered Species

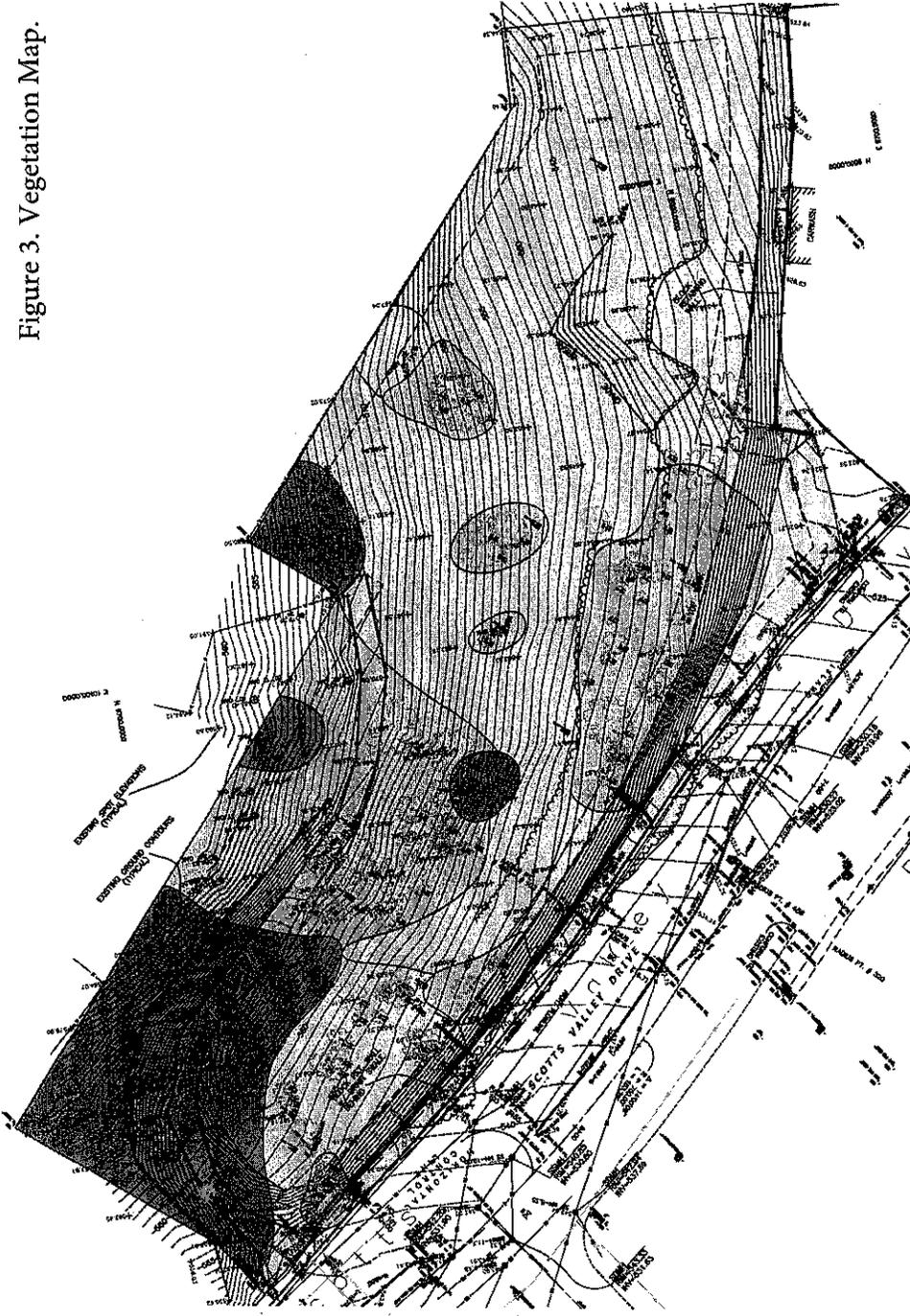
The Zayante sandhills region near the proposed project site support several special status plant and animal taxa, including four federally endangered species. Table 2 lists these taxa and their federal and state conservation statuses. Although a complete floristic inventory of the entire project site has not been undertaken, the proposed impact area does not support any of these other sandhill species (Arnold, personal observation) since the native habitat conditions are degraded.

Common Name	Scientific Name	Conservation Status		
		Federal	State	CNPS
Mount Hermon June beetle	<i>Polyphylla barbata</i>	Endangered		
Zayante Band-Winged grasshopper	<i>Trimerotropis infantilis</i>	Endangered		
Ben Lomond spineflower	<i>Chorizanthe pungens</i> var. <i>hartwegiana</i>	Endangered		
Santa Cruz wallflower	<i>Erysimum teretifolium</i>	Endangered	Endangered	1B
Santa Cruz cypress	<i>Cupressus abramsiana</i>	Endangered	Endangered	
Silverleaf manzanita	<i>Arctostaphylos silvicola</i>			1B
Ben Lomond buckwheat	<i>Eriogonum nudum</i> var. <i>decurrans</i>			1B

Note: CNPS is the California Native Plant Society, whose lists of rare plants are often treated as endangered species by resource agencies.

Also, the endangered Ohlone Tiger beetle (*Cicindela ohlone*: Coleoptera, Cicindelidae) is known to occur within the City of Scotts Valley in an area characterized by Watsonville loam soils and coastal prairie habitat (Knisley and Arnold 2013). Because the soils and habitat types that characterize the project site are not suitable to support the beetle, it would not be expected to occur there.

Figure 3. Vegetation Map.



**LEGEND**

-  Ponderosa Pine Forest
-  Annual Grassland
-  Oak Woodland
-  Non-native Tree Grove (Acacia)
-  Oak/Acacia Woodland

**Biotic Resources Group**

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Scotts Valley Corners  
 Existing Vegetation

Figure 2  
 7/14  
 725-01

## Section 4

# Potential Biological Impacts/Take Assessment

### 4.1 Direct and Indirect Impacts

Direct and indirect impacts, including both temporary and permanent impacts are anticipated to occur due to project-related activities at the project site. The remainder of this section identifies the specific activities that could result in impacts to the MHJB as well as its habitat.

#### 4.1.1 Direct Impacts

The proposed project has the potential to directly impact life stages of the MHJB by causing mortality of eggs, larvae, pupae, and adult life stages wherever soils are disturbed within the impact area (i.e., the entire project site). Permanent habitat loss will occur as a result of these activities.

##### 4.1.1.1 Permanent Habitat Loss

Permanent habitat loss will result from grading, excavation, construction of the 20 new townhomes, driveways, and other hardscape at the project site. These ground-disturbing activities will remove roots of vegetation, which may be fed upon by larvae of the MHJB, as well as kill, injure, or remove life stages of the MHJB. The total area of permanent habitat loss is approximately 102,713 ft.<sup>2</sup> (2.358 acres), as detailed in Table 3. Because of the degraded site condition and small size of the impact area, incidental take of the MHJB as a result of these activities is expected to be limited, but will occur throughout 2.622 acre project site.

##### 4.1.1.2 Temporary Habitat Loss

Temporary habitat loss will occur during the removal of non-native vegetation and revegetation of undeveloped portions of the impact area after completion of all construction activities. Temporary impacts may also occur when protective fencing to demarcate the maintained trees is installed, repaired, or ultimately removed. The total area of temporary habitat loss is 11,500 ft.<sup>2</sup> (0.264 acre), as detailed in Table 3.

The Fire Department of the City of Scotts Valley will ultimately determine the fire

clearance requirements, if any, for the new townhomes. According to the Fire Department, fire clearance requirements depend on the type of construction materials used to build the structures, the location of the proposed structures within the building envelope, and the presence of sensitive habitat on site. At this time, it is anticipated that no additional fire clearance will be necessary within the impact area; however, it is possible that at a later date the Fire Department may require clearing or pruning of vegetation between the new townhomes and the property boundaries.

#### 4.1.2 Indirect Impacts

Indirect impacts are those caused by covered activities that may occur at a different time or in a different place than the direct impacts. This project is designed to avoid indirect effects on the MHJB. For example, any outdoor lights that are installed will use bulbs designed to not attract-nocturnally-active insects. If any construction occurs during the flight season for adult MHJB (mid-May through mid-August), any exposed soil will be covered between the hours of 7:00 pm and 7:00 am with erosion control fabric, tarps, or a similar impervious material. This precaution will prevent males from burrowing into soils and subsequently being impacted by construction activities.

**Table 3. Types and areas of temporary and permanent impacts to Mt. Hermon June beetle habitat resulting from features of the proposed project.**

Project Activities	Type of Impact	Area of Impact	
		Square feet	Acres
Grading, Excavation, and Construction	Permanent	102,714	2.358
	<i>Subtotal Permanent</i>	<i>102,714</i>	<i>2.358</i>
Invasive plant removal and revegetation	Temporary	11,500	0.264
	<i>Subtotal Temporary</i>	<i>11,500</i>	<i>0.264</i>
<i>Grand Totals</i>		<i>114,214</i>	<i>2.622</i>

#### 4.2 Anticipated Take of Covered Wildlife Species

Since there are no accurate estimates of the numbers of MHJB that reside at the proposed project site, it is not possible to quantify the exact number of individual animals that could be taken by the removal of its degraded habitat within the impact area. For these reasons, the level

of take of the MHJB is expressed as the affected acreage, i.e., the 2.622-acre impact area of the property. Thus, take due to injury or mortality of MHJB life stages could result from disturbance to approximately 2.622-acre of degraded habitat within the impact area.

### **4.3 Effects on Critical Habitat**

Critical habitat has not been designated for the MHJB. Thus, the proposed project will not cause any impacts to critical habitat. The Zayante Sandhills Conservation Bank is located within the critical habitat (USFWS 2001) for the federally-listed endangered Zayante band-winged grasshopper (*Trimerotropis infantilis*). The Zayante band-winged grasshopper is not covered in this HCP because suitable habitat for this species does not exist at this project site (Arnold, personal observation).

### **4.4 Cumulative Impacts**

The USFWS has recently published notices in the Federal Register for several other small projects in the Zayante Sandhills that include new residential construction, plus remodels and additions to existing homes. Older HCPs that were previously approved in the sandhills included sand mining at the now closed Hanson Aggregates' Felton Sand Plant and at the Quail Hollow Quarry, and two small development projects for single-family homes in Scotts Valley. As of October 2011, residents of 11 sandhill neighborhoods are able to participate in the Interim Programmatic HCP (IPHCP) that was approved by the County of Santa Cruz, the City of Scotts Valley, and USFWS. However, The Terrace of Scotts Valley is not eligible to participate in the IPHCP because the amount of ground disturbance exceeds the 15,000 ft.<sup>2</sup> limit.

Impacts of the proposed townhouse project on the long term persistence of the MHJB are low because of the degraded quality of the habitat there, apparent absence of Zayante sands at the project site, and its location within an existing residential and commercial neighborhood. These losses are not expected to affect the range-wide survival of the beetle due to the occurrence and abundance of this species and its habitat at several nearby locations, as well as elsewhere throughout its entire geographic range. Furthermore, MHJB has been observed inhabiting soils in residential yards and less disturbed habitats that occur in close proximity to the townhouse project site (Arnold, personal observation), so it can presumably co-exist in such habitat once soil disturbance has ceased. Thus, some MHJBs may ultimately recolonize the less disturbed and revegetated portions of the impact area, where loose, sandy soils remain after all construction activities have been completed.

Future commercial development, residential additions and remodels in the surrounding neighborhood would reduce the amount of available habitat for the beetle. Nonetheless, significant portions of the sandhills in the Scotts Valley area have been protected and support populations of the endangered beetle, including the former Hansen Quarry off of Mt. Hermon

Road.

## Section 5

# Conservation Program/Measures to Minimize and Mitigate for Impacts

### 5.1 Biological Goals

Section 10(a)(2)(A) of the Act requires that an HCP specify the measures that the permittee will take to minimize and mitigate to the maximum extent practicable the impacts of the taking of any federally listed animal species as a result of activities addressed by the plan. As part of the "Five Point" Policy adopted by the USFWSs in 2000, HCPs must also establish biological goals and objectives (65 *Federal Register* 35242, June 1, 2000). The purpose of the biological goals is to ensure that the operating conservation program in the HCP is consistent with the conservation and recovery goals established for the species. The goals are also intended to provide to the applicant an understanding of why these actions are necessary. These goals are developed based upon the species' biology, threats to the species, the potential effects of the covered activities, and the scope of the HCP.

The following biological goals and objectives were developed based on the MHJB's biology and potential impacts of the covered activities within the scope of this HCP. They include on-site measures that will minimize take of the MHJB at the project site and off-site measures that will protect habitat with high conversation value for the beetle in perpetuity.

**Goal 1: Avoid and minimize, to the extent practical, take of the MHJB within the project site.**

Objective 1.1: Cover exposed soils nightly if construction activities occur during the MHJB's flight season (mid-May through mid-August).

Objective 1.2: Revegetate portions of the project site that are temporarily disturbed due to the project with plant taxa indigenous to the Zayante Sandhills and avoid landscaping with turf grass, weed matting, aggregate, and mulch.

Objective 1.3: Minimize outdoor night lighting during the flight season of the MHJB or use light bulbs that are certified to not attract nocturnally-active insects.

**Goal 2: Protect habitat for the MHJB at an off-site location with high conservation value for the beetle.**

Objective 2.1: Provide funds, through the purchase of conservation credits at the Ben Lomond Sandhills Preserve of the Zayante Sandhills Conservation Bank, to protect, manage, and monitor habitat of the MHJB in perpetuity.

**5.2 Minimization and Mitigation Measures**

Section 10 of the Endangered Species Act requires that all applicants submit HCPs that “minimize and mitigate” the impacts of take authorized by an incidental take permit, and that issuance of the permit will not “appreciably reduce the likelihood of the survival and recovery of the species in the wild.” In general, HCPs should include mitigation programs that are based on sound biological rationale, practicable, and commensurate with the impacts of the project on species for which take is requested. Additionally, the USFWS encourages applicants to develop HCPs that contribute to the recovery of a listed species. If the proposed project is expected to result in permanent habitat loss, then the mitigation strategy must include compensatory mitigation consisting of the permanent preservation of suitable habitat or similar measures.

In accordance with these guidelines and the requirements of the Endangered Species Act, the conservation program of this HCP is intended to achieve its biological goals and objectives and to ensure that the impacts of covered activities on the MHJB are minimized and mitigated to the maximum extent practicable.

**5.2.1 Measures to Minimize Impacts**

The following measures are designed to minimize the indirect effects of the covered activities on the MHJB by reducing incidental take of individuals and the degradation of habitat adjacent to the project area and existing development.

**5.2.1.1 Delineate Boundaries of the Impact Area**

Temporary fencing and signs will be erected before any vegetation clearing, or excavation activities occur to clearly delineate the boundaries of the project’s impact area. Warning signs will be posted on the temporary fencing to alert excavators and other construction workers not to proceed beyond the fence. All protective fencing will remain in place until all construction and other site improvements have been completed. Signs will include the following language:

**"NOTICE: SENSITIVE HABITAT AREA. DO NOT ENTER."**

**5.2.1.2 Cover Exposed Soils**

Adult males of the MHJB actively search for breeding females during the evenings between about May 15 and August 15. During this period, both sexes burrow into duff and soils during the daytime. If grading or construction occurs during any portion of the MHJB flight season, all exposed soils within the impact area will be covered by tarps, plywood, erosion control fabric, or another suitable impervious material. Exposed sandy soils should be covered between the hours of 7pm and 7am daily. Once grading has been completed, gravel will be laid in the locations of the planned new road, driveways, and pads for the new townhomes. These materials will prevent adult males from burrowing into the exposed soils and subsequently being injured or killed by soil disturbance (i.e., digging, grading, covering, etc.).

#### **5.2.1.3 Relocate Observed Life Stages of the Covered Species**

During the pre-construction training session, all construction personnel will be shown pictures of the MHJB larval and adult life stages, and instructed to cease construction activities and call an entomologist qualified and permitted to handle and translocate the endangered beetle should any be observed during the covered activities. If the life stage is buried, then it will be reburied outside of the impact area at the approximate depth at which it was unearthed. If an adult MHJB is found on the soil surface, then it will be relocated and released outside of the impact area on the soil surface. This measure will minimize take of the MHJB by reducing the number of larvae and adults that could otherwise be injured or killed as a result of project-related activities.

#### **5.2.1.4 Dust Control**

Dust can clog the spiracles of adult beetles and accumulated dust on plants may cause them to experience a decline in vigor or even die, which would affect the roots that larvae of the MHJB may feed upon. Appropriate dust control measures, such as periodically wetting down the work areas, will be used as necessary during excavation for the new foundations in of the impact area, site grading, or any other project-related activities that generate dust.

#### **5.2.1.5 New Outdoor Lighting**

Adult MHJBs are active at dusk and may be distracted by incandescent, mercury vapor, sodium, and black light sources, which can disrupt normal behaviors and breeding activities. Thus any outdoor lighting installed as part of this project will use bulbs certified to not attract nocturnal insects.

#### **5.2.1.6 Landscaping Elements That Degrade MHJB Habitat**

Because MHJB adults emerge from the soil to attract and search for mates, turf grass, dense ground covers (such as ivy), weed matting, aggregate, and mulch can degrade habitat conditions and will not be used in this project.

### **5.2.2 Measures to Mitigate Unavoidable Impacts**

To mitigate for unavoidable impacts of their project, Apple Homes will purchase conservation credits and revegetate the area of temporary habitat loss with native sandhill plants. The next two sections describe these mitigation measures in more detail.

#### **5.2.2.1 Purchase Conservation Credits at the Zayante Sandhills Conservation Bank**

Project construction will temporarily and permanently remove 114,214 ft.<sup>2</sup> (2.622 acres) of habitat that could potentially be used by the MHJB (Table 3). Apple Homes will compensate for these impacts by purchasing at a 1:1 ratio, a total of 114,214 ft.<sup>2</sup> (2.622 acres) of conservation credits from the Ben Lomond Sandhills Preserve of the Zayante Sandhills Conservation Bank. This level of mitigation (i.e., conservation credits) is clearly commensurate with the level of impacts to MHJB habitat at this property because the habitat quality at the conservation bank is prime compared to the degraded habitat within the impact area of this property; thus the conservation value of the bank habitat is much greater than that of the impact area.

The Zayante Sandhills Conservation Bank was approved by the USFWS and the County of Santa Cruz to provide mitigation for impacts to the MHJB and other special-status plants and animals of the Zayante sandhills from projects within the Felton USGS quad. Figure 3 is a map that illustrates the location of the Ben Lomond Sandhills Preserve of the Zayante Sandhills Conservation Bank operated by PCO, LLC and its service area. A copy of the sales agreement between Apple Homes and PCO, LLC is attached to this HCP in Appendix D.

The operator of the conservation bank, PCO, LLC, will be responsible for all species monitoring, habitat management, and other conservation related activities that occur at the Ben Lomond Sandhills Preserve. An annual monitoring report will be prepared for submission to the USFWS and the County of Santa Cruz as described in Section 5.3.2 of this HCP.

#### **5.2.2.2 Revegetation of Temporarily Disturbed Portions of the Project Site**

Portions of the impact area that are temporarily disturbed will be revegetated with plants native to the Zayante sandhills, including Ponderosa Pines and Coast Live Oak trees. However, because of the uncertainty about future vegetation pruning or clearing activities that may be required by City of Scotts Valley Fire Department, the permanent protection of temporarily-disturbed portions the project site that will be revegetated cannot be assured. Also, the revegetated portions will probably be too small for a land trust to accept a conservation easement for their protection. Finally, no post-construction monitoring will occur in the protected habitat

area of the project site. It is for these reasons that off-site mitigation is being utilized to compensate for all of the anticipated and potential project-related impacts.

### **5.3 Monitoring**

Monitoring tracks compliance with the terms and conditions of the HCP and permit. This project will include compliance, effects, and effectiveness monitoring. Compliance monitoring will track the permit holder's compliance with the requirements specified in the HCP and permit, as described below. Effects monitoring tracks the impacts of the covered activities on the covered species. Compliance and effects monitoring will be conducted by the permitted entomologist. All biological effectiveness monitoring, which tracks the progress of the conservation program in meeting the HCP's biological goals and objectives, will be conducted at the Zayante Sandhills Conservation Bank's Ben Lomond Sandhills Preserve, where the off-site mitigation will occur. This latter monitoring will be the responsibility of the bank operator.

#### **5.3.1 Construction and Compliance Monitoring**

Prior to construction, a USFWS-approved biologist will conduct a training session for all construction workers involved with the project. The program will include a brief presentation about the biology of the MHJB, its habitats, and the terms of the HCP. The orientation will also inform equipment operators and other workers about the impact area's boundaries, equipment storage locations, materials laydown areas, construction activity restrictions, and identify other habitat protection and work procedures. Workers will be directed to immediately cease work if a MHJB is observed within the designated impact area and contact the biologist who can handle and relocate the beetle as authorized by the USFWS.

Throughout the construction and the other covered activities the USFWS-approved biologist will conduct regular inspections of the project site during all phases of the project to ensure that the perimeter fencing and signs that delineate the impact area remain in place, that exposed soils are properly covered by impervious materials, and to salvage and relocate and MHJB life stages.

#### **5.3.2 Effects Monitoring**

To quantify the amount of incidental take at the end of the project, the USFWS-approved biologist will calculate the area of soil disturbance (i.e., incidental take), and tally the number of MHJB life stages that were found and translocated during the project. This information will be summarized in the Compliance Monitoring Report (see Section 5.4.1).

#### **5.3.3 Access to Project Site**

The permit holder shall allow representatives from the USFWS access to the project site

to monitor compliance with the terms and conditions of this HCP and the effects of the covered activities of this project.

## **5.4 Reporting**

### **5.4.1 Compliance Report**

By January 31<sup>st</sup> following each year of the permit, the USFWS-approved biologist will submit a report to the Ventura Fish and Wildlife Office of the USFWS and the City of Scotts Valley Planning Department to document the status of the project. The report will provide the following information:

1. Brief summary or list of project activities accomplished during the reporting year (e.g. this includes development/construction activities, and other covered activities)
2. Project impacts (e.g. number of acres graded, number of buildings constructed, etc.)
3. Description of any take that occurred for each covered species (includes cause of take, form of take, take amount, location of take and time of day, and deposition of dead or injured individuals)
4. Brief description of conservation strategy implemented
5. Monitoring results (compliance, effects and effectiveness monitoring) and survey information (if applicable)
6. Description of circumstances that made adaptive management necessary and how it was implemented. Please include a table including the cumulative totals; by reporting period all adaptive management changes to the HCP, including a very brief summary of the actions.
7. Description of any changed or unforeseen circumstances that occurred and how they were dealt with
8. Funding expenditures, balance, and accrual
9. Description of any minor or major amendments.

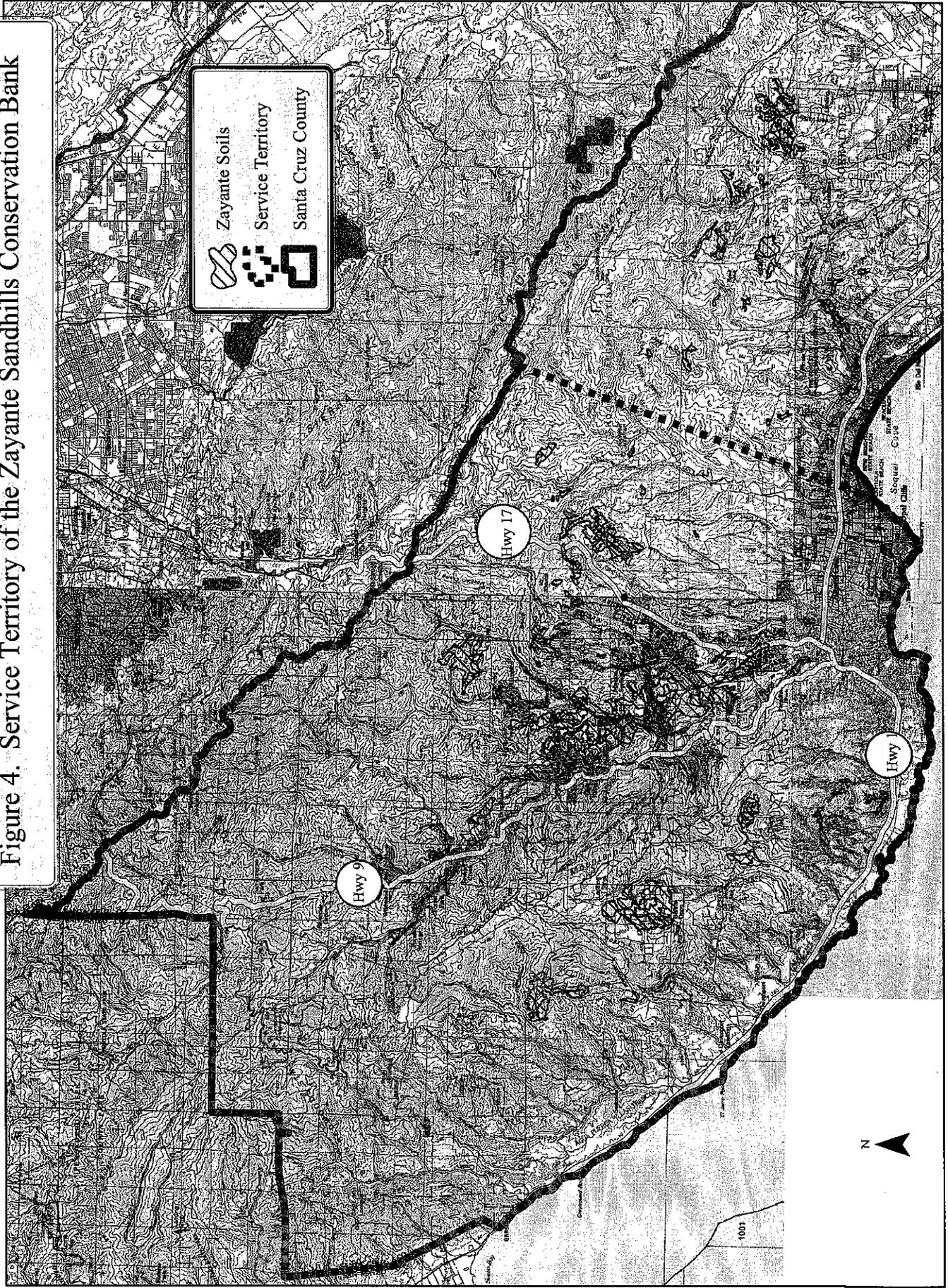
### **5.4.2 Annual Mitigation Monitoring Reports**

PCO, LLC must submit an annual monitoring report to the Ventura Fish and Wildlife Office of the USFWS, describing activities performed to benefit the MHJB as part of its agreement to sell conservation credits and operate a conservation bank. Thus, mitigation monitoring reports will be prepared annually by PCO, LLC. This report shall be submitted to USFWS by December 31<sup>st</sup> of the monitoring year. This report shall include:

1. a general assessment of the condition of the habitat at the Ben Lomond Sandhills Preserve;
2. a description of all management actions taken on the Preserve along with an assessment of their effectiveness toward enhancing the biological goals and objectives;
3. a description of any problems encountered in managing the Preserve;
4. results of monitoring studies for the endangered species and/or communities conducted

- during the year and an assessment of their implications for the biological goals and objectives; and
5. a description of other activities designed to enhance the Preserve.

Figure 4. Service Territory of the Zayante Sandhills Conservation Bank



## Section 6 **Plan Implementation**

### **6.1 Plan Implementation**

Apple Homes is the owner of the property and is the applicant for the incidental take permit. Apple Homes will also purchase of conservation credits needed to complete the mitigation strategy. The schedule of implementation of the covered activities will depend on the timing of issuance of the incidental take permit and local building permits, as well as seasonal constraints.

