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**PRELIMINARY DRAFT REPORT**  
**Archaeological Literature Review and**  
**Field Inspection in Support of Nā‘ālehu**  
**Solar LLC-HI-Registration Project Area,**  
**Kāhilipali Iki Ahupua‘a, Ka‘ū District,**  
**Hawai‘i Island**

TMKs: (3) 9-5-007:029 por.

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*On Behalf of:*  
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1001 Bishop Street, Suite 2900  
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April 2023

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## MANAGEMENT SUMMARY

<b>Document Title:</b>	Archaeological Literature Review and Field Inspection in Support of Nā'ālehu Solar LLC-HI-Registration Project Area, Kāhilipali Iki Ahupua'a, Ka'u District, Hawai'i Island
<b>Date/Revised Date:</b>	April 2023
<b>Archaeological Permit #:</b>	SHPD Permit No. 23-08
<b>Project Location:</b>	95-580 Māmalahoa Highway
<b>Project TMK:</b>	(3) 9-5-007:029 por.
<b>Land Owner:</b>	Danielle K. Taggerty-Onaga
<b>Project Proponents:</b>	Hawai'i Electric Company (HECO)
<b>Project Tasks:</b>	Archaeological Literature Review and Field Inspection
<b>Project Acreage:</b>	21.83 acres
<b>Principal Investigator:</b>	Dennis Gosser, M.A.
<b>Regulatory Oversight:</b>	Chapter 6E-8, Hawaii Revised Statutes (HRS) and Hawaii Administrative Rules (HAR) Chapter 275
<b>Project Background:</b>	The proposed project involves construction of a solar facility in Kāhilipali Iki. Work will include installation of equipment, fencing, site roads, and connectivity to the power source.
<b>SIHP #:</b>	None
<b>Findings:</b>	A single previous archaeological investigation was conducted in the project area in 1972, which was a brief field inspection. Based on the high density of traditional Hawaiian and historic period archaeological sites in the area and because Wai'ōhinu and Nā'ālehu were a primary settlement area in the pre-Contact and early historic periods, the current project area likely contains historic properties.
<b>Human Skeletal Remains:</b>	None identified within the project area. There is potential for human burials in the project area in lava tubes/cave or on the landscape (stacked rock platforms or mounds).
<b>Project Effect:</b>	Due to the inadequate nature of the previous archaeological survey in the proposed project area, there is insufficient information to determine the proposed project's effect on potential historic properties.
<b>Recommendations:</b>	An archaeological inventory survey (AIS) under the direction of an SHPD-approved work plan is recommended to adequately identify and document any archaeological historic properties that may be present, to assess their significance, to determine the potential impacts of this project on any identified archaeological historic properties, and to identify and ensure appropriate mitigation is implemented, if needed.

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## INTRODUCTION

Under contract to the Nexamp Solar, LLC, Pacific Consulting Services, Inc. (PCSI) has prepared this Archaeological Literature Review and Field Inspection (ALRFI) in Support of the Nā‘ālehu Solar LLC-HI-Registration Project in Kāhilipali Iki Ahupua‘a, Ka‘ū District, Hawai‘i Island<sup>1</sup>. The project proponent is the Hawaiian Electric Company (HECO), and land owner is Danielle K. Taggerty-Onaga. The extent of the proposed project is shown in Figure 1. The project scope of work includes installation of solar arrays, fencing, and equipment.

A historical, cultural, and archaeological background study and field inspection was conducted in order to evaluate any potential effect on historic properties and to recommend mitigation of any adverse effect, if warranted. This work was carried out in accordance with Hawaii Revised Statutes (HRS) Chapter 6E, and Title 13 of the Hawaii Administrative Rules (HAR), Subtitle 13 (State Historic Preservation Division Rules), Chapter 275 (Rules Governing Procedures for Historic Preservation Review for Governmental Projects Covered Under Section 6E-8, HRS).

## PROJECT LOCATION AND DESCRIPTION

The Nā‘ālehu Solar LLC-HI-Registration Project area (Nā‘ālehu Solar project area) is at 95-580 Māmalahoa Highway between the towns of Nā‘ālehu (to the east) and Wai‘ōhinu (to the west). The total project area measures 20 acres (ac), or 8.1 hectares (ha). The Tax Map Key (TMK) parcel is (3) 9-5-007:029 (portion), which totals 166.478 acres (Figure 2). The entire project area is undeveloped, as is the surrounding land. Wai‘ōhinu Spur Road extends south from the highway, which is an unmaintained access road to the property. The project scope of work includes installation of solar arrays, fencing, and equipment. An overall site plan is shown in Figure 3.

## ENVIRONMENTAL SETTING

The Nā‘ālehu Solar project area is on the southeastern side of Hawai‘i Island on the lower slopes of Mauna Loa. Kāhilipali Iki is a relatively small *ahupua‘a* in Ka‘ū Moku, which is the largest *moku* (district) on the island. Ka‘ū is characterized by lava flows and grassland, which has been used for cattle grazing since the 1800s. The current project is in a portion of Ka‘ū that is protected from rift- or summit-derived lava flows. South of Māmalahoa Highway, the *ahupua‘a* is underlain by Kau Basalt (Holocene and Pleistocene) from Mauna Loa lava flows (k1y) dating to 3,000–5,000 years B.P (Trusdell et al. 2005; Wolfe and Morris 2005:11–12).

The *ahupua‘a* extends north from the coast to roughly 8 km inland to 525 meters (m) above mean sea level (amsl), and varies in width east-west from 0.5 to 1.0 km. The southern half of the *ahupua‘a* is known as Kahaea, which was traditionally a separate land unit from Kāhilipali Iki. Today the *ahupua‘a* is also referred to as Kāhilipali Kahaea or Kāhilipali-Iki Kahaea.

## TOPOGRAPHY AND SOILS

The project area is gently sloping at 255 m to 280 m amsl (836–918 ft amsl) and 4.5 km inland, or northwest, of the coastline at Waikapuna Bay. Soils in the project area are classified as Kanohina-Lava flows complex with two to 10 percent slopes, as shown in Figure 4. This series consists of 30 percent

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<sup>1</sup> PCSI follows the latest edition of the Society for American Archaeology (SAA) Style Guide (2021) regarding textual elements (e.g., numbers, dates, statistical copy, italicization, capitalization, hyphenation, and accents and diacritical marks). The authority for English spelling is the most recent edition of Merriam-Webster’s Collegiate Dictionary. Unless noted, the authorities for Hawaiian spelling and geographic place names are the Hawaiian Dictionary (Pukui and Elbert 1986), the most recent listing of the Hawai‘i Board on Geographic Names (HBGN), and Place Names of Hawaii (Pukui et al. 1976). PCSI uses the official spelling of Hawaii (without an okina) to refer to the State and State agencies (unless an alternative spelling has been officially adopted); spellings presented in quotations and references retain their original punctuation.

