Exhibit E

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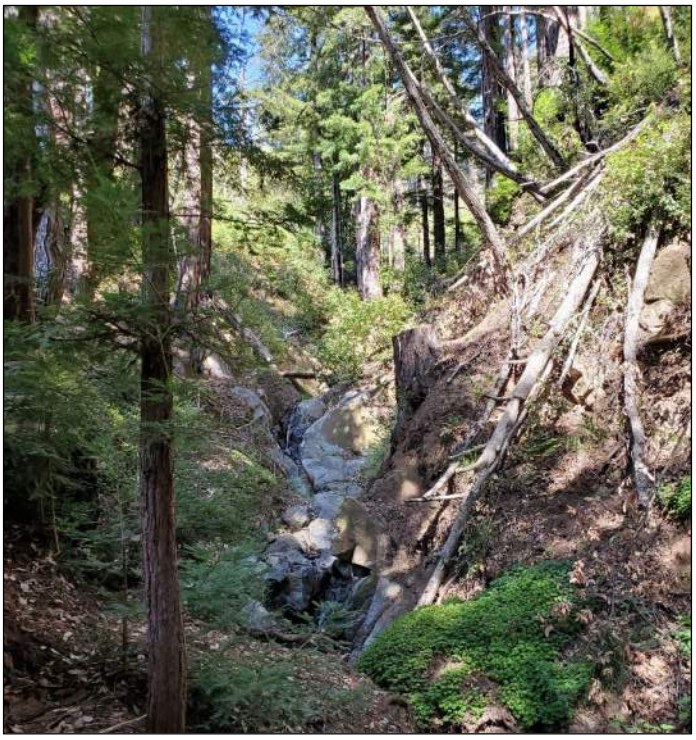
BIOLOGICAL ASSESSMENT

CUDE PARCEL – GREEN RIDGE/PALO COLORADO – BIG SUR
APN 418-081-033



Palo Colorado Creek

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March 21, 2023

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PROPERTY PROFILE

DATE: March 21, 2023

PREPARED BY: Nicole Nedeff, Consulting Ecologist. nikki@ventanaview.net
11630 McCarthy Road, Carmel Valley, CA 93924, 831.320.9463

SITE NAME, APN: Cude/Palo Colorado APN 418-081-033

PHYSICAL ADDRESS: 37761 Palo Colorado Road, Carmel, CA 93923

ACREAGE and ELEVAITON: Total acreage in property = 13.97. Elevations range from approximately 1000-feet to 1400-feet.

USGS QUAD: Mt. Carmel 7.5-minute 1956, photo-revised 1983; T18S, R1E, S4

OWNER: Jesse and Sandra Cude, 27787 Mesa Del Toro Road, Salinas, CA 93908
jessecude@gmail.com , 831.915.1954

MONTEREY COUNTY PLANNING AREA: Big Sur

ZONING/PRESENT LAND USE: Zoning = RDR/40-D(CZ) = Rural Density Residential, 40 acres per unit, requiring Design Review, within the Coastal Zone. Violation # = 14CE00095. Application for Coastal Development Permit in process.

SITE LOCATION: The approximately 14-acre, roughly rectangular parcel north of Palo Colorado Road is situated in a rural residential area of northern Big Sur. The dwelling site is accessed from a private driveway off London Road and Green Ridge Road (directly across Palo Colorado Road from the Mid-Coast Fire Station). The upper, perennial reaches of Palo Colorado Creek flow through the southeastern portion of the parcel in a narrow, steep canyon. The property is generally steep, with many hill slopes and canyon walls exceeding 30%. The parcel is interspersed with several flat areas, some of which are likely associated with historic tanbark and redwood logging activities that date back to the late 19th and early 20th centuries.

PROJECT DESCRIPTION: The owner wishes to resolve an unpermitted single family residential development on vacant property. The small, unpermitted dwelling and two sheds are located on a pre-existing, level pad. The relatively level flat can be dated to at least 1994, as seen on GoogleEarth imagery, and likely reflects historic logging activities in the former redwood and tanbark harvest areas in and around northern Big Sur. From the interpretation of aerial imagery over the past 28 years of the GoogleEarth record, it appears that at some point after purchasing the parcel, the current land owner expanded the large, historic flat area by enlarging pre-existing terraces cut into the northerly hill side. The unpermitted dwelling and associated infrastructure are proposed for permitting according to current Monterey County protocols. The cabin site is accessed by a private, unpaved road along a recorded easement across adjoining parcels in the rural residential Green Ridge neighborhood north of Palo Colorado Road. The subject parcel is surrounded by similar rural residential development.

SITE VISITS: August 20, 2022, August 29, 2022.

HABITAT IN PROJECT AREA: Mixed Evergreen Forest, Northern Coastal Scrub, Redwood Forest, ruderal vegetation.

SIGNIFICANT BIOLOGICAL ATTRIBUTES ON PROPERTY:

- √ Redwood Forest - Environmentally Sensitive Habitat Area
- √ Palo Colorado Creek - Environmentally Sensitive Habitat Area

INTRODUCTION

Prior to the preparation of this Biological Assessment, approximately 1315 square feet of Mixed Evergreen Forest understory, 400 square feet of Redwood Forest understory and 1103 square feet of Northern Coastal Scrub habitat were disturbed by the current land owner on steep hill slopes that often exceed 30-percent in rugged Big Sur. The current land owner removed one, live madrone tree (*Arbutus menziesii*) with a trunk diameter of approximately 6 inches measured 24 inches above the ground. The Redwood Forest understory is technically considered Environmentally Sensitive Habitat Area (ESHA) in the California Coastal Zone and Big Sur Planning Area.

Improvements undertaken by the current land owner include construction of a small cabin and two out buildings on a pre-existing flat, installation of two water storage tanks and a solar array, and modifications to a pre-existing parking pad. Most of the unpermitted improvements are situated on a large, pre-existing flat area that was in-place prior to 1994 (Appendix B includes relevant GoogleEarth imagery).

The parcel displays evidence of historic logging and site disturbances that included the felling, processing and removal of old growth redwood trees. Roads, skid trails and flat logging landings were graded decades ago through the subject property to access and process the old growth trees. The historic logging disturbances characterizing the subject property are typical of the late 19th and early 20th century redwood and tanbark harvest industry in Palo Colorado Canyon and northern Big Sur. Appendix C provides references and evidence of historic logging that occurred on the parcel and the immediate vicinity prior to the adoption of state and local zoning codes and environmental protection measures.

Most of the property burned during the 2016 Soberanes Fire and shrubby vegetation, some mature trees, as well as many dead and downed trees were consumed. Trees that burned on the property in 2016 are resprouting, shrub-dominated habitat is maturing, and forest understory plants are vigorously regenerating today.

In 2014, a zoning violation was reported on the subject property and in 2018 the land owner received a Notice of Violation from the County of Monterey regarding unpermitted development in the Coastal Zone (Administrative Citation dated August 21, 2018, 14CE00095). At this time, the land owner wishes to remedy the Zoning Violation and authorize the residence and improvements by applying for a Coastal Development Permit to resolve unpermitted development.

Pursuant to email correspondence between the land owner Jesse Cude and Monterey County Senior Planner Mary Israel (forwarded to me via email by Mr. Cude on July 28, 2022), a Biological Assessment has been prepared to address Ms. Israel's request, "that the Biological Report should include a survey of the stumps that are onsite. That report needs to discuss all natural environmental functions and plants/animals/trees that were affected by the development. Have them estimate the size (dbh) and health of the tanbark oaks that you removed."

This Biological Assessment describes the process for determining what natural habitat may have been present at the site before the current land owner began improvements. While it is not feasible to definitively describe habitat conditions or tree density and species composition that existed prior to the current ownership and before the 2016 Soberanes Fire, it is possible to

generally describe environmental impacts that resulted from the development of the dwelling site prior to the Soberanes Fire and in the years since then. Biological assessment of the property was augmented with historical accounts of early logging activities and GoogleEarth imagery.

The review of sequential aerial photographs available on GoogleEarth (Appendix B) and the identification of vegetation cover in habitat areas adjoining the development sites provide clues as to what the site conditions may have been like prior to disturbance by the current owner.

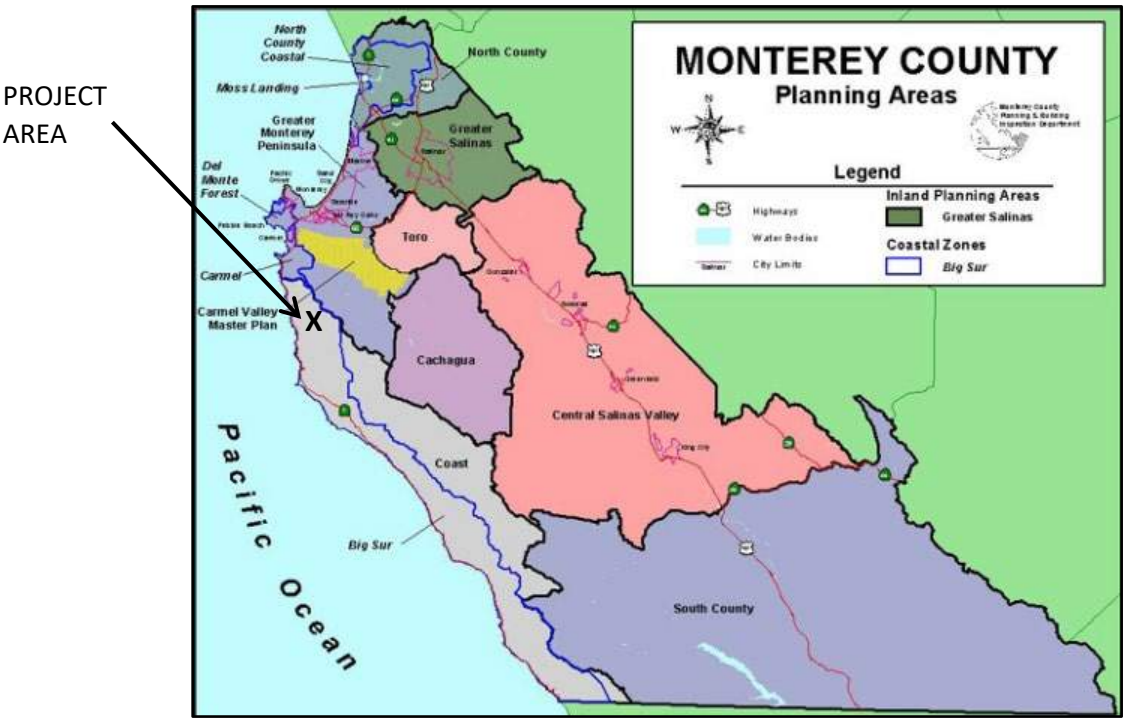

Figure 1 – Project site location in the Big Sur Planning Area, Monterey County.

Figure 2 – Assessor's Parcel Map of subject property.

Figure 3 – Aerial image of subject parcel.

I. SURVEY METHODS

On-site inspection, local maps, place-based knowledge, literature references, and Internet data searches were used during the preparation of the Biological Assessment for the subject parcel. In addition, copies of a topographic survey map, site plan, septic design plan and erosion control plan were provided by the property owner.

Floristic field survey methods utilized in the Biological Assessment of the project area conform to protocols outlined by the California Department of Fish and Wildlife (November 2009). The purpose of the statewide survey protocols is to facilitate a comprehensive, consistent and systematic approach for the identification of plants, natural communities and special status elements in proposed development areas. The goal is to produce reliable information and to maximize the potential for locating special status species and communities. The Biological Assessment also conforms to protocols for report requirements outlined in Monterey County Zoning Ordinance Title 20 for Discretionary Permit Application Submittals.

Field survey for the Biological Assessment of the project site focused on the following objectives:

- Identify and map natural communities.
- Locate and map environmentally sensitive habitat, special status plants and wildlife species.
- Identify and map significant biological features.
- Identify and assess past and potential impacts to biological resources.
- Consider site conditions for restoration strategies.
- Consider remedial work or actions to reduce or eliminate potential impacts to sensitive resources.