### **6.2 Changed Circumstances**

#### **6.2.1 Summary of Circumstances**

Section 10 regulations [(69 *Federal Register* 71723, December 10, 2004 as codified in 50 Code of Federal Regulations (C.F.R.), Sections 17.22(b)(2) and 17.32(b)(2))] require that an HCP specify the procedures to be used for dealing with changed and unforeseen circumstances that may arise during the implementation of the HCP. In addition, the HCP No Surprises Rule [50 CFR 17.22 (b)(5) and 17.32 (b)(5)] describes the obligations of the permittee and the USFWS. The purpose of the No Surprises Rule is to provide assurance to the non-Federal landowners participating in habitat conservation planning under the Act that no additional land restrictions or financial compensation will be required for species adequately covered by a properly implemented HCP, in light of unforeseen circumstances, without the consent of the permittee.

Changed circumstances are defined in 50 CFR 17.3 as changes in circumstances affecting a species or geographic area covered by an HCP that can reasonably be anticipated by plan developers and the USFWS and for which contingency plans can be prepared (e.g., the new listing of species, a fire, or other natural catastrophic event in areas prone to such event). If additional conservation and mitigation measures are deemed necessary to respond to changed circumstances and these additional measures were already provided for in the plan's operating conservation program (e.g., the conservation management activities or mitigation measures

expressly agreed to in the HCP or IA), then the permittee will implement those measures as specified in the plan. However, if additional conservation management and mitigation measures are deemed necessary to respond to changed circumstances and such measures were not provided for in the plan's operating conservation program, the USFWS will not require these additional measures absent the consent of the permittee, provided that the HCP is being "properly implemented" (properly implemented means the commitments and the provisions of the HCP and the IA have been or are fully implemented).

Foreseeable changed circumstances within the project area of this HCP including the following:

- the new listing of a species;
- the discovery of the Zayante Band-winged grasshopper, Santa Cruz wallflower, Ben Lomond spineflower, Ben Lomond buckwheat, or Santa Cruz Cypress within the impact area of the project site; or
- natural disasters.

#### **6.2.2 Listing of New Species**

If a new species that is not covered by the HCP but that may be affected by activities covered by the HCP is listed under the Act during the term of the section 10(a)(1)(B) permit, the section 10 permit will be reevaluated by the USFWS and the HCP covered activities may be modified, as necessary, to insure that the activities covered under the HCP are not likely to jeopardize or result in the take of the newly listed species or adverse modification of any newly designated critical habitat. Apple Homes shall implement the modifications to the HCP covered activities identified by the USFWS as necessary to avoid the likelihood of jeopardy to or take of the newly listed species or adverse modification of newly designated critical habitat. Apple Homes shall continue to implement such modifications until such time as the Permittee has applied for and the USFWS has approved an amendment of the Section 10(a)(1)(B) permit, in accordance with applicable statutory and regulatory requirements, to cover the newly listed species or until the USFWS notifies Apple Homes in writing that the modifications to the HCP covered activities are no longer required to avoid the likelihood of jeopardy of the newly listed species or adverse modification of newly designated critical habitat.

The occurrence of a newly listed species at Apple Homes's project site during the 5-year permit is unlikely due to the small size of the project site and impact area, the degraded habitat conditions there and in the surrounding neighborhood, and the short duration of the incidental take permit.

### **6.2.3 Discovery of Other Currently Listed Species at the Project Site**

In the unlikely event that one or more currently listed endangered or threatened species are found at the project site, the applicant will cease project activities that would likely result in take of the newly-discovered listed species and apply for a permit amendment. Because of the degraded habitat conditions within the impact area of the project site, the distance to nearest known populations, and the short duration of the project permit, this circumstance is unlikely to actually happen.

### **6.2.4 Natural Disasters**

As to other potential changed circumstances, Apple Homes has applied for a permit for incidental take of the MHJB throughout the entire 2.622-acre impact area at this project site. Therefore, Apple Homes does not anticipate that any additional changed circumstances will occur during the 5-year life of the incidental take permit in the area covered by this HCP that will result in unanticipated levels of take of the covered species.

Additional changed circumstances; e.g., wildfire, erosion, extended drought, earthquake or other natural disaster, may occur at the off-site conservation bank. However, the short duration of the permit (i.e., five years) lessens the likelihood that one of these phenomena may cause substantial changes to the off-site conservation bank during the permit period. Furthermore, some types of changed circumstances, for example a wildfire, may actually enhance habitat values in the long term because Ponderosa Pine and other members of the indigenous sandhill plant communities are adapted to, and regenerate well after such fires. Winter storms or earthquakes could cause landslide or erosion problems in habitat areas that would require subsequent repairs, such as slope stabilization, repair of fencing, and revegetation. A portion of the fees paid by the permittee for the MHJB conservation credits include contingency funds to cover the costs of unexpected repairs, or habitat restoration that may be required as a result of any natural disasters occurring at the off-site conservation bank.

### **6.3 Unforeseen Circumstances**

Unforeseen circumstances are defined in 50 CFR 17.3 as changes in circumstances that affect a species or geographic area covered by the HCP that could not reasonably be anticipated by plan developers and the USFWS at the time of the HCP's negotiation and development and that result in a substantial and adverse change in status of the covered species. The purpose of the No Surprises Rule is to provide assurances to non-Federal landowners participating in habitat conservation planning under the Act that no additional land restrictions or financial compensation will be required for species adequately covered by a properly implemented HCP, in light of unforeseen circumstances, without the consent of the permittee.

In case of an unforeseen event, the permittee shall immediately notify the USFWS staff who have functioned as the principal contacts for the proposed action. In determining whether

such an event constitutes an unforeseen circumstance, the USFWS shall consider, but not be limited to, the following factors: size of the current range of the affected species; percentage of range adversely affected by the HCP; percentage of range conserved by the HCP; ecological significance of that portion of the range affected by the HCP; level of knowledge about the affected species and the degree of specificity of the species' conservation program under the HCP; and whether failure to adopt additional conservation measures would appreciably reduce the likelihood of survival and recovery of the affected species in the wild.

If the USFWS determines that additional conservation and mitigation measures are necessary to respond to the unforeseen circumstances where the HCP is being properly implemented, the additional measures required of the permittee must be as close as possible to the terms of the original HCP and must be limited to modifications within any conserved habitat area or to adjustments within lands or waters that already set-aside in the HCP's operating conservation program. Additional conservation and mitigation measures shall involve the commitment of additional land or financial compensation or restrictions on the use of land or other natural resources otherwise available for development or use under original terms of the HCP only with the consent of the permittee.

Thus, in the event that unforeseen circumstances adversely affecting the MHJB occur during the term of the requested incidental take permit, Apple Homes would not be required to provide additional financial mitigation or implement additional land use restrictions above those measures specified in the HCP, provided that the HCP is being properly implemented. This HCP expressly incorporates by reference the permit assurances set forth in the revised (USFWS 2004) Habitat Conservation Plan Assurances ("No Surprises") Rule (50 CFR Part 17).

## **6.4 Amendments**

### **6.4.1 Minor Amendments**

Minor amendments are changes that do not affect the scope of the HCP's impact and conservation strategy, change amount of take, add new species, and change significantly the boundaries of the HCP. Examples of minor amendments include correction of spelling errors or minor corrections in boundary descriptions. The minor amendment process is accomplished through an exchange of letters between the permit holder and the USFWS's Ventura Field Office.

### **6.4.2 Major Amendments**

Major amendments to the HCP and permit are changes that do affect the scope of the HCP and conservation strategy, increase the amount of take, add new species, and change significantly the boundaries of the HCP. Major amendments often require amendments to the USFWS's decision documents, including the NEPA document, the biological opinion, and

findings and recommendations document. Major amendments will often require additional public review and comment.

## **6.5 Suspension/Revocation**

The USFWS may suspend or revoke their respective permits if Apple Homes fails to implement the HCP in accordance with the terms and conditions of the permits or if suspension or revocation is otherwise required by law. Suspension or revocation of the Section 10(a)(1)(B) permit, in whole or in part, by the USFWS shall be in accordance with 50 CFR 13.27-29, 17.32 (b)(8).

## **6.6 Permit Renewal**

The applicant requests a permit duration of five (5) years. This period of time should ensure that the covered activities associated with the proposed project can be completed prior to permit expiration.

Upon expiration, the Section 10(a)(1)(B) permit may be renewed without the issuance of a new permit, provided that the permit is renewable, and that biological circumstances and other pertinent factors affecting covered species are not significantly different than those described in the original HCP. To renew the permit, Apple Homes shall submit to the USFWS, in writing:

- a request to renew the permit, along with reference to the original permit number;
- certification that all statements and information provided in the original HCP and permit application, together with any approved HCP amendments, are still true and correct, and inclusion of a list of changes;
- a description of any take that has occurred under the existing permit; and
- a description of any portions of the project still to be completed, if applicable, or what activities under the original permit the renewal is intended to cover.

If the USFWS concurs with the information provided in the request, it shall renew the permit consistent with permit renewal procedures required by Federal regulation (50 CFR 13.22). If Apple Homes files a renewal request and the request is on file with the issuing USFWS office at least 30 days prior to the permits expiration date, the permit shall remain valid while the renewal is being processed, provided the existing permit is renewable. However, Apple Homes may not take listed species beyond the quantity authorized by the original permit. If Apple Homes fails to file a renewal request within 30 days prior to permit expiration, the permit shall become invalid upon expiration. Apple Homes and the conservation bank operator must have complied with all annual reporting requirements to

qualify for a permit renewal.

## **6.7 Permit Transfer**

In the event of a sale or transfer of ownership of the property during the life of the permit, the following will be submitted to the USFWS by the new owner(s): a new permit application, permit fee, a receipt for conservation credits purchased from the Zayante Sandhills Conservation Bank, and written documentation providing assurances pursuant to 50 CFR 13.25 (b)(2) that the new owner(s) will provide sufficient funding for the HCP and will implement the relevant terms and conditions of the incidental take permit, including any outstanding minimization and mitigation. The new owner(s) will commit to all requirements regarding the take authorization and mitigation obligations of this HCP unless otherwise specified in writing and agreed to in advance by the USFWS.

## Section 7 Funding

### 7.1 Costs of HCP Implementation

Costs to implement the conservation strategy described in this HCP are listed in Table 4.

<b>Table 4. Estimated costs to implement Apple Homes' conservation program.</b>					
Item or Activity	Conservation Strategy	Units		Costs (\$)	
		Type	Number	Per Unit	Total
<b>Minimization and Mitigation Measures</b>					
Minimization Measure 5.2.1.2	Install construction fencing	Construction fencing	2,500 ft.	Apple Homes has these materials	---
	Install signs	signs	30 signs	25.00	750.00
Minimization Measure 5.2.1.3	Cover exposed soils	Tarps, plastic sheeting, geojute, etc.	To be determined	Apple Homes has these materials	---
Minimization Measure 5.2.1.4	Relocate MHJB life stages	Labor/hrs.	100	200.00	20,000.00
Minimization Measure 5.2.1.5	Dust control	Spray water	100	20.00	2,000.00
Minimization Measure 5.2.1.6	Outdoor lights	Non-attracting insect light bulbs	25	10.00	250.00
Mitigation Measure 5.3.2.1	Compensation	Conservation credits	114,214	6.00	685,284.00
Mitigation	Revegetation	5-gal.	100	10	1,000.00

<b>Table 4. Estimated costs to implement Apple Homes' conservation program.</b>					
Item or Activity	Conservation Strategy	Units		Costs (\$)	
		Type	Number	Per Unit	Total
Measure 5.2.2.3	with sandhill plants	Plant stock			
<b>Subtotal</b>					<b>\$709,284.00</b>
<b>Monitoring</b>					
Compliance monitoring	USFWS-approved biologist to conduct compliance monitoring	Labor/hrs.	40	200	8,000.00
Effects monitoring	USFWS-approved biologist to conduct effects monitoring	Labor/hrs.	40	200	8,000.00
<b>Subtotal</b>					<b>\$16,000.00</b>
Reporting	USFWS-approved biologist to complete annual project reports	Labor/hrs./	40	200	8,000.00
<b>Subtotal</b>					<b>\$8,000.00</b>
<b>Grand Total</b>					<b>\$733,284.00</b>

## 7.2 Funding Source

The applicant, Apple Homes, will pay for all costs associated with implementing this HCP's conservation strategies, including minimization measures, conservation credits, plus effects and compliance monitoring as itemized in Table 4. In recognition of the fact that the costs for these activities in Table 4 are estimates, the actual incurred costs may be less or more than these estimates. However, if the actual costs for any of the aforementioned activities are higher than estimated in Table 4, Apple Homes agrees to pay the actual costs.

## 7.3 Funding Mechanism and Management

Apple Homes will provide all funds needed to implement the conservation program

measures itemized in Table 4. Apple Homes, the permit applicant, understands that failure to provide adequate funding and consequent failure to implement the terms of this HCP in full could result in temporary permit suspension or permit revocation.

To demonstrate its ability to cover these costs, Apple Homes will provide a bank statement or letter of credit to the USFWS. A copy of the sales receipt for the purchase of conservation credits will be provided to the USFWS prior to permit issuance and a copy will be included in this HCP (Appendix D).

## Section 8 Alternatives

### 8.1 Summary

Section 10(a)(2)(A)(iii) of the Endangered Species Act of 1973, as amended, [and 50 CFR 17.22(b)(1)(iii) and 17.32(b)(1)(iii)] requires that alternatives to the taking of species be considered and reasons why such alternatives are not implemented be discussed. Three alternatives for the proposed project are discussed.

### 8.2 Alternative #1: No Action

Under the No Action Alternative, construction of the new townhomes at Apple Homes' property would not occur and it would not request an incidental take permit, and an incidental take permit would not be issued by the USFWS. This property would remain vacant.

Furthermore, the conservation measures described in this HCP would not be implemented and the purchase of 114,214 conservation credits for the MHJB would not occur. This would reduce funding for preservation, management, and monitoring of the MHJB and its high quality sandhills habitat at the Ben Lomond Sandhills Preserve. Thus the No-Action Alternative is concluded to be of lesser conservation value to the covered species than the proposed project and accompanying HCP and does meet the goal of the applicant. For these reasons, it has been rejected.

### 8.3 Alternative #2: Redesigned Project (Reduced Take)

Under this alternative, the impact area of the construction project would be reduced at the project site, which presumably would result in reduced take of the MHJB. Since the project is proposed at a site that is not known to have Zayante sands, the applicant has already designed this project to minimize impacts to the MHJB and its habitat. Thus, the Redesigned Project Alternative is not practical and no reduced take can actually be realized. The proposed project provides greater habitat conservation benefits than the Redesigned Project Alternative. For these reasons the Redesigned Project Alternative has been rejected.

### 8.4 Alternative #3: Proposed Action

Under the Proposed Action Alternative, Apple Homes will complete the proposed construction of 20 new, townhomes as described in section 2. This alternative would require the issuance of a section 10(a)(1)(B) permit to allow construction of the project. The project would

cause the loss of approximately 114,214 ft<sup>2</sup> (2.622 acres) of degraded habitat for the MHJB and mortality of any beetles living within this impact area. However, the conservation measures proposed in this HCP would result in greater conservation value for the MHJB than either the No Action or Redesigned Project alternatives, while best meeting the needs of the applicant. Therefore, the Proposed Action is the preferred alternative.

## Section 9 References Cited

- Arnold, R.A. 2001. Letter report on MHJB presence-absence survey for the Scotts Valley LP's property located near Scotts Valley Drive and Mt. Hermon Road in Scotts Valley, CA. Letter dated 11 July 2001 and addressed to Mr. Dick Engelhard of the Equus Group. 3 pp.
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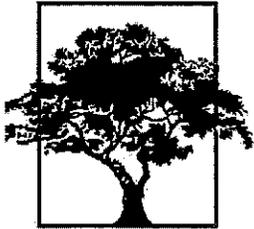
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Section 10  
**Appendices**

**Appendix A:**  
**Tree Report**



**James P. Allen  
& Associates**

**Terrace at Scotts Valley  
Scotts Valley Drive at Bean Creek Road  
APN 022-162-69**

**Tree Resource Evaluation/  
Construction Impact Assessment/  
Tree Protection Plan**



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**Prepared for  
Corrie Kates  
Scotts Valley Planning Department**

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Required Procedures.....	Pages 8, 9 and 10
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Appraised Value of Preserved Trees.....	Pages 12 and 13
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### Attachments

Tree Appraisal Worksheet

Tree Resource Inventory

Tree Location Map File

Construction Impact Assessment

Tree Protection Plan

File A, Sheets 1 through 5

File B, Sheets 1 through 5

## ASSIGNMENT/SCOPE OF SERVICES

Apple Homes Development proposes to build 20 townhomes on a currently undeveloped 2.3-acre parcel located on Scotts Valley Drive near the intersection of Bean Creek Road, APN 022-162-69. Tree resources on this site include native conifer and mixed hardwood species many of which meet “protected” criteria. A large number of acacia trees grow on the property that do not meet “protected” criteria. To ensure the protection of the tree resources and meet City requirements, Corrie Kates of the Scotts Valley Planning Department has requested the following tasks be completed.

- Locate, catalog and map trees/tree groups greater than 6 inches in trunk diameter growing within 20 feet of the Limits of Grading
  - NOTE: acacia trees will not be inventoried
- Identify trees as to size, species and trunk diameter
- Rate individual tree health/structure and preservation suitability as “good, fair or poor”
- Map Critical Root Zones
- Review grading, utility, drainage, building and landscape construction plans to determine potential impacts to trees
- Identify trees with active disease organisms or structural weakness that present risk to the redefined use of the site
- Provide recommendations for remedial treatments and maintenance to improve tree condition and decrease risk in preparation for construction
- Create tree preservation specifications including a protection-fencing plan
- Determine tree replacement requirements for “Protected” trees removed as outlined by Scotts Valley Municipal Code Section 17.44.080
- Appraise the value of “Protected” trees to be preserved
- Provide all findings in the form of a report accompanied by a Tree Location Map/Preservation Plan

## SUMMARY

Plans for this project have been reviewed and the known impacts to one hundred forty-five trees/tree groups within twenty feet of proposed grading limits have been assessed. In order to construct this project extensive grading, slope retention systems, drainage structures and site stabilization procedures are necessary. To construct the improvements as currently defined the removal of 71 trees/tree groups, 56 of which meet Protected criteria is necessary. Of the total number proposed for removal, 61 trees/tree groups are required to be removed due to construction impacts. The remaining 10 trees that comprise this removal total are dead, diseased, have fallen or are structurally unsound and should be removed to eliminate the risk to the redefined use of the site (see Summary Table on page 9).

Tree removal quantities were calculated anticipating the most dramatic level of impacts and greatest number of trees to be removed. Tree removal quantities may change once grade stakes are in place and actual impacts are known. If so, an addendum to this report will be submitted documenting actual totals of trees to be removed/preserved and necessary replacement tree planting.

City approved tree removal may require additional California Department of Forestry (CalFIRE) permits.

When all plans are finalized and grade stakes are in place, an accurate determination of construction impacts will be defined and necessary procedures within the Special Treatment Areas will be determined. Specific tree protection treatments and maintenance requirements will be identified at that time. All recommended treatments and procedures including the installation of protection fencing and rice straw bales are to be installed and inspected prior to grading equipment being brought on-site.

Compensation for the removal of 56 trees necessary to construct the project will include:

- Preservation and protection of retained trees/tree groups during construction
- Plan modifications to allow the preservation of Trees #20, 30, 31, 35, 44, 45 and 47 through 107
- Implementation of Special Treatments
- Tree planting as a component of the planned landscape to be maintained in perpetuity
- The planting of native shrubs between the project and Scotts Valley Drive for visual buffering/screening, air purification and noise attenuation
- Reforestation
  - Coast live oak acorns will be collected and propagated by the Project Developer in the Fall of 2014
  - The propagated seedlings along with acorns collected in the fall of 2015 will be planted during the 2015 winter

Replacement trees will be planted at a minimum 2:1 ratio, two trees replanted for each "Protected" tree removed as outlined by Scotts Valley Municipal Code Section 17.44.080.

The exact quantity of replacement trees will be determined after tree removal is completed in order to meet City mitigation requirements. Nursery stock and planting specifications, a Maintenance and Monitoring Plan and defined Success Criteria have been designed and should be implemented to insure the successful restoration of the lost canopy.

The total appraised value of the trees to be preserved is \$178,906. A retention bond in this amount shall be posted by the developer and held in trust by the City of Scotts Valley, as required by Scotts Valley Municipal Code Section 17.44.080.

In the event project management fails to implement recommended procedures and/or otherwise damage trees, the cost of implementation of recommended tree preservation treatments or appraised value of damage to these protected trees, resulting from construction activities shall be determined by the Project Arborist, monetary costs/fines assessed and deducted from the retention funds.

Site inspections will be performed by the Project Arborist<sup>1</sup> at defined intervals. Monitoring reports will be submitted to the City of Scotts Valley Planning Department at regular intervals.

The implementation of Special Treatments as defined within this document along with adherence to Tree Preservation Specifications are required to safeguard trees proposed for retention.

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<sup>1</sup> **Project Arborist:** The Consulting Arborist as an authorized representative of the owner and City, with the responsibility of periodic inspection of the project, contractor and subcontractors and contractor's equipment to determine compliance with the project specifications, the City of Scotts Valley tree preservation requirements and the cited professional standards.

## BACKGROUND

To complete the assessment, numerous site inspections were performed during the months of July and August, 2014. A preliminary grading plan dated June 20, 2014 was provided by David Dauphin, C2G Engineers with tree location data for approximately 30% of the trees inventoried. The remaining trees inventoried were “field located” by measuring or approximating distance from known features; existing buildings at the Shell Gas station, hardscape elements, the unimproved access road etc. and plotting the approximate tree trunk location on the map file. Numbered metal tags have been attached to the each tree’s trunk at six feet above grade. The corresponding numbers and tree locations are documented on the attached *Construction Impact Assessment Tree Location Map file “A”*.

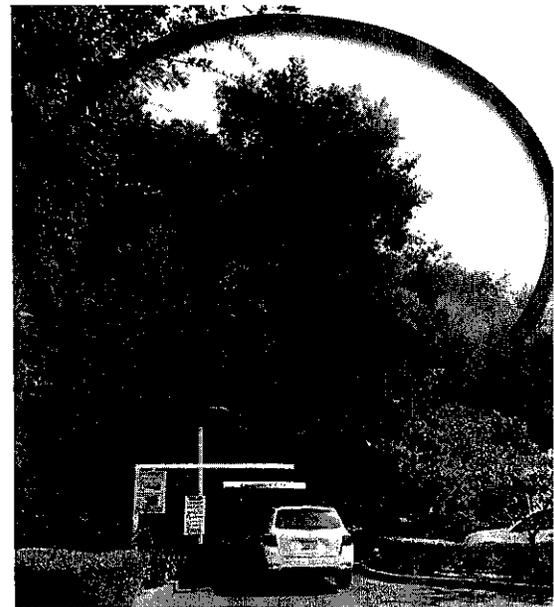
After the initial site inspection was completed, it was determined that several key trees would be severely damaged by necessary grading. Chris Perri, the Project Developer was made aware of this information and scheduled a meeting with Becky Dees the Project Geotechnical Engineer, David Dauphin of C2G the Project Civil Engineer and I to determine plan modifications to decrease tree related impacts. The decisions made at this meeting resulted a 15-foot buffer being created between grading limits and trees along the western boundary, adjacent to Scotts Valley Drive and the Shell Station. Additionally, grading limits were adjusted near **Trees #20, 31, 32, 40 and 41** to allow the retention of these trees. This plan dated August 20, 2014 was reviewed as the final grading plan for this project.

Detailed site, biotic, wildlife and forest system descriptions are provided in *The Terrace at Scotts Valley, Biological Report* prepared by Biotic Resources Group; Kathleen Lyons, Plant Ecologist with Dana Bland, Wildlife Biologist, August 20, 2014. For purposes of clarity and brevity, the information provided in the *Biological Report* will not be restated in this document.

Several of the inventoried trees stand along the southwestern property boundary belonging to the Shell Gas Station and Car Wash.



Many of these trees are in poor condition and unstable due to structural deficiencies, poor pruning practices and suppressed growing conditions. Several of the trees lean dramatically over the area where cars wait to enter and then exit the car wash facility. These trees present a High Risk of falling and injuring people and property.



Tree health and structural integrity were evaluated visually from the root crown (where the trunk meets natural grade), to the foliar canopy while standing on the ground. While more thorough techniques are available for inspection and evaluation, they were neither requested nor considered necessary or appropriate at this time. Periodic inspections to varying degrees are to be implemented before, during and after construction as detailed within this report.

Landscape plans, construction detail, utility and drainage plans as well as the soils report were not finalized and available for my review as of this date. These plans will be reviewed and commented on at a later date.

Based on this review, the impacts to the tree resources resulting from the proposed grading and construction have been assessed. Necessary tree removal was quantified at the most dramatic level, expecting the highest level of impacts and largest number of trees to be removed. It is anticipated the level of impacts will change when grade stakes are placed delineating actual grading limits. The exact locations of the proposed grading and other improvements will be reviewed and evaluated once the site staking is in place. There is a possibility that tree classification and recommended procedures will change once the exact positions of the proposed improvements are known. If additional tree removal is necessary or if tree removal requirements decrease, a confirming addendum will be prepared and submitted to the Scotts Valley City Planning Department.

## **OBSERVATIONS**

### **Tree Descriptions**

This site is populated with Ponderosa pine and oak woodland, oak/acacia woodland forest systems. The site, plant communities and biotic resources are described in detail the *Biological Report* prepared for this project by Biotic Resources Group dated August 20 of this year.

Native tree species inventoried on this site include:

- ponderosa pine (*Pinus ponderosa*)
- coast live oak (*Quercus agrifolia*)
- Pacific madrone (*Arbutus menziesii*)

Non-native tree species on the site include:

- acacia (*Acacia sp*)
- walnut (*Juglans sp.*)
- plum (*Prunus sp.*)

## TREE INVENTORY METHODOLOGY

The appended inventory lists information on 145 trees/tree groups growing within the 20 feet of the known limits of grading including; species, trunk diameter, health, structure, suitability for preservation, Critical Root Zone (CRZ) radius, construction impacts, observations, required procedures and whether the tree meets “protected” criteria per the Scotts Valley Municipal Code Section 17.44.080.

**Diameter:** is the width of the trunk measured at 4.5 feet above natural grade (ground level). This inventory comprises of individuals with diameters  $\geq 6$  inches and groups (sum of diameters) with diameters  $\geq 10$  inches at 4.5 feet above natural grade. For trees that were unable to be measured at 4.5 feet above natural grade, measurement heights are provided.

**Health, Structure and Preservation Suitability Inventory ratings** are based on the following criteria:

**Tree health and structure** are separate issues that are related since both are revealed by tree anatomy. A tree’s vascular system is confined in a thin layer of tissue between the bark and wood layers. This thin layer is responsible for transport of nutrients and water between the root system and the foliar canopy. When this tissue layer is functioning properly a tree has the ability to produce foliage (leaves). As long as the tree maintains a connected vascular system it may appear to be in good health.

When conditions conducive to decay are present, fungi, bacteria or poor compartmentalization, wood strength is degraded. As decay advances, the tree’s ability to continue standing is compromised. Thus, a tree can appear to be in good health, but have poor structure.

**Tree Health:** This rating is determined visually. Annual growth rates, leaf size and coloration are examined. Indications of insect activity, decay and dieback percentages are also used to define health ratings.