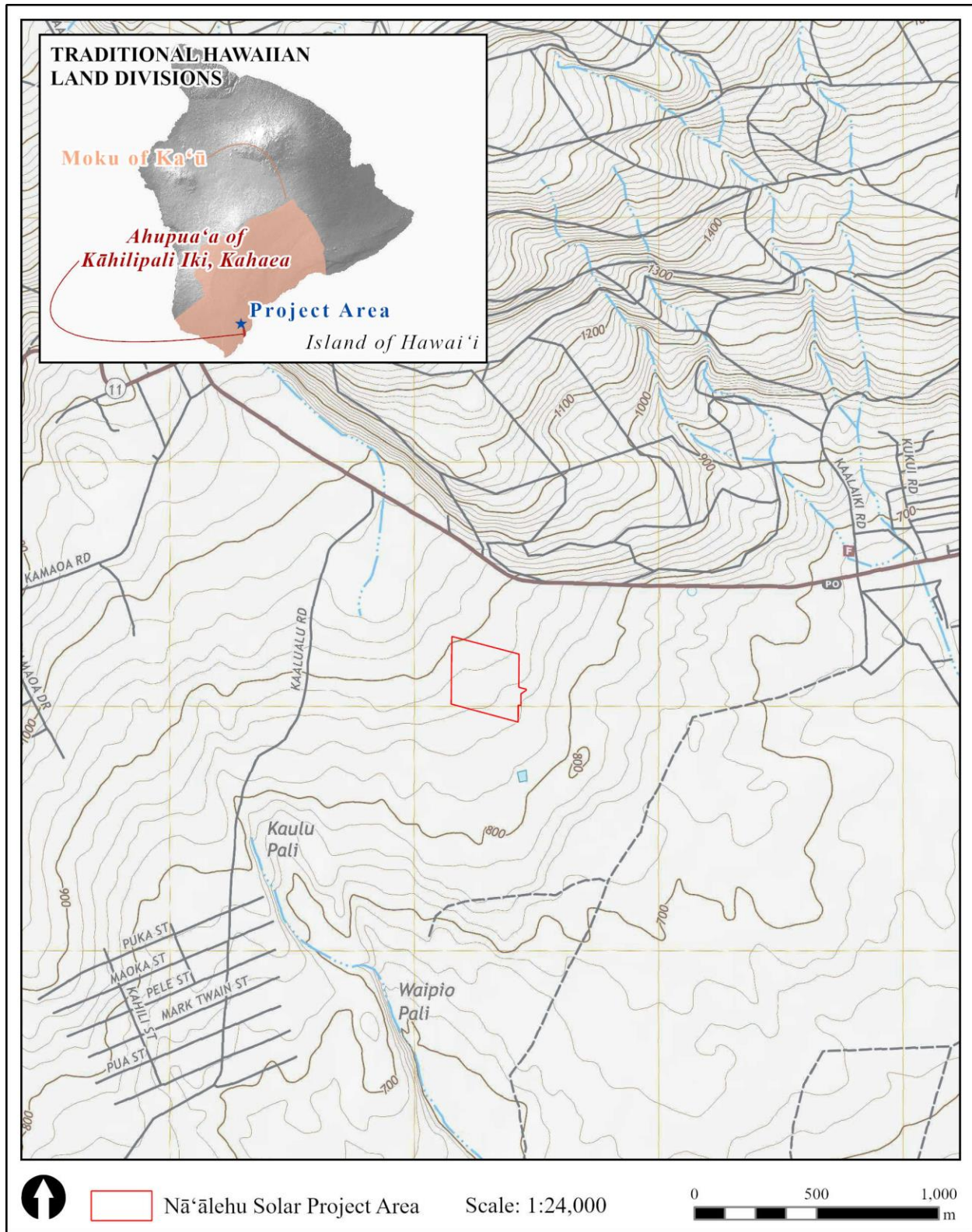
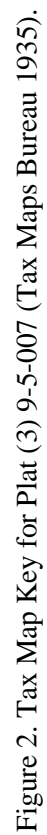
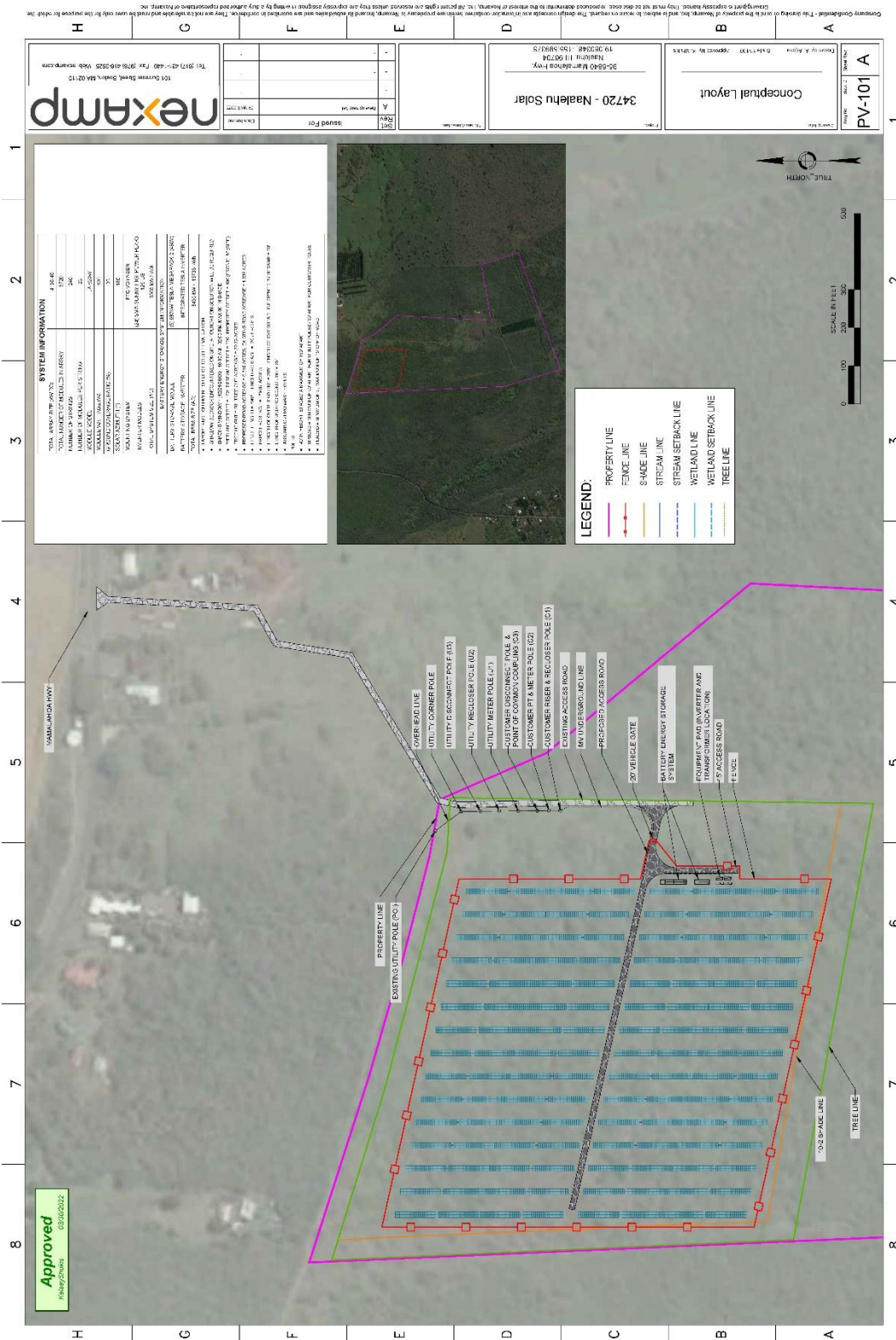


Figure 1. Project Area Location on 7.5-Minute Series USGS Naalehu Topographical Quadrangle (2017).







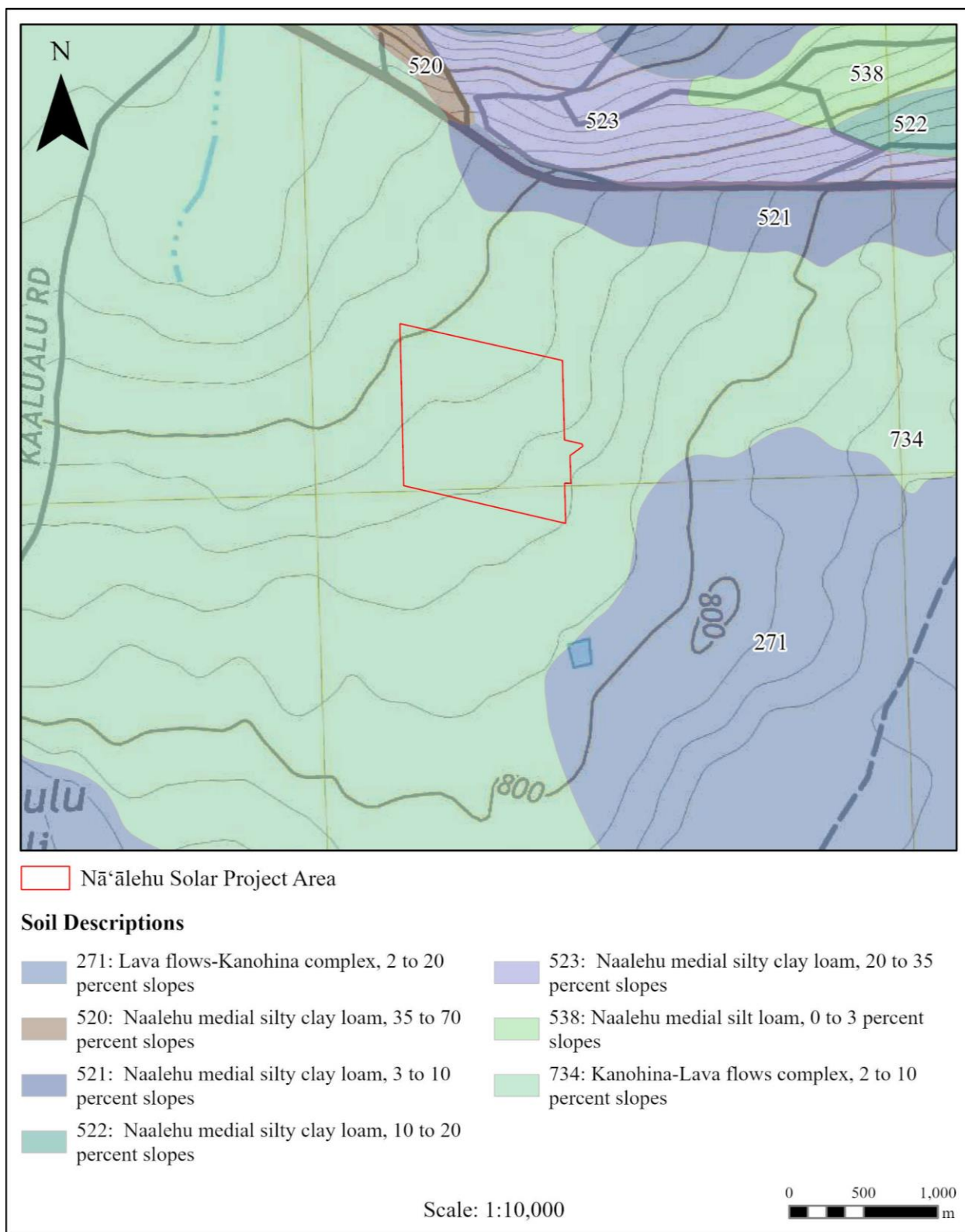


Figure 4. Soil Units Near the Project Area (Data Layer: USDA/NRCS 2015).

pahoehoe lava flows, 60 percent Kanohina or similar soils, and 10 minor other components. The Kanohina soils formed from basaltic volcanic ash over pahoehoe lava. A typical profile is (A) 0 to 4 inches, ashy very fine sandy loam; (C1) 4 to 5 inches, gravelly ashy loamy sand; (C2) 5 to 7 inches, ashy loam; and (2R) 7 to 17 inches, bedrock.

## HYDROLOGY AND VEGETATION

Annual rainfall in the project area averages 1,113 millimeters (mm), or 43.82 inches (in) (Giambelluca et al. 2013). There are no perennial streams in the vicinity, but there are gulches that fill during heavy rain. Vegetation includes Christmasberry (*Schinus terebinthifolius*), kiawe (*Prosopis pallida*), koa haole (*Leucaena leucocephala*), lantana (*Lantana camara*), and grasses. To the south of the project, in the same parcel (TMK [3] 9-5-007:029), is quarry covering approximately 4 ha, which was first used in 1972 by the previous land owner.

## HISTORICAL BACKGROUND

This section presents the ethno-historical and archaeological background information of the project area. Data from the background research were compiled to create an overview of traditional Hawaiian and historic-era land use and subsistence practices. Previous archaeological research in the study area is reviewed, along with results of the field inspection, and anticipated archaeological findings are discussed.

### MO‘ŌLELO AND WAHI PANA

The Hawaiian cultural landscape can be described through significant Hawaiian place names, or *wahi pana*, and *mo‘ōlelo*. *Mo‘ōlelo* may be myths, legends, proverbs, and events surrounding well-known individuals in Hawaiian history (Pukui and Elbert 1986:254). The following is a discussion of the mythological and traditional accounts from in and around the project area.

Kāhilipali Iki Ahupua‘a is traditionally one of more than 80 *ahupua‘a* in Ka‘ū, many of which were consolidated in the mid-1800s. As previously mentioned, the southern portion of the *ahupua‘a* was formerly a separate *ahupua‘a* called Kahaea. The boundary was not surveyed during the Māhele, but was approximately 3.0 km south of the project area at roughly 500 to 600 ft amsl based on historical maps and land use.

Kāhilipali Iki literally means “small Kāhilipali.” Kāhilipali can be translated as “wind-swept cliff” and is said to have been the name of an ancient priest (Pukui et al. 1972:65). Handy and Handy, writing of observations in the first half of the 20<sup>th</sup> century, state that “there were no settlements of prime importance” in Kāhilipali Iki or the neighboring Kāhilipali Nui (Handy and Handy 1972:859). These two land units are between the two population centers of Wai‘ōhinu and Nā‘ālehu. Nā‘ālehu, can be translated literally as “the volcanic ashes” (Pukui et al. 1974:160) and Wai‘ōhinu as “shiny water” (Pukui et al. 1974:226). There is a poetical saying for the wind in Nā‘ālehu: *Ka makani kuehu lepo o Na‘alehu*, which can be translated as “The dust scattering wind of Na‘alehu” (Pukui 1983:159).