An initial botanical and habitat survey of the project site was conducted on August 20, 2022 and a follow-up visit was made on August 29, 2022. Prior to the August 20, 2022 site visit, California Department of Fish and Wildlife - California Natural Diversity Database (CNDDB) RareFind computer data and BIOS maps for the Palo Colorado Canyon and northern Big Sur region were consulted. CNDDB database information displays several records, or "element occurrences", of sensitive or special status species occurring in the northern Big Sur area, particularly along the Maritime Chaparral-dominated ridge south of Palo Colorado Canyon. The area surrounding the subject property is depicted on the attached CNDDB map (Figure 4). In addition, a query of the California Native Plant Society web-based "Inventory of Rare and Endangered Vascular Plant Species" was consulted to identify occurrences of special status plants in natural communities where the subject parcel is located.

The CNDDB BIOS data downloaded August 19, 2022 for the project area displays only a very general, unspecified occurrence of maple-leaved checkerbloom (*Sidalcea malachroides*) occurring in the vicinity of the subject parcel. This fuzzy-leaved plant has a California Rare Plant Rank of 4.2, meaning that is has a limited distribution within the state. Maple-leaved checkerbloom is generally found in disturbed places along road-sides in damp coastal canyons. This plant was not observed on the subject property, or the neighboring vicinity.

The August 2022 botanical survey and biological resource site assessment around and through the project area were conducted on foot. The August assessment period was not optimal to

record nesting birds or annual, flowering plants that could potentially occupy the project area, however the survey period was entirely appropriate for the identification of trees, shrubs and typical indicator plant and wildlife species common in and around Redwood Forest, Mixed Evergreen Forest and Northern Coastal Scrub vegetation types in the Big Sur region.

No mammals or nesting or roosting avian species were observed during field surveys. Herpetological surveys were not conducted and no amphibians or reptiles were observed during site visits.

Common names for plants and wildlife species are noted with scientific names when they are first mentioned in the report text, and thereafter only common names are used. Scientific nomenclature for plants described in this report follows conventions used in Matthews and Mitchell (2015), and Baldwin, et al (2012). A list of plants observed on the property is included in Appendix A.

Photographs by the author in August 2022, unless noted otherwise.

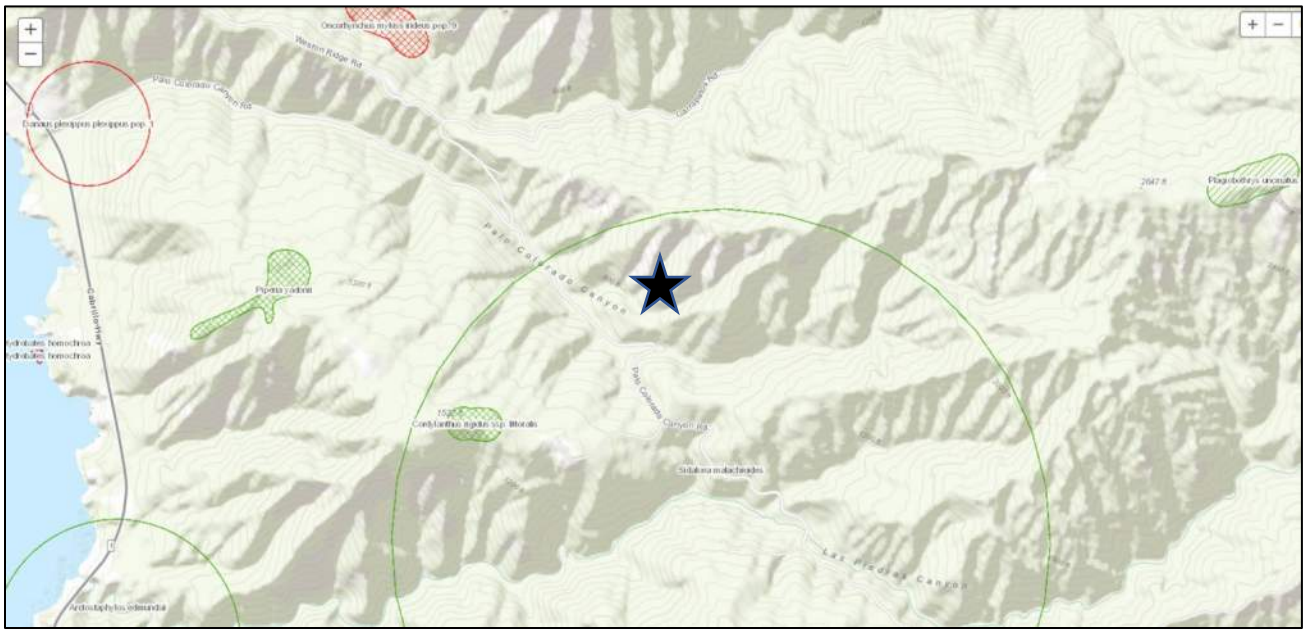

Figure 4 - CNDDB map download August 19, 2022. Black star indicates subject parcel. Large green circle corresponds to unspecified population of maple-leaved checkerbloom. Nearby element occurrences to the west and southwest correspond to plant species associated with Maritime Chaparral habitat. Red circle at the mouth of Palo Colorado indicates Monarch Butterfly roosting habitat in eucalyptus trees and red polygon at top refers to steelhead habitat in Garrapata Creek. Green polygon at right indicates a population of Salinas Valley popcorn-flower (*Plagiobothrys uncinatus*), which occurs in dry grasslands.

No sensitive status species were documented on the subject parcel

II. PROPERTY DESCRIPTION AND EXISTING CONDITIONS

A. General Description:

The approximately 14-acre Cude parcel in northern Big Sur supports typical vegetation communities that characterize the steep canyons and hill slopes of the coastal Santa Lucia Range. The property includes a perennial reach of Palo Colorado Creek in an extremely steep and narrow canyon, as well as small open flats that likely supported historic logging activities in this region of Monterey County. Stands of Redwood Forest habitat with second and third-growth trees line the narrow canyons that slice through the parcel and many large, cut and burned stumps, as well as remnant logs and decaying boles speak to the historic logging of redwoods and tanbark oaks that occurred many decades in the past. Redwood Forest and the associated riparian corridor of Palo Colorado Creek are considered Environmentally Sensitive Habitat Areas in the Coastal Zone of the Big Sur Planning Area.

The subject parcel is north of Palo Colorado Canyon Road in a rural, residential neighborhood locally referred to as Green Ridge. It is unknown when historic site disturbances occurred and how much native vegetation may have been removed, particularly before forest management practices were introduced into the Central Coast logging industry. However, it is likely that substantial vegetation removal and grading activities in this region took place during industrial redwood and tanbark harvest activities in the late 19th and early 20th Centuries.
Evidence of significant historic redwood logging activity exists throughout the Redwood Forest and Mixed Evergreen Forest areas on the subject parcel and neighboring properties. Massive old growth redwood stumps on the subject parcel stand as testimonials to the habitat destruction associated with the historic tanbark and redwood logging industry. The old growth redwood stumps on the subject parcel are charred from fires and most have notches cut into the sides that are related to the installation of spring boards that supported sawyers. Spring board logging was gradually phased out after World War 2 in Big Sur when chainsaws became available. Old growth, second growth and third growth redwood logging, as well as tanbark oak harvest continued in Big Sur into the 1970's. All historic logging activities in the rugged northern Big Sur region were dependent on extensive networks of roads and skid trails to transport logs overland to and from landings where lumber was staged, milled and processed before being hauled to markets (Norman 2004).

The son of former property owners noted that,

> *… access to the property was via a road that came up along Palo Colorado Creek from where the present day paved road (Palo Colorado Canyon Road) makes a sharp turn to begin its climb up Murray Grade. Back then, there was an old redwood bridge that crossed the creek at that point and this road then passed by a very old cabin on its way up to our property. This cabin, we were told, was built around 1918. During that time, redwood and tan oak trees were being logged in this area and this road was a means to get the logs down to the main road and eventually to the mouth of the canyon and Notley's Landing. Our road extended up the canyon through my parent's property and beyond. Based on this information, I am fairly certain that the road and landings that were created in our area for the purpose of logging were built close to the year 1918 (Rance Kastor, January 30, 2023).*

Figure 5 – Redwood stump 6-feet in diameter near present-day cabin site. Note fairy ring of mature clonal sprouts around the stump. This is one of several large redwood stumps within 100-feet of the cabin flat. The cabin flat, travel trailer pad and lower parking pad likely served as logging landings where cut redwoods were processed and staged before transport to the historic port at Notley's Landing. Photo by Jesse Cude, March 2, 2023.

The current land owner purchased the approximately 14-acre subject parcel in December 2002, at which time the spring site had been identified, road access was in place, and several level pads already existed. The current land owner improved the largest level site to support a small cabin, out buildings, septic and leach field. Solar panels were placed on a south-facing hill side above the cabin site and a water storage and delivery system with gravity feed was enhanced in a seasonal drainage above the structures.

In summer 2016, nearly the entire property burned during the Soberanes Fire, however CalFire crews staged engines on the parking pad below the home site and pumped water from Palo Colorado Creek to successfully defend the residence and out-buildings. During the winter of 2017, heavy rains on burned hills above the residence resulted in the erosion of a culvert that directed seasonal flow through a portion of the property. The erosional gully was remediated with the installation of a 30-inch plastic culvert that directs water from an unnamed, seasonal drainage towards Palo Colorado Creek.

B. SOILS: Soils on the parcel consist of decomposed granite overlying competent granitic bedrock. Soils throughout the property are classified as Cienba fine, gravelly, sandy loams on 30-70 percent slopes.

C. NATURAL COMMUNITIES: General vegetation cover on the subject parcel can be described as Redwood Forest, Mixed Evergreen Forest and Northern Coastal Scrub. Redwood Forest lines the narrow, damp canyons on the subject property, with Mixed Evergreen Forest habitat on adjoining slopes and shrub-dominated Northern Coastal Scrub on steep, south-facing hill sides. Redwood Forest is designated as ESHA in the California Coastal Zone and Big Sur Planning Area.

The State of California's Vegetation Classification and Mapping Program (VegCAMP) is currently mapping plant cover across the entire state and attempting to classify natural plant communities according to vegetation alliances (Sawyer, et al, 2009). Alliances are groupings of plants defined by diagnostic species in the uppermost layer of vegetation, or groupings of plants with the highest canopy cover. Within Alliances are more specific units of vegetation called Associations – these finer mapping areas reflect local topographic, soil and micro-climates, as well as disturbance regimes.

1. Redwood Forest:

The coast redwood-dominated natural community on the subject parcel is identified by VegCAMP as the Coast Redwood/Tanbark Oak Alliance, numeric code 86.100.16 (*Sequoia sempervirens/Notholithocarpus densiflorus*). Redwood trees (*Sequoia sempervirens*) dominate the canopy, with tanbark oaks (*Notholithocarpus densiflorus*), California bay (*Umbellularia californica*), occasional oaks (*Quercus* sp.), and big-leaf maple (*Acer macrophyllum*) in the sub-canopy. This habitat type on the subject parcel was entirely burned by the Soberanes Fire and is generally recovering, with tanbark oaks either completely burned or in various stages of mortality due to the Sudden Oak Death (SOD) pathogen (*Phytophthora ramorum*).

Redwood Forest habitat is restricted to the perennial stream reaches of steep Palo Colorado Creek and adjoining narrow side canyons where soils maintain enough moisture to support the iconic trees. Shaded by a dense canopy, the Redwood Forest natural community supports many species typically found in similar habitat areas along the Big Sur coast, including tanbark oak, maple and bay. The open understory includes sparse cover of redwood sorrel (*Oxalis oregana*), Hooker's fairy bells (*Prosartes hookeri*), trillium (*Trillium chloropetalum*), Douglas iris (*Iris douglasiana*), a variety of fern species and occasional thimbleberry (*Rubus parviflorus*), among other characteristic species.

Linear corridors of fire-scarred second and third-growth redwood trees are restricted to the incised canyon bottom of Palo Colorado Creek and shady, damp, side canyons where massive cut and burned redwood stumps remain from historic logging in the region. Within 100-feet of the level cabin flat are two redwood stumps measuring 5-feet in diameter, one stump at 4.5-feet, and the 6-foot wide stump depicted in Figure 5 above. Many other old redwood stumps are scattered in the narrow canyons on the property and neighboring parcels.

Redwood Forest canopy shades the stream channel of Palo Colorado Creek, which flows through a very steep, narrow canyon over large, granitic boulders in a series of cascades and small pools. Areas along the channel where sediment has collected support horsetail (*Equisetum arvense*), chain ferns (*Woodwardia fimbriata*) and thick patches of bracken ferns (*Pteridium aquilinum*). Two different willow species, sitka willow (*Salix sitchensis*) and arroyo willow (*Salix lasiolepis*) can be found in discontinuous patches.