Trees in “**good**” health are full canopied, with dark green leaf coloration. Areas of foliar dieback or discoloration are less than 10% of the canopy. Dead material in the tree is limited to small twigs and branches less than one inch in diameter. There is no evidence of insects, disease or decay.

Trees with a “**fair**” health rating have from 10% to 30% foliar dieback, with faded coloration, dead wood larger than one inch, and/or visible insect activity, disease or decay.

Trees rated as having “**poor**” health have greater than 30% foliar dieback, dead wood greater than two inches, severe decay, disease or insect activity.

**Tree Structure:** This rating is determined by visually assessing the roots, root crown (where the trunk meets the ground), supporting trunk, and branch structure. The presence of decay can affect both health and structural ratings.

Trees that receive a “**good**” structural rating are well rooted, with visible taper in the lower trunk, leading to buttress root development. These qualities indicate that the tree is solidly rooted in the growing site. No structural defects such as codominant stems (two stems of equal size that emerge from the same point), poorly attached branches, cavities, or decay are present.

Trees that receive a “**fair**” structural rating may have defects such as poor taper in the trunk, inadequate root development or growing site limitations. They may have multiple trunks, included bark (where bark turns inward at an attachment point), or suppressed canopies. Decay or previous limb loss (less than 2 inches in diameter) may be present in these trees. Trees with fair structure may be improved through proper maintenance procedures.

**Poorly** structured trees display serious defects that may lead to limb, trunk or whole tree failure due to uprooting. Trees in this condition may have had root loss or severe decay that has weakened their support structure. Trees in this condition can present a risk to people and structures. Maintenance procedures may reduce, but not eliminate these defects.

**Suitability for preservation:** This rating evaluates tree health, structure, species characteristics, age and potential longevity.

Trees with a “**good**” rating have adequate health and structure with the ability to tolerate moderate impacts and thrive for their safe, useful life expectancy.

A “**fair**” rating indicates health or structural problems have the ability to be corrected. They will require more monitoring and intense management with an expectation that their lifespan will be shortened by construction impacts.

Trees with a “**poor**” rating possess health or structural defects that cannot be corrected through treatment. Trees with poor suitability can be expected to continue to decline regardless of remedies provided. Species characteristics may not be compatible with redefined use of the area. Species which are non-native and unusually aggressive are considered to have a poor suitability rating.

**Critical Root Zone:** Individual tree root systems provide anchorage, absorption of water/minerals, storage of food reserves and synthesis of certain organic materials necessary for tree health and stability. The Critical Root Zone (CRZ) is the species-specific amount of roots necessary to continue to supply these elements essential for each tree to stand upright and maintain vigor. This distance reflects the minimum footage measurement from the trunk required for the protection of the tree’s root zone. Construction activities proposed within these areas are subject to specific review and the implementation of recommended special treatments.

## **DESCRIPTION OF DEVELOPMENT IMPACTS**

This section describes what procedures are proposed near the individual tree. The influences the proposed construction activities will have on the tree are classified as **None, Low, Moderate** or **High**. These classifications are defined as follows:

**NONE**, the tree is not near the impact area of the proposed construction.

**LOW**, adverse affects from the proposed construction activities are minimal.

**MODERATE**, this level of impacts will result in loss in tree vigor and/or stability. Recommended procedures must be implemented to decrease these impacts.

**HIGH**, requiring tree removal or the understanding that premature tree mortality can be anticipated. Mitigation is required for trees subject to this level of impacts.

Site inspections and review of the plans as presented identified numerous construction impacts to individuals. The construction of this project as presented requires the following procedures:

- **Grading for site stabilization, parking lot and building construction as well as trenching for retaining wall, foundation, drainage and utility line construction.** These procedures require alteration of natural grade in the form of cut and/or fill (described below) at the defined “Limits of Grading”. Roots shattered during this process provide openings for opportunistic decay causing organisms degrading tree support systems and vigor.
- **Alteration of natural grade**
  - Cuts, lowering of natural grade, require the removal of soil until the desired elevation is reached. A cut within the trees Critical Root Zone can remove non-woody and woody roots. Non-woody (absorbing) roots are responsible for transporting moisture and nutrients necessary for maintaining tree health. More significant cuts remove woody roots that provide structural support, compromising the tree’s ability to stand upright.
  - Fill, increasing natural grade, often requires an initial cut to “knit in” and stabilize the material. This material is applied in layers and compacted in the process. Compaction breaks down soil structure by removing air and adding moisture. Anaerobic conditions may develop, promoting decay. Absorbing roots can suffocate from lack of oxygen. Structural roots may be compromised as a result of the decay.
- **Drainage structures and Utility line placement.** Necessary drainage structures and utility lines are to be consciously placed to avoid the Critical Root Zones of the preserved trees or brought to the attention of the Project Arborist to allow for preconstruction root severance along placement lines.
- **Planned Landscape Installation** typically requires the import of topsoil, rototilling the top 8 inches of native soils, digging planting holes, trenching for irrigation lines and increased water supply for establishing new plantings. Increased disturbance in the Critical Root Zone and elevated water levels will stress mature trees. It is recommended that landscape features planned within Critical Root Zones avoid the above-described procedures.

## REQUIRED PROCEDURES

The following are procedures are recommended within Special Treatment Areas defined on the attached to maintain tree vigor while reducing construction related impacts. Procedures will be determined by the Project Arborist once grade stakes have been set and impacts are understood.

### Special Treatments

**Reduce Grading Limits** within Critical Root Zones where possible.

**Preconstruction root exploration** is necessary for trees adjacent to trenching, grade reduction or retaining wall systems that require exposure or removal of soil from designated Critical Root Zones. Roots should be located using non-invasive procedures. Exploration can be done either with a probe, by hand, using small tools or an AirSpade<sup>®</sup>. This tool uses compressed air to displace soil, exposing roots, without damage. Once exposed, roots can be examined and determinations can be made regarding the feasibility of removal or severance. If roots encountered are less than two inches in diameter, they can be pruned following the guidelines defined below and traditional footings may be used. If roots encountered are greater than two diameter inches are unearthed they must be preserved, protected and bridged.

**Preconstruction root pruning** is to be performed by skilled labor. Roots are to be pruned off cleanly. Bark should adhere to the wood without tearing. Wood fibers should remain intact without shattering. When completed, the pruned portions should be covered with untreated burlap or similar absorptive material and kept constantly moist. The following tools (only) may be used for pruning of roots:

- Hand-pruners
- Loppers
- Handsaw
- Reciprocating saw
- Chainsaw

### **Mulching**

A 4-6 inch layer of tree chip mulch shall be applied within the Tree Preservation Zones (TPZ). Maintain a 12-inch distance from tree trunks that is free of chips or organic material or excess soil accumulation

**Supplemental Irrigation** shall be provided using “soaker” hoses or similar method of slow delivery to maintain soil moisture levels. If a recycled water supply line is not available, a water trunk can apply irrigation. Supplemental irrigation requirements shall be determined by the Project Arborist and will be required prior to and after completion of the grading.

**Maintenance procedures** are those, which are necessary to decrease risk of falling branches, provide re-enforcement for weak branch junctures and improve tree health/stability.

- **Stabilization Cabling** has been recommended for **Trees # 20, 36, 68, 81, 83, 85, 89 and 102.**
  - Cables should be installed between the weakly attached stems using the following or comparable hardware:
    - 5/8 or 3/4 inch “eye” lag bolts
    - 1/4 inch Extra High Strength cable
    - Pre-formed grips with thimbles
- **Pruning** to remove dead branches has been recommended to reduce potential health and safety hazards that persisting dead branches pose, such as decay, attracting harmful insects and injury from falling branches.
  - Each tree to be preserved should have dead/broken branches greater than 2-inches in diameter removed
- **Clearance pruning** may be required to allow vertical space for equipment access and building construction. A minimum number of branches are to be removed to provide this space. Individual trees requiring clearance pruning will be identified by the Project Arborist after the vertical elements are defined.
  - Pruning should not remove more foliage than absolutely necessary to accommodate proposed construction as determined by the Project Arborist.

**Monitor Stability** is recommended for trees with obvious structural weaknesses

**Necessary Tree Removal** is to be performed in a sectional manner in order to avoid damaging surrounding trees and landscape. Locations of trees to be removed are documented in the Inventory and on the *Construction Impact Assessment Tree Location Map file “A”*.

- **Removal due to Construction Impacts** is required for trees that are in direct conflict with the proposed building footprints where plans cannot be modified.
- **Removals due to Condition** recommendations are based upon the combination of current health, structural stability, preservation suitability ratings, failure potential and general species characteristics. There are currently several trees at risk of failure and present extreme hazards to people and property.

**Terrace at Scotts Valley  
Tree Removal Summary Table 2014**

Number of trees/tree groups inventoried	Trees proposed for removal	Number of trees proposed for Removal due to Construction Impacts	Number of trees proposed for Removal due to Construction Impacts that meet "Protected" criteria	Number of Trees proposed for Removal due to poor condition, disease or instability	Trees/Tree Groups proposed for Removal due to Condition that meet "Protected" criteria	Trees/Tree Groups proposed that meet "Protected" criteria that require replacement at a 2:1 ratio
145	71	61	50	10, 4 are dead	6	56

**Stump removal** will be performed on each tree removed by "grinding" to a minimum depth of 18 inches or digging them out with the backhoe or an excavator when in conflict with proposed grading. If removed trees are outside of grading limits, stumps may be left in place.

City approved tree removal may require additional California Department of Forestry permits.

**Tree Maintenance Contractors qualifications:**

A qualified Certified Arborist, state licensed and insured for general liability and workers compensation should be contracted to perform the above-described work in compliance with the most current versions of the following industry standards:

- American National Standards Institute, *A300 for Tree Care Operations-Tree, Shrub and Other Woody Plant Maintenance-Standard Practices.*
  - (Part 1)-2001 Pruning
  - (Part 3)-2007 Support Systems, Cabling, Bracing and Guying
- American National Standards Institute *Z133.1-1994 for Tree Care Operations- Pruning, Trimming, Repairing, Maintaining, and Removing Trees and Cutting Brush-Safety Requirements*
- International Society of Arboriculture: *Best Management Practices (Pruning & Cabling)*

**TREE REPLACEMENT**

Compensation for tree removal necessary to construct the project will include:

- Preservation and protection of retained trees/tree groups during construction
- Plan modifications to allow the preservation of Trees #20, 30, 31, 35, 44, 45 and 47 through 107
- Implementation of Special Treatments
- Tree planting as a component of the planned landscape to be maintained in perpetuity
- The planting of native shrubs between the project and Scotts Valley Drive for visual buffering/screening, air purification and noise attenuation
- Reforestation
  - Coast live oak acorns will be collected and propagated by the Project Developer in the fall of 2014.
  - The propagated seedlings along with acorns collected in the fall of 2015 will be planted during the 2015 winter season.

Replacement trees will be planted at a minimum 2:1 ratio, two trees replanted for each "Protected" tree removed as outlined by Scotts Valley Municipal Code Section 17.44.080.

A defined Success Criteria will be followed to insure appropriate growth rates of the newly planted trees and the restoration of the lost canopy.

**Nursery stock** selected shall be standard (single-trunk), with low branching intact. Planting stock shall be well formed and absent of co-dominant, weakly attached stems. Trees shall be disease free and absent of circling or girdling roots.

**Replacement tree planting** should be performed by qualified professionals to the following guidelines:

- Prepare the planting site by excavating the planting hole to 3 times the rootball width and 2 inches shallower depth of the rootball. Finished rootball grade at the trunk should be approximately 2" above the surrounding grade.
- Prune any visible matted or circling roots to remove or straighten them. Cut the root ball vertically on opposite sides at least half the distance to the trunk.
- Free exterior roots from the root by ball breaking away some soil to provide better contact between the root ball and the backfill soil.
- Backfill with native soil only.
- After backfilling, a four-inch layer of amended tree chip mulch should be applied to the soil layer. Maintain a 12-inch radius from the tree trunk that is free of tree chips.
- Stakes, for support, installed only where necessary for support, should be installed on opposite sides of the root ball and driven into the soil. The tree can be secured to the stakes using "Arbortape" or by using the "ReadyStake" system or flexible materials such as recycled bicycle tubing. Secure to both stakes at two vertical locations, with the highest being only as high as necessary to hold the top substantially upright. Some ability for trunk movement is mandatory.

### **Irrigation**

Irrigation will be provided the new trees by means of a temporary "drip" emitter system for a period of two (2) years. This system shall be designed, installed and maintained by a qualified professional to ensure adequate, consistent soil moisture levels while avoiding saturation.

### **Success Criteria**

To insure the survival and adequate growth of replacement trees, Success Criteria will be defined and implemented as follows.

- A qualified professional will monitor the newly planted tree at six (6) month intervals for a period of five years.
- Tree health and growth rates will be monitored and recorded
- Trees suffering poor growth rates or declining health will be identified.
- Invigoration treatments will be provided
- Dead trees or trees in an irreversible state of decline will be replaced with the same species and size.
- At the end of the five-year period, the status of the new plantings will be assessed to insure that the Success Criteria has been met and all mitigation trees planted are performing well.
- Implementation of these Success Criteria shall be a condition of final project approval.

## **TREE PRESERVATION AND PROTECTION**

Tree Preservation Specifications included in this report, outline specifics for tree protection fencing and other procedures that will provide the best opportunity for their long-term survivability. The exact locations for these procedures are documented on the attached Tree Location map file "B".

**Tree Preservation Zone:** This area is the protected area that allows the majority of the Critical Root Zone to be undisturbed while still facilitating necessary grading, the construction of buildings and associated construction related activities. Tree Preservation Zones are identified in the Tree Location Map file "B" attached to this report.

**Inspections** To ensure the successful implementation of the recommended procedures Site Inspections are recommended by the Project Arborist. Site inspections will take place at the following intervals throughout the course of the project:

- During all tree removal activities in proximity to trees to be preserved.
- During demolition
- Following on-site placement of grade stakes.
- During preconstruction root exploration and severance procedures.
- After Tree Preservation fencing locations have been staked.
- Following Tree Protection fencing installation and prior to the commencement of grading.
- As necessary during the grading activities, construction and landscape installation to ensure compliance with all conditions of project approval.

Site monitoring forms will be submitted to the City of Scotts Valley Planning Department at regular intervals.

## **APPRAISED VALUE OF PRESERVED TREES**

Preserved trees that meet "Protected" criteria that grow adjacent to proposed impacts have been valued using Trunk Formula Method, as prescribed in the publication *Guide for Plant Appraisal, Ninth Edition*, authored by the Council of Tree and Landscape Appraisers, published in 2000 by the International Society of Arboriculture.

This method is based upon tree size (cross-section of trunk), and extrapolates a Basic Value from regionally developed costs. The Basic Value is depreciated by factors for Species, Condition, Location and extent of Damage to establish total value or the appraised value of the loss. Detailed appraisal calculations for individual trees are included on an attached spreadsheet.

The appraised value of "protected" trees within proximity to the Limits of Grading is **\$178,906**. A retention bond in this amount shall be posted by the developer and held in trust by the City of Scotts Valley. If project management fails to implement recommended procedures, the contract cost of implementation of necessary tree preservation treatments shall be deducted from the retention funds. If trees are damaged the appraised value of damage to these preserved trees, resulting from construction activities shall be determined by the Project Arborist, monetary costs/fines assessed and deducted from the retention funds and may include any of the following:

- Unauthorized pruning by contractor or sub contractor, branch size dependent per occurrence:
  - 1 inch diameter branch: \$1000
  - 1 to 2 diameter inch branch: \$2000
  - 2-3 inch diameter branch: \$4000
  - Branches greater than 3 diameter inches: \$5000
  
- Any further disturbance or cutting of structural roots beyond the currently established limit of excavation (final line of disturbance) and/or within a tree's Critical Root Zone: \$5000
  
- Unauthorized intrusion into the defined tree protection exclusionary zone.
  - \$1000 per occurrence

## **CONCLUSION**

The construction of the proposed development project as presented will require the removal of 61 trees/tree groups and the protection of all retained trees.

The detrimental impacts to the remaining trees may be reduced using the methods described in this report. The tree preservation specifications designed for this site and contained in this report must be enforced to protect the remainder of the forest system.

The replanting program for this site will compensate for trees required to be removed to accommodate constructing the project. Planting locations shall allow appropriate space for growth. The defined Success Criteria for replacement trees will be a condition of project approval.

Please contact me at 831-426-6603 with any questions regarding this project

Respectfully submitted,

James P. Allen  
Registered Consulting Arborist® No. 390

# Tree Preservation Specifications

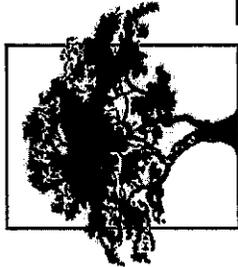
Terrace at Scotts Valley

APN 022-162-69

These guidelines should be printed on all pages of the development plans. Contractors and sub contractors should be aware of tree protection guidelines and restrictions. Contracts should incorporate tree protection language that includes “damage to trees will be appraised using the Guide to Plant Appraisal 9th Edition and result in mitigation costs and monetary fines assessed”.

1. **Pre construction meeting with the Project Arborist:** A meeting with the Project Arborist, Project Manager and all contractors involved with the project shall take place prior to demolition. All tree preservation specifications will be reviewed and discussed.
2. **Field decisions:** The Project Arborist, Soils Engineer and Grading Contractor will work together to determine the most effective construction methods required to preserve and protect trees.
3. **Tree Preservation Zone (TPZ) establishment:** TPZ's shall be established as indicated on the attached map. The TPZ's shall be delineated by chain link fencing, no less than 72 inches in height with metal stakes embedded in the ground. Rice straw bales shall be placed circumventing the fence perimeters where necessary as defined by the Project Arborist. Bales shall be stabilized by driving metal stakes or sections of #5 rebar through the bales 12 to 18 inches into the soil surface, one at each end of bale. The fencing will be installed prior to the onset of demolition under the supervision of the Project Arborist and shall not be moved.
4. **Restrictions within the Tree Preservation Zone (TPZ):** No storage of construction materials, debris or excess soil will be allowed within the TPZ. Parking of vehicles or construction equipment in this area is prohibited. Solvents, liquids or phytotoxic materials of any type shall never be stored or disposed of within the any TPZ, and shall only be disposed of as prescribed by law.
5. **Grade Alterations:** Maintain the natural grade around all trees to be preserved. If tree roots are encountered during the construction process, the Project Arborist will be notified immediately. Exposed roots will be immediately covered with moistened burlap (or similar material) until the Project Arborist makes a determination as to required mitigation methods and extent of damage.
6. **Trenching requirements:** Any areas of where trenching is proposed will be evaluated with the Project Arborist and the Contractor prior to excavation or construction.
7. **Tree canopy alterations:** Unauthorized pruning of any tree on this site will not be allowed. Tree canopy alterations will be performed to the specifications established by the Project Arborist.
8. **Supplemental irrigation:** Irrigation shall be provided using “soaker” hoses or similar method of slow delivery. Supplemental irrigation requirements shall be determined by the Project Arborist and will be required prior to and after completion of the grading.
9. **Mulch Layer:** A 4-6 inch layer of tree chip mulch shall be applied within the Tree Preservation Zones (TPZ). Maintain a 12-inch distance from tree trunks that is free of chips or organic material or excess soil accumulation





## The Terrace at Scotts Valley Appraised Value of Preserved Trees

*Dedicated to the Preservation of Trees*

**James P. Allen  
& Associates**

### Trunk Formula Method

Tree #	Species	Diameter (inches)	Basic Tree Cost	Rating Percentages %			Nursery Group	Replacement Stock			Stock Price	Installation Cost	Installed Tree Cost	Appraised Trunk Area TAA (in <sup>2</sup> )	Appraised Trunk Increase TAINCR	Appraised Value
				Species	Condition	Site		Contribution	Placement	Trunk Diameter (in)						
5	Ponderosa pine	14.2	\$5,928	70%	68%	45%	65%	65%	4.75	159.29	\$36.36	\$172.73	\$345.46	153.54	\$1,646	
6	madrone	12.6	\$9,774	50%	46%	45%	35%	35%	2.24	124.63	\$77.04	\$172.73	\$345.46	122.38	\$862	
9	Ponderosa pine	32.6	\$30,507	70%	74%	45%	35%	35%	4.75	834.27	\$36.36	\$172.73	\$345.46	829.52	\$6,058	
10	madrone	6.3	\$2,573	50%	32%	45%	35%	35%	2.24	31.16	\$77.04	\$172.73	\$345.46	28.91	\$158	
11	Ponderosa pine	32.6	\$30,507	70%	68%	45%	35%	35%	4.75	834.27	\$36.36	\$172.73	\$345.46	829.52	\$6,058	
12	coast live oak	14.5	\$7,676	90%	68%	45%	35%	35%	3.8	165.05	\$45.46	\$172.73	\$345.46	161.25	\$1,801	
13	coast live oak	17.5	\$6,391	90%	52%	45%	35%	35%	3.8	136.78	\$45.46	\$172.73	\$345.46	131.98	\$1,447	
14	coast live oak	21.5	\$7,160	90%	56%	45%	35%	35%	3.8	159.86	\$45.46	\$172.73	\$345.46	154.87	\$1,673	
20	coast live oak	28.3	\$28,753	90%	56%	45%	35%	35%	4.75	628.70	\$45.46	\$172.73	\$345.46	624.90	\$5,555	
30	Ponderosa pine	12.3	\$4,491	70%	42%	45%	35%	35%	2.46	118.76	\$36.36	\$172.73	\$345.46	114.01	\$506	
31	coast live oak	32.4	\$37,635	90%	68%	45%	35%	35%	4.75	824.06	\$45.46	\$172.73	\$345.46	820.26	\$8,829	
32	coast live oak	14.3	\$7,470	90%	32%	45%	35%	35%	3.8	160.52	\$45.46	\$172.73	\$345.46	158.73	\$625	
33	coast live oak	32.6	\$38,098	90%	46%	45%	35%	35%	4.75	834.27	\$45.46	\$172.73	\$345.46	830.47	\$8,046	
34	coast live oak	28.6	\$29,383	90%	32%	45%	35%	35%	4.75	642.10	\$45.46	\$172.73	\$345.46	636.30	\$3,242	
35	coast live oak	6.1	\$1,501	90%	62%	45%	35%	35%	2.2	29.21	\$45.46	\$172.73	\$345.46	25.41	\$321	
36	Ponderosa pine	25.2	\$18,288	70%	56%	45%	35%	35%	4.75	498.51	\$36.36	\$172.73	\$345.46	493.78	\$2,750	
37	Ponderosa pine	23	\$19,272	70%	74%	45%	35%	35%	4.75	415.27	\$36.36	\$172.73	\$345.46	410.51	\$3,033	
38	coast live oak	23.7	\$20,217	90%	56%	45%	35%	35%	4.75	440.93	\$45.46	\$172.73	\$345.46	437.13	\$3,906	
40	coast live oak	10.2	\$3,886	90%	46%	45%	35%	35%	2.2	81.67	\$45.46	\$172.73	\$345.46	77.87	\$617	
42	coast live oak	14.3	\$7,470	90%	46%	45%	35%	35%	3.8	160.52	\$45.46	\$172.73	\$345.46	158.73	\$1,185	
44	coast live oak	23.5	\$19,880	90%	56%	45%	35%	35%	4.75	433.52	\$45.46	\$172.73	\$345.46	428.72	\$5,645	
45	coast live oak	8.3	\$2,631	90%	56%	45%	35%	35%	2.2	54.08	\$45.46	\$172.73	\$345.46	50.28	\$774	
47	coast live oak	8.5	\$2,751	90%	42%	45%	35%	35%	2.2	56.72	\$45.46	\$172.73	\$345.46	52.92	\$462	
48	coast live oak	17	\$10,486	90%	56%	45%	35%	35%	3.8	223.07	\$45.46	\$172.73	\$345.46	223.07	\$2,312	
49	coast live oak	12.6	\$9,774	90%	42%	45%	35%	35%	3.8	124.63	\$45.46	\$172.73	\$345.46	124.63	\$1,716	
50	coast live oak	11.8	\$5,142	90%	28%	45%	35%	35%	3.8	109.30	\$45.46	\$172.73	\$345.46	105.50	\$756	
51	coast live oak	13	\$6,204	90%	28%	45%	35%	35%	3.8	132.67	\$45.46	\$172.73	\$345.46	128.87	\$912	
52	coast live oak	35.9	\$46,165	90%	68%	45%	35%	35%	6.5	101.72	\$45.46	\$172.73	\$345.46	100.72	\$16,481	
53	coast live oak	9.4	\$3,326	90%	38%	45%	35%	35%	2.2	69.36	\$45.46	\$172.73	\$345.46	65.56	\$664	
55	coast live oak	8.1	\$2,514	90%	28%	45%	35%	35%	2.2	51.50	\$45.46	\$172.73	\$345.46	47.70	\$370	
56	coast live oak	10.5	\$4,107	90%	28%	45%	35%	35%	3.8	86.55	\$45.46	\$172.73	\$345.46	82.75	\$604	
57	coast live oak	10.5	\$4,107	90%	28%	45%	35%	35%	3.8	86.55	\$45.46	\$172.73	\$345.46	82.75	\$604	
58	coast live oak	16.4	\$9,771	90%	32%	45%	35%	35%	4.75	211.13	\$45.46	\$172.73	\$345.46	207.33	\$1,642	
59	coast live oak	8.5	\$2,751	90%	28%	45%	35%	35%	2.2	56.72	\$45.46	\$172.73	\$345.46	52.92	\$404	
60	coast live oak	19	\$13,055	90%	56%	45%	35%	35%	3.8	283.39	\$45.46	\$172.73	\$345.46	279.59	\$3,838	
61	coast live oak	19	\$13,055	90%	28%	45%	35%	35%	3.8	283.39	\$45.46	\$172.73	\$345.46	279.59	\$1,919	
62	coast live oak	28.6	\$28,963	90%	32%	45%	35%	35%	4.75	642.10	\$45.46	\$172.73	\$345.46	636.30	\$4,933	
63	coast live oak	7	\$1,921	90%	32%	45%	35%	35%	2.2	38.47	\$45.46	\$172.73	\$345.46	34.67	\$223	
67	coast live oak	14.1	\$7,267	90%	32%	45%	35%	35%	3.8	156.07	\$45.46	\$172.73	\$345.46	152.27	\$1,221	
68	coast live oak	27.8	\$27,752	90%	36%	45%	35%	35%	4.75	606.68	\$45.46	\$172.73	\$345.46	602.88	\$8,159	
69	coast live oak	26.8	\$25,804	90%	52%	45%	35%	35%	4.75	563.82	\$45.46	\$172.73	\$345.46	560.02	\$8,389	
78	coast live oak	11.2	\$4,649	90%	52%	45%	35%	35%	3.8	88.47	\$45.46	\$172.73	\$345.46	84.7	\$1,269	
79	coast live oak	11.7	\$5,058	90%	52%	45%	35%	35%	3.8	103.82	\$45.46	\$172.73	\$345.46	103.66	\$1,381	
80	coast live oak	13.5	\$6,677	90%	42%	45%	35%	35%	3.8	103.82	\$45.46	\$172.73	\$345.46	100.02	\$1,233	
81	coast live oak	11.5	\$6,677	90%	42%	45%	35%	35%	3.8	143.07	\$45.46	\$172.73	\$345.46	139.27	\$1,472	
82	coast live oak	21	\$19,910	90%	42%	45%	35%	35%	3.8	346.19	\$45.46	\$172.73	\$345.46	342.39	\$3,508	
83	coast live oak	16.8	\$10,245	90%	58%	45%	35%	35%	3.8	221.56	\$45.46	\$172.73	\$345.46	217.76	\$3,120	
85	coast live oak	28.7	\$29,567	90%	42%	45%	35%	35%	4.75	646.60	\$45.46	\$172.73	\$345.46	642.80	\$6,520	
86	coast live oak	11.2	\$6,485	90%	28%	45%	35%	35%	3.8	136.86	\$45.46	\$172.73	\$345.46	135.06	\$318	
87	coast live oak	11.2	\$4,649	90%	32%	45%	35%	35%	3.8	98.47	\$45.46	\$172.73	\$345.46	94.67	\$521	
89	coast live oak	25.6	\$23,730	90%	48%	45%	35%	35%	4.75	514.46	\$45.46	\$172.73	\$345.46	514.41	\$5,990	
90	coast live oak	10.4	\$4,033	90%	32%	45%	35%	35%	3.8	84.91	\$45.46	\$172.73	\$345.46	81.11	\$678	
93	coast live oak	11.4	\$4,811	90%	32%	45%	35%	35%	3.8	102.02	\$45.46	\$172.73	\$345.46	98.22	\$808	
95	coast live oak	18.9	\$12,920	90%	62%	45%	35%	35%	3.8	280.41	\$45.46	\$172.73	\$345.46	276.61	\$4,205	