For Wai‘ōhinu, there is poetical saying for the rain: *Ka ua Hā‘ao o Waiōhinu*, which can be translated as “The Hā‘ao rain of Waiōhinu,” which refers to the Hā‘ao rain that falls in columns from the mountains to Wai‘ōhinu; it is mentioned in songs and chants of Ka‘ū (Pukui 1983:167). Hā‘ao, or Punawaiohā‘ao, is north of Wai‘ōhinu, and refers to a group of five springs: Hā‘ao, Waiakailio, Waiakahoalii, Mauolioli, Kapuna. Kamakau tells of what a chief named Kaiheki‘oi chanted when he saw the body of Chief Keōua Ku‘ahu‘ula of K‘aū being carried to Pu‘ukohola Heiau after he was killed by Kamehameha’s men:

Ku‘u haku i ka ua Ha‘ao e,  
Ke lele a‘e Ia ka ua,

My lord of the rain of Ha‘ao,  
The rain flies fast,

Ma uka o 'Au'aulele,	Flies over the upland of 'Au'aulele,
Lele ka ua, lele pu no me ka	The rain flies driven by the wind.
makani.	The rain drives down from the
E lele po'o ana ka wai o ka ha',	cliffs above,
Ku'u haku mai ka wai	The tears for my chief
Ha'ule po'o e.	Drop down on the heads of the
	people [Kamakau 1992:158].

In a footnote for Hā'ao in line one of the chant, the rain and spring named Hā'ao as further described:

*Ua* Ha'ao (rain of Ha'ao) is the name of a rain that comes down at Waiohinu in Ka'u and keeps that district green. Ha'ao is the name of the spring second in size of the five springs that water Waiohinu. The chant is still chanted by the old people of Ka'u who retain their love of Keoua and hatred for Kamehameha Kamakau 1992:158].

In Lorrin Andrews dictionary, revised by Parker (1922), Hā'ao is also defined as “A rain peculiar to Auaulelo in Kau, Hawaii, so named because the showers follow one another like the haao or subdivisions in the retinue of a chief” (Andrews and Parker 1922:87).

At Nā'ālehu, which is in Kāwala Ahupua'a on the east side of Kāhilipali Nui, there was a “large population, rich planting areas, planting, healing and war *heiau* (temple), sports arena, a pavilion of the *ali'i* in a grove of *kou* trees, and other distinctions” (Handy and Handy 1972:859). At Wai'ōhinu, which is in Wai'ōhinu Ahupua'a on the west side of Kāhilipali Iki, “[a]s late as 1833, according to the missionary surveyors, there were twenty sizable plots (*lo'i*) of irrigated taro in Waiohinu village requiring constant flooding by flowing water diverted from the stream in ditches (*'auwai*) (Handy and Handy 1972: 242).

Handy and Handy mention how several proverbs regarding Nā'ālehu are indicative of its importance in ancient times (1972:595). Both refer to the stalwart and fierce nature of those from Nā'ālehu. The following are the proverbs and translations from Mark Kawena Pukui (1983):

*Na Kūmmau palapa'a o Na'alehu oia mau no ka papa'a i ka pala pa'a*  
The thick-walled calabashes of Na'alehu are always crusted [with poi]  
“A Ka'ū saying—the thick headed natives of Naalehu are strict adherence to principles” [Pukui 1983:245].

*Keiki haehae poko o Na'alehu*  
The lad of Na'alehu who tears into bits  
“Said in admiration of a strong warrior of Naalehu who fearlessly attacks his foes. Later said of a Na'alehu-born person who shows no fear in any situation” [Pukui 1983:183].

Pukui mentions two stones who were husband and wife, named Ka'ūloa and Wai'ōhinu, in a *kukui* (Candlenut tree, *Aleurites moluccana*) grove on the north side of main the road between Wai'ōhinu and Nā'ālehu. There was a saying, *I puni ia 'oe o Ka'ū a I 'ike 'ole 'oe ia Ka'ūloa, 'a'ohe no 'oe I 'ike ia ia Ka'ū*, which she translates as, “If you have not seen Ka'ūloa, you have not seen the whole of Ka'ū” (Pukui 1983:136). The focus on a point between Wai'ōhinu and Nā'ālehu highlights the importance of the area in Ka'ū. According to Pukui, over time both stones sank into the ground and vanished, which is when Palahemo, a deep water hole inland near South Point, was substituted. So, the saying became: *I 'ike 'oe iā Ka'ū a puni, a ike 'ole 'oe iā Pala-hemo, 'a'ole 'oe i 'ike iā Ka'ū*, or “if you have seen all Ka'ū, but have not seen Pala-hemo, you haven't seen Ka'ū” (Pukui et al. 1972:176). Pukui et al. (1972:176) also explain,



1 “Palahemo is believed connected underground to the sea and haunted by a *mo‘o* of the same name; in times  
2 of rain it was taboo to bathe there.” There is also one other saying regarding Palahemo, which is an insult:  
3 *E ho‘i Ka‘ū i Pala-hemo*, or “go back to Ka‘ū and Pala-hemo” (Pukui et al. 1972:176). It is an insult because  
4 Palahemo translates literally as “loose dab of excreta,” which is what the markings on the walls of the water  
5 hole look like (Pukui et al. 1972:176).

## 6 **TRADITIONAL HAWAIIAN HISTORY AND LAND USE**

7 Archaeological evidence shows the earliest settlement of the Hawaiian Islands occurred no earlier  
8 than AD 1000 (Kirch 2011). This is based on AMS 14C dating and paleoenvironmental evidence. Recent  
9 reassessment of radiocarbon dates for the several archaeological sites throughout Hawai‘i and Polynesian  
10 have called many early dates into question in Ka‘ū for site excavated in the in the 1950 and 1960s (Emory  
11 and Sinoto 1969; Emory et al. 1969), such as Ka Lae (H1), and Makalei Rockshelter Site (H2), and  
12 Wai‘ahukini Rockshelter Site (H8) (Allen and Huebert 2014; Athens et al. 2014; Anderson and Sinoto  
13 2002; Dye 2002, 2011; Kahn et al. 2016; Kirch 2011; Mulrooney et al. 2014; Rieth et al. 2011; Rieth et al.  
14 2013; Wilmschurst et al. 2011). More recent work posited that the settlement in Ka‘ū began in the late  
15 fifteenth century, with sites being occupied through the late pre-Contact period (Kahn et al. 2016).

16 As of the 1400s there were two concentrations of power on the island: the “Kona” chiefs of Kohala,  
17 Kona, and Ka‘ū, and the “I” chiefs of Hamakua, Hilo, and Puna (Cordy 2000:205–207). When ‘Umi-a-  
18 Liloa came to power, sometime between the early 1400s and early 1600s, he united the island and chose  
19 Kona as the seat of power. Based on royal oral traditions it is thought that from 1500 to the mid-1700s  
20 many attempts were made to overthrow the lineage. This tumultuous period ended under Kamehameha I, a  
21 direct descendant of ‘Umi-a-Liloa, who unified the Hawaiian Islands (less Kaua‘i) at the end of the  
22 eighteenth century (Cordy 2000:205–208).

23 Though there is uncertainty about the exact dates of events (Stokes 1933), and the events  
24 themselves, Kamakau wrote that Kamehameha I, named at birth Pai‘ea, was born at a time of war among  
25 the Hawai‘i chiefs (Kamakau 1992:66). Keawe‘īkekahiali‘iokamoku, *ali‘i nui* of Hawai‘i, had died and his  
26 sons Ke‘eaumoku and Kalaninui‘amamao, district chiefs of the Kona and Hilo sides of the island, began  
27 clashing. At the time, the chief Alapa‘i was on Maui and heard of the fighting. He took the opportunity to  
28 attack the island and won, becoming ruler of Hawai‘i Island.

29 As pointed out in a newspaper article from 1911 about Kamehameha’s birth (Imaikalani 1911),  
30 Hawaiian *mo‘ōlelo* and *mele* (chants, songs, or poems) are not always literal. For example, it was not to a  
31 literal cave that the infant Kamehameha was taken to as some say, but the door of Kaha‘ōpūlani’s house  
32 (Imaikalani 1911). Several version of the birth say that before Kamehameha was born to Alapa‘i’s niece  
33 Keku‘iapoiwa II, a priest warned him of Kamehameha’s future power and Alapa‘i planned to have the child  
34 killed (Stillman 1911). Another version tells of a North Kohala chief Nāihe who heard rumors in the court  
35 of plans to kill the child and secretly took the infant to raise in safety (Desha 2000:26). According to  
36 Kamakau (1992:67), the Kohala chief Nae‘ole swiped the child from Keku‘iapoiwa II at Kokoiki while she  
37 was delivering the afterbirth unaccompanied on a stormy night, and his motive was to become the *kahu*  
38 (guardian) of the chief’s child. And then there is other version stating that Keku‘iapoiwa II and Keōua knew  
39 of Alapa‘i’s plot and made plans to have a skilled runner carry the infant from ‘Āinakea (not Kokoiki) to  
40 ‘Āwini, where Kaha‘ōpūlani lived (Stillman 1911).

41 When Kamehameha was five years old he was taken to be raised in Alapa‘i’s court, where Keawe’s  
42 two sons, Keōua and Kalani‘ōpu‘u (who were half-brothers), were captains of his army. In 1752, Keōua  
43 became ill and died while at the court of Alapa‘i in Hilo. According to one source, Kalani‘ōpu‘u heard of  
44 the illness and travel from Ka‘ū to Keōua. Before Keōua died, he told his half-brother that Alapa‘i had  
45 poisoned him, and to take his son, Kamahameha, and care for him. In other versions Kalani‘ōpu‘u heard  
46 rumors of poison or prayer by Alapa‘i that caused Keōua’s death, decided to take Kamehameha away from



Alapa'i's court (Desha 2000:27, 28; Silverman 1972). Either way, this was the beginning of the struggle for Hawai'i by Kalani'ōpu'u against Alapa'i. Kamakau wrote:

Ka-lani-'ōpu'u and Keoua were the hereditary heirs to the land of Hawaii, for it had belonged to their father, Ka-lani-nui-'i-a-mamao, and [his brother] Ka-lani-ke'e-au-moku; but Alapa'i had seized it through force of arms and had slain the inheritors. Alapa'i was a chief of high rank. Ka-lani-kau-lele-ia-iwi was his mother as well as the mother of Ka-lani-ke'e-au-moku. His father was Ka-uaua-a-Mahi, whose father, Mahi-'ololi', was executive officer (*Kuhina kaua nui*) for the chiefess Keakea-lani while she held the government of Hawaii [Kamakau 1992:76].