Tanbark oaks in the entire area of northern Big Sur are heavily impacted by SOD, which is rampant on the subject parcel. Many mature tanbark oaks in the Redwood Forest and associated Mixed Evergreen Forest matrix are dead, and dead standing trees and numerous decaying dead-falls now litter the forest floor after the Soberanes Fire. Young tanbark oak seedlings have sprouted in various places under the canopy, however the long-term resilience of these trees is uncertain due to the SOD pathogen.

2. Mixed Evergreen Forest:
VegCAMP does not have a specific Vegetation Alliance description or code that readily matches the composition of dominant tree species in the forested areas flanking Redwood Forest habitat characteristic of northern Big Sur. Forested habitat that supports a variety of trees and shrubs on the subject parcel is situated on steep, drier hill slopes adjoining the narrow canyons where redwoods tend to be found. The closest VegCAMP Alliance description that loosely matches vegetation on the subject parcel is referred to as the Coast Live Oak/Madrone/California Bay Alliance, numeric code 71.060.26 (*Quercus agrifolia/Arbutus menziesii/Umbellularia californica*).

Mixed Evergreen Forest is mostly composed of trees that do not shed their leaves during winter months, although the deciduous big-leaf maple (*Acer macrophyllum*) occasionally occurs in the canopy. Scattered canyon live oak (*Quercus chrysolepis*) and Shreve oak (*Quercus parvula* var. s*hrevei*) occur on the subject parcel with coast live oak in a mixture of diverse oak species. The understory on the property includes a variety of shrub and herbaceous plants, with California blackberry (*Rubus ursinus*), toyon (*Heteromeles arbutifolia*, snowberry (*Symphoricarpos albus),* coffeeberry (*Frangula californica*), and ubiquitous poison oak (*Toxicodendron diversilobum*). Light gaps in the canopy and ecotones along the margin of adjoining Northern Coastal Scrub vegetation support cream bush (*Holodiscus discolor*), California lilac (*Ceanothus thyrsiflorus*), elderberry (*Sambucus mexicana*), and woodmint (*Stachys bullata*), among other plants typical in this area of Monterey County.

3. Northern Coastal Scrub:
This natural community is distinguished by woody shrubs that often have pungent leaves and intricate flowers. Northern Coastal Scrub habitat typically occurs along the coast, but can extend inland as far as the presence of regular marine influence. On the subject property, this shrub-dominated vegetation community occurs mostly on sunny, south-facing steep slopes and extends from the margin of forested habitats up to the highest elevations on the property. The sparse appearance of this evergreen natural community is characteristic over much of the steep hill sides on the property and reflects regeneration after being completely burned in the 2016 Soberanes Fire.

No specific VegCAMP Alliance exactly matches the Northern Coastal Scrub habitat on the subject parcel. The closest similar Alliance is the California Sagebrush/Black Sage/Desert Broom Alliance, numeric code 32.120.03 (*Artemisia californica/Salvia mellifera/Baccharis sarothroides*). However, desert broom does not occur in Monterey County and is only found in arid regions of southern California. Coyote brush (*Baccharis pilularis*) generally occurs in Northern Coastal Scrub in Monterey County and this species is a close relative of desert broom, yet VegCAMP does not provide a description or code for this very common associate of California sagebrush and black sage.

Occasionally referred to as "soft chaparral" because of the flexible stems and foliage of the shrub cover, Northern Coastal Scrub on the subject property is mostly characterized by gray-green California sagebrush (*Artemisia californica*). Typical co-dominant species include coyote brush (*Baccharis pilularis*), poison oak (*Toxicodendron diversilobum*), sticky monkey-flower (*Diplacus aurantiacus*), lizard-tail *(Eriophyllum staechadifolium*), black sage (*Salvia mellifera*), deerweed (*Acmispon glaber* var*. glaber*) and occasional western bracken fern (*Pteridium aquilinum* var*. pubescens*). Twining coast morning glory (*Calystegia macrostegia* ssp. *cyclostegia*) and wild cucumber (*Marah fabacea*) can often be seen draped over the shrub vegetation. Coffeeberry (*Frangula californica* ssp*. californica*), manzanita (*Arctostaphylos glandulosa*) and golden fleece (*Ericameria arborescens*) occur less frequently in the overall matrix of shrubs, however each of these species is dominant or co-dominant in particular areas.

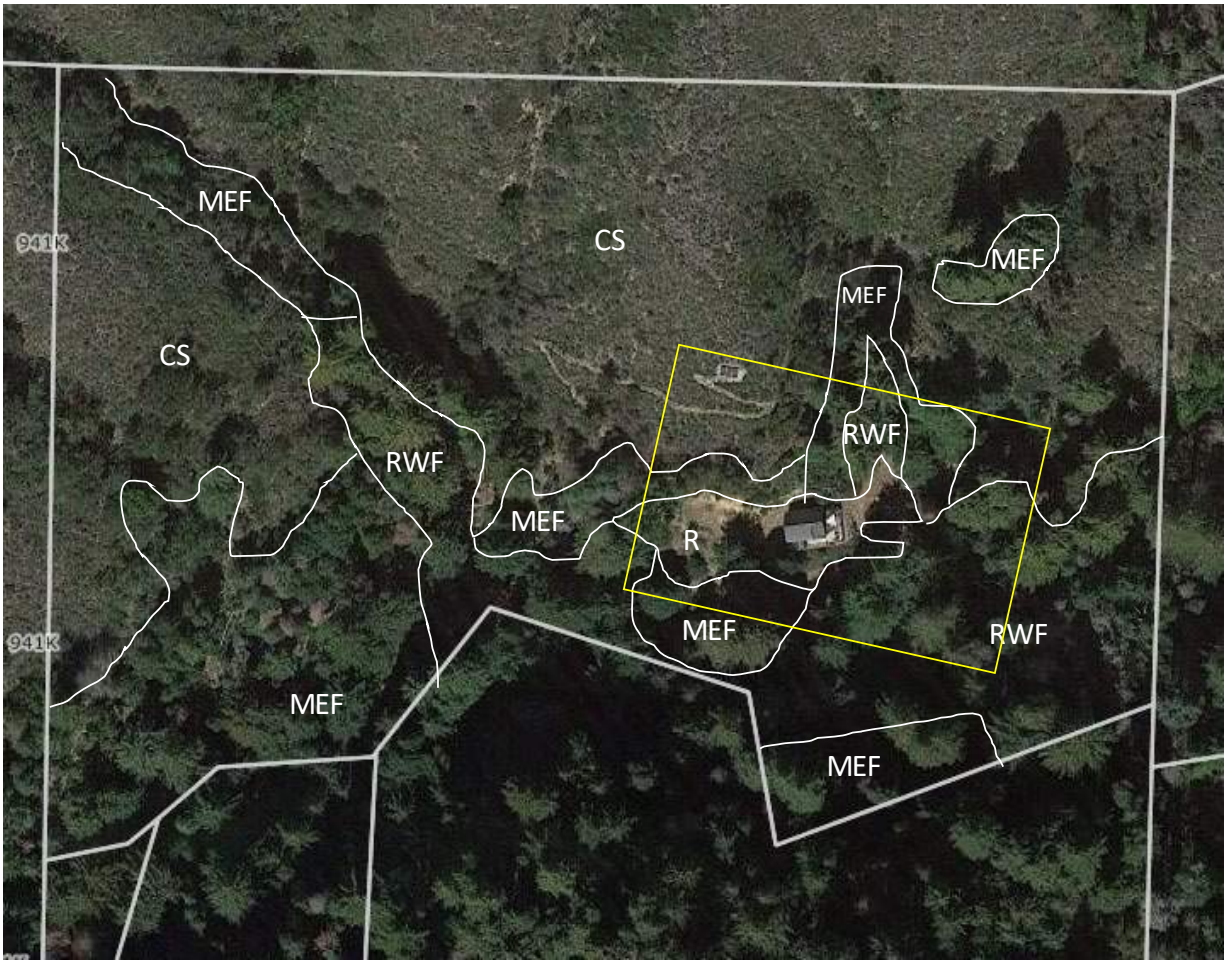

Figure 6 - Vegetation Map of parcel. Cabin site area outlined in yellow (see Figure 15).
Vegetation Types: RWF = Redwood Forest
MEF = Mixed Evergreen Forest
CS = Northern Coastal Scrub
R = Ruderal (disturbed and weedy)

III. FOCUSED SURVEY SITES

The following development areas on the subject parcel APN 418-081-033 were specifically assessed for potential environmental impacts associated with the construction of an unpermitted cabin and associated infrastructure:

A. Level flat areas with travel trailer, cabin and sheds (terraces, slope cut, shed)
B. Spring and water tank site
C. Solar array
D. Lower parking pad

The owner states that all of these improvements resulted in the removal of only one live tree - a madrone that was approximately 6 inches in diameter measured 24 inches above ground level. Figure 7 depicts the madrone growing on the site in 2008 where the cabin is now located. No cut tree stumps are visible on the property, except for historically logged redwoods and one fallen root mass near the residence that cracked off a large, multi-trunk bay after the tree burned in the Soberanes Fire. A few dead or fallen and decomposing tanbark oaks are visible scattered under the canopy of both the Redwood Forest and Mixed Evergreen Forest natural communities and the owner states that he has bucked up and removed dead tanbark oaks to reduce fire fuels on his property.

Figure 7 – Photograph of cabin site provided by owner, 2008. Note small madrone immediately right of blue-green umbrella and dead tanbark oaks (left, top left and right of center). Cabin construction was initiated on the pre-existing level flat area in 2009 (Jesse Cude photo).

A. LEVEL FLAT AREAS:

There is one small flat where a travel trailer is stored and one primary level area where the cabin and sheds are located. These flats pre-date the current ownership and were likely created to support historic logging activities.

1. Travel Trailer Site:

No improvements have been undertaken on the small level area where the travel trailer is stored and no vegetation has been permanently impacted by the present land owner at this site (Figure 8). Routine fire clearance and weed-whacking are undertaken around the trailer to reduce fuels. This small flat pre-dates the current ownership and is likely a historic feature associated with past logging activities.

Figure 8 – Travel trailer stored on small, pre-existing flat.

2. Cabin Site:

The largest flat area on the property supports a cabin and two sheds constructed by the current property owner (Figure 7). This level area is visible on 1994 GoogleEarth imagery (Appendix B). Prior to improvements initiated by the current land owner on the large, pre-existing level area, vegetation appears to have been largely composed of herbaceous species. The June 6, 1994 GoogleEarth image depicts light-colored, even-textured vegetation cover on the level area, with darker Mixed Evergreen Forest and Redwood Forest completely surrounding the future building site. It appears that the flat area was dominated by grasses and herbaceous species which had dried by the time the 1994 image was recorded, however historically this site area likely supported both Redwood Forest habitat and Mixed Evergreen Forest before the region was logged 100 years ago. In later GoogleEarth imagery (but still prior to the current ownership), the level area appears to have been expanded in size and tree cover was clearly removed, as seen in the June 6, 2002 GoogleEarth image.

As previously noted, massive old-growth redwood stumps in the vicinity of the cabin site distinguish the subject property as having been heavily logged in past decades and it is likely that the pre-existing flat areas on the parcel were originally related to historic logging activity. In the otherwise very steep terrain, the constructed flats created the only suitable locations where logged redwoods and tanbark oaks could have been staged for milling into smaller rounds, planks and stakes capable of being transported to primary roads or the historic port facility at Notley's Landing immediately south of Palo Colorado Canyon. Please refer to Appendix C for a series of quotes and references that document the industrial redwood and tanbark harvest in the Palo Colorado region.

After purchasing the property in December 2002, the current land owner impacted natural vegetation around the pre-existing cabin site in three locations:

a. Pre-existing terraces were expanded on the slope along the northern side of the level area.
b. A pre-existing slope cut was enlarged at the western edge of the level area.
c. Soil was removed at the edge of the level area behind the current location of the two small sheds.

a. Terraces: At an unknown time prior to current ownership, the northerly edge of the largest level area was created or potentially expanded by cutting a series of step-like terrace features into the steep northerly hillside. The terraces were in-place when the property was purchased by the current land owner in December 2002. The current land owner improved and enlarged the terraces prior to constructing the cabin – GoogleEarth imagery indicates that Northern Coastal Scrub and Mixed Evergreen Forest habitat was disturbed between 2002 and the start of cabin construction in 2008. The May 6, 2006 and July 29, 2007 GoogleEarth images depict the expansion of the terraces into the northerly hillside.