The Terrace at Scotts Valley  
Appraised Value of Preserved Trees

Dedicated to the Preservation of Trees

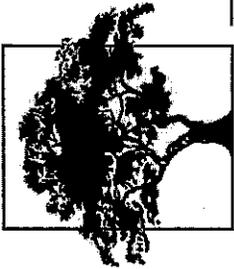
**James P. Allen**  
**Associates**

Trunk Formula Method

Tree #	Species	Diameter (inches)	Basic Tree Cost	Rating Percentages %				Replacement Stock			Stock Price	Installation Cost	Installed Tree Cost	Appraised Trunk Area TAA (in <sup>2</sup> )	Appraised Trunk Increase TAINCR	Appraised Value	
				Species	Condition	Site	Contribution	Placement	Nursery Group	Trunk Diameter (in)							Trunk Area (in <sup>2</sup> )
96	coast live oak	11.4	\$4,811	90%	32%	45%	65%	65%	3	2.2	3.8	\$45.46	\$172.73	\$345.46	102.02	98.22	\$808
97	coast live oak	9.1	\$3,128	80%	32%	45%	65%	65%	3	2.2	3.8	\$45.46	\$172.73	\$345.46	65.01	61.21	\$526
98	coast live oak	15	\$8,202	90%	36%	45%	65%	65%	3	2.2	3.8	\$45.46	\$172.73	\$345.46	176.63	172.93	\$1,550
99	coast live oak	19.6	\$13,882	90%	38%	45%	65%	65%	3	2.2	3.8	\$45.46	\$172.73	\$345.46	301.57	297.77	\$4,956
100	coast live oak	16.7	\$6,133	90%	32%	45%	65%	65%	4	2.46	4.75	\$36.36	\$172.73	\$345.46	218.93	214.18	\$1,366
101	coast live oak	8.7	\$2,333	90%	32%	45%	65%	65%	4	2.46	4.75	\$36.36	\$172.73	\$345.46	59.42	54.67	\$392
102	coast live oak	25.8	\$19,172	90%	46%	45%	65%	65%	4	2.46	4.75	\$36.36	\$172.73	\$345.46	522.53	517.78	\$4,630
103	coast live oak	23.7	\$20,217	90%	62%	45%	65%	65%	3	2.2	3.8	\$45.46	\$172.73	\$345.46	440.93	437.13	\$6,581
104	coast live oak	15.5	\$7,030	80%	42%	45%	65%	65%	4	2.46	4.75	\$36.36	\$172.73	\$345.46	188.60	183.85	\$1,560
105	coast live oak	22.6	\$14,751	80%	48%	45%	65%	65%	4	2.46	4.75	\$36.36	\$172.73	\$345.46	400.95	396.20	\$3,717
106	coast live oak	8.6	\$2,284	90%	46%	45%	65%	65%	4	2.46	4.75	\$36.36	\$172.73	\$345.46	56.06	53.31	\$352

TOTAL VALUE  
OF  
PRESERVED  
TREES

\$178,906

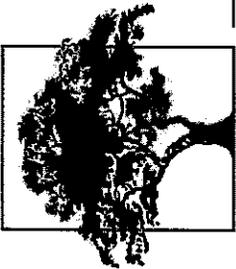


# Terrace at Scotts Valley Tree Resource Inventory Construction Impact Assessment

*Dedicated to the Preservation of Trees*

**James P. Allen  
Associates**

TREE/TREE GROUPS #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	HEALTH	STRUCTURE	SUITABILITY	Critical Root Zone (Radial ft.)	IMPACTS LEVEL/ Description	OBSERVATIONS RECOMMENDED PROCEDURES MEETS "PROTECTED" CRITERIA
1	Ponderosa pine	14	Fair	Poor	Poor	12	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>Tall suppressed tree</li> <li>Large diameter dead branches</li> <li>Remove Due to Construction Impacts</li> <li>Yes</li> </ul>
2	Ponderosa pine	7.6	Fair	Poor	Poor	8	NONE	<ul style="list-style-type: none"> <li>Small young tree</li> <li>Dead branches</li> <li>Preserve and Protect</li> <li>Remove dead branches</li> <li>No</li> </ul>
3	Ponderosa pine	7.2	Fair	Poor	Poor	8	NONE	<ul style="list-style-type: none"> <li>Small young tree</li> <li>Dead branches</li> <li>Preserve and Protect</li> <li>Remove dead branches</li> <li>No</li> </ul>
4	Ponderosa pine	6.1	Fair	Poor	Poor	8	NONE	<ul style="list-style-type: none"> <li>Small young tree</li> <li>Dead branches</li> <li>Preserve and Protect</li> <li>Remove dead branches</li> <li>No</li> </ul>
5	Ponderosa pine	14.2	Fair	Fair	Fair	12	NONE	<ul style="list-style-type: none"> <li>Tall suppressed tree</li> <li>Preserve and Protect</li> <li>Yes</li> </ul>

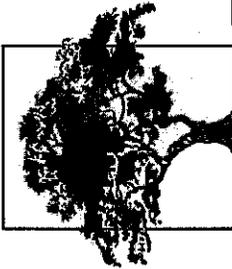


# Terrace at Scotts Valley Tree Resource Inventory Construction Impact Assessment

*Dedicated to the Preservation of Trees*

**James P. Allen  
& Associates**

TREE/TREE GROUPS #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	HEALTH	STRUCTURE	SUITABILITY	Critical Root Zone (Radial ft.)	IMPACTS LEVEL/ Description	OBSERVATIONS RECOMMENDED PROCEDURES MEETS "PROTECTED" CRITERIA
6	madrone	12.6	Fair	Poor	Poor	14	MODERATE/ Proximity to Proposed Grading	<ul style="list-style-type: none"> <li>Exposed surface roots</li> <li>Leans to North and West</li> <li>Preserve and Protect</li> <li>Yes</li> </ul>
7	Ponderosa pine	7.8	N/A	N/A	N/A	N/A	NONE	<ul style="list-style-type: none"> <li>Dead</li> <li>Remove Due to Condition</li> <li>No</li> </ul>
8	Ponderosa pine	11.6	N/A	N/A	N/A	N/A	NONE	<ul style="list-style-type: none"> <li>Dead</li> <li>Remove Due to Condition</li> <li>No</li> </ul>
9	Ponderosa pine	32.6	Fair	Fair	Fair	22	NONE	<ul style="list-style-type: none"> <li>Trunk swoops gently to South and West</li> <li>Preserve and Protect</li> <li>Yes</li> </ul>
10	madrone	Double Trunk 5.6, 6.3	Fair	Fair	Fair	8	NONE	<ul style="list-style-type: none"> <li>Small double trunk tree</li> <li>Preserve and Protect</li> <li>No</li> </ul>
11	Ponderosa pine	32.6	Fair	Fair	Fair	18	NONE	<ul style="list-style-type: none"> <li>Declining branches in lower canopy</li> <li>Large diameter dead branches</li> <li>Preserve and Protect</li> <li>Remove dead branches</li> <li>Yes</li> </ul>

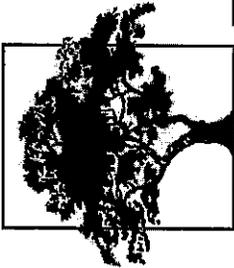


# Terrace at Scotts Valley Tree Resource Inventory Constuction Impact Assessment

*Dedicated to the Preservation of Trees*

**James P. Allen**  
**@ Associates**

TREE/TREE GROUPS #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	HEALTH	STRUCTURE	SUITABILITY	Critical Root Zone (Radial ft.)	IMPACTS LEVEL/ Description	OBSERVATIONS •RECOMMENDED PROCEDURES •MEETS "PROTECTED" CRITERIA
12	coast live oak	14.5	Fair	Poor	Good	14	NONE	<ul style="list-style-type: none"> <li>Leans to South</li> <li>Preserve and Protect</li> <li>Yes</li> </ul>
13	coast live oak	13.2	Fair	Poor	Fair	14	NONE	<ul style="list-style-type: none"> <li>Divides at 5 feet above grade</li> <li>Decayed wound sites</li> <li>Canopy swoops to West</li> <li>Preserve and Protect</li> <li>Yes</li> </ul>
14	coast live oak	27.5	Fair	Poor	Fair	18	NONE	<ul style="list-style-type: none"> <li>Evidence of sycamore borer in lower trunk</li> <li>Poor trunk-stem attachment at 18 feet</li> <li>Canopy bows severely to South and West</li> <li>Minor branch dieback</li> <li>Preserve and Protect</li> <li>Yes</li> </ul>
15	madrone	15.8	Fair	Poor	Poor	18	NONE	<ul style="list-style-type: none"> <li>Trunk leans dramatically to West</li> <li>Canker caused decay at 20 feet above grade</li> <li>High Failure Potential</li> <li>Remove Due to Condition</li> <li>Yes</li> </ul>
16	coast live oak	Double Trunk 11, 21.5	Fair	Poor	Poor	20	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>Trunk leans horizontal to ground</li> <li>Large diameter dead branches</li> <li>Remove Due to Construction Impacts</li> <li>Yes</li> </ul>

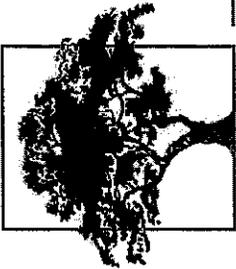


# Terrace at Scotts Valley Tree Resource Inventory Constuction Impact Assessment

*Dedicated to the Preservation of Trees*

**James P. Allen  
& Associates**

TREE/TREE GROUPS #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	HEALTH	STRUCTURE	SUITABILITY	Critical Root Zone (Radial ft.)	IMPACTS LEVEL/ Description	OBSERVATIONS RECOMMENDED PROCEDURES "MEETS "PROTECTED" CRITERIA
17	coast live oak	19.5	Fair	Poor	Poor	22	NONE	<ul style="list-style-type: none"> <li>Uprooted tree</li> <li>Large diameter dead branches</li> <li>Remove Due to Condition</li> <li>Yes</li> </ul>
18	madrone	13.2	N/A	N/A	N/A	N/A	NONE	<ul style="list-style-type: none"> <li>Dead</li> <li>Remove Due to Condition</li> <li>No</li> </ul>
19	coast live oak	Double Trunk 19.9, 21.8	Fair	Poor	Poor	18	NONE	<ul style="list-style-type: none"> <li>Poor trunk-stem attachment</li> <li>Evidence of sycamore borer</li> <li>Decayed pruning wound at 8 feet</li> <li>Previous branch failures at 20 feet</li> <li>Severe decay columns</li> <li>Remove Due to Condition</li> <li>Yes</li> </ul>
20	coast live oak	28.3	Fair	Poor	Poor	16	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>Evidence of sycamore borer</li> <li>Divides at 8 feet</li> <li>Asymmetrical canopy</li> <li>Swoops to South</li> <li>Suppressed to North</li> <li>Preserve and protect Special Treatment Area</li> <li>Monitor stability</li> <li>Decrease grading limits</li> <li>Yes</li> </ul>

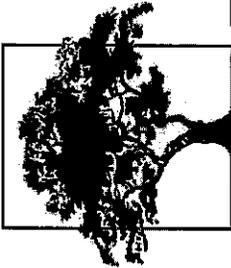


# Terrace at Scotts Valley Tree Resource Inventory Constnuction Impact Assessment

*Dedicated to the Preservation of Trees*

**James P. Allen**  
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TREE/TREE GROUPS #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	HEALTH	STRUCTURE	SUITABILITY	Critical Root Zone (Radial ft.)	IMPACTS LEVEL/ Description	OBSERVATIONS RECOMMENDED PROCEDURES MEETS "PROTECTED" CRITERIA
21	Pondersa pine	40.7	Fair	Fair	Fair	24	NONE	<ul style="list-style-type: none"> <li>Severely decayed trunk</li> <li>Previous stem failure at 30 feet</li> <li><b>High Failure Potential</b></li> <li>Remove Due to Condition</li> <li>Yes</li> </ul>
22	coast live oak	11	Poor	Poor	Poor	12	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>Severe decay in lower canopy</li> <li>Dead and dying branches</li> <li>Trunk swoops dramatically to West</li> <li>Remove Due to Construction Impacts</li> <li>Yes</li> </ul>
23	coast live oak	8.1	Fair	Poor	Fair	10	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>Lower trunk leans to South and West</li> <li>Suppressed young tree</li> <li>Remove Due to Construction Impacts</li> <li>Yes</li> </ul>
24	coast live oak	7.1	Fair	Poor	Poor	8	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>Dead branches</li> <li>Canopy swoops to West</li> <li>Poison oak co-mingling with canopy</li> <li>Remove Due to Construction Impacts</li> <li>No</li> </ul>
25	coast live oak	7.9	Poor	Poor	Poor	8	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>Branch failure at 15 feet</li> <li>Small diameter sprout growth</li> <li>Remove Due to Construction Impacts</li> <li>No</li> </ul>

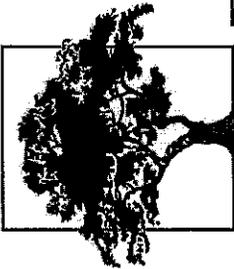


# Terrace at Scotts Valley Tree Resource Inventory Construction Impact Assessment

*Dedicated to the Preservation of Trees*

**James P. Allen  
Associates**

TREE/TREE GROUPS #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	HEALTH	STRUCTURE	SUITABILITY	Critical Root Zone (Radial ft.)	IMPACTS LEVEL/ Description	OBSERVATIONS RECOMMENDED PROCEDURES "MEETS "PROTECTED" CRITERIA
26	coast live oak	11.2	Fair	Poor	Poor	12	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>• Trunk leans dramatically to West</li> <li>• Remove Due to Construction Impacts</li> <li>• Yes</li> </ul>
27	coast live oak	15.4	Fair	Poor	Poor	16	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>• Trunk leans dramatically to West</li> <li>• Remove Due to Construction Impacts</li> <li>• Yes</li> </ul>
28	coast live oak	Double Trunk 14.6, 13.8	Fair	Poor	Poor	14	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>• Large diameter wound in lower trunk area</li> <li>• Suppressed to North and East</li> <li>• Canopy swoops to West</li> <li>• Large diameter dead branches</li> <li>• Remove Due to Construction Impacts</li> <li>• Yes</li> </ul>
29	coast live oak	28.6 at 6" above grade	Fair	Poor	Fair	18	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>• Divides at 3 feet above grade</li> <li>• Poor trunk-stem attachment</li> <li>• Suppressed to North and West</li> <li>• Large diameter dead branches</li> <li>• Remove Due to Construction Impacts</li> <li>• Yes</li> </ul>
30	Ponderosa pine	12.3	Fair	Poor	Poor	10	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>• Tall suppressed tree</li> <li>• Dead branches</li> <li>• Preserve and Protect Special Treatment Area</li> <li>• Reduce grading limits</li> <li>• Yes</li> </ul>



# Terrace at Scotts Valley Tree Resource Inventory Constuction Impact Assessment

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TREE/TREE GROUPS #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	HEALTH	STRUCTURE	SUITABILITY	Critical Root Zone (Radial ft.)	IMPACTS LEVEL/ Description	OBSERVATIONS •RECOMMENDED PROCEDURES •MEETS "PROTECTED" CRITERIA
31	coast live oak	32.4 at 12" above grade	Good	Fair	Good	18	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>• Poor trunk-stem attachment</li> <li>• Divides into five secondary trunks at 3 feet above grade</li> <li>• Canopy suppressed to North and East</li> <li>• Dead branches</li> <li>• <b>Preserve and Protect</b></li> <li>• <b>Special Treatment Area</b></li> <li>• <b>Reduce grading limits</b></li> <li>• <b>Remove dead branches</b></li> <li>• <b>Raise lower canopy</b></li> <li>• Yes</li> </ul>
32	coast live oak	Double Trunk 14.3, 12	Fair	Poor	Fair	14	MODERATE/ Proximity to Proposed Grading	<ul style="list-style-type: none"> <li>• Divides at 6 inches above grade</li> <li>• Poor trunk-stem attachment</li> <li>• Suppressed to North and West</li> <li>• Large diameter dead branches</li> <li>• <b>Preserve and Protect</b></li> <li>• <b>Remove dead branches</b></li> <li>• Yes</li> </ul>
33	coast live oak	32.6 at 1' above grade	Fair	Poor	Fair	18	LOW/ Proximity to Proposed Grading	<ul style="list-style-type: none"> <li>• Divides into 3 trunks at 3 feet above grade</li> <li>• Poor trunk-stem attachment</li> <li>• Low live crown ratio</li> <li>• Long swooping branches</li> <li>• Suppressed to North</li> <li>• Wet wood infection at 28 feet</li> <li>• <b>Preserve and Protect</b></li> <li>• Yes</li> </ul>



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TREE/TREE GROUPS #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	HEALTH	STRUCTURE	SUITABILITY	Critical Root Zone (Radial ft.)	IMPACTS LEVEL/ Description	OBSERVATIONS RECOMMENDED PROCEDURES MEETS "PROTECTED" CRITERIA
34	coast live oak	28.6 at grade	Fair	Poor	Fair	18	LOW/ Proximity to Proposed Grading	<ul style="list-style-type: none"> <li>Divides into 4 secondary trunks between 1 and 3 feet above grade</li> <li>Poor trunk-stem attachment</li> <li>Dead and dying branches</li> <li>Suppressed to North</li> <li>Preserve and Protect</li> <li>Remove dead branches</li> <li>Yes</li> </ul>
35	coast live oak	Double Trunk 4.3, 6.1	Good	Fair	Fair	8	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>Poor trunk-stem attachment</li> <li>Slightly suppressed to North</li> <li>Preserve and Protect</li> <li>Reduce grading limits</li> <li>Yes</li> </ul>
36	Ponderosa pine	25.2	Fair	Poor	Good	18	NONE	<ul style="list-style-type: none"> <li>Poor trunk-stem attachment at 30 feet above grade</li> <li>Preserve and Protect</li> <li>Install simple direct cable</li> <li>Yes</li> </ul>
37	Ponderosa pine	23	Good	Fair	Good	18	NONE	<ul style="list-style-type: none"> <li>Slightly suppressed to East</li> <li>Large diameter dead branches</li> <li>Preserve and Protect</li> <li>Remove dead branches</li> <li>Yes</li> </ul>
38	coast live oak	Double Trunk 23.7, 11.4	Good	Poor	Fair	18	NONE	<ul style="list-style-type: none"> <li>Canopy swoops to South</li> <li>Suppressed to North</li> <li>Preserve and Protect</li> <li>Yes</li> </ul>

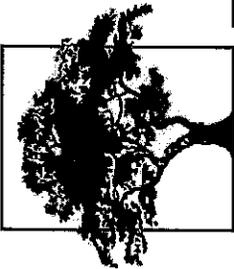


# Terrace at Scotts Valley Tree Resource Inventory Construction Impact Assessment

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& Associates**

TREE/TREE GROUPS #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	HEALTH	STRUCTURE	SUITABILITY	Critical Root Zone (Radial ft.)	IMPACTS LEVEL/ Description	OBSERVATIONS RECOMMENDED PROCEDURES MEETS "PROTECTED" CRITERIA
39	pine	6.1	Fair	Fair	Fair	8	NONE	<ul style="list-style-type: none"> <li>Suppressed to North and East</li> <li>Preserve and Protect</li> <li>No</li> </ul>
40	coast live oak	10.2	Fair	Poor	Poor	8	HIGH/ Proximity to Proposed Grading	<ul style="list-style-type: none"> <li>Leans to North and West</li> <li>Preserve and Protect</li> <li>Special Treatment Area</li> <li>Reduce grading limits</li> <li>Yes</li> </ul>
41	coast live oak	7.8	Fair	Poor	Poor	8	HIGH/ Proximity to Proposed Grading	<ul style="list-style-type: none"> <li>Suppressed to South</li> <li>Leans to North</li> <li>Preserve and Protect</li> <li>Special Treatment Area</li> <li>Reduce grading limits</li> <li>No</li> </ul>
42	coast live oak	14.3	Fair	Poor	Poor	12	HIGH/ Proximity to Proposed Grading	<ul style="list-style-type: none"> <li>Wet wood infection</li> <li>Poor trunk-stem attachment</li> <li>Preserve and Protect</li> <li>Special Treatment Area</li> <li>Reduce grading limits</li> <li>Yes</li> </ul>
43	coast live oak	Double Trunk 8.7, 8.3	Fair	Poor	Fair	12	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>Poor trunk-stem attachment</li> <li>Remove Due to Construction Impacts</li> <li>Yes</li> </ul>

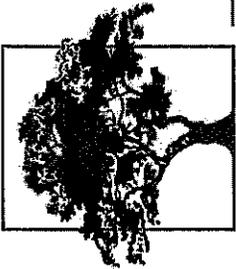


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& Associates**

TREE/TREE GROUPS #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	HEALTH	STRUCTURE	SUITABILITY	Critical Root Zone (Radial ft.)	IMPACTS LEVEL/ Description	OBSERVATIONS RECOMMENDED PROCEDURES MEETS "PROTECTED" CRITERIA
44	coast live oak	23.5	Fair	Fair	Good	18	LOW/ Proximity to Proposed Grading	<ul style="list-style-type: none"> <li>Grows on neighboring property</li> <li>Fractured bark in lower trunk</li> <li>Severe wet wood infection</li> <li>3 secondary trunks divide at 12 feet above grade</li> <li>Large diameter dead branches</li> <li><b>Preserve and Protect</b></li> <li><b>Remove dead branches</b></li> <li>• Yes</li> </ul>
45	coast live oak	8.3	Fair	Poor	Poor	10	LOW/ Proximity to Proposed Grading	<ul style="list-style-type: none"> <li>Grows on neighboring property</li> <li>Smaller suppressed tree</li> <li>Leans over storage shed</li> <li><b>Preserve and Protect</b></li> <li>• Yes</li> </ul>
46	coast live oak	Triple Trunk 12, 12.7, 18.8	Fair	Poor	Fair	18	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>Poor trunk-stem attachment</li> <li>One upright central trunk</li> <li>Remaining trunks lean dramatically to West and North</li> <li>Large diameter dead branches</li> <li><b>Remove Due to Construction Impacts</b></li> <li>• Yes</li> </ul>
47	coast live oak	8.5	Poor	Poor	Poor	8	MODERATE/ Proximity to Proposed Grading	<ul style="list-style-type: none"> <li>Grows on neighboring property</li> <li>Canopy co-mingles with acacia</li> <li><b>Preserve and Protect</b></li> <li>• Yes</li> </ul>

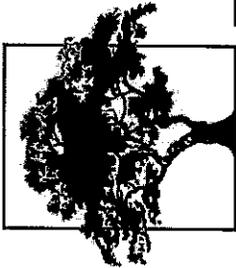


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TREE/TREE GROUPS #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	HEALTH	STRUCTURE	SUITABILITY	Critical Root Zone (Radial ft.)	IMPACTS LEVEL/ Description	OBSERVATIONS RECOMMENDED PROCEDURES MEETS "PROTECTED" CRITERIA
48	coast live oak	17	Fair	Poor	Poor	12	MODERATE/ Proximity to Proposed Grading	<ul style="list-style-type: none"> <li>Grows on neighboring property</li> <li>Trunk bows dramatically to West</li> <li>Heavy end weight</li> <li>Preserve and Protect</li> <li>Reduce end weight</li> <li>Yes</li> </ul>
49	coast live oak	12.6	Fair	Poor	Poor	12	MODERATE/ Proximity to Proposed Grading	<ul style="list-style-type: none"> <li>Grows on neighboring property</li> <li>Leans dramatically to West over dumpster enclosure</li> <li>Preserve and Protect</li> <li>Yes</li> </ul>
50	coast live oak	11.8	Fair	Poor	Poor	10	MODERATE/ Proximity to Proposed Grading	<ul style="list-style-type: none"> <li>Grows on neighboring property</li> <li>Poorly pruned</li> <li>Preserve and Protect</li> <li>Yes</li> </ul>
51	coast live oak	13	Fair	Poor	Poor	12	MODERATE/ Proximity to Proposed Grading	<ul style="list-style-type: none"> <li>Grows on neighboring property</li> <li>Trunk is growing over nursery stake</li> <li>Lower branch removed</li> <li>Preserve and Protect</li> <li>Yes</li> </ul>
52	coast live oak	35.9	Good	Fair	Good	18	MODERATE/ Proximity to Proposed Grading	<ul style="list-style-type: none"> <li>Grows on neighboring property</li> <li>Large diameter well attached lateral branches</li> <li>Developed near grade</li> <li>Canopy develops in all compass directions</li> <li>Long-weighted scaffold branches</li> <li>Preserve and Protect</li> <li>Yes</li> </ul>

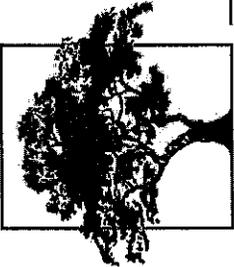


# Terrace at Scotts Valley Tree Resource Inventory Construction Impact Assessment

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Associates**

TREE/TREE GROUPS #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	HEALTH	STRUCTURE	SUITABILITY	Critical Root Zone (Radial ft.)	IMPACTS LEVEL/ Description	OBSERVATIONS RECOMMENDED PROCEDURES MEETS "PROTECTED" CRITERIA
53	coast live oak	9.4	Fair	Poor	Poor	8	MODERATE/ Proximity to Proposed Grading	<ul style="list-style-type: none"> <li>Grows on neighboring property</li> <li>Trunk swoops to left</li> <li>Preserve and Protect</li> <li>Yes</li> </ul>
54	coast live oak	13.7	Fair	Poor	Poor	12	NONE	<ul style="list-style-type: none"> <li>Grows on neighboring property</li> <li>Long-weighted branches go over entry to carwash</li> <li>High Branch Failure Potential</li> <li>Remove Due to Condition</li> <li>Yes</li> </ul>
55	coast live oak	8.1	Fair	Poor	Poor	8	MODERATE/ Proximity to Proposed Grading	<ul style="list-style-type: none"> <li>Grows on neighboring property</li> <li>Poorly pruned, suppressed tree</li> <li>Preserve and Protect</li> <li>Yes</li> </ul>
56	coast live oak	10.5	Fair	Poor	Poor	8	MODERATE/ Proximity to Proposed Grading	<ul style="list-style-type: none"> <li>Grows on neighboring property</li> <li>Poorly pruned, suppressed tree</li> <li>Preserve and Protect</li> <li>Yes</li> </ul>
57	coast live oak	10.5	Fair	Poor	Poor	8	MODERATE/ Proximity to Proposed Grading	<ul style="list-style-type: none"> <li>Grows on neighboring property</li> <li>Trunk bows dramatically to East</li> <li>Preserve and Protect</li> <li>Yes</li> </ul>