There was a battle at Mahinaakaka between Kalani'ōpu'u and Alapa'i, during which Alapa'i defeated Kalani'ōpu'u's army. Kalani'ōpu'u ruled over Ka'ū "the birth sands of his ancestors" and Puna (Kamakau 1992:77). Alapa'i stayed at Hilo for a year and then moved to Waipi'o, then Waimea, and finally Lanimaomao, where he became ill. He then moved to Kikiako'i in Kawaihae where he grew close to death, so he appointed his son Keawe'ōpala as his successor.

Alapa'i died around 1754, and then there was then an uprising led by Kalani'ōpu'u that resulted in Keawe'ōpala's death (Kamakau 1992:78). Kalani'ōpu'u became *ali'i nui* of Hawai'i. His reign was spent attempting to conquer Maui. He managed to take Hāna and then held the fortress Ka'uiki for 20 years. Young Kamehameha spent time at Kalani'ōpu'u's court in Ka'ū where he trained in warfare with the famous warrior Kekūhaupi'o (Desha 2000; Kamakau 1992:86).

## EARLY POST-CONTACT HISTORY

When Captain Cook arrived in the Hawaiian Islands, Kalani'ōpu'u was on Maui. He returned to meet Cook in January of 1779 and they exchanged gifts (Kuykendall 1947:16). Kalani'ōpu'u became ill in the following years and before his death he bequeathed Kīwala'ō his land and Kamehameha his god Kuka'ilimoku (Fornander 1919:464; Kamakau 1992:108,110). Fearing for Kamehameha's safety when he died, he sent him to live in Kohala. Kalani'ōpu'u died at Wai'oahukini in Ka'ū in 1782. Soon after Kalani'ōpu'u's death, fighting broke out between the districts and Kīwala'ō was killed. After a famous battle called Moku'ohai, Kamehameha then became chief of the districts of Kona, Kohala, and half of Hāmākua, while Keōua, the brother of Kiwala'o, controlled Ka'ū and half of Puna, and Keawema'uhili declared himself independent of both in Hilo and controlled half of Puna and Hāmākua (Kalākau 1888:122, 363).

In the following years there was constant fighting between the districts controlled by Keōua, Keawema'uhili, and Kamehameha. Leading up to Kamehameha's rule of the entire island, Keōua killed Keawema'uhili out of fear that he and Kamehameha would join forces against him (Kamakau 1992:151). Kamehameha was on Moloka'i with Isaac Young and Davis when he heard that Keawema'uhili was killed and that Kohala had been attacked. He left for Hawai'i and took with him muskets, gunpowder, and the canon called Lopaka (Kamakau 1992:152). The battle between Kamehameha and Keōua was a draw, and Keōua and his chiefs divided up Hilo for themselves.

Around 1790, Kamehameha held Keōua's army in the north and sent fighters to attack Ka'ū. On their way back to defend Ka'ū, Keōua's army was caught in an eruption of Kīlauea and was devastated, but Ka'ū still resisted Kamehameha's control. Kamehameha decided to feign a peace offering and invited Keōua to the dedication of Pu'ukohola Heiau in Kawaihae. Kamakau claims that Keōua knew his fate when he agreed to travel to Kona (Kamakau 1992:156). When Keōua and his men arrived they were killed, Keōua's body was offered as the sacrifice at the dedication of the *heiau*.

In 1783, Kahekili II, *ali'i nui* of Maui, defeated Kahahana, *ali'i nui* of O'ahu (Kamakau 1992:136). Ten years later, Kahekili II died and his half-brother Ka'eokulani inherited Maui, Moloka'i, and Lana'i, while his son Kalanikūpule inherited O'ahu. In 1793, Ka'eokulani made plans to visit his home island of Kaua'i, which made Kalanikūpule suspicious. They went to war with one another and several days of fighting occurred. After a brief period of peace, the fighting resumed, but this time Kalanikūpule employed

1 the help of Captain William Brown and his three vessels, known as the Butterworth Squadron. Kalanikūpule  
2 was successful and defeated Kaʻeokulani, killing him and his wives, chiefs, and warriors, in a battle called  
3 Kukiʻiahu in ʻEwa (Kamakau 1992:169).

4 Kalanikūpule’s next target was Kamahameha on Hawaiʻi. Due to a disagreement, Kalanikūpule  
5 had Captain Brown killed, and the other foreigners were taken prisoner. In January of 1795, Kalanikūpule,  
6 his warriors, and the prisoners attempted to set sail for Hawaiʻi Island, but were delayed. The prisoners  
7 managed to sneak off with the ships and ammunition and left to warn Kamahameha of Kalanikūpule’s  
8 plans. Upon receiving the news, Kamehameha then set to make war upon Kalanikūpule.

9 In February, 1795, Kamehameha’s fleet of war canoes landed at Lahaina, covering the sands along  
10 the coast from Launiupoko to Mala. All that part of Lahaina given over to food patches and cane  
11 fields was at that time overrun by the men from Hawaii. At Molokai, again, the whole coast from  
12 Kawela to Kalamaʻula was covered by canoes [Kamakau 1992:171].

13 Next, they sailed to Oʻahu. The war culminated in the Battle of Nuʻuanu where Kamehameha was  
14 victorious.

## 15 EARLY POST-CONTACT LAND USE

16 In 1823, the missionary William Ellis visited Hawaiʻi Island in search of a station for the American  
17 Board of Commissioners for Foreign Missions (ABCFM). In 1825, Queen Kaʻahumanu gave the ABCFM  
18 the *ahupuaʻa* of Punahoa 2, a narrow 5000-acre tract reaching inland roughly 20 kilometers from Hilo Bay.  
19 During his time on the island, Ellis kept a journal and recorded his observations when traveling. During his  
20 time on the island, he visited Waiʻōhinu and highlighted the availability of fresh water. He recorded an  
21 entry in his journal titled “The Beauties of Waiohinu”:

22 Our path running in a northerly direction, seemed leading us towards a ridge of high mountains, but  
23 it suddenly turned to the east, and presented to our view a most enchanting valley, clothed with  
24 verdure, and ornamented with clumps of kukui and kou trees. On the south-east it was open towards  
25 the sea, and on both sides adorned with gardens, and interspersed with cottages, even to the summits  
26 of the hills.

27 A fine stream of fresh water, the first we had seen on the island, ran along the centre of the valley,  
28 while several smaller ones issued from the rocks on the opposite side, and watered the plantations  
29 be low. We drank a most grateful draught from the principal stream, and then continued our way  
30 along its margin, through Kiolakaa, travelling towards the sea, till we reached Waiohinu, about ten  
31 miles from the place where we slept last night. Here we found a very comfortable house belonging  
32 to Pai, the head man, who invited us in, and kindly entertained, us.

33 About noon, a hospitable dinner was prepared, of which, with the additional luxury of fresh water,  
34 we made a comfortable meal [Ellis 1827:146–147].

35 Ellis goes on to tell of how after he and his companions conducted some missionary work that  
36 day, and then set off toward Nāʻālehu:

37 Between three and four o’clock we took leave of them, and pursued our journey towards the sea-  
38 shore. Our road, for a considerable distance, lay through the cultivated parts of this beautiful valley:  
39 the mountain taro, bordered by sugar-cane and bananas, was planted in fields six or eight acres in  
40 extent, on the sides of the hills, and seemed to thrive luxuriantly. On leaving the valley, we  
41 proceeded along by the foot of the mountains, in a line parallel with the sea, and about a mile and a  
42 half from it (Ellis 1827:133–134).

43 It is on this route that Ellis observed traditional Hawaiian games during *makahiki* (a traditional  
44 Hawaiian festival occurring in the fall) the first being *paheʻe* (spear throwing): “In our way we passed over a  
45 *tahua pahe*, or *pahe* floor, about fifty or sixty yards long, where a number of men were playing at *pahe*, a  
46 favourite amusement with farmers and common people in general.” (Ellis 1827:147). He goes on to describe  
47 a game of *maika* (Hawaiian lawn bowling) and gambling during the games, and ends by stating, “The

country appeared more thickly inhabited than that over which we had travelled in the morning. The villages, along the sea shore, were near together, and some of them extensive” (Ellis 1917:149).

Handy and Handy (1972) wrote of the area being cultivated in *‘uala* (sweet potato), and also mentions *heiau*, lava tubes, and petroglyphs:

This was an area of sweet potatoes and gourds. There was a notable heiau, a luakini or war temple, the remains of which are in the rear of the present public-school site. About half a mile beyond this to seaward is a caved-in section of lava tube forming a sort of cave, on the wall of which are lightly drawn petroglyphs in the form of human figures [Handy and Handy 1972:595–596]

## MAHELE

Traditional land divisions of the fifteenth and sixteenth centuries persisted until the 1848 Mahele, which introduced private property into Hawaiian society (Kamakau 1991:54). During the Mahele, the Land Commission required the Hawaiian chiefs and *konohiki* (land agents for the *ali‘i*) to present their claims to the Land Commission. In return they were granted awards for the land quit-claimed to them by Kamehameha III. The remaining unclaimed land was then sold publicly, “subject to the rights of the native tenants” (Chinen 1958:29). The new western system of ownership resulted in many losing their land. Often claims would be made for discontinuous cultivated plots with varying crops, but only one parcel would be awarded.

In the case of land claims made for Konohiki lands, approval by the Land Commissioners was required before the award was made. If approved, then the awardee obtained a Royal Patent (RP) from the Minister of the Interior, which indicated that the government’s interest in the land had been settled with a commutation fee. This fee was typically no more than one-third of the value of the unimproved land. This fee was paid either with cash, or, more commonly, the return of one-third of the awardee’s lands, or total value of the lands awarded (Barrère 1975:28).

Following the Māhele of 1848, two acts were passed in 1850 that changed land ownership in Hawai‘i. On 10 July 1850, the Alien Land Ownership Act was adopted, which allowed foreigners to own land. On 6 August 1850, the Kuleana Act of 1850 was adopted, which allowed *hoa‘āina* (common people of the land, native tenants) to make claims to the Land Commission. The new western system of ownership resulted in many losing their land. Often *kuleana* (property) claims would be made for discontinuous cultivated plots with varying crops, but only one parcel would be awarded.