Today, the terraces rise upslope from the level pad approximately 24 feet in 4 benches. The hillside terrace features were evaluated for slope stability and integrity by CMAG Engineering (Geotechnical Investigation, November 8, 2019), who determined the terrace features are stable and the hillside is not in danger of collapse.

From photo interpretation of sequential GoogleEarth imagery between 1994 to the present, and from the extrapolation of plant density and species composition in adjoining habitat areas, the loss of vegetation related to the current land owner's terracing work appears to have included areas of shrub-dominated Northern Coastal Scrub and sparse understory habitat below the canopy of Mixed Evergreen Forest. Improving the terrace features impacted approximately 657 square feet of shrub-dominated Northern Coastal Scrub vegetation. Approximately 540 square feet of understory habitat beneath the canopy of Mixed Evergreen Forest was also removed by the current land owner during the expansion of the terraces. Today, many of the terrace steps are vegetated with a mix of native species and horticultural plantings, including a number of redwoods planted by the current owner (Figures 9 and 10).

Figure 9 – Terraces behind cabin looking west.

Figure 10 – Terraces behind cabin looking east.

b. Slope Cut:
At the westerly edge of the large, pre-existing level area, an excavated cut has been expanded in the northerly hill side. The original slope cut pre-dates the current ownership, however the fresh exposed soil and lack of mature vegetation speaks to additional relatively recent disturbance. The owner states that a portion of the slope's westerly margin failed when a large California bay tree broke apart after the Soberanes Fire and fell to level pad below.

The current slope cut is between 20 and 22 feet tall at the apex of the slope face and is approximately 35 to 37 feet wide at the base. Although Northern Coastal Scrub vegetates the steep slopes above the slope cut, it appears from GoogleEarth aerial imagery that approximately 700 square feet of Mixed Evergreen Forest understory habitat was removed when material was excavated from this site and the adjoining hill slopes on either side. The slope cut is not vegetated and small fans of colluvium have collected at the base. No trees were removed during excavation of the slope cut (Figure 11).

At the extreme western edge of the pre-existing level area just above the slope cut, a mass of roots and cut clonal stems from a fallen California bay are resting. This multi-trunk tree consisted of several stems that burned in the Soberanes Fire and cracked off to the ground below. The land owner has gradually removed wood from the fallen tree for firewood, however the large root wad remains on the level area below the cut bank. The original burl is still alive and appears to be solidly rooted above the edge of the level area.

Figure 11 – Pre-existing cut bank that has been enlarged by current property owner.

c. Behind the Sheds:

The current land owner constructed two small out-buildings on the easterly side of the historic level flat. The structures are not built on fill material and were tucked into the toe of the hill slope in a one to two-foot hand-dug excavation. The placement of the sheds impacted approximately 75 square feet of shrubby understory habitat at the sunny edge of Mixed Evergreen Forest vegetation. No trees were removed to position the sheds (Figure 12).

Figure 12 – Note shallow excavation behind sheds.

B. Water Tank Site:

Two 2500-gallon Nalgene water storage tanks are situated on a small pad in Northern Coastal Scrub habitat approximately 35-feet above the dwelling. The tanks are placed on a 25'x10' level pad that was cut with hand tools into a natural hillside depression (Figure 13). Access is along narrow, well-constructed foot path. A spring box is located in a small, unnamed drainage west of tank site and a hand trenched water line gravity feeds water to the two storage tanks. Overflow is downhill back into the unnamed creek of origin. No erosion has resulted from the minimal excavation of the tank pad and surplus soil was widely dispersed into the vegetation around the site. Approximately 250 square feet of Northern Coastal Scrub vegetation was removed to create the tank pad. No trees were removed. The area surrounding the water tanks entirely burned during Soberanes Fire and vegetation is resprouting vigorously.

The spring box is tucked into a narrow drainage surrounded by Redwood Forest vegetation resprouting after the Soberanes Fire. No current erosion or sedimentation is evident in and around the granite boulders where the spring bubbles out of the ground and no slope disturbance or vegetation impacts are visible around the spring or in the vicinity. No trees were impacted by the installation of the spring box or the hand-trenched water lines.

Figure 13 – Water tank site.

C. Solar Array:

A 11x17-foot clearing and small solar array is located in Northern Coastal Scrub habitat on a south-facing hillside above the cabin to the southwest. The site is accessed from a narrow, well-constructed foot trail and no evidence of soil erosion is visible. Vegetation surrounding the solar array is composed of typical Northern Coastal Scrub species that are resprouting vigorously after the Soberanes Fire.

The solar panels were replaced after 2016 fire and the installation is robustly anchored in hand-augered 12-inch concrete pilings set 3-feet deep. The solar panels are connected to the dwelling and out-buildings in conduit that was hand-trenched through Coastal Scrub vegetation. No trees were impacted by the installation of the solar array (Figure 14).

Figure 14 – Solar array.

D. Lower Parking Pad:

The northerly portion of the flat where the two small sheds are located is underlain by a 30-inch plastic, corrugated culvert. This culvert was installed after the Soberanes Fire when 2017 winter rains damaged the pre-existing culvert and caused it to fail. The culvert directs seasonal flow under the easterly portion of the level area from an unnamed drainage towards Palo Colorado Creek. The seasonal drainage supports a few second and third-growth redwoods upstream of the two sheds and below the lower parking pad, as is typical of the narrow side canyons in this region. No redwoods were disturbed during the replacement of the damaged culvert.

Adjacent to the driveway and below the primary level area and sheds there is a small, pre-existing parking pad. During the Soberanes Fire, CalFire crews staged an engine on this lower parking pad and accessed Palo Colorado Creek to install a submersible pump used for fire

suppression. A portion of the lower parking pad eroded in the winter of 2017 when the culvert near the shed was plugged and the pad was restored when the new culvert was installed. A veneer of uncompacted soil was placed over the southern edge of the lower parking pad and unvegetated soil extends down-slope onto the steep canyon sides above Palo Colorado Creek. No live trees were removed during repair of the culvert or parking pad, however approximately 400 square feet of Redwood Forest understory habitat has been impacted by a veneer of native soil. Palo Colorado Creek and the riparian buffer were not impacted by the post-Soberanes Fire repairs.

Figure 15 – Fresh veneer of soil on right edge of lower parking pad. Parking area was previously devoid of vegetation, however soil was placed along the right (southerly) side and allowed to cascade down slope. This resulted in covering approximately 400 square feet of Redwood Forest understory with a thin veneer of native soil.

IV. RECOMMENDATIONS FOR REVEGETATION

General Summary: In total, 400 square feet of Redwood Forest understory habitat, 1315 square feet of Mixed Evergreen Forest understory habitat and 1103 square feet of Northern Coastal Scrub have been impacted by the current land owner. The only live tree removed by the current land owner was a 6-inch madrone before the construction of the cabin.

Table 1 summarizes the vegetation impacts associated with unpermitted activities undertaken by the current property owner and immediate past land owners of the subject parcel APN 418-081-033. Prior to state and local zoning codes, early grading and vegetation removal associated with historic logging created flat areas utilized by more recent land owners for development purposes. The property was vacant and undeveloped at the time Jesse and Sandra Cude purchased the parcel in 2002. Figure 15 depicts contemporary impact areas in the vicinity of the unpermitted cabin.

DISTURBANCE SITE	ESTIMATED SQUARE FEET OF IMPACT	VEGETATION
Cabin Level Area - Terraces	675 540	Coastal Scrub MEF understory
Cabin Level Area – Slope Cut	700	MEF understory
Cabin Level Area - Behind Sheds	75	MEF understory
Water Tank Pad	250	Coastal Scrub
Solar Array	178	Coastal Scrub
Lower Parking Pad	400	Redwood Forest understory

Table 1 – Area of Northern Coastal Scrub, Mixed Evergreen Forest understory and Redwood Forest understory impacted after historic logging disturbances.

TOTAL AREA NORTHERN COASTAL SCRUB = 1103 square feet
TOTAL AREA MIXED EVERGREEN FOREST UNDERSTORY = 1315 square feet
TOTAL AREA REDWOOD FOREST UNDERSTORY = 400 square feet

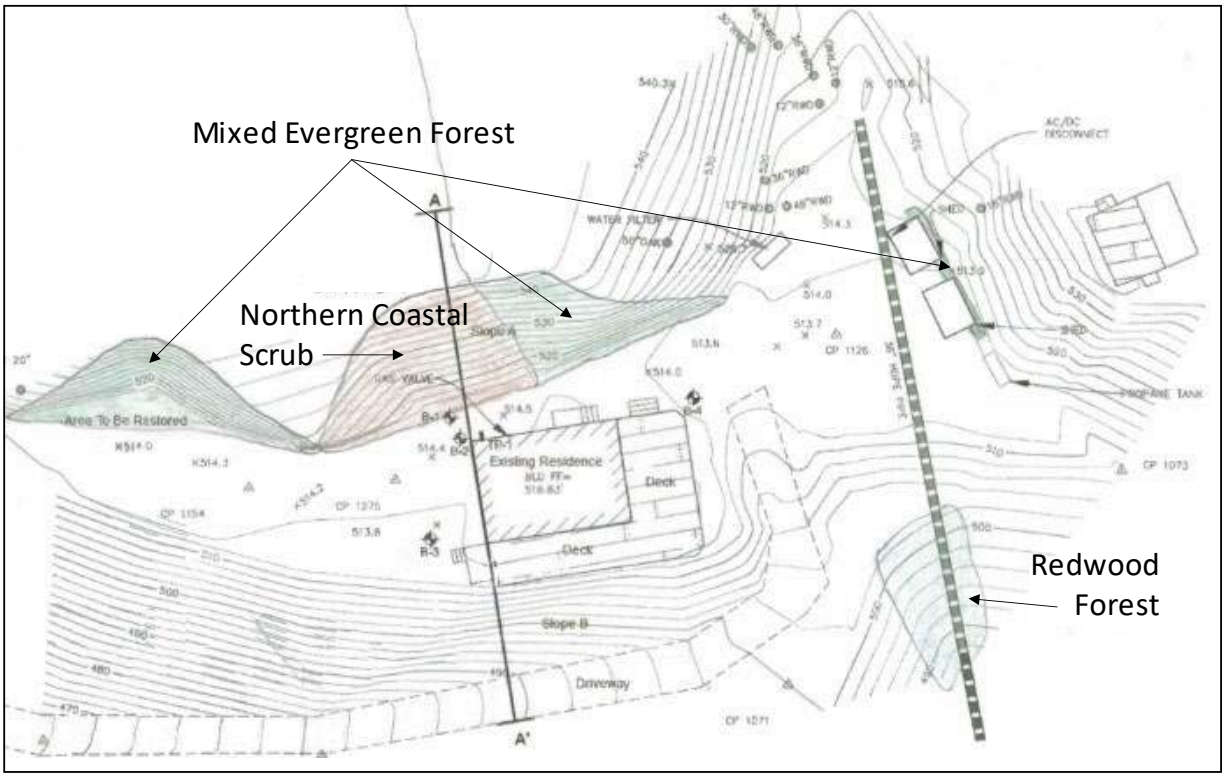

Figure 15 - Impact and disturbance areas in the vicinity of the unpermitted cabin that were a result of activities undertaken by property owners after the historic logging era. Shaded zones are proposed restoration sites. Base map from CMAG Engineering, Geotechnical Investigation. November 8, 2019.

There is evidence of recent removal of fallen and dead tanbark oak trees that succumbed to SOD or the Soberanes Fire, however it is not feasible to determine how many dead/diseased trees have been felled or how many were consumed or weakened by the 2016 fire.

Massive redwood stumps provide evidence of historic logging and removal of coast redwood trees, however it is not feasible to determine the number of mature trees, or second and third-growth trees logged in the past. Undoubtedly, oaks, madrone, bay, maple and other species were also removed during past logging activity – stumps of these hardwood species have rotted or were burned during the Soberanes Fire, as none remain today to provide an estimate of prior tree removal. It is also not feasible to determine exactly how much grading was undertaken during industrial logging of the area when landings were created to process felled redwoods and tanbark. Significant landscape alteration occurred during historic industrial logging before forest management prescriptions or local zoning regulations were in-place. Please refer to Appendix C for notes and references that speak to the historic practices that impacted habitat in the Palo Colorado region of northern Big Sur many decades ago.