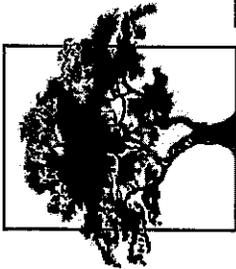


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TREE/TREE GROUPS #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	HEALTH	STRUCTURE	SUITABILITY	Critical Root Zone (Radial ft.)	IMPACTS LEVEL/ Description	OBSERVATIONS •RECOMMENDED PROCEDURES •MEETS "PROTECTED" CRITERIA
58	coast live oak	16.4	Fair	Poor	Poor	12	MODERATE/ Proximity to Proposed Grading	<ul style="list-style-type: none"> <li>• Grows on neighboring property</li> <li>• Heavily weighted canopy leans dramatically over carwash entry</li> <li>• <b>Preserve and Protect</b></li> <li>• Reduce branch end length</li> <li>• Yes</li> </ul>
59	coast live oak	8.5	Fair	Poor	Poor	8	MODERATE/ Proximity to Proposed Grading	<ul style="list-style-type: none"> <li>• Grows on neighboring property</li> <li>• Suppressed tree</li> <li>• Dead and dying branches</li> <li>• <b>Preserve and Protect</b></li> <li>• Remove dead branches</li> <li>• Yes</li> </ul>
60	coast live oak	19	Fair	Fair	Fair	16	MODERATE/ Proximity to Proposed Grading	<ul style="list-style-type: none"> <li>• Grows on neighboring property</li> <li>• Large diameter dead branches</li> <li>• <b>Preserve and Protect</b></li> <li>• Remove dead branches</li> <li>• Yes</li> </ul>
61	coast live oak	19	Good	Poor	Poor	18	MODERATE/ Proximity to Proposed Grading	<ul style="list-style-type: none"> <li>• Grows on neighboring property</li> <li>• Leans dramatically over entry to carwash</li> <li>• <b>Preserve and Protect</b></li> <li>• Reduce branch end weight</li> <li>• Yes</li> </ul>



# Terrace at Scotts Valley Tree Resource Inventory Construction Impact Assessment

*Dedicated to the Preservation of Trees*

**James P. Allen  
& Associates**

TREE/TREE GROUPS #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	HEALTH	STRUCTURE	SUITABILITY	Critical Root Zone (Radial ft.)	IMPACTS LEVEL/ Description	OBSERVATIONS RECOMMENDED PROCEDURES MEETS "PROTECTED" CRITERIA
62	plum	12.4	Poor	Poor	Poor	8	NONE	<ul style="list-style-type: none"> <li>Grows on neighboring property</li> <li>Severely decayed trunk</li> <li>Low vigor</li> <li>Leans dramatically over carwash entry</li> <li>Remove Due to Condition</li> <li>Yes</li> </ul>
63	coast live oak	28.6	Fair	Poor	Fair	18	MODERATE/ Proximity to Proposed Grading	<ul style="list-style-type: none"> <li>Grows on neighboring property</li> <li>Previous branch failure</li> <li>Severely decayed wound sites</li> <li>Preserve and Protect</li> <li>Monitor stability</li> <li>Yes</li> </ul>
64	walnut	16.2	Fair	Fair	Fair	12	HIGH/ Proximity to Proposed Grading	<ul style="list-style-type: none"> <li>Rodent guard on lower trunk</li> <li>Dead and dying branches</li> <li>Remove due to Construction Impacts</li> <li>Yes</li> </ul>
65	coast live oak	7 at 2' above grade	Fair	Poor	Fair	8	HIGH/ Proximity to Proposed Grading	<ul style="list-style-type: none"> <li>Suppressed young tree</li> <li>Divides at 5 feet above grade</li> <li>Preserve and Protect</li> <li>No</li> </ul>
66	coast live oak	7	Fair	Poor	Fair	8	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>Suppressed young tree</li> <li>Remove Due to Construction Impacts</li> <li>No</li> </ul>

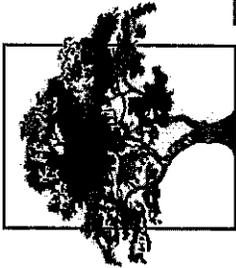


# Terrace at Scotts Valley Tree Resource Inventory Construction Impact Assessment

*Dedicated to the Preservation of Trees*

**James P. Allen  
& Associates**

TREE/TREE GROUPS #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	HEALTH	STRUCTURE	SUITABILITY	Critical Root Zone (Radial ft.)	IMPACTS LEVEL/ Description	OBSERVATIONS •RECOMMENDED PROCEDURES •MEETS "PROTECTED" CRITERIA
67	coast live oak	14.1	Fair	Poor	Poor	12	MODERATE/ Proximity to Proposed Grading	<ul style="list-style-type: none"> <li>• Grows on neighboring property</li> <li>• Trunk leans dramatically to East</li> <li>• Divides into 2 secondary trunks at 12 feet above grade</li> <li>• <b>Preserve and Protect</b></li> <li>• Yes</li> </ul>
68	coast live oak	27.8	Fair	Poor	Good	18	MODERATE/ Proximity to Proposed Grading	<ul style="list-style-type: none"> <li>• Grows on neighboring property at top of slope</li> <li>• Poor trunk-stem attachment</li> <li>• <b>Preserve and Protect</b></li> <li>• <b>Install simple direct cable</b></li> <li>• Yes</li> </ul>
69	coast live oak	26.8	Fair	Fair	Good	18	MODERATE/ Proximity to Proposed Grading	<ul style="list-style-type: none"> <li>• Grows on neighboring property</li> <li>• Large diameter lower branch may be in way of proposed grading</li> <li>• Well-attached branches</li> <li>• Dead and dying branches</li> <li>• <b>Preserve and Protect</b></li> <li>• <b>Requires clearance pruning</b></li> <li>• <b>Remove dead and dying branches</b></li> <li>• Yes</li> </ul>
70	coast live oak	6.8	Fair	Poor	Fair	8	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>• Suppressed young tree</li> <li>• Divides at 5 feet above grade</li> <li>• <b>Remove Due to Construction Impacts</b></li> <li>• No</li> </ul>
71	coast live oak	7.8	Fair	Poor	Fair	8	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>• Suppressed young tree</li> <li>• Divides at 5 feet above grade</li> <li>• <b>Remove Due to Construction Impacts</b></li> <li>• No</li> </ul>

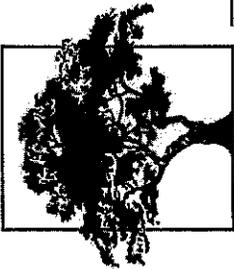


# Terrace at Scotts Valley Tree Resource Inventory Construction Impact Assessment

*Dedicated to the Preservation of Trees*

**James P. Allen  
Associates**

TREE/TREE GROUPS #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	HEALTH	STRUCTURE	SUITABILITY	Critical Root Zone (Radial ft.)	IMPACTS LEVEL/ Description	OBSERVATIONS RECOMMENDED PROCEDURES "MEETS "PROTECTED" CRITERIA
72	coast live oak	9.3	Good	Fair	Good	12	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>Symmetrical canopy</li> <li>Poor trunk-stem attachment</li> <li>Remove Due to Construction Impacts</li> <li>Yes</li> </ul>
73	coast live oak	13.7	Fair	Poor	Fair	12	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>Poor trunk-stem attachment</li> <li>Remove Due to Construction Impacts</li> <li>Yes</li> </ul>
74	coast live oak	12.2	Fair	Poor	Poor	12	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>Suppressed tree leans to South</li> <li>Remove Due to Construction Impacts</li> <li>Yes</li> </ul>
75	coast live oak	21.2 at 1' above grade	Fair	Fair	Good	18	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>Well-formed tree</li> <li>Strong branch attachments</li> <li>Remove Due to Construction Impacts</li> <li>Possible relocation candidate</li> <li>Yes</li> </ul>
76	coast live oak	9.2	Fair	Poor	Fair	12	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>Poor trunk-stem attachment</li> <li>Remove Due to Construction Impacts</li> <li>Yes</li> </ul>
77	coast live oak	9, 9.7, 9.1, 8.3, 9.2, 8.3, 6.3, 7.1, 6.8, 7.4	Fair	Poor	Poor	8	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>Group of 10 smaller diameter trees</li> <li>Remove Due to Construction Impacts</li> <li>Yes; 6 trees meet protection criteria</li> </ul>

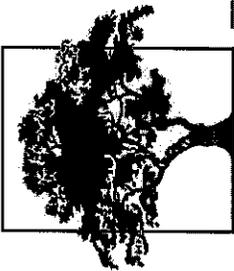


# Terrace at Scotts Valley Tree Resource Inventory Constuction Impact Assessment

*Dedicated to the Preservation of Trees*

**James P. Allen**  
**@ Associates**

TREE/TREE GROUPS #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	HEALTH	STRUCTURE	SUITABILITY	Critical Root Zone (Radial ft.)	IMPACTS LEVEL/ Description	OBSERVATIONS RECOMMENDED PROCEDURES MEETS "PROTECTED" CRITERIA
78	coast live oak	11.2	Fair	Poor	Fair	12	HIGH/ Proximity to Proposed Excavation	<ul style="list-style-type: none"> <li>Grows on neighboring property</li> <li>Poor trunk-stem attachment</li> <li>Suppressed to North</li> <li>Preserve and Protect</li> <li>Special Treatment Area</li> <li>Yes</li> </ul>
79	coast live oak	11.7	Fair	Poor	Fair	12	HIGH/ Proximity to Proposed Grading	<ul style="list-style-type: none"> <li>Poor trunk-stem attachment</li> <li>Suppressed to North</li> <li>Preserve and Protect</li> <li>Yes</li> </ul>
80	coast live oak	11.5	Fair	Poor	Poor	12	HIGH/ Proximity to Proposed Grading	<ul style="list-style-type: none"> <li>Canopy swoops dramatically to South</li> <li>Canopy conflicts with proposed grading</li> <li>Preserve and Protect</li> <li>Yes</li> </ul>
81	coast live oak	13.5	Fair	Poor	Poor	14	HIGH/ Proximity to Proposed Grading	<ul style="list-style-type: none"> <li>Poor trunk-stem attachment</li> <li>Suppressed tree</li> <li>Low live crown ratio</li> <li>Preserve and Protect</li> <li>Install cable support system</li> <li>Yes</li> </ul>

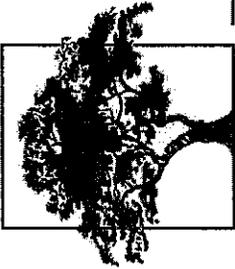


# Terrace at Scotts Valley Tree Resource Inventory Construction Impact Assessment

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**James P. Allen  
& Associates**

TREE/TREE GROUPS #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	HEALTH	STRUCTURE	SUITABILITY	Critical Root Zone (Radial ft.)	IMPACTS LEVEL/ Description	OBSERVATIONS -RECOMMENDED PROCEDURES -MEETS "PROTECTED" CRITERIA
82	coast live oak	21	Fair	Poor	Good	16	HIGH/ Proximity to Proposed Grading	<ul style="list-style-type: none"> <li>• Grows on neighboring property</li> <li>• Poor trunk-stem attachment</li> <li>• Suppressed to East</li> <li>• Preserve and Protect</li> <li>• Special Treatment Area</li> <li>• Install simple direct cable</li> <li>• Yes</li> </ul>
83	coast live oak	Double Trunk 16.8, 13.7	Fair	Fair	Good	14	HIGH/ Proximity to Proposed Grading	<ul style="list-style-type: none"> <li>• Reaction wound in lower trunk area of larger trunk</li> <li>• Canopy swoops to East</li> <li>• Preserve and Protect</li> <li>• Install cable support system</li> <li>• Branch end weight reduction</li> <li>• Yes</li> </ul>
84	coast live oak	8	Fair	Poor	Poor	8	MODERATE/ Proximity to Proposed Grading	<ul style="list-style-type: none"> <li>• Suppressed canopy swoops to East</li> <li>• Preserve and Protect</li> <li>• Branch end weight reduction</li> <li>• Yes</li> </ul>
85	coast live oak	28.7	Fair	Poor	Good	16	MODERATE/ Proximity to Proposed Grading	<ul style="list-style-type: none"> <li>• Poor trunk-stem attachment at 10 feet above grade</li> <li>• Suppressed to East</li> <li>• Large diameter dead and dying branches</li> <li>• Preserve and Protect</li> <li>• Remove dead branches</li> <li>• Install cable system to support weak branches</li> <li>• Yes</li> </ul>

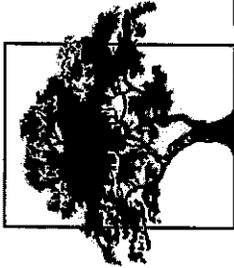


# Terrace at Scotts Valley Tree Resource Inventory Constuction Impact Assessment

*Dedicated to the Preservation of Trees*

**James P. Allen  
Associates**

TREE/TREE GROUPS #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	HEALTH	STRUCTURE	SUITABILITY	Critical Root Zone (Radial ft.)	IMPACTS LEVEL/ Description	OBSERVATIONS RECOMMENDED PROCEDURES MEETS "PROTECTED" CRITERIA
86	coast live oak	13.3	Fair	Poor	Poor	12	MODERATE/ Proximity to Proposed Grading	<ul style="list-style-type: none"> <li>• Tall suppressed tree</li> <li>• Canopy swoops to North and East</li> <li>• Dead branches</li> <li>• <b>Preserve and Protect</b></li> <li>• Remove dead branches</li> <li>• Yes</li> </ul>
87	coast live oak	11.2	Fair	Poor	Poor	14	MODERATE/ Proximity to Proposed Grading	<ul style="list-style-type: none"> <li>• Trunk develops parallel to ground</li> <li>• Trunk bows dramatically to East</li> <li>• Possible canopy conflicts</li> <li>• <b>Preserve and Protect</b></li> <li>• Yes</li> </ul>
88	coast live oak	Double Trunk 9, 11	Fair	Poor	Poor	12	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>• Poor trunk-stem attachment</li> <li>• Trunk swoops dramatically to South</li> <li>• <b>Remove due to Construction Impacts</b></li> <li>• Yes</li> </ul>
89	coast live oak	25.6	Fair	Fair	Good	16	MODERATE/ Proximity to Proposed Grading	<ul style="list-style-type: none"> <li>• Poor trunk-stem attachment</li> <li>• Large diameter dead branches</li> <li>• <b>Preserve and Protect</b></li> <li>• Remove dead branches</li> <li>• Install cable support system</li> <li>• Yes</li> </ul>
90	coast live oak	10.4 at 3' above grade	Fair	Poor	Poor	8	MODERATE/ Proximity to Proposed Grading	<ul style="list-style-type: none"> <li>• Leans dramatically to East</li> <li>• Possible canopy conflicts</li> <li>• <b>Preserve and Protect</b></li> <li>• Yes</li> </ul>

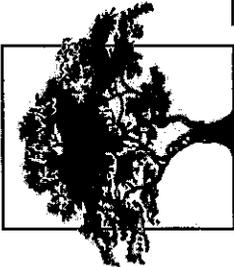


# Terrace at Scotts Valley Tree Resource Inventory Construction Impact Assessment

*Dedicated to the Preservation of Trees*

**James P. Allen  
& Associates**

TREE/TREE GROUPS #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	HEALTH	STRUCTURE	SUITABILITY	Critical Root Zone (Radial ft.)	IMPACTS LEVEL/ Description	OBSERVATIONS RECOMMENDED PROCEDURES MEETS "PROTECTED" CRITERIA
91	coast live oak	7	Fair	Poor	Poor	8	MODERATE/ Proximity to Proposed Grading	<ul style="list-style-type: none"> <li>Leans dramatically to East</li> <li>Possible canopy conflicts</li> <li>Preserve and Protect</li> <li>No</li> </ul>
92	coast live oak	6.5	Fair	Poor	Poor	8	MODERATE/ Proximity to Proposed Grading	<ul style="list-style-type: none"> <li>Leans dramatically to East</li> <li>Possible canopy conflicts</li> <li>Preserve and Protect</li> <li>No</li> </ul>
93	coast live oak	11.4	Fair	Poor	Poor	8	MODERATE/ Proximity to Proposed Grading	<ul style="list-style-type: none"> <li>Leans dramatically to East</li> <li>Possible canopy conflicts</li> <li>Preserve and Protect</li> <li>Yes</li> </ul>
94	coast live oak	7.7	Fair	Poor	Poor	8	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>Trunk bows dramatically to South parallel to ground level</li> <li>Canopy conflicts with proposed grading</li> <li>Remove Due to Construction Impacts</li> <li>No</li> </ul>
95	coast live oak	18.9	Fair	Fair	Fair	14	MODERATE/ Proximity to Proposed Grading	<ul style="list-style-type: none"> <li>Trunk encircled by large diameter poison oak vine</li> <li>Suppressed to South</li> <li>Preserve and Protect</li> <li>Yes</li> </ul>

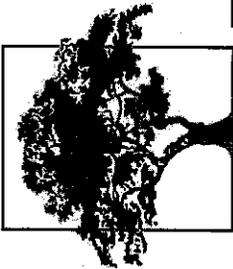


**James P. Allen  
Associates**

# Terrace at Scotts Valley Tree Resource Inventory Constuction Impact Assessment

*Dedicated to the Preservation of Trees*

TREE/TREE GROUPS #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	HEALTH	STRUCTURE	SUITABILITY	Critical Root Zone (Radial ft.)	IMPACTS LEVEL/ Description	OBSERVATIONS •RECOMMENDED PROCEDURES •MEETS "PROTECTED" CRITERIA
96	coast live oak	11.4	Fair	Poor	Poor	12	MODERATE/ Proximity to Proposed Grading	<ul style="list-style-type: none"> <li>• Trunk bows to South</li> <li>• Suppressed tree</li> <li>• Large diameter dead branches</li> <li>• Preserve and Protect</li> <li>• Remove dead branches</li> <li>• Yes</li> </ul>
97	coast live oak	9.1	Fair	Fair	Fair	8	MODERATE/ Proximity to Proposed Grading	<ul style="list-style-type: none"> <li>• Suppressed tree</li> <li>• Preserve and Protect</li> <li>• Yes</li> </ul>
98	coast live oak	15	Fair	Poor	Fair	12	MODERATE/ Proximity to Proposed Grading	<ul style="list-style-type: none"> <li>• Developed trunk swoops dramatically over Scotts Valley Drive</li> <li>• Preserve and Protect</li> <li>• Reduce end weight</li> <li>• Yes</li> </ul>
99	coast live oak	19.6	Fair	Fair	Good	16	MODERATE/ Proximity to Proposed Grading	<ul style="list-style-type: none"> <li>• Trunk encircled by large diameter poison oak vine</li> <li>• Stout trunk</li> <li>• Good trunk-stem attachments</li> <li>• Well-spaced branching</li> <li>• Large diameter dead branches</li> <li>• Preserve and Protect</li> <li>• Remove poison oak</li> <li>• Remove dead branches</li> <li>• Yes</li> </ul>
100	coast live oak	16.7	Fair	Poor	Fair	12	MODERATE/ Proximity to Proposed Grading	<ul style="list-style-type: none"> <li>• Trunk swoops and bows dramatically over Scotts Valley Drive</li> <li>• Preserve and Protect</li> <li>• Reduce branch end weight</li> <li>• Yes</li> </ul>

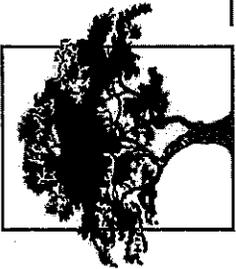


# Terrace at Scotts Valley Tree Resource Inventory Constuction Impact Assessment

*Dedicated to the Preservation of Trees*

**James P. Allen  
Associates**

TREE/TREE GROUPS #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	HEALTH	STRUCTURE	SUITABILITY	Critical Root Zone (Radial ft.)	IMPACTS LEVEL/ Description	OBSERVATIONS RECOMMENDED PROCEDURES MEETS "PROTECTED" CRITERIA
101	coast live oak	8.7	Fair	Poor	Fair	12	MODERATE/ Proximity to Proposed Grading	<ul style="list-style-type: none"> <li>Trunk swoops and bows dramatically over Scotts Valley Drive</li> <li>Preserve and Protect</li> <li>Reduce branch end weight</li> <li>Yes</li> </ul>
102	coast live oak	25.8	Fair	Poor	Good	18	MODERATE/ Proximity to Proposed Grading	<ul style="list-style-type: none"> <li>Poor trunk-stem attachment</li> <li>Poison oak co-mingling in canopy</li> <li>Large diameter dead branches</li> <li>Preserve and Protect</li> <li>Install simple direct cable</li> <li>Remove dead branches</li> <li>Yes</li> </ul>
103	coast live oak	23.7	Fair	Fair	Good	14	MODERATE/ Proximity to Proposed Grading	<ul style="list-style-type: none"> <li>Bowed trunk</li> <li>Good trunk-stem attachments</li> <li>Well-spaced branching</li> <li>Dead branches</li> <li>Preserve and Protect</li> <li>Clearance pruning may be required</li> <li>Remove dead branches</li> <li>Yes</li> </ul>
104	coast live oak	15.5	Fair	Poor	Fair	14	MODERATE/ Proximity to Proposed Grading	<ul style="list-style-type: none"> <li>Trunk swoops to North and West</li> <li>Canopy extends over Scotts Valley Drive</li> <li>Preserve and Protect</li> <li>Remove branch end weight</li> <li>Yes</li> </ul>

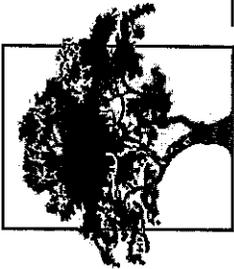


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Associates**

TREE/TREE GROUPS #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	HEALTH	STRUCTURE	SUITABILITY	Critical Root Zone (Radial ft.)	IMPACTS LEVEL/ Description	OBSERVATIONS RECOMMENDED PROCEDURES MEETS "PROTECTED" CRITERIA
105	coast live oak	22.6	Fair	Poor	Good	16	MODERATE/ Proximity to Proposed Grading	<ul style="list-style-type: none"> <li>• Trunk leans to East</li> <li>• Large diameter dead branches</li> <li>• Preserve and Protect</li> <li>• Remove dead branches</li> <li>• Yes</li> </ul>
106	coast live oak	8.6	Fair	Fair	Fair	10	MODERATE/ Proximity to Proposed Grading	<ul style="list-style-type: none"> <li>• Smaller suppressed tree</li> <li>• Preserve and Protect</li> <li>• Yes</li> </ul>
107	coast live oak	6	Fair	Poor	Fair	8	MODERATE/ Proximity to Proposed Grading	<ul style="list-style-type: none"> <li>• Leans to East</li> <li>• Dead branches</li> <li>• Preserve and Protect</li> <li>• No</li> </ul>
108	coast live oak	Double Trunk 8.7, 9.3	Fair	Poor	Fair	8	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>• Suppressed tree</li> <li>• Large diameter dead and dying branches</li> <li>• Remove Due to Construction Impacts</li> <li>• Yes</li> </ul>
109	coast live oak	19.7	Fair	Poor	Good	14	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>• Grows from steep slope</li> <li>• Damaged supporting roots on North side of tree</li> <li>• Potential uprooting</li> <li>• Remove Due to Construction Impacts</li> <li>• Yes</li> </ul>
110	Ponderosa pine	7.2	N/A	N/A	N/A	N/A	NONE	<ul style="list-style-type: none"> <li>• Dead</li> <li>• Remove Due to Condition</li> <li>• No</li> </ul>

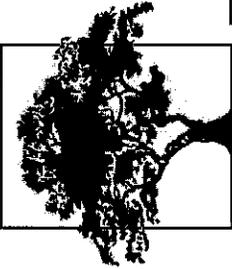


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TREE/TREE GROUPS #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	HEALTH	STRUCTURE	SUITABILITY	Critical Root Zone (Radial ft.)	IMPACTS LEVEL/ Description	OBSERVATIONS RECOMMENDED PROCEDURES MEETS "PROTECTED" CRITERIA
111	Ponderosa pine	37	Fair	Good	Good	22	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>Excellent form and structure</li> <li>Large diameter dead lower branches</li> <li>Remove Due to Construction Impacts</li> <li>Yes</li> </ul>
112	madrone	11.9	Fair	Poor	Poor	12	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>Leans to East</li> <li>Remove Due to Construction Impacts</li> <li>Yes</li> </ul>
113	coast live oak	6	Fair	Poor	Poor	8	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>Small suppressed tree</li> <li>Remove Due to Construction Impacts</li> <li>No</li> </ul>
114	coast live oak	6	Fair	Poor	Poor	8	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>Small suppressed tree</li> <li>Remove Due to Construction Impacts</li> <li>No</li> </ul>
115	coast live oak	10.8	Fair	Poor	Poor	10	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>Trunk bows dramatically to West</li> <li>Remove Due to Construction Impacts</li> <li>Yes</li> </ul>
116	coast live oak	7.4	Fair	Poor	Poor	10	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>Trunk bows dramatically to West</li> <li>Remove Due to Construction Impacts</li> <li>No</li> </ul>
117	coast live oak	8.2	Fair	Poor	Poor	8	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>Tall suppressed young tree</li> <li>Remove Due to Construction Impacts</li> <li>Yes</li> </ul>

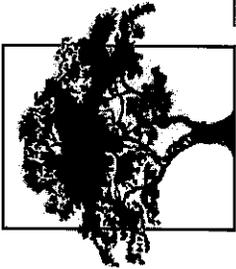


# Terrace at Scotts Valley Tree Resource Inventory Constuction Impact Assessment

*Dedicated to the Preservation of Trees*

**James P. Allen  
Associates**

TREE/TREE GROUPS #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	HEALTH	STRUCTURE	SUITABILITY	Critical Root Zone (Radial ft.)	IMPACTS LEVEL/ Description	OBSERVATIONS •RECOMMENDED PROCEDURES •MEETS "PROTECTED" CRITERIA
118	coast live oak	8.3	Fair	Poor	Poor	10	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>• Bows dramatically to South and West</li> <li>• Remove Due to Construction Impacts</li> <li>• Yes</li> </ul>
119	Pondersa pine	7.2	Poor	Poor	Poor	8	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>• Tall suppressed young tree</li> <li>• Remove Due to Construction Impacts</li> <li>• No</li> </ul>
120	madrone	6.6	Poor	Poor	Poor	8	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>• Suppressed asymmetrical canopy</li> <li>• Remove Due to Construction Impacts</li> <li>• No</li> </ul>
121	coast live oak	6.6	Poor	Poor	Poor	8	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>• Suppressed asymmetrical canopy</li> <li>• Remove Due to Construction Impacts</li> <li>• No</li> </ul>
122	Pondersa pine	37.5	Fair	Poor	Poor	22	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>• Poor trunk-stem attachment at 12 feet above grade</li> <li>• Previous large diameter stem failure at 15 feet above grade</li> <li>• Remove Due to Construction Impacts</li> <li>• Yes</li> </ul>
123	coast live oak	13.3	Fair	Poor	Poor	14	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>• Bowed trunk</li> <li>• Low live crown ratio</li> <li>• Remove Due to Construction Impacts</li> <li>• Yes</li> </ul>