The Crown Lands became Government Lands when the Hawaiian Government was overthrown in 1895, making them public domain for sale by fee simple (Hammatt 2013:A-5). Patents were the certificates issued for the sale of such lands. Beginning in 1900, when Hawaii became a U.S. territory, the certificates were called Land Patents, or Land Patent Grants (Hammatt 2013:A-5). The Crown Lands became Government Lands when the Hawaiian Government was overthrown in 1895, making them public domain for sale by fee simple (Hammatt 2013:A-5). Patents were the certificates issued for the sale of such lands. Beginning in 1900, when Hawaii became a U.S. territory, the certificates were called Land Patents, or Land Patent Grants (Hammatt 2013:A-5).

At the Māhele, Kahilipali Iki and Kahea became government lands. Within the TMK plat of (3) 9-5-007 were two Land Grants and three LCAs. The current project area falls within Land Grant 996, which consisted of 293 acres sold to Samuel La‘anui in 1852. Descriptions of LCAs granted in the area most often mention *‘uala*, but also refer to *pahale* (house sites) and goat pens.

## LATE POST-CONTACT LAND USE

Land use in the 1800s was dominated by cattle ranching and sugarcane cultivation. In Ka‘ū, the first sugar mill was built in at Wai‘ōhinu by Nicholas George in 1866 (Elwell and Elwell 2005:23), but it, along with much of the area, was destroyed by earthquakes and tsunamis in 1868 when Mauna Loa erupted.

1        Soon after four o'clock p.m. on Thursday we experienced a most fearful earthquake. First the earth  
2        swayed to and fro from north to south, then from east to west, then round and round, up and down,  
3        and finally in every imaginable direction, for several minutes, everything crashing around, and the  
4        trees thrashing as if tom by a hurricane, and there was a sound as of a mighty rushing wind. It was  
5        impossible to stand: we had to sit on the ground, bracing with hands and feet to keep from being  
6        rolled over ... we saw ... an immense torrent of molten lava, which rushed across the plain below ...  
7        swallowing everything in its way;--trees, houses, cattle, horses, goats, and men, all overwhelmed in  
8        an instant. This devouring current passed over a distance of about three miles in as many minutes,  
9        and then ceased. [Lyman 1868:109]

10        The following year, a famine in Ka'ū was reported by a resident of Wai'ōhinu (Huia 1869).  
11        Hawaiian farmers went to work for the white employers gathering *pulu* (part of a fern used to stuff pillows  
12        or mattresses), for which they were paid by the pound. This led to crops not being attended and a food  
13        shortage, which was likely compounded by the recent natural disaster.

14        In 1868, Alexander Hutchinson began Nā'ālehu Plantation, which became the Hutchinson Sugar  
15        Plantation Co. The sugar mill can be seen east of the current project area on a portion of a historical map in  
16        Figure 5. The sugarcane was grown north of the highway, while the south side was used for ranching. The  
17        sugar industry brought an influx of workers from outside Hawaii, such as Japan. Tamekichi "Tommy"  
18        Ishimura, the former landowner of the current project area, was the son of Japanese immigrants and worked  
19        as a mechanic for the Hutchinson Sugar Plantation Co. from 1935 to 1945 (Hawaii Tribune Herald 1946b:2)  
20        As of 1946 he was the manager of the Naalehu Service Station (Hawaii Tribune Herald 1946a:2), which he  
21        either owned or bought and was soon known as Tommy's Service Station (Hawaii Tribune Herald 1946b:2).  
22        In 1961, an article appeared in the newspaper about Tommy Ishimaru's multiple occupations:

23        Tommy Ishimaru of Naalehu is another all-around operator who can qualify not only as a farmer,  
24        but also as a business man or contractor.

25        He cleared, fenced and planted his own pasture with adapted grasses and legumes. With use of  
26        fertilizer he has made his acres highly productive.

27        As a contractor, he has made bulldozers available to other local farmers for conservation work--  
28        clearing land, building diversion ditches and waterways, and excavating for reservoirs.

29        Rounding out his operations, Ishimaru operates a service station which doubles as a ranch and  
30        contracting office [Hawaii Tribune Herald 1961:8].

31        It was in the early 1970s that Mr. Ishimaru began quarrying within 25-acres of his property in  
32        Kāhilipali Iki. A hospital had been built in Ka'ū using material hauled from Hilo, which Ishimaru argued  
33        doubled the cost. His operation included crushing machinery, a concrete batch plant, and an asphaltic  
34        concrete plant. There was opposition from the Honolulu-based landowner of the neighboring property, who  
35        wanted to develop a resort on the land. Ishimaru said he also had such plans, and that the quarry would save  
36        tax payers five to ten thousand dollars on the nearby Wai'ōhinu flood control project and that he could later  
37        fill the quarry with flood debris [Hawaii Tribune Herald 1972:2].

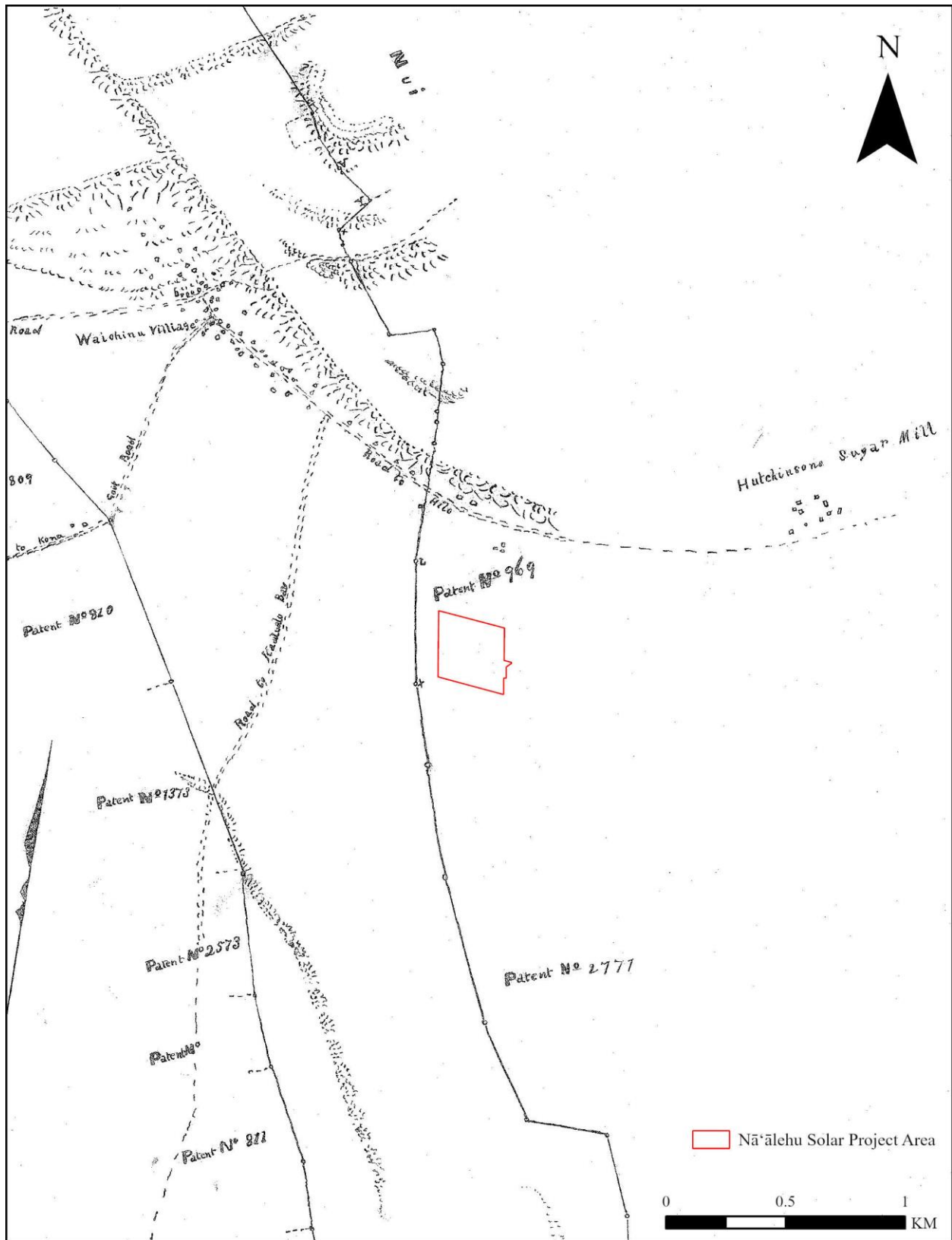


Figure 5. Portion of Historical Map Showing Project Area in Land Grant 969 (Lyman 1876).

## PREVIOUS ARCHAEOLOGY

Several archaeological inventory surveys have been conducted near the current project area that covered hundreds of acres; however, in multiple cases no report was produced (surveys by Borthwick and Hammatt 1990, Haun et al. 2006, and Rechtman Consulting 2006-2007). Some of the data included herein was mapped in HICRIS (Hawaii Cultural Resource Information System), while other data was included in the archaeological background of various other reports. Generally, any undeveloped parcel in the Wai‘ōhina and Nā‘ālehu area have yielded traditional Hawaiian and historic period sites when surveyed. The current project was subject to a brief field inspection in 1972 by archaeologist William Bonk who stated that no sites were observed (Bonk 1972), but it is highly likely that archaeological sites are extant based on more recent archaeological investigations in the vicinity.

Previous investigations with no significant findings were all on parcels previously graded or developed (Fackler and Haun 2014; Kam 1984; Meineke 1981; Rechtman 2016; Rechtman and Nelson 2013; Smith 1992; Thurman et al. 2020; Wilkinson et al. 2009). A detailed discussion of previous archaeological investigations with identified sites is presented below chronologically, which is indicative of sites that may be present in the current project area. The project locations are shown in Figure 7 and previously identified sites are shown in Figure 8. In Table 2, all previous archaeological investigations conducted near the Nā‘ālehu Solar project area are summarized. Additionally, Table 3 includes a summary of all the identified archaeological sites listed in Table 2.

### Bonk 1972

In 1972, Tommy Ishimaru, the former property owner of the 166-acre TMK (3) 9-5-007:029, applied for a permit to quarry on his land. Prior to the approval, the land was investigated for archaeological sites. During a one-day field visit, the parcel was crisscrossed via a four-wheel drive vehicle and on foot. Heavy underbrush was noted along with Christmas berry and lantana. The archaeologist stated no archaeological sites were likely to be present. Subsequently, the quarrying began in the southeast corner of the L-shape parcel, outside the current project area.