Site-Specific Restoration Recommendations: Restoration is generally required when there is a violation of Monterey County Zoning ordinances that regulate grading and/or vegetation removal. The fundamental goal of any restoration plan is the revegetation of native plants and habitat and the reconstruction of natural land features which have been altered in violation of County regulations. Establishing environmental conditions that will ultimately promote natural recruitment processes is ideal.

Restoration Plan objectives for the subject parcel include:

- Protect sensitive features and environmentally sensitive habitat areas.
- Revegetate exposed soils with native plants typical of surrounding habitat.
- Control erosion.
- Maintain restoration by controlling weeds.
- Rigorous monitoring.
- Adaptive management.

Restoration planting proposed for the Cude property should be supervised by the Project Biologist and adjusted for evolving field conditions as the property recovers from the Soberanes Fire. Vegetation on the Cude parcel will continue to transform as plants resprout and recruit after the Soberanes Fire. All planting sites in the "impact areas" identified for revegetation should reflect appropriate microclimate conditions, topography and associated nearby plant species that may provide shade or canopy cover.

All restoration plant material should be rooted in one-gallon pots obtained from a local native plant nursery. Shrubs, herbaceous species and ferns should be spaced no closer that 3-feet apart. Trees should be spaced no closer than 8-feet apart.

Prior to restoration planting, remove unwanted invasive plants and dispose of weedy biomass in an appropriate off-site location.

After restoration plantings are installed, mulch all exposed soils with Redwood Forest and Mixed Evergreen Forest leaf litter collected on-site. Individual planting basins may be mulched with sterile straw.

The ideal time for planting will be in fall months before the onset of winter rains. If the property owner chooses to install plants during the spring or summer, the seedlings will require supplemental irrigation during the plant establishment period. Temporary hose/sprinkler use is appropriate, or the land owners may decide to install a temporary drip irrigation system of their own design.

A. Level Flat Areas – Terraces, Slope Cut and Cabin Pad, Sheds:

1. Travel Trailer Site: No revegetation required.

2. Cabin Site:

a. Terraces: Fill in unvegetated areas on terraces with:

- 4 coffeeberry (*Frangula californica*)
- 4 deerweed (*Acmispon glaber*)
- 6 sticky monkey flower (*Diplacus aurantiacus*)
- 3 California lilac (*Ceanothus thyrsiflorus*)
- 3 toyon (*Heteromeles arbutifolia*)

- 3 black sage (*Salvia mellifera*)
- 6 blue wild ryegrass (*Elymus glaucus*)

b. Slope Cut and the Southerly Edge of Level Cabin Pad: Follow erosion control suggestions in the 2019 Geotechnical Investigation report by CMAG Engineering and vegetate area between the berm and toe of the slope with:

- 5 coast live oak (*Quercus agrifolia*)
- 2 madrone (*Arbutus menziesii*)
- 4 coffeeberry (*Frangula californica*)
- 8 deerweed (*Acmispon glaber*)
- 6 sticky monkey flower (*Diplacus aurantiacus*)
- 3 California lilac (*Ceanothus thyrsiflorus*)
- 4 toyon (*Heteromeles arbutifolia*)
- 4 black sage (*Salvia mellifera*)
- 12 blue wild ryegrass (*Elymus glaucus*)

To compensate for habitat loss at the solar array and water tank sites, open areas along the southerly margin of the level cabin pad should be revegetated with additional:

- 3 coffeeberry (*Frangula californica*)
- 6 deerweed (*Acmispon glaber*)
- 3 sticky monkey flower (*Diplacus aurantiacus*)
- 3 California lilac (*Ceanothus thyrsiflorus*)
- 3 toyon (*Heteromeles arbutifolia*)
- 3 black sage (*Salvia mellifera*)
- 12 blue wild ryegrass (*Elymus glaucus*)

Planting California bay (*Umbellularia californica*) is not recommended, as this species is a key host for the pathogen that causes Sudden Oak Death.

c. Behind the Sheds - Plant exposed soil areas with:

- 3 snowberry (*Symphoricarpos albus*)
- 3 wood fern (*Dryopteris arguta*)
- 3 bracken fern (*Pteridium aquilinum*)
- 6 blue wild ryegrass (*Elymus glaucus*)

** Note that over-crowding trees and planting flammable shrubs near structures is not recommended so that fire clearance can be maintained.

B. Water Tank Site:

No vegetation planting is recommended in and around the spring or water tanks. The area surrounding the tanks is stable and resprouting vigorously after the Soberanes Fire.

C. Solar Array:

No revegetation is recommended below or around the solar array. This site is stable. Monitor soil around the solar array and along the access path for signs of erosion and address promptly. Install fiber wattles, if needed.

D. Lower Parking Pad:

Evaluate post-winter conditions at this site and if any erosion appears evident on slope below parking pad install coir fiber roll at 10 to 12-foot intervals parallel to the slope. Secure firmly with

wooden stakes, particularly at left and right edges. Slightly pull back shallow edge of soil at top of slope break (southerly edge of parking area) to more gentle contour and place excess soil against northerly edge of parking pad. This work can be completed with hand tools and will not require a grading permit, as less than 100 CY of loose soil veneer will be moved.

Plant slope below the parking pad with:

- 4 redwood (*Sequoia sempervirens*)
- 3 big-leaved maple (*Acer macrophyllum*)
- 6 snowberry (*Symphoricarpos albus*)
- 6 wood fern (*Dryopteris arguta*)
- 6 bracken fern (*Pteridium aquilinum*)
- 6 sword fern (*Polystichum munitum*)
- 12 blue wild ryegrass (*Elymus glaucus*)

Redwood seedlings should be randomly placed on the slope below the lower parking pad and spaced no closer than 8-feet apart. The big-leaved maple seedlings should be planted towards the toe of the slope close to the 100-foot buffer flanking the riparian corridor of Palo Colorado Creek. The shrub, fern and native bunchgrass plants should be clustered in groups of 3 and should be placed no closer than 3-feet away from tree seedlings.

V. Monitoring Schedule and Success Criteria

An “as-built” planting diagram should be prepared for each impact area after the installation of restoration plants. For a three-year period after revegetation, a qualified biologist should revisit the planting sites during late summer or early fall to monitor habitat conditions. The monitoring period should be extended as needed if success criteria are not met, or erosion, or a predominance of weedy forbs are documented in the revegetation area. Annual monitoring reports, with a narrative and photographic description of restoration site conditions based on success criteria outlined below, should be forwarded to the Director of the Monterey County Housing and Community Development Department. The identification code of the assigned PLN and Violation Citation Number should be noted on the annual monitoring reports.

Restoration success of each of the revegetation project areas (terraces, slope cut and southerly edge of cabin pad, behind sheds, lower parking area) will be determined by an overall vigorous cover of native species on all areas where soils were previously disturbed. A majority of tree, shrub, fern and native grasses must be alive and growing. If weedy, invasive forbs are found to be dominating the restoration sites at more than 50% total cover, the land owner shall take immediate corrective action by mowing, hand-pulling or spraying undesirable plants. Since non-native species often invade disturbed areas in this region of Monterey County, complete eradication of invasive grasses and forbs is not practical. However, the reduction of undesirable species will promote the success and viability of plants in the revegetation sites. The ultimate goal is the revegetation of treated areas with a predominance of native species typical of the surrounding landscape.

If gullying, or erosion features are observed in the restoration area, the land owner shall take immediate corrective actions, which could include reseeding exposed soils with a native grass seed mixture appropriate for this region.

VI. Conclusions

The subject parcel has undergone several episodes of landscape change in the past 125+ years. Historic site disturbances related to late 19th and early 20th century industrial logging are likely to have resulted in the creation of graded logging landings and roadways on the property. During industrial logging, old growth redwoods and tanbark oaks were felled and processed on flat sites carved into steep hillsides before protective local and state ordinances were developed. These flat sites were subsequently developed by the current property owner with unpermitted improvements, including a small cabin and sheds on the largest of the level pads found on the property. After improvements were installed, the entire parcel burned in the devastating 2016 Soberanes Fire, however CalFire was successful in defending the structures.

The contemporary site disturbances have been assessed and quantified, and remedial revegetation has been proposed to compensate for impacts to natural community resources.

In total, 1103 square feet of Northern Coastal Scrub, 1315 square feet of Mixed Evergreen Forest understory, and 400 square feet of Redwood Forest understory can reliably be quantified as having been impacted by the current land owner and immediate past property owners. If the planting recommendations described in this report are implemented, appropriate revegetation of the disturbed impact areas, including Redwood Forest understory, will be accomplished.

The current property owners, Jesse and Sandra Cude, are committed to resolving the Monterey County Zoning Code Violation on their parcel, and as engaged land owners are also committed to the success of the revegetation efforts they may be required to complete.

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APPENDIX A

PLANTS OBSESRVED – APN 418-081-033

TREES:
Acer macrophyllum, big-leaved maple
Arbutus menziesii, madrone
Notholithocarpus densiflorus, tanbark oak
Quercus agrifolia, coast live oak
Quercus chrysolepis, canyon live oak
Quercus parvula var. shrevei, Shreve oak
Salix lasiolepis, arroyo willow
Salix sitchensis, Sitka willow
Sequoia sempervirens, coast redwood
Umbellularia californica, bay

SHRUBS:
Acmispon glaber, deerweed
Adenostoma fasciculatum, chamise
Arctostaphylos glandulosa, manzanita
Baccharis pilularis, coyote brush
Ceanothus thyrsiflorus, California lilac
Diplacus aurantiacus, sticky monkeyflower
Ericameria arborescens, golden fleece
Eriophyllum confertiflorum, golden yarrow
Frangula californica, coffeeberry
Genista monspessulana, French broom *
Heteromeles arbutifolia, toyon
Holodiscus discolor, creambush
Rosa gymnocarpa, wood rose
Rubus parviflorus, thimbleberry
Rubus ursinus, California blackberry
Salvia mellifera, black sage
Sambucus Mexicana, elderberry
Symphoricarpos albus, snowberry
Toxicodendron diversilobum, poison oak

HERBACEOUS SPECIES:
Achillea millefolium, yarrow
Acmispon heermannii, Heerman’s lotus
Ageratina Adenophora, eupatorium *
Artemisia douglasiana, mugwort
Calystegia macrostegia, coast morning-glory
Clinopodium douglasii, yerba Buena
Erigeron canadensis, horseweed
Galium porrigens, climbing bedstraw
Hieracium albiflorum, white hawkweed
Hypochaeris radicata, hairy cat’s ear

Iris douglasiana, Douglas iris
Lathyrus sp., pea vine (not in flower)
Lonicera hispidula, hairy honeysuckle
Lysimachia latifolia, star flower
Madia exigua, small-flowered madia
Maianthemum racemosum, fat solomon
Oxalis oregana, redwood sorrel
Phacelia sp. (not in flower), phacelia
Pseudognaphalium ramosissimum, everlasting
Prosartes hookeri, Hooker's fairy bells
Scrophularia californica, bee plant
Solanum douglasii, Douglas' nightshade
Stachys bullata, wood mint
Torilis arvensis, field hedge-parsley *
Trillium chloropetalum, trillium