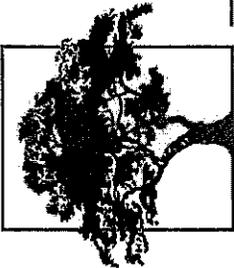


# Terrace at Scotts Valley Tree Resource Inventory Construction Impact Assessment

*Dedicated to the Preservation of Trees*

**James P. Allen  
& Associates**

TREE/TREE GROUPS #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	HEALTH	STRUCTURE	SUITABILITY	Critical Root Zone (Radial ft.)	IMPACTS LEVEL/ Description	OBSERVATIONS RECOMMENDED PROCEDURES MEETS "PROTECTED" CRITERIA
124	coast live oak	8.4	Fair	Poor	Poor	12	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>Tall suppressed young tree</li> <li>Remove Due to Construction Impacts</li> <li>Yes</li> </ul>
125	Ponderosa pine	14.9	Fair	Fair	Fair	12	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>Slightly suppressed to East</li> <li>Remove Due to Construction Impacts</li> <li>Yes</li> </ul>
126	coast live oak	6.9	Fair	Poor	Poor	6	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>Small suppressed tree</li> <li>Remove Due to Construction Impacts</li> <li>No</li> </ul>
127	Ponderosa pine	14.8	Fair	Fair	Fair	16	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>Suppressed to South and East</li> <li>Large diameter dead branches</li> <li>Remove Due to Construction Impacts</li> <li>Yes</li> </ul>
128	coast live oak	7.4	Fair	Poor	Poor	8	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>Trunk bows dramatically to North</li> <li>Remove Due to Construction Impacts</li> <li>No</li> </ul>
129	coast live oak	11.6	Fair	Poor	Poor	12	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>Tall suppressed tree</li> <li>Remove Due to Construction Impacts</li> <li>Yes</li> </ul>
130	coast live oak	6.3	Fair	Poor	Poor	8	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>Trunk bows dramatically to North</li> <li>Remove Due to Construction Impacts</li> <li>No</li> </ul>

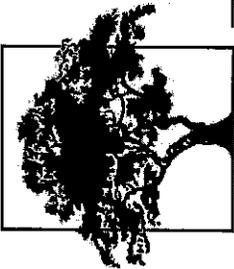


# Terrace at Scotts Valley Tree Resource Inventory Construction Impact Assessment

*Dedicated to the Preservation of Trees*

**James P. Allen  
& Associates**

TREE/TREE GROUPS #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	HEALTH	STRUCTURE	SUITABILITY	Critical Root Zone (Radial ft.)	IMPACTS LEVEL/ Description	OBSERVATIONS RECOMMENDED PROCEDURES MEETS "PROTECTED" CRITERIA
131	coast live oak	21.8	Fair	Poor	Fair	16	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>Poor trunk-stem attachment</li> <li>Large diameter scaffold branch developing at 2.5 feet above grade</li> <li>Large diameter dead branches</li> <li>Remove Due to Construction Impacts</li> <li>Yes</li> </ul>
132	coast live oak	15.5	Fair	Poor	Fair	16	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>Poor trunk-stem attachment</li> <li>Leans to West</li> <li>Large diameter scaffold branch developing at 2.5 feet above grade</li> <li>Large diameter dead branches</li> <li>Remove Due to Construction Impacts</li> <li>Yes</li> </ul>
133	coast live oak	11.7	Fair	Poor	Fair	12	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>Bowed trunk swoops to North and West</li> <li>Large diameter dead and dying branches</li> <li>Remove Due to Construction Impacts</li> <li>Yes</li> </ul>
134	coast live oak at 6" above grade	23.6	Fair	Poor	Poor	14	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>Develops into two secondary trunks at 18 feet above grade</li> <li>Poor trunk-stem attachment</li> <li>Suppressed to North and East</li> <li>Possible wood rat nest in western canopy section</li> <li>Remove Due to Construction Impacts</li> <li>Yes</li> </ul>
135	coast live oak	10.6	Fair	Poor	Poor	12	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>Suppressed tree</li> <li>Remove Due to Construction Impacts</li> <li>Yes</li> </ul>



# Terrace at Scotts Valley Tree Resource Inventory Construction Impact Assessment

*Dedicated to the Preservation of Trees*

**James P. Allen  
& Associates**

TREE/TREE GROUPS #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	HEALTH	STRUCTURE	SUITABILITY	Critical Root Zone (Radial ft.)	IMPACTS LEVEL/ Description	OBSERVATIONS RECOMMENDED PROCEDURES MEETS "PROTECTED" CRITERIA
136	coast live oak	Double Trunk 8.9, 11.2	Fair	Poor	Poor	12	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>Poor trunk-stem attachment</li> <li>Suppressed tree</li> <li>Remove Due to Construction Impacts</li> <li>Yes</li> </ul>
137	coast live oak	11.2	Fair	Poor	Poor	12	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>Poor trunk-stem attachment</li> <li>Suppressed tree</li> <li>Remove Due to Construction Impacts</li> <li>Yes</li> </ul>
138	coast live oak	9.9 at 2' above grade	Fair	Poor	Poor	12	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>Divides at 3 feet above grade</li> <li>Canopy swoops to North and West</li> <li>Remove Due to Construction Impacts</li> <li>Yes</li> </ul>
139	coast live oak	10.8 at 3' above grade	Fair	Poor	Poor	12	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>Bowed trunk divides at 4.5 feet above grade</li> <li>Canopy swoops to North and West</li> <li>Remove Due to Construction Impacts</li> <li>Yes</li> </ul>
140	coast live oak	Double Trunk 6.1, 6.1	Fair	Poor	Poor	8	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>Canopy swoops to North</li> <li>Remove Due to Construction Impacts</li> <li>Yes</li> </ul>
141	coast live oak	6.1	Fair	Poor	Poor	6	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>Suppressed young tree</li> <li>Leans to North and West</li> <li>Remove Due to Construction Impacts</li> <li>No</li> </ul>

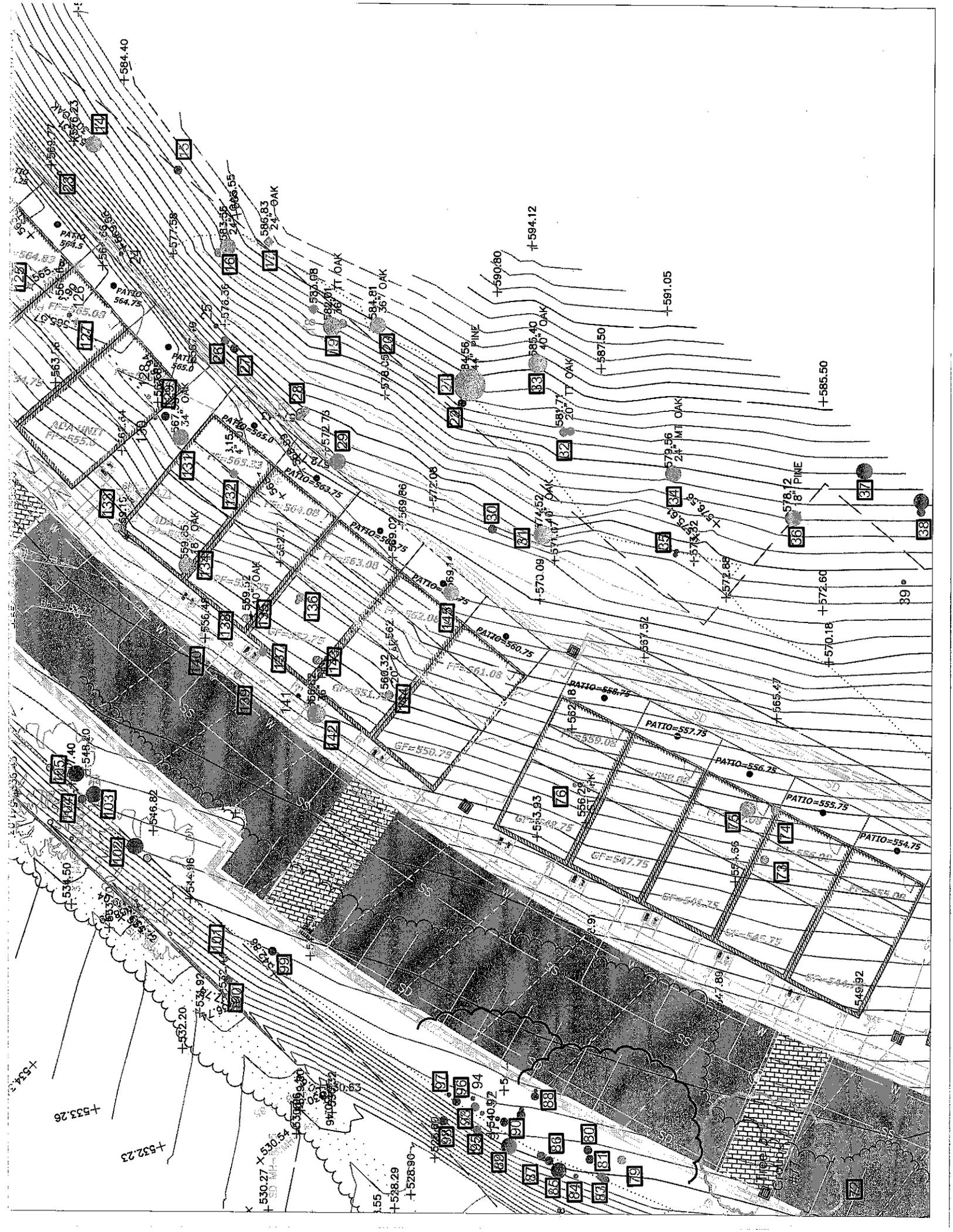


# Terrace at Scotts Valley Tree Resource Inventory Constuction Impact Assessment

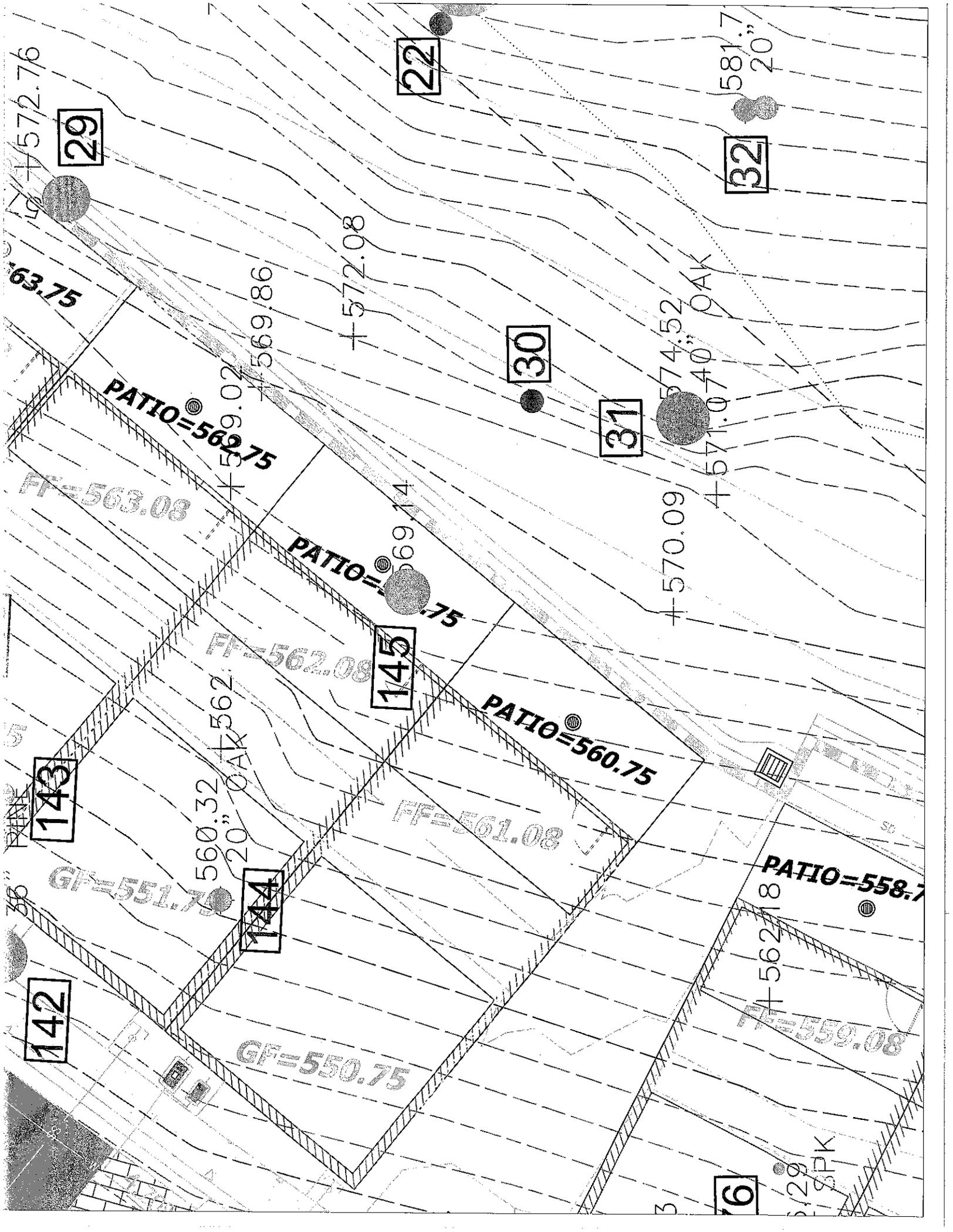
*Dedicated to the Preservation of Trees*

**James P. Allen  
& Associates**

TREE/TREE GROUPS #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	HEALTH	STRUCTURE	SUITABILITY	Critical Root Zone (Radial ft.)	IMPACTS LEVEL/ Description	OBSERVATIONS -RECOMMENDED PROCEDURES -MEETS "PROTECTED" CRITERIA
142	Ponderosa pine	30.2	Fair	Good	Good	22	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>Excellent form and structure</li> <li>Large diameter dead lower branches</li> <li>Remove Due to Construction Impacts</li> <li>Yes</li> </ul>
143	coast live oak	11.7	Fair	Poor	Poor	12	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>Poor trunk-stem attachment</li> <li>Tall suppressed tree</li> <li>Remove Due to Construction Impacts</li> <li>Yes</li> </ul>
144	coast live oak	18.2	Fair	Poor	Poor	14	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>Suppressed to East</li> <li>Dead and dying branches</li> <li>Remove Due to Construction Impacts</li> <li>Yes</li> </ul>
145	coast live oak	22.1	Fair	Fair	Poor	16	HIGH/ Within Proposed Grading	<ul style="list-style-type: none"> <li>Stout trunk divides into four scaffold branches at 5 feet above grade</li> <li>Good trunk attachments</li> <li>Branches bow to West</li> <li>Remove Due to Construction Impacts</li> <li>Yes</li> </ul>







29

22

32

30

31

145

143

144

142

16

572.76

581.7

63.75

572.08

574.52

PATIO=562.75

FF=563.08

599.02

569.86

PATIO=560.75

FF=562.08

562.20

560.32

FF=561.08

PATIO=560.75

GF=551.75

PATIO=558.75

GF=550.75

FF=559.08

562.18

SPK

40" OAK

29

+568.84

Ø 20.56 ACACIA

40

41

+558.25

+554.75

43

42

PATIO=554.08

PATIO=553.42

PATIO=552.08

+553.50

FF=554.41

FF=553.75

FF=552.08

+550.

08

SD

SD

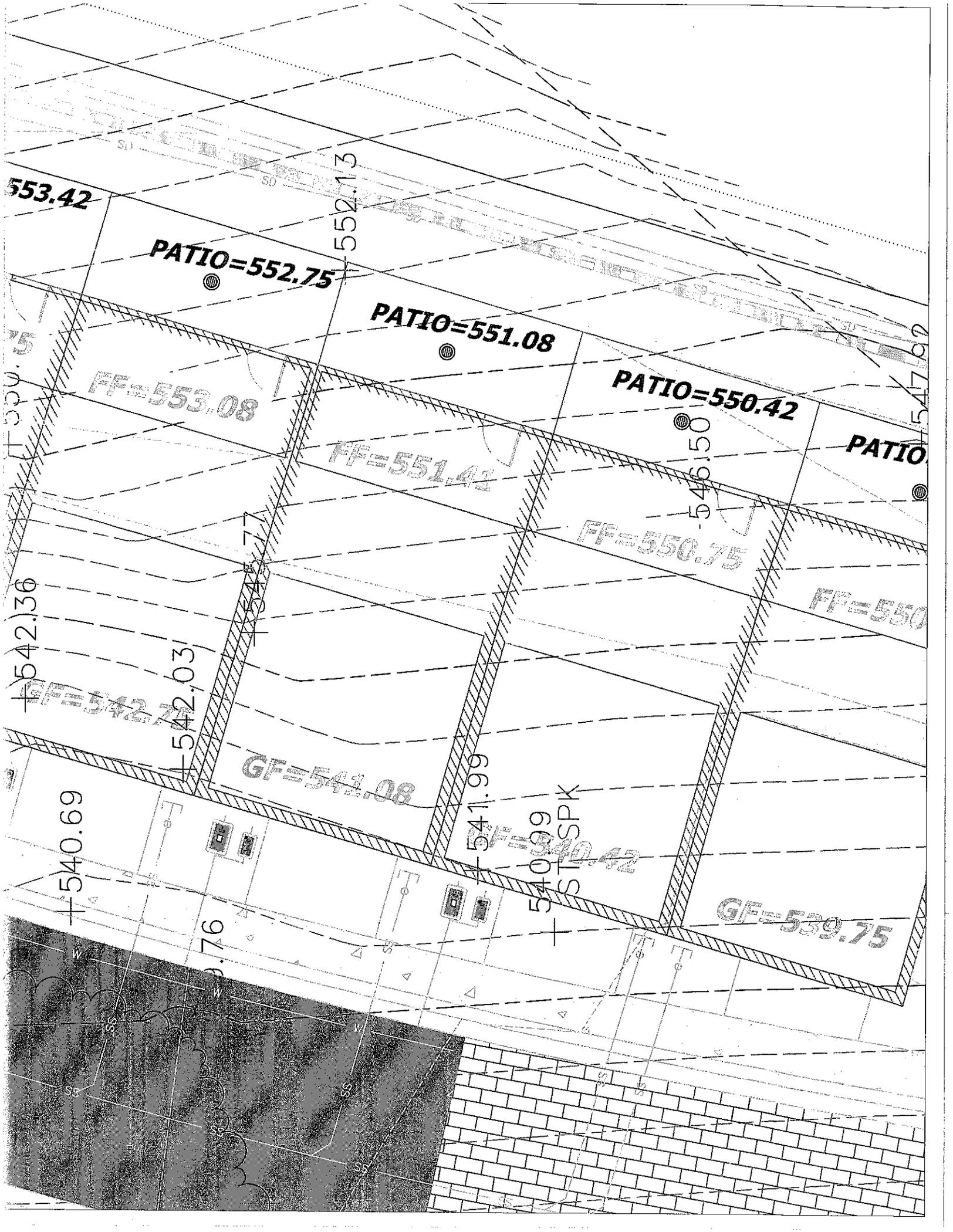
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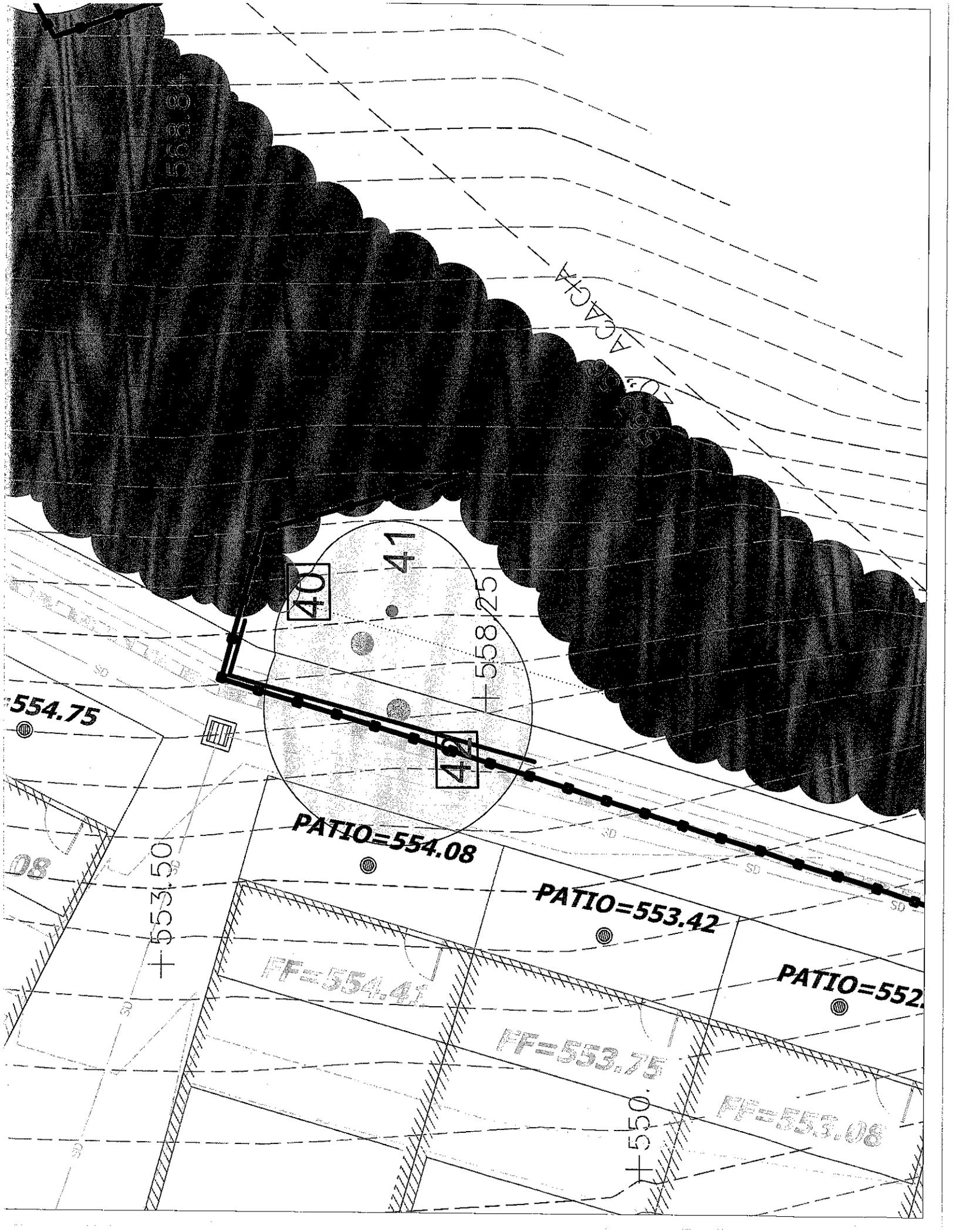
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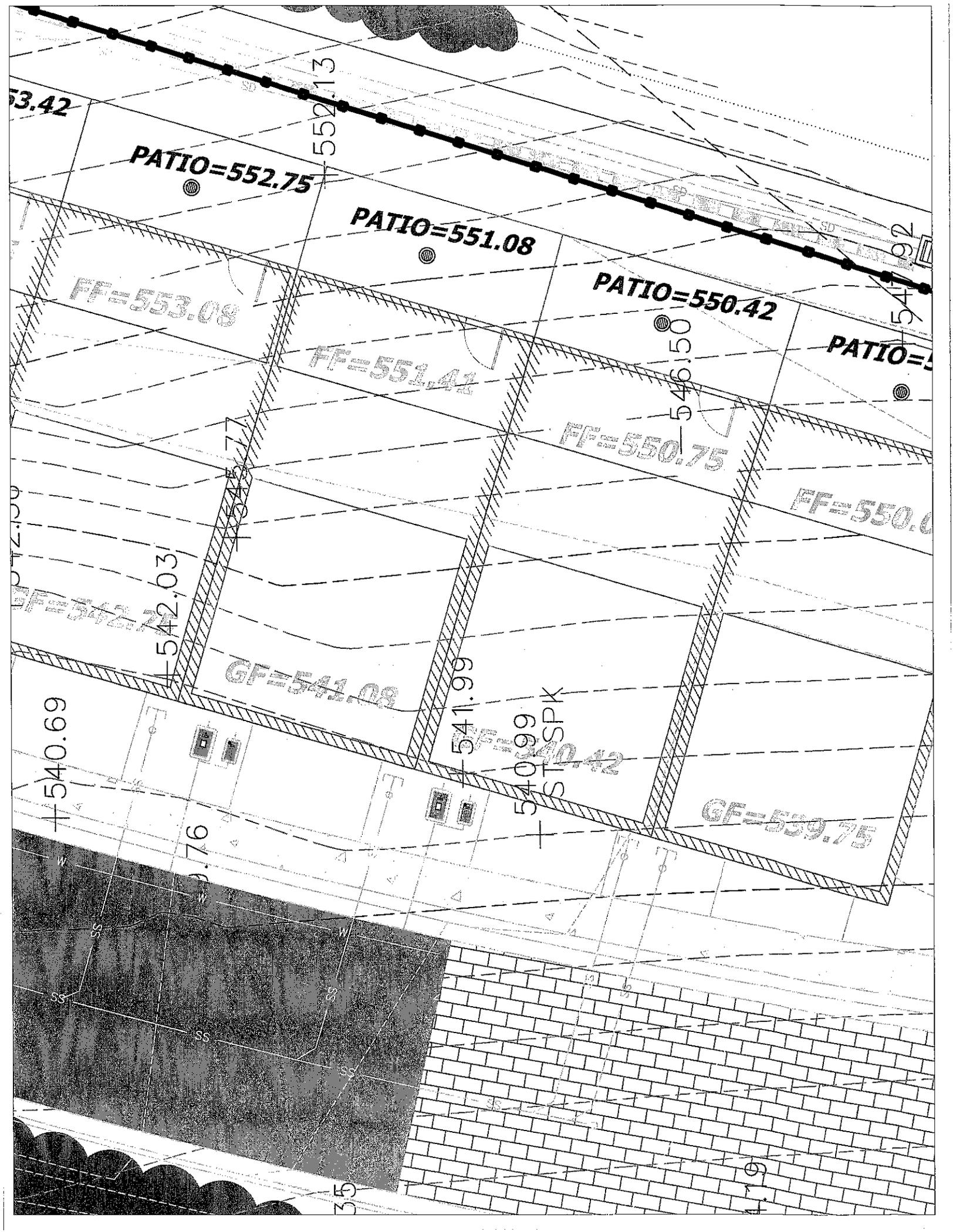












**Appendix B:**  
**Biological Report**

**THE TERRACE AT SCOTTS VALLEY**  
City of Scotts Valley, CA

**Biological Report**



**Biotic Resources Group**

Biotic Assessments ♦ Resource Management ♦ Permitting

# Biotic Resources Group

Biotic Assessments ♦ Resource Management ♦ Permitting

## THE TERRACE AT SCOTTS VALLEY City of Scotts Valley, CA

### Biological Report

*Prepared for*

Apple Homes Development, Inc.  
15 Sherman Court  
Scotts Valley, CA 95066  
Attn: Chris Perri

*Prepared by:*

Biotic Resources Group  
Kathleen Lyons, Plant Ecologist  
with  
Dana Bland & Associates  
Dana Bland, Wildlife Biologist

August 20, 2014

## 1.0 INTRODUCTION

Biotic Resources Group, with Dana Bland & Associates, documented and evaluated the biotic resources of a proposed residential housing project in the City of Scotts Valley in Santa Cruz County.

Specific tasks conducted for this study include:

- Characterize and map the major plant communities within the proposed project area.
- Identify sensitive biotic resources, including habitats, plant or wildlife species of concern. (Note: Issues relating to Mt. Hermon June beetle, a federally listed species are subject to separate review by Dr. Richard Arnold through a separate agreement with the landowner).
- Evaluate the potential effects of the proposed project activities on sensitive biotic resources and recommend measures to avoid or reduce such impacts.