### Kelly and Crozier 1972

Bernice Pauhani Bishop Museum (BPBM) archaeologists conducted phase I and II survey and excavations for the Wai‘ōhinu drainage improvement project (Kelly and Crozier 1972). The project area was the site of a former American Board of Christian Foreign Missions (ABCFM) station in the mid-1800s, on the east side of Wai‘ōhinu town. At the site was the first sugar mill built in Ka‘ū, along with the mission houses and Alanui Missionari (Missionary road). Features recorded during the survey included boundary walls for *kuleana*, agricultural walls, retaining walls, historic period house platforms, and ‘*auwai*’ system, the stone-paved Carriage Road, and a traditional Hawaiian shrine (a small altar for a family). The authors noted that: “Waiohinu was one of the most important *ahupua‘a* in Ka‘u, and Waiohinu village, with its excellent fresh-water springs and taro lands, was perhaps its most important asset. Many of the early events that took place in Waiohinu were typical of those which took place throughout the islands, but seldom survived in the records” (Kelly and Crozier 1972:17).

### Kawachi 1998

Archaeologist Carol Kawachi surveyed a portion of agricultural land in Kiolaka‘a Ahupua‘a based on the reported presence of archaeological sites (Kawachi 1998). This land is also known as Pu‘u Maka‘a in Māhele records and on tax maps. Sites documented were planting/clearing mounds, walls, and a possible planting depression, which indicate the areas contained an agricultural system (Kawachi 1998:8). SIHP 50-10-73-21156, comprised multiple agricultural features, including modified outcrops, walls, and mounds. Soil test from the sites suggested it would have been suited to vine crops, such as ‘*uala*’, and in the historic period gourds, pumpkins, and melons (Kawachi 1998:12). SIHP 50-10-73-21227 comprised three walls likely related to ranching in the historic period. A collapsed lava tube was also documented, though no cultural materials were present in the portion that could be accessed (no SIHP number was assigned).



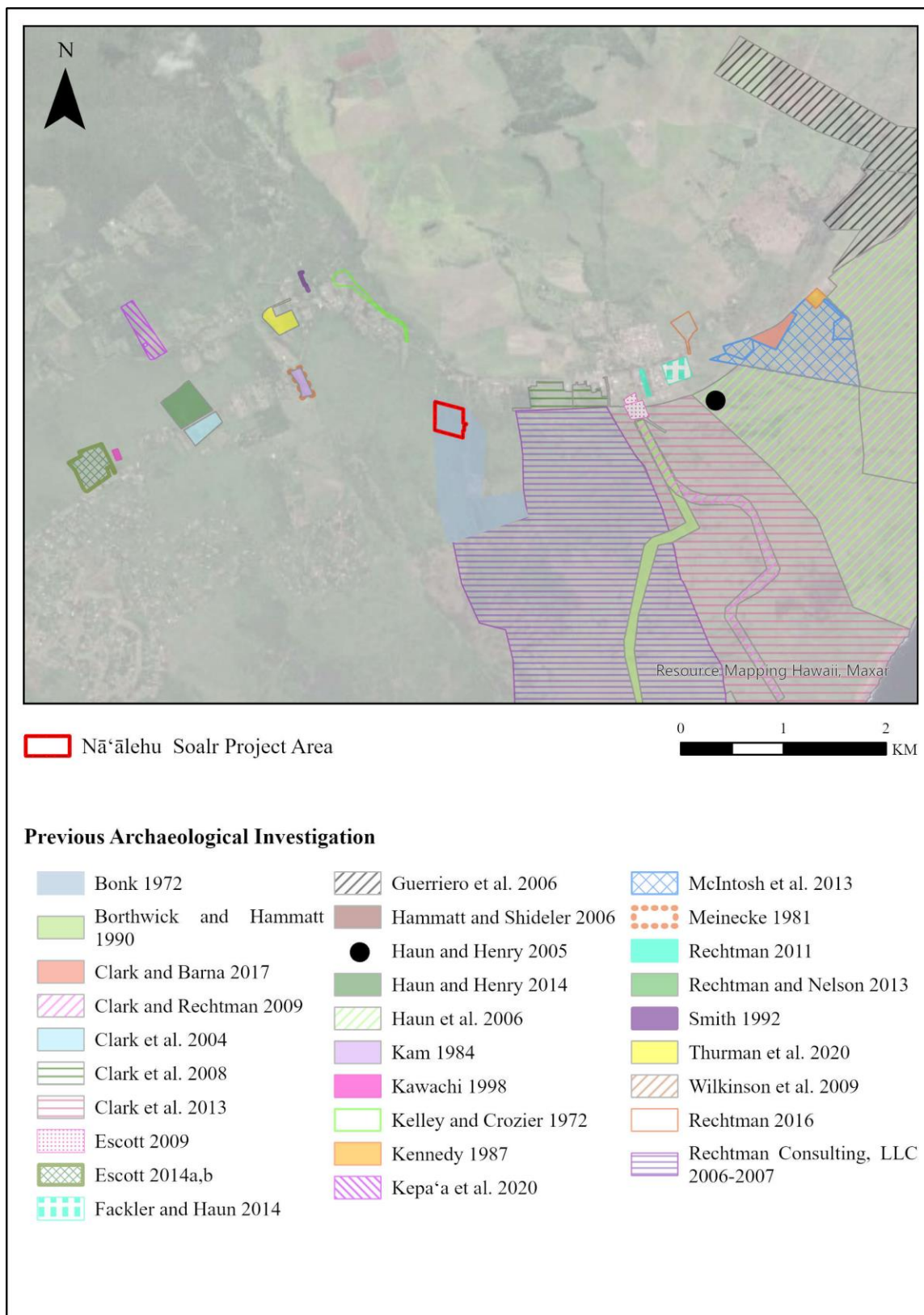


Figure 6. Previously Archaeological Investigations Near the Nā'ālehu Solar Project Area.

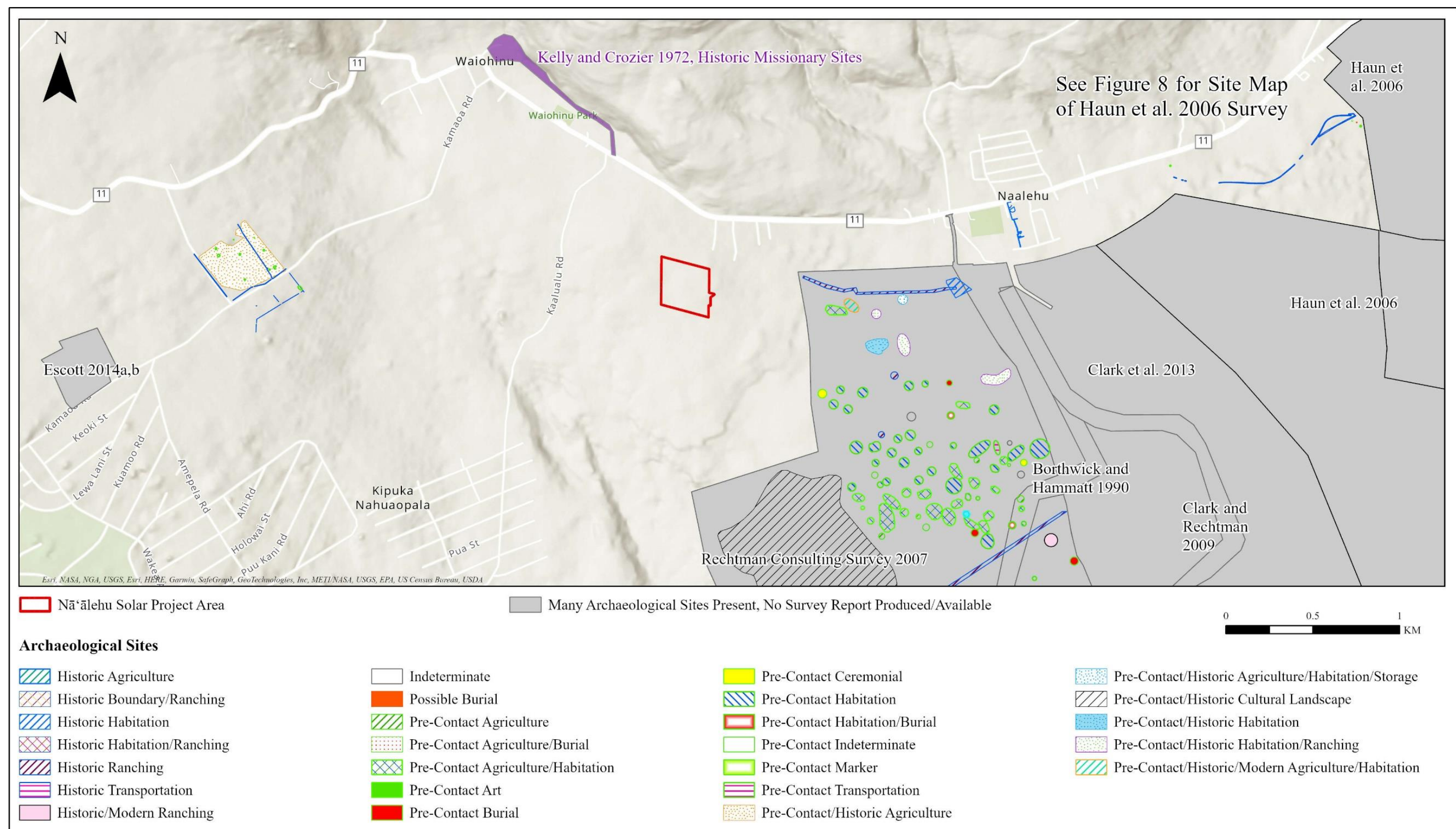


Figure 7. Previously Identified Sites Near the Nā'ālehu Solar Project Area.



Table 1. List of Previous Archaeological Studies and Identified Sites (See Table 3) Near the Project Area.