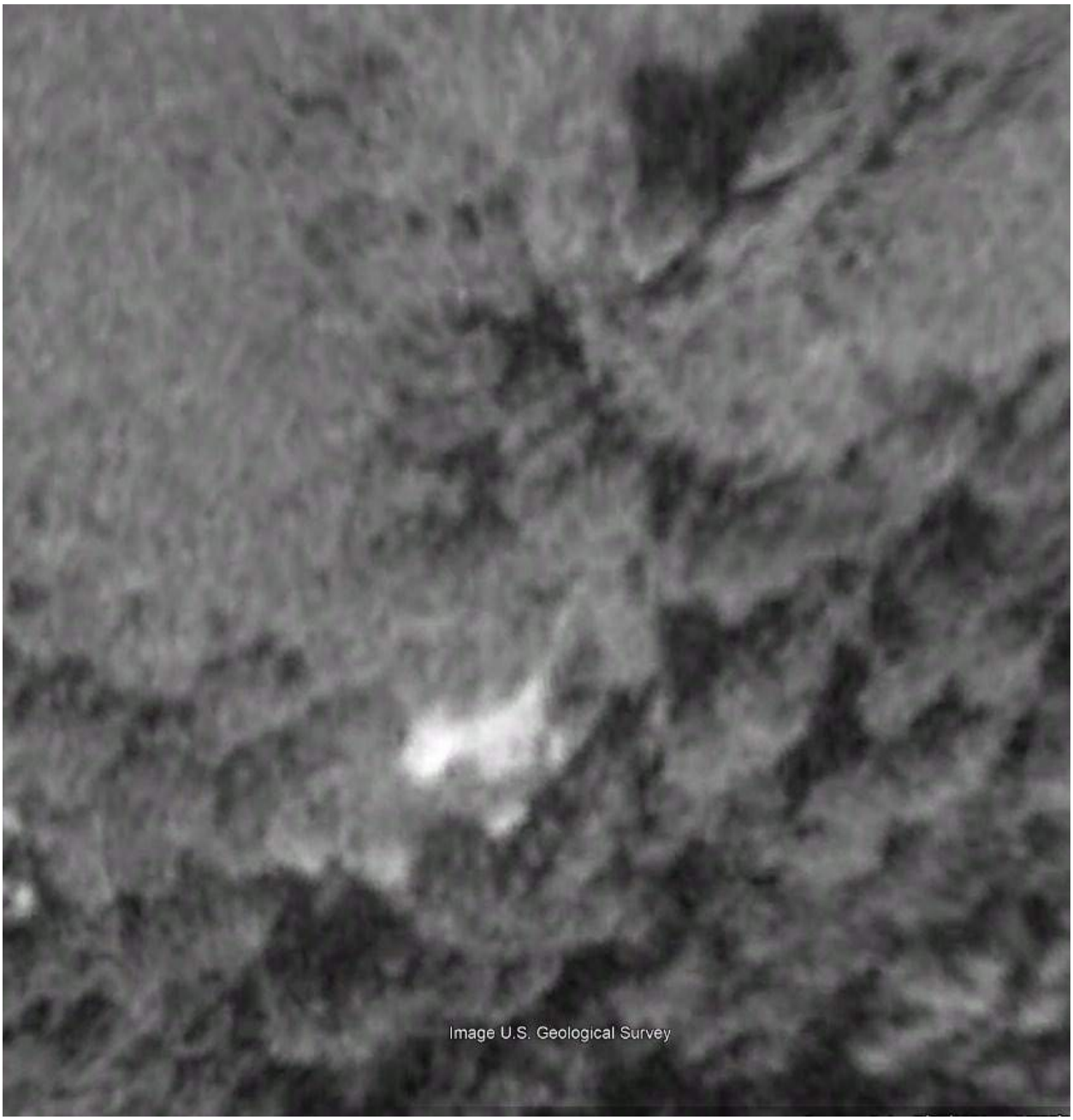
FERNS, GRASSES and GRASS-LIKE SPECIES:
Adiantum aleuticum, five-finger fern
Adiantum jordanii, maidenhair fern
Agrostis pallens, leafy bent grass
Anthoxanthum occidentale, vanilla grass
Athyrium filix-femina, lady fern
Briza maxima, rattlesnake grass *
Dryopteris arguta, wood fern
Elymus glaucus, blue wild ryegrass
Equisetum arvense, horsetail
Hordeum brachyantherum, California barley
Luzula comosa, Pacific woodrush
Pentagramma triangularis, goldback fern
Polystichum munitum, sword fern
Pteridium aquilinum, bracken fern
Scirpus microcarpus, panicled bulrush
Woodwardia fimbriata, chain fern

* Non-native, invasive plant species

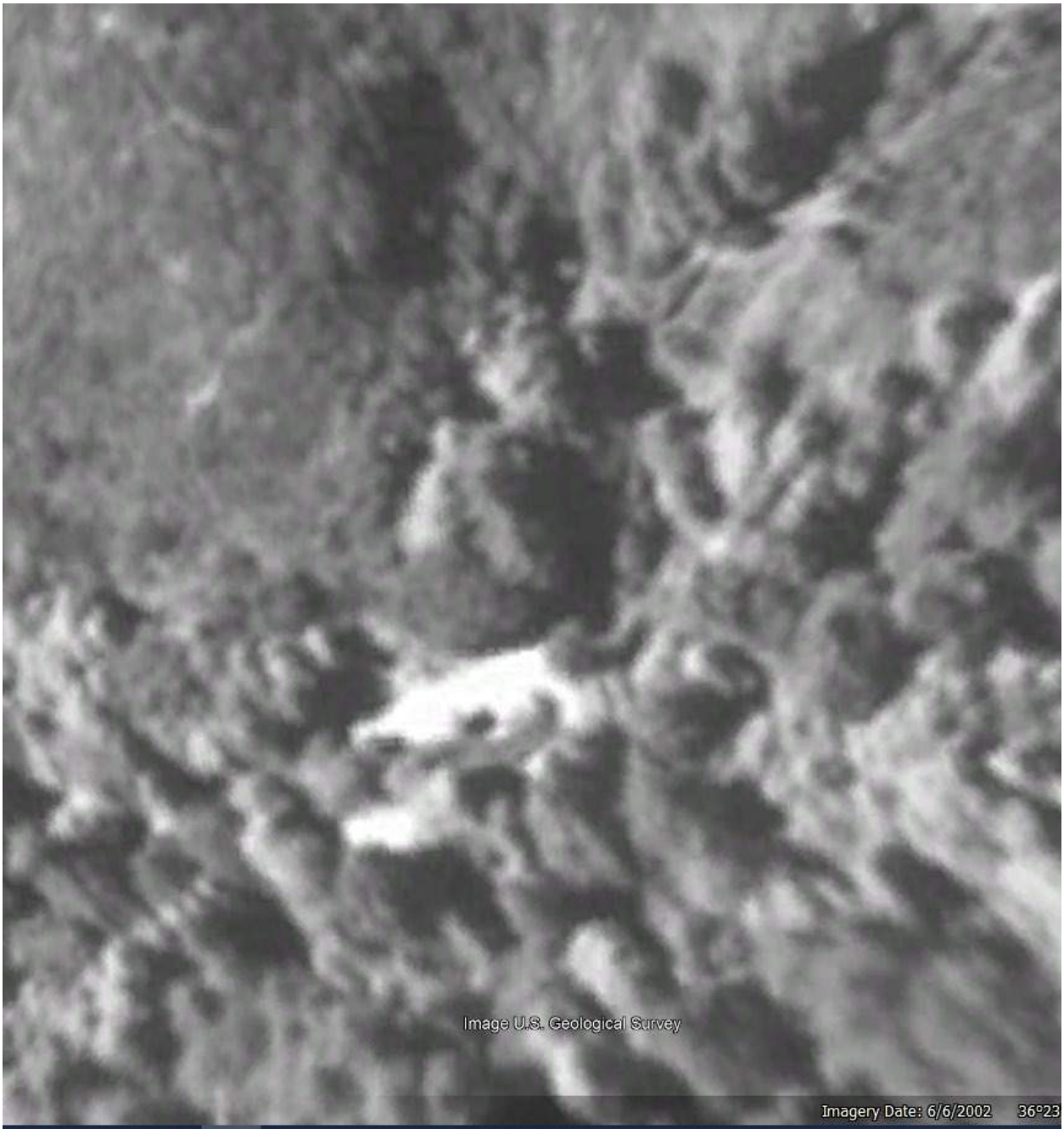
APPENDIX B

GoogleEarth Imagery of Cude Parcel Between 1994 and 2021

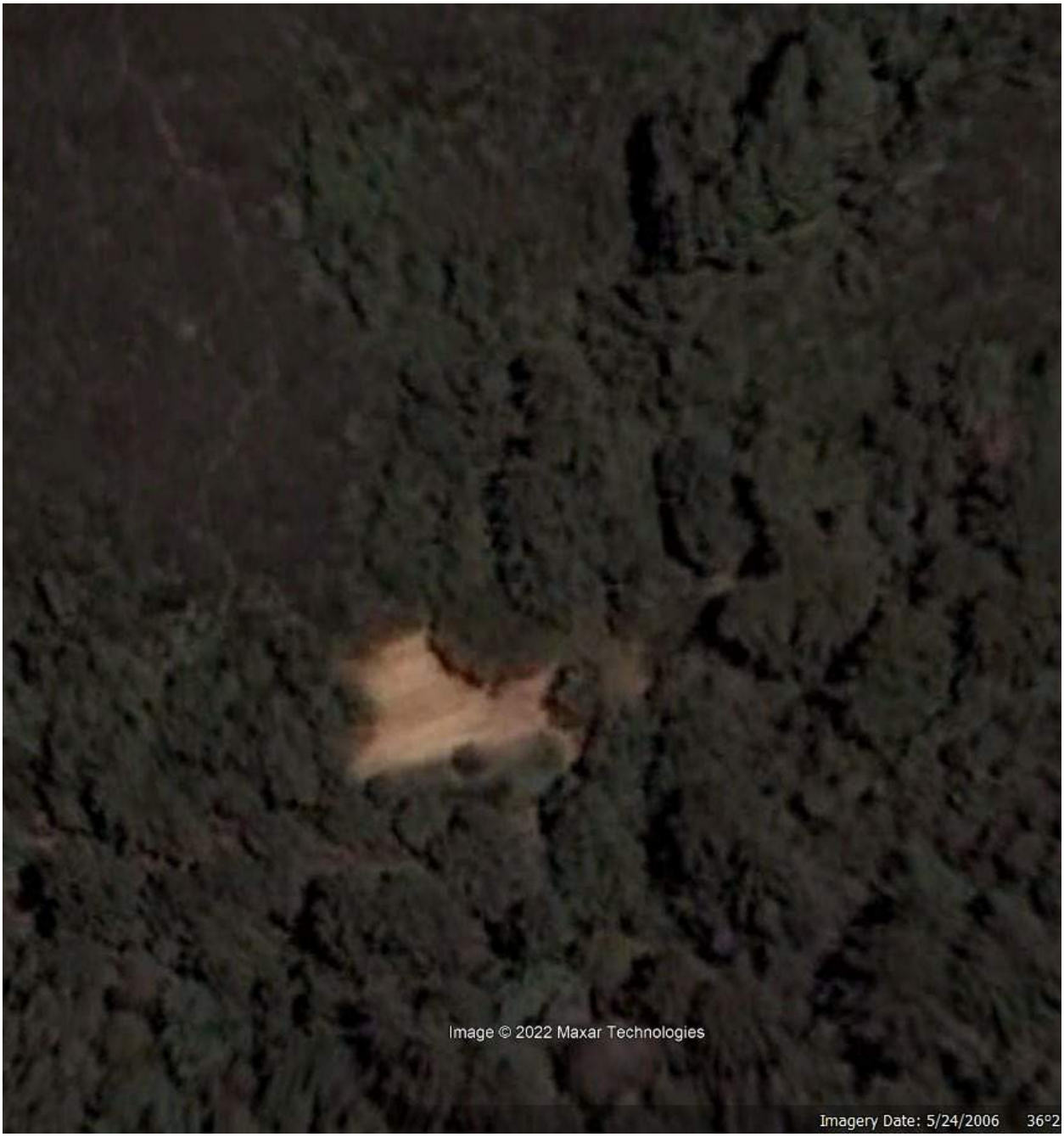
5.12.94 – Note light-colored area below center. This is the pre-existing level pad where the Cude family constructed their cabin.