### 1.1 PROPOSED PROJECT

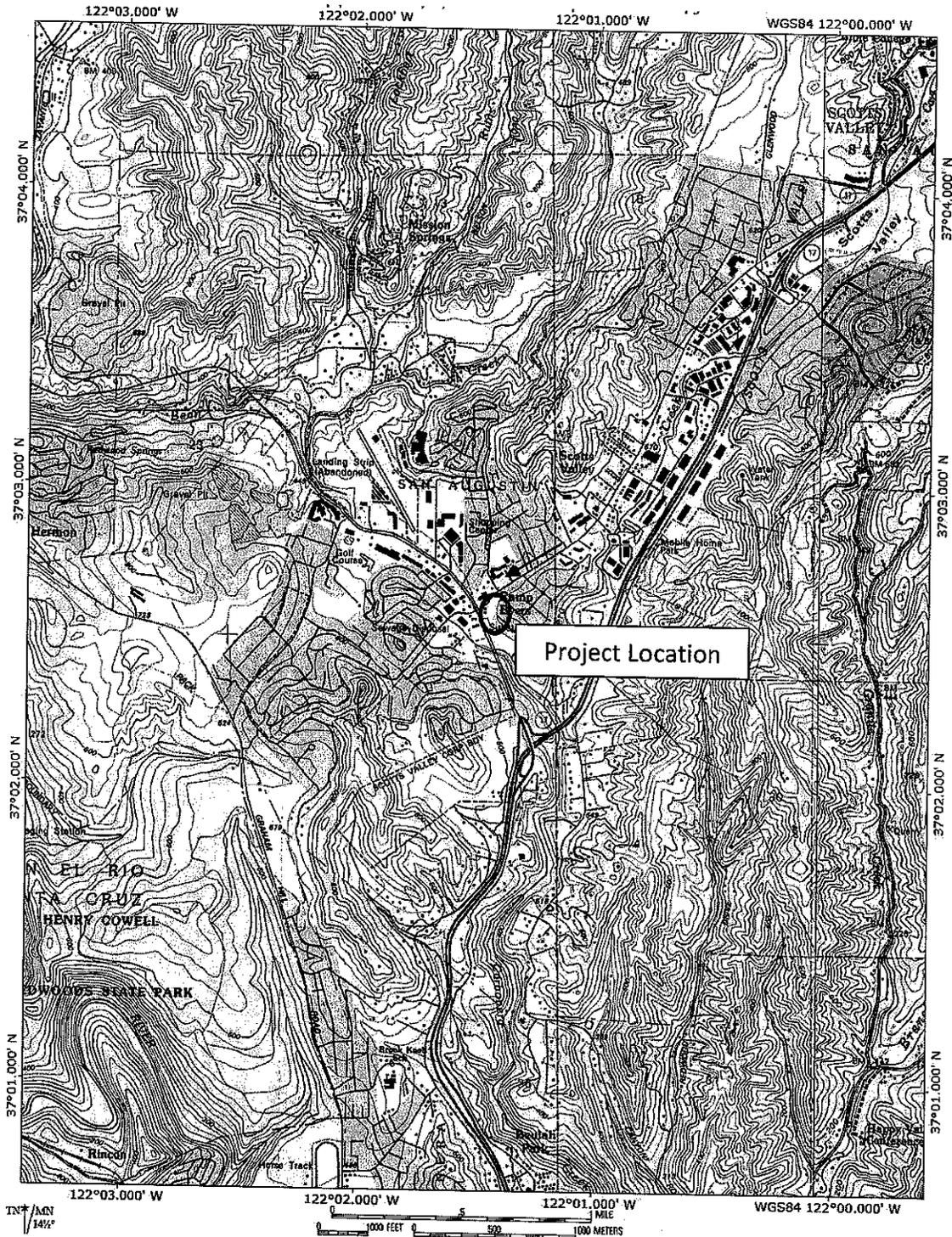
The project is located on Scotts Valley Drive near the intersection of Bean Creek Road in the City of Scotts Valley, north of Highway 17 and northeast east of Mt. Hermon Road as shown on Figure 1. The site is currently undeveloped and encompasses approximately 2.3 acres (APN 022-16-269).

The proposed project, as per a site grading plan prepared by C2G Civil Consultants Group, dated 6-20-13, depicts the construction of 20 residential units with roadway access from Scotts Valley Drive. The majority of the property will be re-graded to accommodate the proposed development; the proposed site grading plan is presented in Appendix A.

The proposed work requires the removal of forest trees and understory vegetation to accommodate the new residential buildings, access road, and parking. Approximately 2 acres of the approximately 2.3-acre property will be affected by the proposed construction project.

### 1.2 INTENDED USE OF THIS REPORT

The findings presented in this biological report are intended for the sole use of Apple Homes Development, Inc. and the City of Scotts Valley in evaluating the proposed project. The findings presented in this report are for information purposes only; they are not intended to represent the interpretation of any State, Federal or City law or ordinance pertaining to permitting actions within sensitive habitat or endangered species. The interpretation of such laws and/or ordinances is the responsibility of the applicable governing body.



**Figure 1. Location of Project Site on USGS Topographic Map**  
 (USGS Felton Quadrangle)

## 2.0 EXISTING BIOTIC RESOURCES

### 2.1 METHODOLOGY

The biotic resources of the project site were assessed through literature review and field observations. Site observations were made on May 5, 2014 by Kathleen Lyons (plant ecologist) and Dana Bland (wildlife biologist).

Vegetation mapping of the property was conducted from review of aerial photos, a topographic map, and field observations. The major plant communities within the project area, based on the classification system developed by *California Terrestrial Natural Communities* (California Department of Fish and Game, 2003 and 2010) and *A Manual of California Vegetation* (Sawyer and Keeler-Wolf 1995) and as amended to reflect site conditions, were identified during the field surveys. Modifications to the classification system's nomenclature were made, as necessary, to accurately describe the site's resources. The plant communities were mapped onto the engineer's base map. All plant species observed were recorded and identified to a level sufficient to determine their rarity; species observed are listed in the narrative section of this report. Plant nomenclature follows *The Jepson Manual Vascular Plants of California* (2012); the *An Annotated Checklist of the Vascular Plants of Santa Cruz County, California* (CNPS, 2013) was also reviewed.

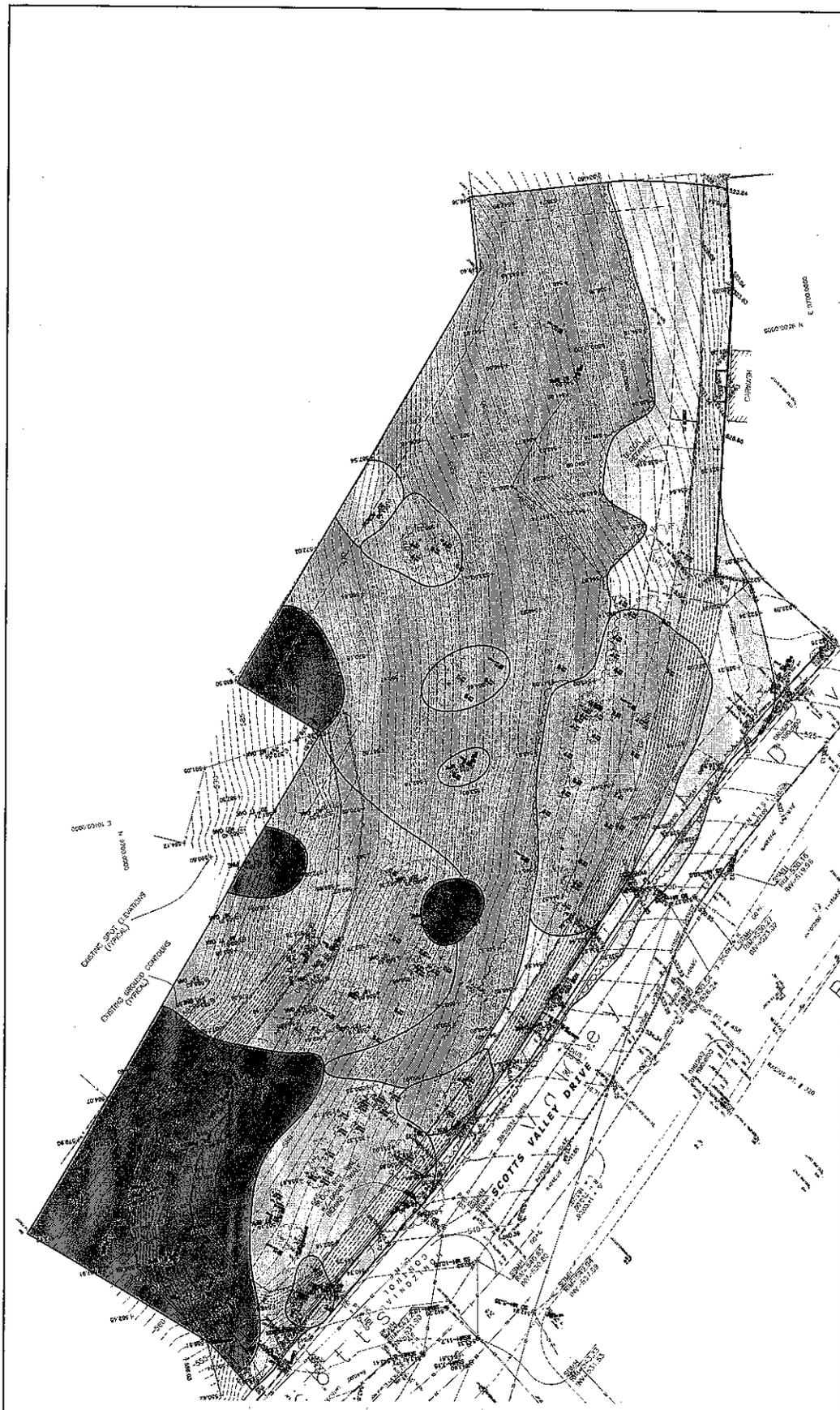
To assess the potential occurrence of special status biotic resources, two electronic databases were accessed to determine recorded occurrences of sensitive plant communities and sensitive species. Information was obtained from the California Native Plant Society's (CNPS) Electronic Inventory (2014) and California Department of Fish & Wildlife (CDFW) RareFind database (CDFW, 2014) for the Felton USGS quadrangle and eight surrounding quadrangles.

This report summarizes the findings of the biotic assessment for the proposed project. The potential impacts of the proposed residential project on sensitive biological resources are discussed below. Measures to reduce significant impacts to a level of less-than-significant are recommended, as applicable.

### 2.2 ENVIRONMENTAL SETTING

#### 2.2.1 Geographic Setting

The project is located on the Felton USGS quadrangle (see Figure 1). The project is located west of State Highway 17 and adjacent to residential and retail development; undeveloped lands extend from the property boundary to the southeast. There are no watercourses on the property. The Santa Cruz County Soil Survey (USDA, 1980) identifies three soil types within the property. They include Danville loam, 2-9% slopes (125), Pfeiffer gravelly sandy loam, 30-50% slopes (160), and Pfeiffer gravelly sandy loam, 15-30% slopes (159). A small area of Elder sandy loam, 9-15% slopes (131) abuts the property along Scotts Valley Drive. The project site supports ponderosa pine forest, oak woodland, annual grassland, and non-native tree groves. The distribution of vegetation types within the project area is depicted on Figure 2. Each vegetation type, its California vegetation code, and state ranking (rarity), is listed in Table 1.



**LEGEND**

Ponderosa Pine Forest

Annual Grassland

Non-native Tree Grove (Acacia)

Oak Woodland

Oak/Acacia Woodland

**Biotic Resources Group**

2551 S. Rodeo Gulch # 12 ♦ Sequel, California 95073  
 (831) 476-4803 ♦ [brg@cruzio.com](mailto:brg@cruzio.com)

**Scotts Valley Corners  
 Existing Vegetation**

Figure 2  
 7/14  
 725-01

Scotts Valley Corners

**Table 1. Vegetation Types at The Terrace at Scotts Valley Property**

CaCode <sup>1</sup>	Vegetation Type	Plant Association	State Ranking <sup>2</sup>
87.010.00	Ponderosa Pine Forest	Ponderosa Pine/Madrone/Coast Live Oak – California Blackberry	S4*
71.060.00	Coast Live Oak Woodland and Oak/Acacia Woodland	Coast Live Oak/Acacia- California Blackberry/Poison Oak	S4
42.026.09	Annual Grassland	Soft Chess/Rattail Fescue/ Filaree	None
None	Non-native Tree Groves	Acacia	None

<sup>1</sup> – California vegetation code as per CDFG/CNDDDB (2010); <sup>2</sup> – Vegetation types are ranked between S1 and S5. For vegetation types with ranks of S1-S3, all associations within the type are considered to be highly imperiled. \* Ponderosa pine on inland sandhills is high priority in CNDDDB

## 2.2.2 Vegetation and Wildlife Habitats

### Ponderosa Pine Forest

Ponderosa pine forest is located in the northeastern portion of the property. The forest is characterized by the presence of ponderosa pine (*Pinus ponderosa*). Associated trees species include madrone (*Arbutus menziesii*), coast live oak (*Quercus agrifolia*), tan oak (*Notholithocarpus densiflorus*), and California bay (*Umbellularia californica*). The understory supports native shrubs and forbs, such as California blackberry (*Rubus ursinus*), poison oak (*Toxicodendron diversilobum*), wild cucumber (*Marah fabacea*), and hazel nut (*Corylus cornuta*). Non-native acacia trees (*Acacia sp.*) abut the pine forest near Scotts Valley Drive. The existing dirt access road traverses a portion of this forest. The character of the ponderosa pine forest understory is depicted in Figure 3. The ponderosa pine forest abuts additional pine-forested areas on adjacent properties to the east and intermixes with the oak woodland on the subject property; a tall ponderosa tree that extends above the oak woodland on the property is depicted in Figure 4.

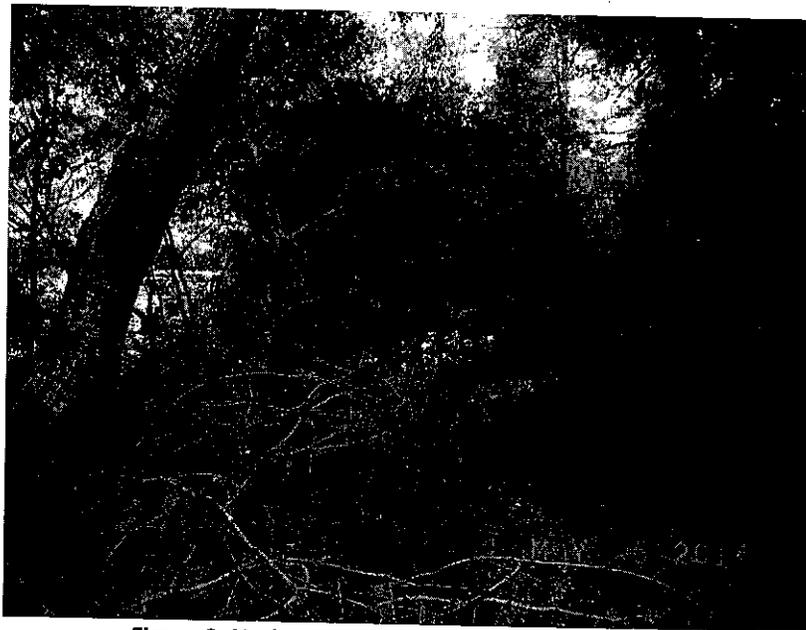


Figure 3. Understory within ponderosa pine forest



**Figure 4. Ponderosa pine tree growing above the adjacent oak woodland**

#### **Oak Woodland and Oak/Acacia Woodland**

The property supports grove-like stands of oak woodland. The oak woodland occurs along a portion of the access road as well as intermixing with non-native acacias parallel to Scotts Valley Drive. The tree cover is dense and dominated by coast live oak. Associated species include California blackberry, coyote brush (*Baccharis pilularis*), cotoneaster (*Cotoneaster sp.*) and Himalayan berry (*Rubus armeniacus*). Herbaceous species observed include rattail fescue (*Festuca myuros*), soft chess (*Bromus hordeaceus*), storksbill (*Erodium botrys*), rose clover (*Trifolium hirtum*), fiddle dock (*Rumex acetosella*), and scarlet pimpernel (*Anagallis arvensis*). The character of the oak woodland is depicted in Figure 5.



**Figure 5. Oak woodland, showing overstory oak trees and understory vegetation**

## Annual Grassland

The central and southern portions of the property support annual grassland. The grassland abuts the oak woodland and non-native tree groves (acacias). Plant cover is co-dominated by annual grasses, such as soft chess, ripgut brome (*Bromus diandrus*), farmers foxtail (*Hordeum murinum ssp. leporinum*), and rattlesnake grass (*Briza maxima*). Other herbaceous species include filaree, cut leaf geranium (*Geranium dissectum*), dandelion (*Taraxacum officinale*), cat's ear (*Hypochaeris spp.*), wild lettuce (*Lactuca sp.*), and wild radish (*Raphanus sativa*). Native herbaceous species include California poppy (*Eschscholzia californica*), miniature lupine (*Lupinus bicolor*), and miner's lettuce (*Claytonia perfoliata*). The character of the annual grassland is depicted in Figure 6.



Figure 6. Annual grassland, looking southward to oak woodland

## Non-native Tree Grove

Areas of the property paralleling Scotts Valley Drive support dense groves of non-native trees, primarily acacia. In some areas, native oak trees intermix with the acacias. Other non-native trees include locust (*Robinia sp.*), as well as non-native shrubs of cotoneaster and Himalayan berry.

## Wildlife Resources

The vegetative communities on this property are relatively small and surrounded by urbanized areas supporting residential and retail development and busy roadways. Thus the value of each vegetative type to wildlife is moderated, and rather the whole site functions as a mixed forest with small grassland openings. Common native wildlife expected to inhabit this site includes those that are able to forage in relatively small areas and tolerate high human presence in the surrounding developed areas, such as western fence lizard (*Sceloporus occidentalis*), red-shouldered hawk (*Buteo lineatus*), rock dove (*Columba livia*), Nuttall's woodpecker (*Picoides nuttallii*), Pacific-slope flycatcher (*Empidonax difficilis*), western scrub-jay (*Aphelocoma californica*), chestnut-backed chickadee (*Poecile rufescens*), American robin (*Turdus migratorius*), Spotted towhee (*Pipilo maculatus*), and Botta's pocket gopher (*Thomomys bottae*).

Although the site is not mapped in the Santa Cruz County Soil Survey as supporting Zayante series soils, there are Ponderosa pines present and sandy loam soils. Dr. Richard Arnold, entomologist, has observed

the federally endangered Mt. Hermon June beetle throughout the site (Dr. Richard Arnold, pers. comm. 2014).

## **2.3 SENSITIVE BIOTIC RESOURCES**

### **2.3.1 Regulated Habitats**

California Department of Fish and Wildlife (CDFW) is a trustee agency that has jurisdiction under Section 1600 et seq. of the CDFW Code. Under Sections 1600-1603 of the California Fish and Game Code, CDFW regulates all diversions, obstructions, or changes to the natural flow or bed, channel or bank of any river, stream or lake which supports fish or wildlife. CDFW also regulates alterations to ponds and impoundments; CDFW jurisdictional limits typically extend to the top of bank or to the edge of riparian habitat if such habitat extends beyond top of bank (outer drip line), whichever is greater. There are no jurisdictional water features on the property.

Water quality in California is governed by the Porter-Cologne Water Quality Control Act and certification authority under Section 401 of the Clean Water Act, as administered by the Regional Water Quality Control Board (RWQCB). The Section 401 water quality certification program allows the State to ensure that activities requiring a Federal permit or license comply with State water quality standards. Water quality certification must be based on a finding that the proposed discharge will comply with water quality standards which are in the regional board's basin plans. The Porter-Cologne Act requires any person discharging waste or proposing to discharge waste in any region that could affect the quality of the waters of the state to file a report of waste discharge. The RWQCB issues a permit or waiver that includes implementing water quality control plans that take into account the beneficial uses to be protected. Waters of the State subject to RWQCB regulation extend to the top of bank, as well as isolated water/wetland features and saline waters. Should there be no Section 404 nexus (i.e., isolated feature not subject to USACE jurisdiction); a report of waste discharge (ROWD) is filed with the RWQCB. The RWQCB interprets waste to include fill placed into water bodies. The property is not located within the RWQCB's jurisdiction as per the Section 401 water quality certification program, because there are no creeks or watercourses.

The US Army Corps of Engineers (USACE) regulates activities within waters of the United States pursuant to congressional acts: Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act (1977, as amended). Section 10 of the Rivers and Harbors Act requires a permit for any work in, over, or under navigable waters of the United States. Navigable waters are defined as those waters subject to the ebb and flow of the tide to the Mean High Water mark (tidal areas) or below the Ordinary High Water mark (freshwater areas). The property has no watercourses within the USACE's jurisdiction.

### **2.3.2 Sensitive Habitats**

Sensitive habitats are defined by local, State, or Federal agencies as those habitats that support special status species, provide important habitat values for wildlife, represent areas of unusual or regionally restricted habitat types, and/or provide high biological diversity.

CDFW classifies and ranks the State's natural communities to assist in the determining the level of rarity and imperilment. Vegetation types are ranked between S1 and S5. For vegetation types with ranks of S1-S3, all associations within the type are considered to be highly imperiled. If a vegetation alliance is

ranked as S4 or S5, these alliances are generally considered common enough to not be of concern; however, it does not mean that certain associations contained within them are not rare (CDFG, 2007 and 2010). The proposed project area supports ponderosa pine forest; local stands occurring within the Zayante sandhills are considered to have imperiled status.

Although the property is not mapped as supporting Zayante sandhill substrate in the Santa Cruz County Soil Survey, the western portion of the property is shown to support such resources in the City of Scotts Valley Interim Programmatic Habitat Conservation Plan (IPHCP, 2001). The IPHCP was developed to address development within areas supporting two federally listed insects (i.e., Mt. Hermon June beetle and/or Zayante band-winged grasshopper) and to provide a permitting mechanism for certain developments consistent with the Federal Endangered Species Act (FESA). Dr. Richard Arnold, entomologist, has observed the federally endangered Mt. Hermon June beetle throughout the subject property (Dr. Richard Arnold, pers. comm., 2014); therefore permitting must address potential take of the species pursuant to FESA. The IPHCP area consists of 10 project units. In order to be eligible for coverage under the IPHCP and the City's Incidental Take Permit (ITP) the parcel to be developed must be located in one of these units and the parcel must meet size requirements. The subject property, encompassing approximately 2.3 acres, is not located within one of the IPHCP project unit and is too large in size to be covered under the City's ITP. Potential impacts to the habitat for the federally listed Mt. Hermon June beetle will require a project-specific Habitat Conservation Plan/ITP. (Note: Issues relating to Mt. Hermon June beetle, a federally listed species are subject to separate review by Dr. Richard Arnold through a separate agreement with the landowner).

The City has requirements for the protection of tree resources. The engineers site survey (C2G Consultants Group) demarcated the location of all/most trees within the proposed development/grading area. Ninety-nine (99) trees/tree groups were inventoried; a preliminary evaluation of the grading plan found up to 82 trees are slated for removal or which up to 64 trees may meet the City's protected tree criteria (i.e., acacias do not qualify as protected trees). An arborist report will be required to identify specific measures to avoid, minimize and compensate for the expected tree removal.

### 2.3.3 *Special Status Plant Species*

Plant species of concern include those listed by either the Federal or State resource agencies as well as those identified as rare by CNPS (List 1B). The search of the CNPS and CNDDDB inventories for the Felton and eight surrounding quadrangles identified the special status plant species with potential to occur in the project area. Species evaluated for potential occurrence within the proposed project area as per CNDDDB and CNPS records are listed on Table 2. This evaluation included a review of the habitat requirements for each species, the presence of specialized microhabitats required for such species within the project site, and field observations. The spring 2014 field survey was sufficient in determining presence or absence of special status woody, perennial species and the presence or absence of specialized microhabitats required by several special status species (i.e., Zayante sandhills, coastal prairie/grassland, limestone outcrops, pine forest, rocky outcrops, or serpentine substrate). The May field survey was conducted during the blooming season of several special status sandhill species (i.e., Ben Lomond spineflower, Santa Cruz wallflower) and none were detected on the property. In summary, no special status plant species were observed, or are expected to occur, in the project development area.