Reference	TMK (3)	Project in Ka'ū District, Island of Hawaii	SIHP 50-10-
Bonk 1972	9-5-007:029	Field Research and Investigation of Ishimaru Property	No sites recorded
Kelly and Crozier 1972	9-5-001: various	Archaeological Survey and Excavations at Wai'ōhinu Drainage Improvement Project	74-02600–02606
Meineke 1981	9-4-002:042	Documentation of Historic Site in Wai'ōhinu	No sites recorded (site destroyed)
Borthwick and Hammatt 1990	9-5-006:010 9-5-007:016	Reconnaissance Survey for Spaceport	Unknown (report not seen)
Kam 1984	9-4-002:042	Field Inspection Kiolaka'a	No sites recorded
Smith 1992	9-9-05:040	Site Inspection for State Land Disposition Application	No sites recorded
Kawachi 1998	9-4-003:041 por.	Archaeological Survey of 2.0 Acres in Kiolaka'a	73-21156, 73-21227
Kawachi 2002	9-4-002:034	Archaeological Survey of 2.0 Acres in Kiolaka'a	Unknown SIHP nos. (report not seen)
Clark et al. 2004	9-4-02:012	Archaeological Inventory Survey of a 16-acre parcel Kiolaka'a	74-24128–24132
Haun and Henry 2005	9-5-011:001 por.	Archaeological Assessment Survey of 1.0 Acre in Kaunamano	No sites recorded
Hammatt and Shideler 2006	9-6-005:008, 039; 9-5-009:006, 015	Archaeological Literature Review and Field Check Study of Nā'ālehu Elementary and Intermediate, and Ka'ū High and Pāhala Elementary	No sites recorded
Haun et al. 2006	9-5-011:001, 004-006; 9-5-012:001	Archaeological Inventory Survey of 1,360 acres in Kaunamano	74-25072–25515 (report not seen)
[Rechtman Consulting Survey 2006-2007; not report produced]	9-5-007:016	Archaeological Inventory Survey Fieldwork	31001 (report not seen)
Rechtman 2007 (report withdrawn from SHPD)	9-5-10:001	Archaeological Reconnaissance Survey of an Approximately 1,044 Acre Property in Kāwala	(report not seen; see Clark et al. 2013)
Clark et al. 2008	9-5-021:015 and 9-5-022:001	Archaeological Inventory Survey of 42.5 acres in Nā'ālehu Town, Kahilipali Nui and Kāwala ahupua'a	74-26408, 26409, and 26410
Clark and Rechtman 2009	9-05-010:001	An Archaeological Inventory Survey of a Proposed Roadway in Kāwala Ahupua'a	74-26881–26887 (report not seen)
Escott 2009	9-5-021:035	Archaeological Inventory Survey of 3.098 Acres in Nā'ālehu,	74-26668–26670
Wilkinson et al. 2009	9-5-009: 006	Archaeological Monitoring Report for Nā'ālehu Elementary and Intermediate School Hawai'i Inter-Island DOE Cesspool Project, Kaunāmano Ahupua'a	No sites recorded

Reference	TMK (3)	Project in Ka‘ū District, Island of Hawaii	SIHP 50-10-
Rechtman 2011	9-5-009:003	The Section 106 Archaeological Survey of a 2.24 acre parcel in <i>Kawala Ahupua‘a</i>	74-28925–28930 (report not seen)
Clark et al. 2013	9-5-010:001	Archaeological Inventory Survey of Kāwala Ahupua‘a	74-29505–29696 (report not seen)
Rechtman and Nelson 2013	9-5-009:003	Ka‘ū Family Healthcare Facility in Nā‘ālehu Town	No sites recorded; isolated Historic period artifacts (glass bottles) and a poi pounder
McIntosh et al. 2013	9-5-012:002	Archaeological Survey for the proposed Nā‘ālehu Waste Water Treatment Plant (WWTP), Kaunāmāno Ahupua‘a	74-25266, 29385–29390
Escott 2014a,b	9-4-3:033 and 076	Archaeological Inventory Survey 22.44 acres Parcel in Wai‘ōhinu	21 sites (report not seen)
Fackler and Haun 2014	9-5-009: 006	Archaeological Monitoring Report for Nā‘ālehu Elementary	No sites recorded
Henry and Haun 2014	9-4-03:005	Archaeological Inventory Survey of a 31.365-acre Parcel in Kiolaka‘a	74-30089–30103
Rechtman 2016	9-5-008:050	Archaeological Field Inspection After Grading, Kaunāmāno Ahupua‘a	No sites recorded
Clark and Barna 2017	9-5-012:005	An Archaeological Inventory Survey of the 13-acre Kahua ‘Olohū Property, Kaunāmāno Ahupua‘a	74-29231
Kepa‘a et al. 2020	9-4-003:018	An Archaeological Inventory Survey of a 20-acre Portion of TMK: (3) 9-4-003:018, Mahaiula Ahupua‘a	73-31165–31169
Thurman et al. 2020	9-5-005:001	Archaeological Literature Review and Field Inspection for Wai‘ōhinu Transfer Station Improvements	No sites recorded

1

2

Table 2. List of Previous Identified Sites Near the Project Area on Kahuku Ranch, HI Quad Map.

SIHP 50-10-73	Formal Type	Functional Type	Age	Reference
21156	Traditional Hawaiian clearing/ planting feature complex	Agriculture	Pre-Contact/ Post-Contact	Kawachi 1998
21227	Three walls	Ranching	Historic	Kawachi 1998
31165	Two rock walls	Boundary	Historic	Kepa'a et al. 2020
31166	Complex of two small rock mounds	Indeterminate	Indeterminate	Kepa'a et al. 2020
31167	Homestead feature complex	Agriculture/ Habitation	Historic	Kepa'a et al. 2020
31168	Homestead feature complex	Agriculture	Historic	Kepa'a et al. 2020
31169	Rock wall	Boundary	Historic	Kepa'a et al. 2020

Table 3. List of Previous Identified Sites Near the Project Area on Naalehu, HI Quad Map.

<b>SIHP 50- 10-74</b>	<b>Formal Type</b>	<b>Functional Type</b>	<b>Age</b>	<b>Reference</b>
Unknown	Four walls and enclosure with a collapsed lava tube	Ranching	Historic	Kawachi 2002 in Clark et al. 2004
02600	Shrine	Ceremonial	Pre-Contact	Kelly and Crozier 1972
02601	Wai'ōhinu Sugar Mill	Agriculture	Historic	Kelly and Crozier 1972
02602	House structure	Habitation	Historic	Kelly and Crozier 1972
02603	House structure	Habitation	Historic	Kelly and Crozier 1972
02604	Missionary Road	Transportation	Historic	Kelly and Crozier 1972
02605	Carriage Road	Transportation	Historic	Kelly and Crozier 1972
02606	'Auwai system	Agriculture	Historic	Kelly and Crozier 1972
24128	Wall	Boundary/Ranching	Historic	Clark et al. 2004
24129	Wall	Boundary/Ranching	Historic	Clark et al. 2004
24130	Lava tube	Temporary habitation	Precontact	Clark et al. 2004
24131	Wall	Boundary /Ranching	Historic	Clark et al. 2004
24132	Enclosure	Habitation/Ranching ?	Historic	Clark et al. 2004
25072 – 25515	Terraces, lava tubes, lava blisters, walls, modified sinkholes, pavements, alignments, walled terraces, walled platforms, mounds, midden scatter, canoe shed, salt pans, trails, petroglyphs, human burials	Habitation, Agriculture, Storage, ceremonial, transportation	Pre-Contact to modern	Haun et al. 2006 (see Figure 8)
26408	Three stone and concrete lined trenches	Sanitation	Historic	Clark et al. 2008
26409	Concrete water trough	Ranching	Historic	Clark et al. 2008
26410	Core-filled wall	Ranching	Historic	Clark et al. 2008
26668	Cemetery	Burial	Historic	Escott 2009
26669	House site	Habitation	Historic	Escott 2009
26670	Bath houses	Sanitation	Historic	Escott 2009
26881	Core-filled wall	Ranching	Historic	Clark et al. 2008
26882	Enclosure	Ranching	Historic	Clark et al. 2008
26883	Low-lying, two-tiered platform	Boundary marker	Historic	Clark et al. 2008
26884	Cattle corral complex	Ranching	Historic/ Modern	Clark et al. 2008
26885	Core-filled wall	Ranching	Historic	Clark et al. 2008
26886	Modified outcrop	Indeterminate	Indeterminate	Clark et al. 2008
26887	Large enclosure with core-filled walls	Ranching	Historic	Clark et al. 2008
28925	Residential complex	Habitation	Historic	Rechtman 2011
28926	Rock wall segments	Agriculture	Historic	Rechtman 2011
28927	Rock wall segments	Agriculture	Historic	Rechtman 2011
28928	Stacked stone enclosure	Agriculture	Historic	Rechtman 2011

<b>SIHP 50- 10-74</b>	<b>Formal Type</b>	<b>Functional Type</b>	<b>Age</b>	<b>Reference</b>
28929	Rock pile complex	Agriculture	Historic	Rechtman 2011
25266	Lava tube containing at least one set of human remains	Burial/Habitation	Pre-Contact	McIntosh et al. 2013
29231	Kahua ‘Olohū	Recreation/ Ceremonial	Precontact/ Early Historic	McIntosh et al. 2013; Clark and Barna 2017
29385	Stone mound [possible burial] and a stone platform	Burial/Agriculture	Pre-Contact	McIntosh et al. 2013
29386	Wall	Ranching	Historic	McIntosh et al. 2013
29387	Stone wall backed with bulldozed soil to form a terrace	Ranching	Historic	McIntosh et al. 2013
29388	Two wall segments	Ranching	Historic	McIntosh et al. 2013
29389	Petroglyph	Communication/Art	Pre-Contact	McIntosh et al. 2013
29390	Railroad bed	Transportation	Historic	McIntosh et al. 2013
29391	Wall	Ranching	Historic	McIntosh et al. 2013
29507	Building complex, machinery from Nā‘ālehu Sugar Mill	Ranching/ Agriculture	Historic	Clark et al. 2008; Rechtman Consulting, LLC 2007
30089	Wall	Livestock control	Historic	Henry and Haun 2014
30090	Wall	Livestock control	Historic	Henry and Haun 2014
30091	Wall	Livestock control	Historic	Henry and Haun 2014
30092	Wall	Livestock control	Historic	Henry and Haun 2014
30093	Enclosure	Habitation	Pre-Contact	Henry and Haun 2014
30094	Enclosure	Habitation	Pre-Contact	Henry and Haun 2014
30095	Enclosure	Habitation	Pre-Contact	Henry and Haun 2014
30096	Enclosure	Habitation	Pre-Contact	Henry and Haun 2014
30097	Complex	Marker	Pre-Contact	Henry and Haun 2014
30098	Enclosure	Possible Ceremonial	Pre-Contact	Henry and Haun 2014
30099	Enclosure	Habitation	Pre-Contact	Henry and Haun 2014
30100	Complex	Habitation	Pre-Contact	Henry and Haun 2014
30101	Complex	Habitation	Pre-Contact	Henry and Haun 2014
30102	Terrace	Habitation	Pre-Contact	Henry and Haun 2014
30103	Complex	Agriculture	Pre-Contact/ Historic	Henry and Haun 2014
30928	Feature complex	Agriculture/ Habitation	Pre-Contact/ Historic/ Modern	Rechtman Consulting, LLC 2007
30929	Feature complex	Habitation/ Storage/ Ranching	Pre-Contact/ Historic	Rechtman Consulting, LLC 2007
30930	One feature	Ranching	Historic	Clark et al. 2008
30931	Feature complex	Agriculture/ Habitation	Pre-Contact	Rechtman Consulting, LLC 2007
30932	Complex of 2 features	Habitation/ Ranching	Pre-Contact/ Historic	Rechtman Consulting, LLC 2007
30933	One feature	Habitation/ Ranching	Pre-Contact/ Historic	Rechtman Consulting, LLC 2007