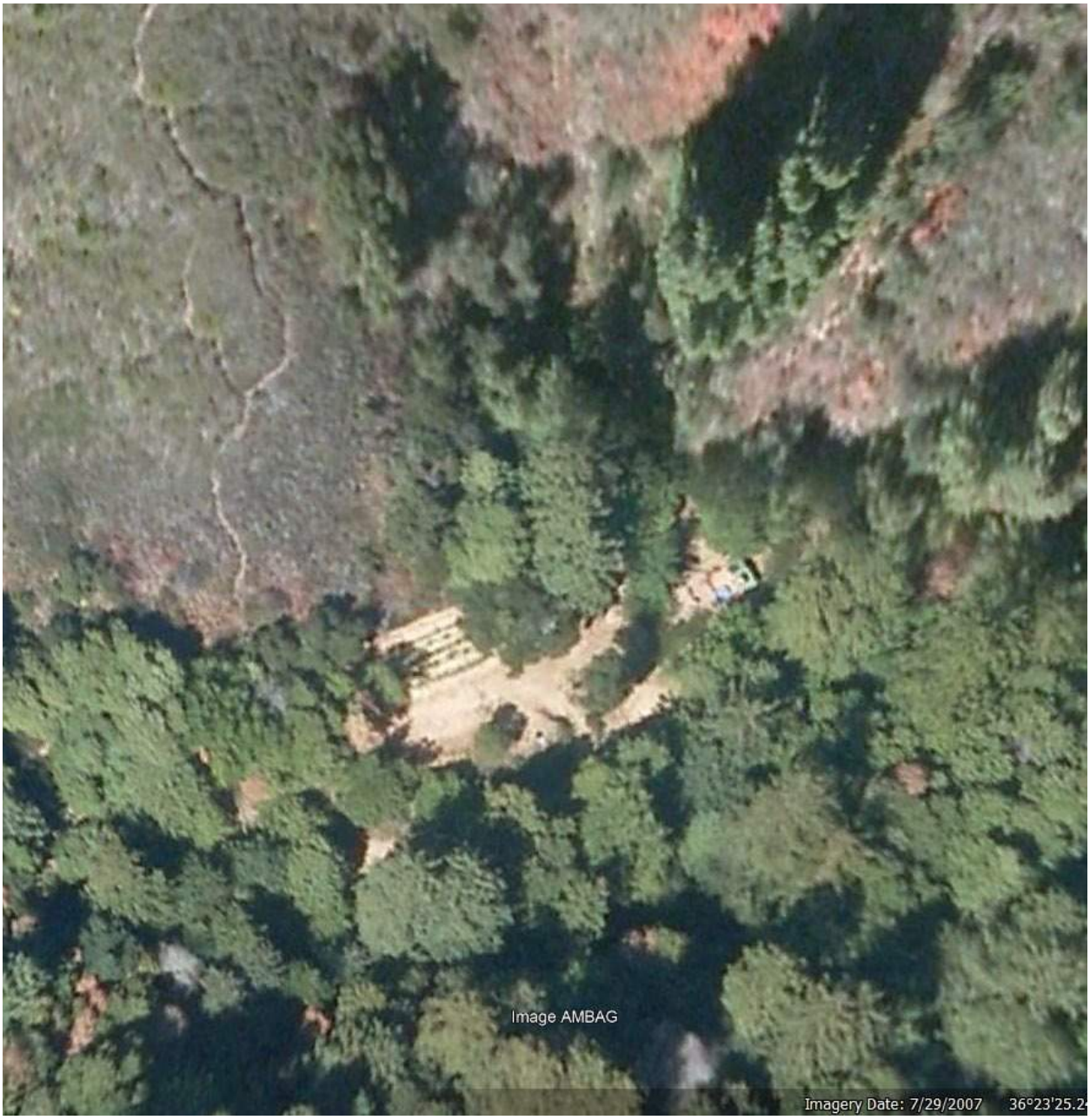
6.6.2002 – Immediately prior to the Cude family taking ownership to the property. The undeveloped level pad (light color) is visible below the center of the image.



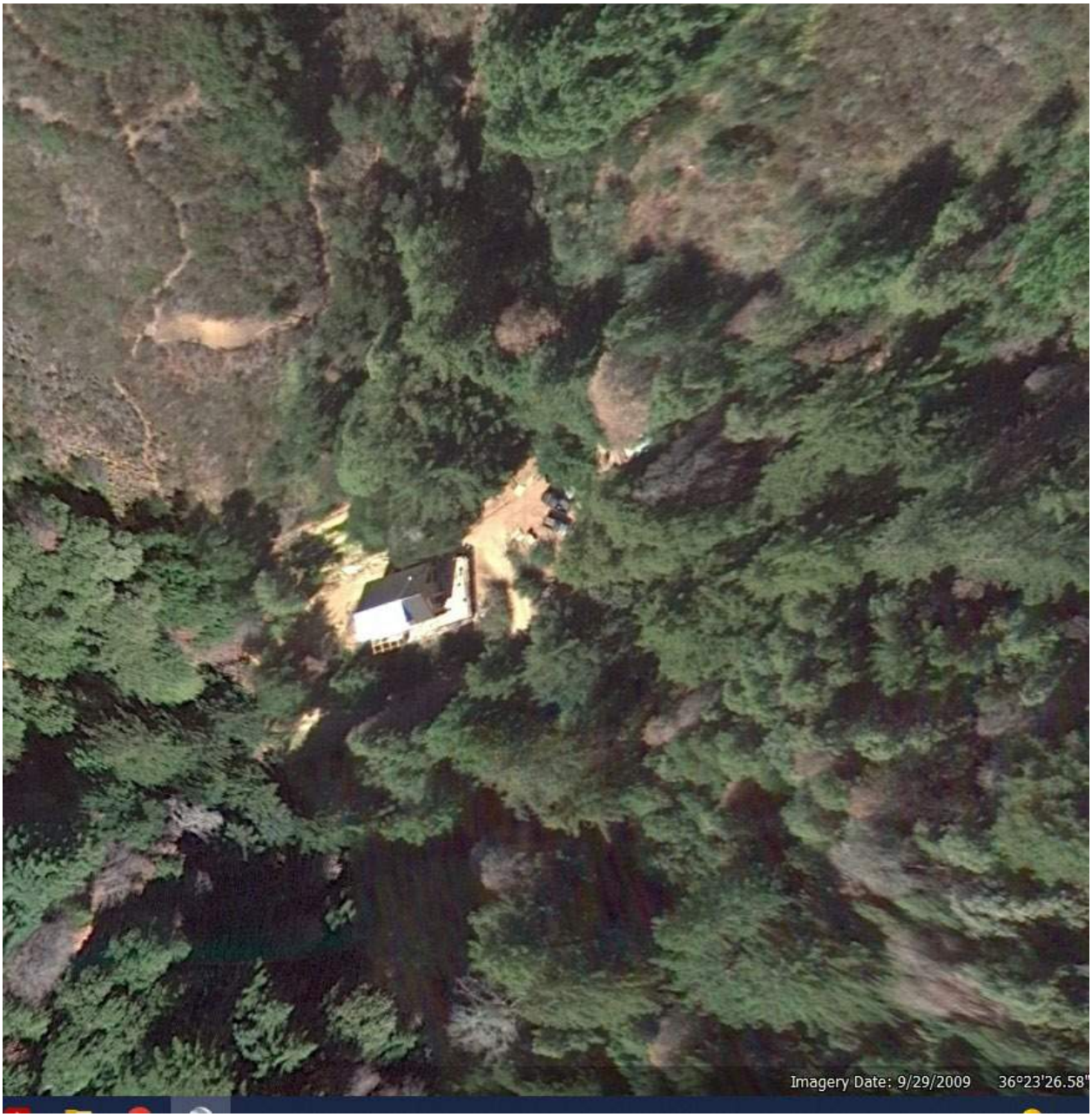
5.24.2006 – The level pad has been expanded northwards.



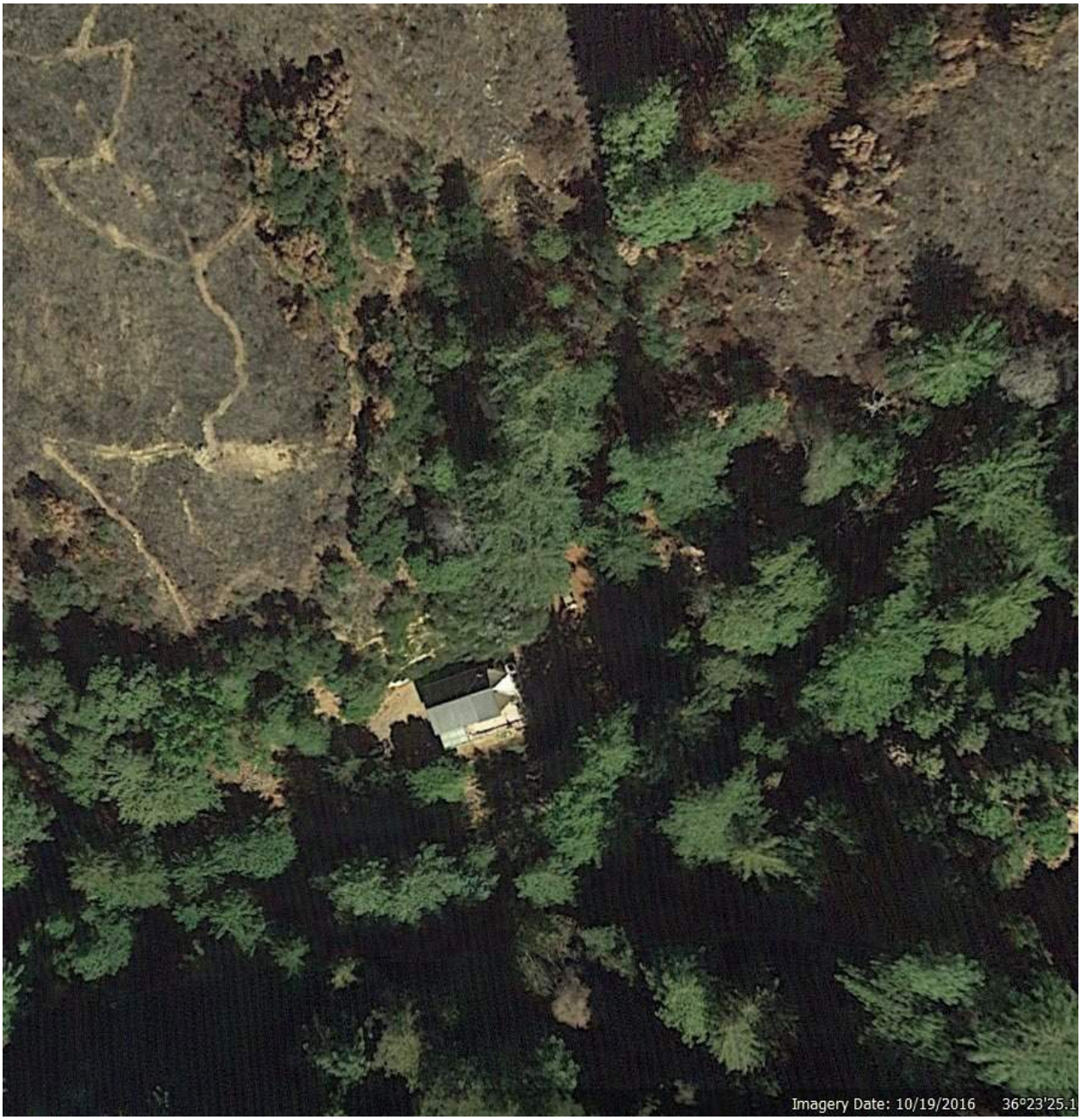
7.29.2007 – Terraces are clearly visible. Note regularly spaced plants installed on terraces.