Table 2. Special Status Plant Species Evaluated for Potential Presence at The Terrace at Scotts Valley Property

Scientific Name	Common Name	Lifeform	CNPS Rare Plant Rank	CESA	FESA	Nearest Record Potential to Occur on Site
<i>Amsinckia lunaris</i>	bent-flowered fiddleneck	annual herb	1B.2	None	None	Polo Ranch, Scotts Valley; rich soils in grassland No suitable habitat; presumed absent
<i>Arctostaphylos andersonii</i>	Anderson's manzanita	perennial evergreen shrub	1B.2	None	None	Nisene Marks SP, N end of Redwood Drive, Aptos No suitable habitat; not observed
<i>Arctostaphylos hookeri</i> ssp. <i>hookeri</i>	Hooker's manzanita	perennial evergreen shrub	1B.2	None	None	Mar Monte Road area, Aptos No suitable habitat; not observed
<i>Arctostaphylos pajaroensis</i>	Pajaro manzanita	perennial evergreen shrub	1B.1	None	None	Monterey County No suitable habitat; not observed
<i>Arctostaphylos silvicola</i>	Bonny Doon manzanita	perennial evergreen shrub	1B.2	None	None	N of Redwood Glen Camp in Zayante sandhills No suitable habitat; not observed
<i>Arenaria paludicola</i>	marsh sandwort	perennial stoloniferous herb	1B.1	CE	FE	Rich marsh area; historic record from Camp Evers, Scotts Valley No suitable habitat; presumed absent
<i>Calyptridium parryi</i> var. <i>hesseae</i>	Santa Cruz Mountains pussypaws	annual herb	1B.1	None	None	Zayante sandhills No suitable habitat; presumed absent; not observed during survey (blooming period)
<i>Campanula californica</i>	swamp harebell	perennial rhizomatous herb	1B.2	None	None	Rich seasonally marshy area; historic record from Camp Evers, Scotts Valley No suitable habitat; presumed absent
<i>Carex saliniiformis</i>	deceiving sedge	perennial rhizomatous herb	1B.2	None	None	Historic record from Camp Evers, Scotts Valley; Forested area in UCSC No suitable habitat; not observed
<i>Ceanothus ferrisiae</i>	Coyote ceanothus	perennial evergreen shrub	1B.1	None	FE	Serpentine chaparral, Santa Clara Co. No suitable habitat; not observed
<i>Centromadia parryi</i> ssp. <i>congdonii</i>	Congdon's tarplant	annual herb	1B.1	None	None	Mesic grassland, Watsonville region No suitable habitat; presumed absent
<i>Chorizanthe pungens</i> var. <i>hartwegiana</i>	Ben Lomond spineflower	annual herb	1B.1	None	FE	Zayante sandhills No suitable habitat; presumed absent; not observed during survey (blooming period)
<i>Chorizanthe pungens</i> var. <i>pungens</i>	Monterey spineflower	annual herb	1B.2	None	FT	Mar Monte area, Aptos Sandy soils on oak woodland, scrub, maritime chaparral

Table 2. Special Status Plant Species Evaluated for Potential Presence at The Terrace at Scotts Valley Property

Scientific Name	Common Name	Lifeform	CNPS Rare Plant Rank	CESA	FESA	Nearest Record Potential to Occur on Site
<i>Chorizanthe robusta</i> var. <i>hartwegii</i>	Scotts Valley spineflower	annual herb	1B.1	None	FE	No suitable habitat; presumed absent; not observed during survey (blooming period)
<i>Chorizanthe robusta</i> var. <i>robusta</i>	robust spineflower	annual herb	1B.1	None	FE	Scotts valley grassland/sandstone outcrops No suitable habitat; presumed absent; not observed during survey (blooming period)
<i>Cirsium fontinale</i> var. <i>campylon</i>	Mt. Hamilton thistle	perennial herb	1B.2	None	FE	Freedom Blvd area, Aptos, sandy soils No suitable habitat; presumed absent; not observed during survey (blooming period)
<i>Collinsia multicolor</i>	San Francisco collinsia	annual herb	1B.2	None	None	Serpentine seeps, Sierra Azul No suitable habitat; not observed
<i>Dacryophyllum falcatifolium</i>	tear drop moss	perennial herb	1B.3	None	None	Moist, shady slopes; found in north coast /Swanton and Scotts creek Shady hillside present yet too dry; presumed absent
<i>Dudleya abramsii</i> ssp. <i>setchellii</i>	Santa Clara Valley dudleyi	perennial herb	1B.2	None	None	Moist bedrock outcrops No suitable habitat; presumed absent
<i>Eriogonum nudum</i> var. <i>decurrens</i>	Ben Lomond buckwheat	perennial herb	1B.1	None	None	Serpentine chaparral No suitable habitat; not observed
<i>Erysimum ammophilum</i>	sand-loving wallflower	perennial herb	1B.2	None	None	Zayante sandhills No suitable habitat; not observed
<i>Erysimum teretifolium</i>	Santa Cruz wallflower	perennial herb	1B.1	CE	FE	Dunes, Monterey Bay dunes No suitable habitat; presumed absent; not observed during survey (blooming period)
<i>Fissidens pauperculus</i>	minute pocket moss	moss	1B.2	None	None	Zayante sands No suitable habitat; presumed absent; not observed during survey (blooming period)
<i>Fritillaria liliacea</i>	Fragrant fritillary	perennial herb	1B.2	None	None	Nisene Marks SP, redwood forest No suitable; presumed absent
<i>Gilia tenuiflora</i> ssp. <i>arenaria</i>	Monterey gilia	annual herb	1B.2	CT	FE	Moist areas ,serpentine grassland No suitable habitat; not observed
<i>Hesperocyparis abramsiana</i> var. <i>abramsiana</i>	Santa Cruz cypress	perennial evergreen tree	1B.2	CE	FE	Dune sands, Monterey Bay dunes No suitable habitat; presumed absent
<i>Hoita strobilina</i>	Loma Prieta hoita	perennial herb	1B.1	None	None	Pine forest on sandstone outcrops, sandy soils; Majors Creek, Boulder Creek No suitable habitat; not observed
						Serpentine chaparral, Loma Prieta No suitable habitat; not observed

Table 2. Special Status Plant Species Evaluated for Potential Presence at The Terrace at Scotts Valley Property

Scientific Name	Common Name	Lifeform	CNPS Rare Plant Rank	CESA	FESA	Nearest Record Potential to Occur on Site
<i>Holocarpha macradenia</i>	Santa Cruz tarplant	annual herb	1B.1	CE	FT	Coastal terrace grassland; Soquel area, Twin Lakes, Arana Gulch, Watsonville No suitable habitat; presumed absent
<i>Horkelia cuneata</i> var. <i>sericea</i>	Kellogg's horkelia	perennial herb	1B.1	None	None	Sandy soil, UCSC grassland No suitable habitat; presumed absent; not observed during survey (blooming period)
<i>Horkelia marinensis</i>	Point Reyes horkelia	perennial herb	1B.2	None	None	Coastal prairie, UCSC grassland No suitable habitat; presumed absent; not observed during survey (blooming period)
<i>Lessingia micradenia</i> var. <i>glabrata</i>	smooth lessingia	annual herb	1B.2	None	None	Serpentine chaparral, Loma Prieta No suitable habitat; presumed absent
<i>Maiacothamnus aboriginum</i>	Indian Valley bush mallow	perennial evergreen shrub	1B.2	None	None	Sandy washes, scrub, chaparral No suitable habitat; not observed
<i>Maiacothamnus arcuatus</i>	arcuate bush-mallow	perennial evergreen shrub	1B.2	None	None	Mt. Bache Road area, chaparral No suitable habitat; not observed
<i>Maiacothamnus hallii</i>	Hall's bush-mallow	perennial evergreen shrub	1B.2	None	None	Serpentine chaparral No suitable habitat; not observed
<i>Microseris paludosa</i>	marsh microseris	perennial herb	1B.2	None	None	Moist areas in coastal prairie, Graham Hill Road area No suitable habitat; presumed absent
<i>Monardella sinuata</i> ssp. <i>negrescens</i>	northern curly-leaved monardella	annual herb	1B.2	None	None	Zayante sandhills No suitable habitat; presumed absent; not observed during survey (blooming period)
<i>Monolopia gracilens</i>	woodland woollythreads	annual herb	1B.2	None	None	Sandy openings in chaparral, Quail Hollow County park No suitable habitat; presumed absent
<i>Pedicularis dudleyi</i>	Dudley's lousewort	perennial herb	1B.2	CR	None	Redwood forest; extirpated from County; historic record from headwaters of Aptos Creek No suitable habitat; presumed absent; not observed during survey (blooming period)
<i>Penstemon rattanii</i> var. <i>kleei</i>	Santa Cruz Mountains beardtongue	perennial herb	1B.2	None	None	Burned or disturbed areas in chaparral and woodland; historic record from Empire Grade area No suitable habitat; presumed absent; not observed during survey (blooming period)

Table 2. Special Status Plant Species Evaluated for Potential Presence at The Terrace at Scotts Valley Property

Scientific Name	Common Name	Lifeform	CNPS Rare Plant Rank	CESA	FESA	Nearest Record Potential to Occur on Site
<i>Pentachaeta bellidiflora</i>	white-rayed pentachaeta	annual herb	1B.1	CE	FE	Beach cliffs near Santa Cruz (historic) No suitable habitat; presumed absent
<i>Piperia candida</i>	White-flowered rein orchid	perennial herb	1B.2	None	None	Open to shady site in coniferous forests Shady hillside present yet unlikely due to dry conditions on slope; presumed absent; not observed during survey (blooming period)
<i>Plagiobothrys chorisianus</i> var. <i>chorisianus</i>	Choris' popcorn-flower	annual herb	1B.2	None	None	Moist depressions in grassland; Polo Ranch, Scotts Valley, Watsonville area
<i>Plagiobothrys diffusus</i>	San Francisco popcorn-flower	annual herb	1B.1	CE	None	No suitable habitat; presumed absent Seasonally moist grassland on coastal terrace, Moore Creek area, Fairway Drive area, Polo Ranch, Scotts Valley, Pogonip
<i>Plagiobothrys glaber</i>	Hairless popcorn-flower	annual herb	1A	CE	None	No suitable habitat; presumed absent Seasonally moist alkaline soils in marshes, meadows, swamps
<i>Polygonum hickmanii</i>	Scotts Valley polygonum	annual herb	1B.1	CE	FE	No suitable habitat; presumed absent Grasslands with sandstone outcrops, Scotts Valley
<i>Rosa pinetorum</i>	pine rose	perennial shrub	1B.2	None	None	No suitable habitat; presumed absent Pine woodland, Big Basin
<i>Silene verecunda</i> ssp. <i>verecunda</i>	San Francisco campion	perennial herb	1B.2	None	None	No suitable habitat; not observed Exposed mudstone in north part of County
<i>Streptanthus albidus</i> ssp. <i>albidus</i>	Metcalf Canyon jewel flower	annual herb	1B.2	None	FE	No suitable habitat; presumed absent Serpentine chaparral and grassland
<i>Streptanthus albidus</i> ssp. <i>peramoemus</i>	most beautiful jewel flower	annual herb	1B.2	None	None	No suitable habitat; presumed absent Serpentine chaparral and grassland
<i>Trifolium buckwestiorum</i>	Santa Cruz clover	annual herb	1B.1	None	None	No suitable habitat; presumed absent Moist depressions in grassland; Soquel area, UCSC

**CNPS Status:** List 1B: These plants (predominately endemic) are rare through their range and are currently vulnerable or have a high potential for vulnerability due to limited or threatened habitat, few individuals per population, or a limited number of populations. List 1B plants meet the definitions of Section 1901, Chapter 10 of the CDFW Code.

### 2.3.4 Special Status Wildlife Species

Special status wildlife species include those listed, proposed or candidate species by either the Federal or the State resource agencies as well as those identified as State species of special concern. In addition, all raptor nests are protected by Fish and Game Code, and all migratory bird nests are protected by the Federal Migratory Bird Treaty Act. Special status wildlife species were evaluated for their potential presence in the project area as described in Table 3 below.

The special status wildlife species that are known to occur or may occur within the project area include Mt. Hermon June beetle, nesting birds, roosting bats and woodrats. Measures are given below to avoid or minimize potential impacts to these species. There is no suitable habitat for the remaining special status wildlife species listed in Table 3.

**Table 3. Special status wildlife species and their predicted occurrence at The Terrace at Scotts Valley Property.**

SPECIES	STATUS <sup>1</sup>	HABITAT	POTENTIAL OCCURRENCE ON SITE
<b>Invertebrates</b>			
Ohlonge tiger beetle <i>Cicindela ohlonge</i>	FE	Coastal terrace prairie with sparse vegetation and openings, Watsonville loam soils	None, no suitable habitat on site.
Mt. Hermon June beetle <i>Polyphylla barbata</i>	FE	Chaparral and ponderosa pine with Zayante sandy soils	Observed on site by Dr. R. Arnold.
Zayante band-winged grasshopper <i>Trimerotropis infantilis</i>	FE	Openings in sand hills parkland habitat with Zayante sandy soils	No suitable habitat on site.
Smith's blue butterfly <i>Euphilotes enoptes smithi</i>	FE	Coastal dunes and coastal sage scrub with buckwheat plants	No suitable habitat on site.
<b>Fish</b>			
Coho salmon <i>Oncorhynchus kisutch</i>	FE, SE	Perennial creeks and rivers with gravels for spawning	No suitable habitat in project area.
Steelhead <i>Oncorhynchus mykiss</i>	FT	Perennial creeks and rivers with gravels for spawning	No suitable habitat in project area.
<b>Amphibians</b>			
California red-legged frog <i>Rana aurora draytonii</i>	FT, CSC	Riparian, marshes, estuaries and ponds with still water at least into June.	No suitable habitat in project area.
Foothill yellow-legged frog <i>Rana boylei</i>	CSC	Creeks and rivers with cobble substrate	No suitable habitat on site.
<b>Reptiles</b>			
Western pond turtle <i>Actinemys marmorata</i>	CSC	Creeks and ponds with water of sufficient depth for escape cover, and structure for basking; grasslands or bare areas for nesting.	No suitable habitat in project area.

**Table 3. Special status wildlife species and their predicted occurrence at The Terrace at Scotts Valley Property.**

SPECIES	STATUS <sup>1</sup>	HABITAT	POTENTIAL OCCURRENCE ON SITE
<b>Birds</b>			
Osprey <i>Pandion haliaetus</i>	None	Nests in tall trees adjacent to reservoirs and rivers	None, no suitable habitat on site.
White-tailed kite <i>Elanus leucurus</i>	FP	Nests in tall riparian trees adjacent to open lands for foraging	None, no suitable habitat on site.
<b>Mammals</b>			
Pallid bat <i>Antrozous pallidus</i>	CSC	Roosts in caves, hollow trees, mines, buildings, bridges, rock outcroppings	Possible in mixed evergreen forest if suitable tree hollows present.
Santa Cruz kangaroo rat <i>Dipodomys venustus venustus</i>	None	Manzanita chaparral with sandy soils	None. No suitable habitat on site.
San Francisco dusky-footed woodrat <i>Neotoma fuscipes annectens</i>	CSC	Woodlands including oaks, willow riparian, Eucalyptus	May occur within oak woodland habitat.
American badger <i>Taxidea taxus</i>	CSC	Grasslands with friable soils	None, no suitable habitat on site; grasslands on site too small in area and isolated to support this medium sized mammal.

<sup>1</sup> Key to status: FE=Federally listed as endangered species; FT=Federally listed as threatened species; SE=State listed endangered; FP=Fully protected species by State; CSC=California species of special concern

## 3.0 IMPACT AND MITIGATION DISCUSSION

### 3.1 IMPACT CRITERIA

#### 3.1 *Thresholds of Significance*

The thresholds of significance presented in Appendix G of the CEQA Guidelines were used to evaluate project impacts and to determine if implementation of the proposed Project would pose significant impacts to botanical resources. For this analysis, significant impacts are those that substantially affect, either directly or through habitat modifications:

- A species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by CDFW or USFWS or NMFS;
- Riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by CDFW or USFWS;
- Federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

### 3.2 ENVIRONMENTAL IMPACTS, MITIGATION MEASURES AND SIGNIFICANCE DETERMINATION FOR THE PROPOSED PROJECT

The proposed residential development project was evaluated for its potential direct and indirect impacts to biotic resources. Impacts to sensitive habitats/resources were considered potentially significant.

Ninety-nine (99) trees/tree groups were inventoried on the property (C2G Civil Consultants Group); a preliminary evaluation of the grading plan found up to 82 trees are slated for removal or which up to 64 trees may meet the City's protected tree criteria (i.e., acacias do not qualify as protected trees). The preliminary review found the project will require removal of 3 ponderosa pines, 61 coast live oaks, and 18 acacias. An arborist report will be required to identify specific measures to avoid, minimize and compensate for the expected tree removal.

Nesting birds may occur in the forest habitat types on the project site. Because most nesting birds are protected by the Migratory Bird Treaty Act, measures are listed below to avoid potentially significant impacts if any are present during construction. Roosting bats may occur in the trees on the project site, and measures to avoid impacts are also listed below. San Francisco dusky-footed woodrats may also occur in the forest habitat, and impacts to woodrats are also detailed below.

As noted in Section 2.3.4, the project site is known occupied habitat for the federally endangered Mt. Hermon June beetle (R. Arnold, pers. comm., 2014.). Because the size of the property exceeds the limits

imposed by the IPHCP, this project will not qualify to be included in the existing Programmatic HCP for this species. A separate application to the US Fish and Wildlife Services will need to be made by the developer for issuance of an ITP; the ITP process will require preparation and submittal of a project-specific HCP. Measures to minimize impacts to this beetle are listed below.

**Impacts to Sensitive Vegetative Resources.** The project will remove up to 82 trees, of which up to 64 trees may meet the City's protected tree criteria

**Mitigation Measure BIO-1.** The applicant shall have an arborist prepare a report on the trees on the property and an evaluation of trees to be removed. The applicant shall implement all measures contained within the arborist report for the avoidance and mitigation for tree removal. Measures include implementing a tree protection plan, maintenance of trees to remain, and implementing a tree replacement program that is subject to review and approval by the City of Scotts Valley.

**Impacts to Nesting Birds.** The removal of trees and other vegetation has the potential to injure or kill bird eggs or chicks, if any birds are actively nesting at the time of vegetation removal.

**Mitigation Measure BIO-2.** To avoid impacting breeding birds, if present, schedule construction to occur between August 1 and February 1 of any given year, which is outside the bird breeding season. If this schedule is not feasible, have a qualified biologist conduct a pre-construction survey for nesting birds. If any active bird nests are found within 50 feet of the work area for passerines, or 100 feet for raptors, either create a suitable buffer zone or postpone construction until the biologist has determined that all young have fledged.

**Impacts to Roosting Bats.** Removal of trees has the potential to kill or injure roosting bats, including the pallid bat, if any are present.

**Mitigation Measure BIO-3.** No more than 30 days prior to vegetation removal, a qualified bat ecologist shall survey the trees to determine if any roosting bats are present. If any are present, the bat ecologist shall recommend measures to allow bats to escape their roosts unharmed prior to tree removal. If necessary, the bat ecologist will consult with CDFW on a bat removal plan.

**Impacts to San Francisco Dusky-footed Woodrat.** The removal of trees and understory vegetation has the potential to kill or injure woodrats, if any are present.

**Mitigation Measure BIO-4.** No more than 30 days prior to vegetation removal, a qualified biologist shall survey the site for presence of woodrat houses. If any are present, the biologist determines they are occupied by surveys, the biologist shall consult with CDFW on a plan to relocate the woodrat house or construct a man-made woodrat house at an appropriate alternate site.

**Impacts to Mt. Hermon June Beetle.** The removal of vegetation, grading and construction of the proposed residential development will permanently remove approximately 2 acres of known occupied Mt. Hermon June beetle habitat. The construction has the potential to kill or injure individuals of this June beetle species. These are significant impacts under both CEQA and FESA.

**Mitigation Measure BIO-5.** The applicant shall develop a Habitat Conservation Plan for the Mt. Hermon June beetle at this site, as allowed under Section 10.a.1.B of the federal Endangered Species Act. The plan will describe measures to avoid and minimize impacts to individual beetles during and after construction, as well as compensatory mitigation sufficient to offset the permanent loss of this occupied beetle habitat. The HCP shall be approved by the U. S. Fish and Wildlife Service prior to any site disturbance for the proposed project.

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## **Appendix A**

**Proposed Grading Plan  
(Source: C2G Civil Consultants Group, Inc.)**



**Appendix C:**

**Mount Hermon June Beetle Survey Reports**

11 July 2001

Mr. Dick Engelhard  
Equus Group  
200 Franz Valley School Road  
Calistoga, CA 94515

RE: Report on Mount Hermon June Beetle Survey for Scotts Valley LP's Property  
Located Near Scotts Valley Drive and Mt. Hermon Road in Scotts Valley, CA

Dear Dick:

This letter reports on the findings of my two-night presence/absence survey for the endangered Mount Hermon June beetle (MHJB) at the above-referenced parcel. The remainder of this letter provides pertinent background information on the MHJB and describes my survey methods, findings, and recommendations.

**Background Information.**

This beetle is known scientifically as *Polyphylla barbata* (Coleoptera: Scarabaeidae) and was described in 1938 from specimens collected on Mount Hermon in Santa Cruz County. Of the 28 species of *Polyphylla* that occur in North America, the MHJB has one of the most restricted geographic ranges. It is found in association with Zayante sandy soils in the Felton-Scotts Valley-Ben Lomond area of Santa Cruz County, CA, and is known only from these Zayante sandhills. Due to the beetle's limited geographic range and the historical and anticipated loss of habitat within its limited range, the U.S. Fish & Wildlife Service (USFWS) recognized the MHJB as an endangered species in 1997, pursuant to provisions of the federal Endangered Species Act of 1973 (FESA).

The Zayante sandhills support a sand parkland vegetation community that is the preferred habitat for MHJB. This plant community is characterized by a mosaic mixture of Ponderosa pine, chaparral, and sparsely-vegetated areas of grasses, forbs and subshrubs, several of which are indigenous to the Zayante sandhills. Adults are usually active from about mid-June through mid-August, but their flight season started earlier in 2001. Males fly each evening for approximately one hour after dusk in search of females that are believed to be flightless and remain at their earthen burrows. Observations of flying males suggest that most flight activity occurs within a few feet above ground.

Although specific life history information for the MHJB is unknown, information from closely related species suggests that most of the beetle's life cycle is spent as a larva or grub that lives below ground and is a root feeder, presumably on one or more of the

plants that are indigenous to the sand parkland vegetation. Larval development is believed to require at least one year, and perhaps as long as two or three years.

### **Survey Methods.**

Males of MHJB are attracted to black lights, so black light traps operated between about 8:30 and 10:00 pm is the standard procedure used to determine presence/absence of MHJB at new survey locations. My surveys at your property were performed on the evenings of June 14 and July 4, 2001. My contacts in the greater Scotts Valley area indicated that the first MHJBs had been seen at porch lights during the week of May 28<sup>th</sup>, when a heat wave embraced the area.

Vegetation at the site consists of a mixture of remnants of native plants (Ponderosa Pines, oaks, lupines, and coyote brush), plus various weeds, ornamentals, and annual grasses that have invaded the site.

On every survey night I placed four black light traps in all portions of your property. All traps were placed in small clearings in the vegetation and at ground level in an effort to attract any MHJBs that were on-site, but to minimize the broadcast of light that could have attracted beetles from adjacent parcels.

On every survey night I also placed one or one trap on the nearby Cellular One antenna site, located just below the Mount Hermon cross. The antenna site is a known location for the MHJB, so it was used as a control.

All traps were operated from about 8:00 to 10:30 pm. While the traps were operating I walked throughout your parcel to search for any MHJB adults that might be emerging from the ground. I also observed beetle activity at each trap.

### **Survey Results.**

Although no MHJBs were observed at your property on June 14<sup>th</sup>, 26 adults were observed in the four traps placed there on July 4<sup>th</sup>. Two of the traps had four beetles each, a third had six beetles, and the fourth trap had 12 beetles. MHJBs were found in all portions of your property. In addition, MHJBs were observed on the parcel as they emerged from the ground and as they were flying on the property. The control trap operated at the Cellular One antenna site yielded a total of 27 MHJBs on June 14, and 18 MHJBs on July 4.

### **Recommendations.**

Because the MHJB occurs at your parcel, a permit for incidental take of the beetle will probably need to be obtained from USFWS to comply with the FESA, should you decide to pursue development of your parcel. Although the permit application is brief, a Habitat Conservation Plan (HCP) needs to be prepared and included as an attachment. This document describes the project, impacts to the endangered beetle, appropriate mitigation and monitoring activities to benefit the beetle, and identifies the parties responsible for all described activities. For you to have the greatest flexibility in designing your project and other site improvements, I suggest that an off-site mitigation

solution may be more appropriate than attempting to accomplish both mitigation and development at your parcel.

I recommend that you contact Colleen Sculley, entomologist for the USFWS's Ventura office (805-644-1766) to discuss this matter further. She is tentatively planning to have a meeting with County and City of Scotts Valley officials, as well as interested property owners on August 8 at 2 PM in Scotts Valley. The purpose of the meeting is to discuss permit and mitigation issues, and to explore the possibility of a joint mitigation solution for the various affected landowners. I encourage you to attend this meeting. It may also be useful to contact the City of Scotts Valley and your county supervisor to advise them of your interest in their assistance with this issue.

Please feel free to contact me if you have questions or need further assistance.

Sincerely,

Richard A. Arnold, Ph.D.  
President

# Entomological Consulting Services, Ltd.

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19 June 2014

Chris Perri  
Apple Homes Development, Inc.  
16 Sherman Court  
Scotts Valley, CA 95066

RE: APN 022-162-69 at Scotts Valley Drive & Mt. Hermon Road in Scotts Valley, CA  
Presence-Absence Survey Report for the Endangered Mount Hermon June Beetle

Dear Chris:

This letter reports on the findings of my presence-absence survey for the endangered Mount Hermon June beetle (MHJB) at the above-noted property. Six males of the MHJB were observed during my one-night survey at your property. The remainder of this letter provides pertinent background information on the MHJB and describes my survey methods, findings, and conclusions, plus recommendations for project planning.

## **Background Information.**

This beetle is known scientifically as *Polyphylla barbata* (Coleoptera: Scarabaeidae) and was described in 1938 from specimens collected on Mount Hermon in Santa Cruz County. Of the 28 species of *Polyphylla* that occur in North America, the MHJB has one of the most restricted geographic ranges. It is found in association with Zayante sandy soils in the Felton-Scotts Valley-Mt. Hermon-Ben Lomond area of Santa Cruz County, CA. More recently, it has also been found at Bonny Doon and some other outlying areas from this core area of Zayante sandhills. Due to the beetle's limited geographic range and the historical and anticipated loss of habitat within its limited range, the U.S. Fish & Wildlife Service (USFWS) recognized the MHJB as an endangered species in 1997, pursuant to provisions of the federal Endangered Species Act of 1973 (FESA).

The Zayante sandhills support several indigenous plant communities that are preferred by the MHJB, including Silverleaf Manzanita Chaparral with Ponderosa pine, Sand Chaparral, mixed Silverleaf Manzanita Chaparral, Ponderosa pine forest, dense sand parkland and open sand parkland. These plant communities often intergrade to become a mosaic mixture of Ponderosa pine, chaparral, and sparsely-vegetated areas of grasses, forbs and subshrubs.

In most years, adults of the MHJB are active from about mid-May through mid-August. Males fly each evening for approximately one hour after dusk in search of females that are flightless and remain at mouths of their earthen burrows. Observations of flying males suggest that most flight activity occurs within a few feet above ground.

Although specific life history information for the MHJB is unknown, information from closely related species suggests that most of the beetle's life cycle is spent as a larva or grub that lives below ground and is a root feeder, presumably on one or more of the plants that are indigenous to the sand parkland vegetation. Larval development is believed to require at least one year, and perhaps as long as two or three years.

### **Survey Methods.**

The USFWS considers three nights of surveys, conducted throughout the MHJB's summer activity period, necessary to demonstrate absence of the beetle at a particular location. Males of MHJB are attracted to black lights, so black light traps operated between about 8:30 and 10:00 pm is the standard procedure used to determine presence or absence of MHJB at new survey locations. A one-night survey at your property was performed on the evening of June 18, 2014. I did not undertake the second or third surveys.

Your property measures approximately 2.264 acres. Soils at your property are identified by Bowman and Estrada (1980) as Elder sandy loam and Pfeiffer gravelly sandy loam. Zayante sands, which are known to support vegetation characteristic of the sandhill habitats and MHJB occur near your property and may even transition onto your property.

Six battery-operated, black light traps were placed in different portions of the property. All traps were placed at ground level in an effort to attract any MHJBs that were on-site, but to minimize the broadcast of light that could have attracted beetles from adjacent parcels. All traps were operated from about 8:15 to 10:30 pm.

Two additional traps were placed at the peak of Mount Hermon. Because this is a known location for the MHJB, it was used as a control to demonstrate that the endangered beetle was active on each of the survey nights.

### **Survey Results.**

Based on the resident native plants, I suspect your property originally supported Ponderosa Pine forest. However, invasive and landscape plants have colonized and degraded the native habitat.

Six males of the endangered Mount Hermon June beetle were trapped at your property, with one male in each of the six traps that were deployed. On the same evening, 17 MHJBs were observed in the two control traps at the peak of Mount Hermon. These survey findings indicate that despite the degraded habitat conditions, the MHJB occurs at your property.

Temperatures during my survey ranged from 67°F to 59°F. These temperatures are well within the range that MHJB is known to be active.

**Conclusions and Recommendations for Project Planning.**

Because the endangered MHJB occurs at your property, a permit for incidental take of the beetle will be required by the USFWS to comply with the FESA. If your project involves more than 15,000 sq. ft. of ground disturbance, it will not qualify for inclusion under the group permit administered by the City of Scotts Valley and Santa Cruz County. Rather, an individual incidental take permit would be required. To obtain an individual incidental take permit a habitat conservation plan must be prepared and the most effective form of conservation to secure this permit would be the purchase of conservation credits from the Zayante Sandhills Conservation Bank. I suggest that you check with Mr. Chad Mitcham of the Watsonville office (actually a local branch of the Ventura office) of USFWS to confirm this. He can be reached at (805) 512-6805.

**Reference Cited.**

Bowman, R.H. and D.C. Estrada. 1980. Soil Survey of Santa Cruz County, California. US Dept. of Agriculture, Soil Conservation Service. 148 pp. & maps.

If you have any questions about my survey or need further assistance, please contact me.

Sincerely,



Richard A. Arnold, Ph.D.  
President

**Appendix D:**  
**Conservation Credit Sales Receipt from the**  
**Zayante Sandhills Conservation Bank**