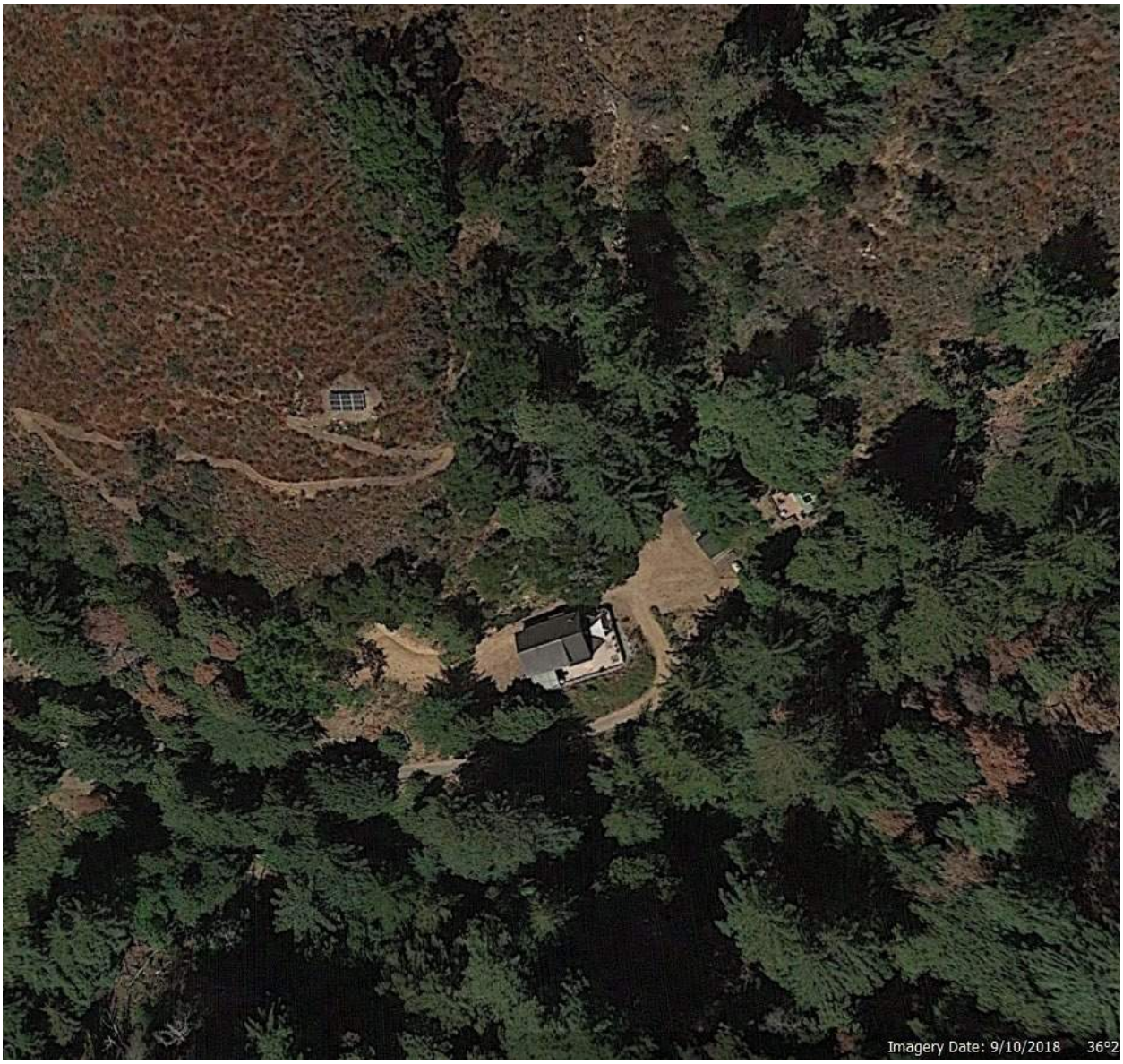
9.29.2009 – The Cude cabin and out-buildings have been constructed. Note clearing for solar array left and above the cabin.



10.19.2016 – Post Soberanes Fire



9.19.2018 – Remedial work completed subsequent to the 2016 Soberanes Fire and 2017 winter.



Most recent Google Earth image 2.23.2021

APPENDIX C

Brief Descriptions of Historic Logging in the Palo Colorado Region

The Palo Colorado Canyon area of northern Big Sur was at the heart of a well-documented industrial redwood logging and tanbark harvest industry in the late 19th and early 20th centuries. While a comprehensive analysis of historic impacts related to logging is beyond the scope of the Biological Assessment prepared for the Jesse and Sandra Cude property (APN 418-081-033), documentation of historical activities in the general geography illustrates some of the landscape changes and environmental disturbances associated with logging that influenced the subject parcel. Site modifications to the subject parcel were definitely made during historic logging activities and some of these site modifications were likely quite significant. Grading of roads and flat logging landings, as well as damage to stream corridors from erosion and removal of vegetation occurred prior to regulatory oversight and zoning ordinances developed to protect the environment.

The following quotes and photographs provide a cursory illustration of activities that impacted land in the general Palo Colorado area.

The following three photographs and captions are from Jeff Norman's book published by Acadia Books and the Big Sur Historical Society, *Big Sur: Images of America*, 2004.

Until the advent of the chain saw in Big Sur after World War II, redwoods were generally harvested using two-man cross-cut saws. Two cuts were required: the first was most often made with an axe, as a relatively wide notch was required to allow the tree to safely drop. The second cut, which felled the tree, brought into play the cross-cut saw, sometimes called a "misery whip," reflecting the amount of labor involved to fell a large tree. Prior to the construction of sawmills in Big Sur, only trees with straight grain were taken, as finishing work was done by splitting the logs with mauls, wedges, and froes. The resulting products included railroad ties, shakes, fence posts, boards, and grape stakes. (Courtesy Ewoldsen family.)

Another major forest product of the Big Sur Coast was the bark of tan oak trees. High in tannic acid, the bark was in demand for the curing of leather. To harvest the bark, the trees were felled and the bark stripped from the trunks. After being allowed to dry, sections were packed onto mules, as shown in this scene, taken by C.B. Clark *c.* 1900. If the terrain permitted, the bark would be loaded directly onto sleds called "go-devils," or wagons. The bark was then transported to one of many California tanneries, especially those of the Kron and Eberhard Tanning Company, which also owned large tracts of forest land in Big Sur. Until roads were improved in the area, most bark was shipped by sea. (Courtesy Pat Hathaway; 89-023-0250).

Notley's Landing at Palo Colorado Canyon, established by brothers William and Godfrey Notley in the 1890s, is seen here in the early 1900s. During its heyday, Notley's Landing was an active village consisting of the manager's quarters, a dormitory for workers, a shingle mill, store, barns, and assorted sheds. From here redwood and tan bark were shipped, having been transported to the site by six-horse wagon teams, then loaded onto ships by means of a steam-powered cable system. This arrangement required waiting vessels to moor beneath a cable attached by a pulley to an offshore rock. Material was dropped onto the ship's deck from a platform suspended from the cable. (Courtesy Elizabeth Knerr.)

The Monterey Peninsula Regional Park District's interpretive brochure for the Mill Creek Redwood Preserve straddling Palo Colorado Road includes this text:

Activity (in the region) picked up again in 1917 when trails were built into the upper canyon, now part of the Preserve, to log for railroad ties in support of WW1 efforts. Pacific Grove's T.A. Work and A.W. Furlong built and operated a mill, Japanese labor quarters, and a steam donkey hoist system for extracting logs out of the canyon. But by 1935 this activity had ceased.

The following excerpts and one photograph are from a short biography of legendary Big Sur woodsman Sam Trotter by Adam Miller, *Sam Trotter – the Timber Beast of Big Sur*, February 2, 2022, https://www.folksinging.org/5560-2/.

In 1889, loggers hauled nearly 50,000 cords of tanbark out of Big Sur watersheds in the Santa Lucia Mountains. The bark of the tree is high in tannic acid and was used in processing leather. The bark of the tanoak has commercial value, but the wood does not and trees were felled and stripped of their bark. In 1890, the G.C. Notley Company began buying tanbark timber property in Big Sur, particularly at Palo Colorado Canyon which was more accessible that the rugged canyons to the south.

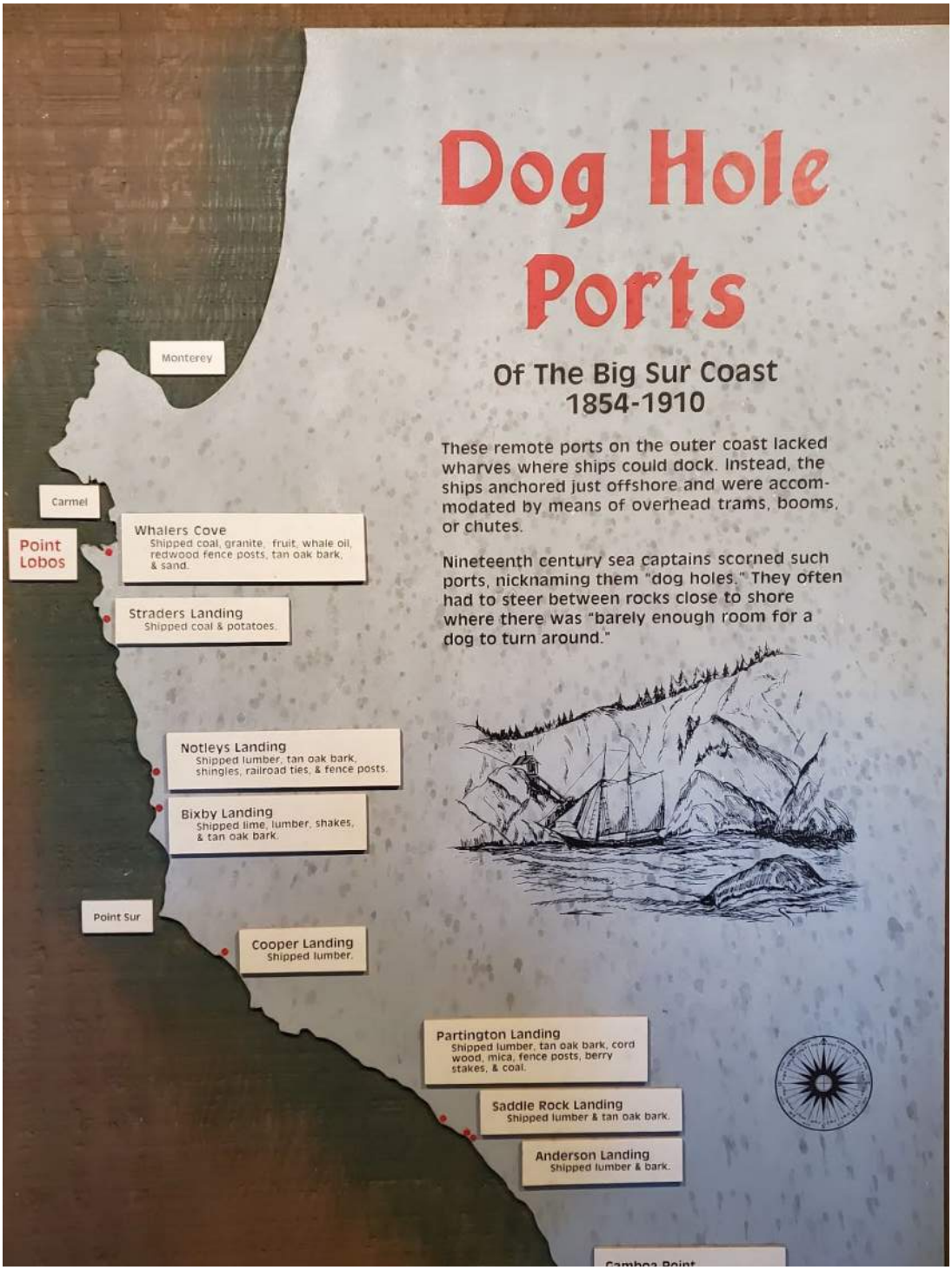
The Monterey Cypress *newspaper reports on September 26, 1896 that, "The schooner Bessie K, Captain Anderson, arrived at Alviso Sunday evening with a cargo of 118 tons of tan bark and twelve hogs from Notley's Landing".*

At Palo Colorado Canyon, business was booming. By the summer of 1906, the G. C. Notley Co. had expanded to fill some twenty buildings and a construction crew was busy erecting a new sawmill at Notley's Landing. It had been a very busy summer – but an extremely dry one. During the month of October, a wildfire burned through Palo Colorado Canyon. In October of 1906, George Notley told a reporter from the Salinas Californian *newspaper, that his lumberjacks had removed the tanbark trees from all the ranches in the neighborhood and estimated that they wouldn't be able to harvest the bark again, for a decade or more.*

The tanbark industry continued to boom for several more years. On September 30, 1909, a reporter from the Monterey Daily Cypress *interviewed Sam Trotter, "Mr. Trotter has probably handled more tanbark than any other man in the state … Just at present Mr. Trotter, who is connected with the Notley company, is engaged in filling a contract for 700 cords of tanbark for a Santa Cruz tanning concern. His company is now stripping tanbark from a tract of 4,800 acres of land down the coast."*

Redwood logs being hauled by horses along a “skid trail”. This image is from Oregon, however similar routes were constructed in Palo Colorado to access mill sites, including the Work Mill less than one mile east of the subject property. Cribbing and primitive logging roadways are still visible in the nearby Mill Creek Redwood Preserve administered by the Monterey Peninsula Regional Park District.

This map of historic ports along the Big Sur coast is displayed at Point Lobos State Reserve in the Whaler's Cabin (Nedeff, February 27, 2023). The caption for Notley's Landing reads, *Notley's Landing at the mouth of Palo Colorado Canyon shipped milled lumber, tan oak bark, shingles, railroad ties and fence posts.*



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