<b>SIHP 50- 10-74</b>	<b>Formal Type</b>	<b>Functional Type</b>	<b>Age</b>	<b>Reference</b>
30934	Complex of 3 features	Habitation	Pre-Contact/ Historic	Rechtman Consulting, LLC 2007
30935	Complex of 4 features	Habitation / Ceremonial	Pre-Contact	Rechtman Consulting, LLC 2007
30936	Single feature	Habitation	Pre-Contact	Rechtman Consulting, LLC 2007
30937	Single feature	Ranching	Historic	Rechtman Consulting, LLC 2007
30938	Complex of 3 features	Habitation	Pre-Contact	Rechtman Consulting, LLC 2007
30939	Single feature	Habitation	Pre-Contact	Rechtman Consulting, LLC 2007
30940	Single feature	Habitation	Pre-Contact	Rechtman Consulting, LLC 2007
30941	Single feature	Burial	Pre-Contact	Rechtman Consulting, LLC 2007
30942	Complex of 4 features	Habitation / Ranching	Pre-Contact/ Historic	Rechtman Consulting, LLC 2007
30943	Complex of 2 features	Habitation	Pre-Contact	Rechtman Consulting, LLC 2007
30944	Single feature	Habitation	Pre-Contact	Rechtman Consulting, LLC 2007
30945	Single feature	Ranching	Historic	Rechtman Consulting, LLC 2007
30946	Complex of 2 features	Habitation	Pre-Contact	Rechtman Consulting, LLC 2007
30947	Single feature	Indeterminate	Indeterminate	Rechtman Consulting, LLC 2007
30948	Complex of 2 features	Habitation/ Burial	Pre-Contact	Rechtman Consulting, LLC 2007
30949	Complex of 2 features	Agriculture/ Habitation	Pre-Contact	Rechtman Consulting, LLC 2007
30950	Complex of 4 features	Habitation	Pre-Contact	Rechtman Consulting, LLC 2007
30951	Cultural Landscape consists of 244 features	Habitation, burial, ceremonial, agricultural, and transportation	Pre-Contact/ Historic	Rechtman Consulting, LLC 2007
30952	Complex of 3 features	Habitation	Pre-Contact	Rechtman Consulting, LLC 2007
30953	Complex of 4 features	Habitation	Pre-Contact	Rechtman Consulting, LLC 2007
30954	Single feature	Habitation	Pre-Contact	Rechtman Consulting, LLC 2007
30955	Single feature	Habitation	Pre-Contact	Rechtman Consulting, LLC 2007

<b>SIHP 50- 10-74</b>	<b>Formal Type</b>	<b>Functional Type</b>	<b>Age</b>	<b>Reference</b>
30956	Wall	Habitation	Pre-Contact	Rechtman Consulting, LLC 2007
30958	Single feature	Habitation	Pre-Contact	Rechtman Consulting, LLC 2007
30959	Modified outcrop	Indeterminate	Pre-Contact	Rechtman Consulting, LLC 2007
30960	Complex of 3 features	Habitation	Pre-Contact	Rechtman Consulting, LLC 2007
30961	Modified outcrop	Habitation	Pre-Contact	Rechtman Consulting, LLC 2007
30962	Complex of 4 features	Habitation	Pre-Contact	Rechtman Consulting, LLC 2007
30963	Complex of 3 features	Habitation	Pre-Contact	Rechtman Consulting, LLC 2007
30964	Complex of 6 features	Habitation	Pre-Contact	Rechtman Consulting, LLC 2007
30965	Enclosure	Agriculture	Pre-Contact	Rechtman Consulting, LLC 2007
30966	Complex of 2 features	Habitation/ Agriculture	Pre-Contact	Rechtman Consulting, LLC 2007
30967	Complex of 2 features	Habitation	Pre-Contact	Rechtman Consulting, LLC 2007
30968	Complex of 6 features	Habitation	Pre-Contact	Rechtman Consulting, LLC 2007
30969	Complex of 3 features	Habitation	Pre-Contact	Rechtman Consulting, LLC 2007
30970	Enclosure	Habitation/ Agriculture	Pre-Contact	Rechtman Consulting, LLC 2007
30971	Terrace	Agriculture	Pre-Contact	Rechtman Consulting, LLC 2007
30972	Platform	Ceremonial	Pre-Contact	Rechtman Consulting, LLC 2007
30973	Single feature	Indeterminate	Indeterminate	Rechtman Consulting, LLC 2007
30974	Mound	Indeterminate	Indeterminate	Rechtman Consulting, LLC 2007
30975	Trail	Transportation	Pre-Contact	Rechtman Consulting, LLC 2007
30976	Complex of 11 features	Habitation	Pre-Contact	Rechtman Consulting, LLC 2007
30977	enclosure	Habitation	Pre-Contact	Rechtman Consulting, LLC 2007
30978	Complex of 6 features	Habitation/ Agriculture	Pre-Contact	Rechtman Consulting, LLC 2007
30979	Complex of 11 features	Habitation/ Agriculture	Pre-Contact	Rechtman Consulting, LLC 2007

<b>SIHP 50- 10-74</b>	<b>Formal Type</b>	<b>Functional Type</b>	<b>Age</b>	<b>Reference</b>
30980	Complex of 12 features	Habitation/ Agriculture	Pre-Contact	Rechtman Consulting, LLC 2007
30981	Complex of 3 features	Habitation/ Agriculture	Pre-Contact	Rechtman Consulting, LLC 2007
30982	Complex of 4 features	Habitation/ Agriculture	Pre-Contact	Rechtman Consulting, LLC 2007
30983	Complex of 3 features	Habitation	Pre-Contact	Rechtman Consulting, LLC 2007
30984	Complex of 4 features	Habitation/ Agriculture	Pre-Contact	Rechtman Consulting, LLC 2007
30985	Complex of 4 features	Habitation/ Agriculture	Pre-Contact	Rechtman Consulting, LLC 2007
30986	Complex of 4 features	Habitation/ Agriculture	Pre-Contact	Rechtman Consulting, LLC 2007
30987	Complex of 2 features	Habitation/ Agriculture	Pre-Contact	Rechtman Consulting, LLC 2007
30988	Complex of 4 features	Habitation	Pre-Contact	Rechtman Consulting, LLC 2007
30989	Complex of 10 features	Habitation/ Agriculture	Pre-Contact	Rechtman Consulting, LLC 2007
30990	Complex of 4 features	Habitation/ Agriculture	Pre-Contact	Rechtman Consulting, LLC 2007
30991	Complex of 6 features	Habitation	Pre-Contact	Rechtman Consulting, LLC 2007
30992	Complex of 3 features	Habitation	Pre-Contact	Rechtman Consulting, LLC 2007
30993	Complex of 2 features	Habitation/Ranching	Pre-Contact/ Historic	Rechtman Consulting, LLC 2007
30994	Complex of 7 features	Habitation/ Agriculture	Pre-Contact	Rechtman Consulting, LLC 2007
30995	Complex of 3 features	Habitation/ Agriculture	Pre-Contact	Rechtman Consulting, LLC 2007
30996	Single feature	Habitation	Pre-Contact	Rechtman Consulting, LLC 2007
30997	Complex of 2 features	Habitation/ Agriculture	Pre-Contact	Rechtman Consulting, LLC 2007
30998	Complex of 3 features	Habitation/ Agriculture	Pre-Contact	Rechtman Consulting, LLC 2007
30999	Enclosure	Habitation	Pre-Contact	Rechtman Consulting, LLC 2007
31000	Wall	Agriculture	Pre-Contact	Rechtman Consulting, LLC 2007
31001	Alignment	Agriculture	Pre-Contact	Rechtman Consulting, LLC 2007
31002	Complex of 2 features	Habitation/ Burial	Pre-Contact	Rechtman Consulting, LLC 2007



SIHP 50- 10-74	Formal Type	Functional Type	Age	Reference
31003	Wall	Ranching	Historic	Rechtman Consulting, LLC 2007
31004	Complex of 2 features	Agriculture	Pre-Contact	Rechtman Consulting, LLC 2007
31005	Platform	Indeterminate	Pre-Contact	Rechtman Consulting, LLC 2007
31006	Platform	Burial	Pre-Contact	Rechtman Consulting, LLC 2007
31007	Feature complex	Habitation	Pre-Contact	Rechtman Consulting, LLC 2007
31008	Complex of 4 features	Habitation/ Agriculture	Pre-Contact	Rechtman Consulting, LLC 2007
31009	Wall	Ranching	Historic/ Modern	Rechtman Consulting, LLC 2007
31010	Wall remnant	Habitation	Pre-Contact	Rechtman Consulting, LLC 2007
31011	Terrace	Burial	Pre-Contact	Rechtman Consulting, LLC 2007
31012	Complex of 3 features	Habitation	Pre-Contact	Rechtman Consulting, LLC 2007

## Kawachi 2002

The letter report cited below was not located during background research. The following is a summary from Clark et al. (2004), which notes ranching features and a lava tube on the property:

The Natural Resource Conservation Service (NRCS) conducted a background and field review for a 6.6-acre property located along Kamaoa Road to the east of the current project area (Kawachi 2002). As a result of that project three Historic walls and a circular enclosure within a collapsed lava tube, all likely used for ranching purposes, were minimally recorded (the lava tube was deemed “inaccessible”). Kawachi also noted “small, low, collapsed rock mound-like and linear features under thick Christmas berry growth and debris,” that were, “all in very poor condition, deteriorated, boundaries indeterminate and function only guessed at” (2002:3). These features were not recorded. Kawachi does surmise, however that “the rock walls and the circular enclosure are most likely post-1868,” because, “they would not have survived intact during the 1868 earthquake” (2002:4). He[r] supposition, however, seems unfounded [Clark et al. 2004:4].

## Clark et al. 2004

Rechtman Consulting, LLC conducted an AIS of a 16-acre parcel in Kiolaka‘a Ahupua‘a (Clark et al. 2004). Five archaeological sites were recorded: historic ranch/boundary walls (SIHP 50-10-74-24128, 24129, and 24131), a historic period enclosure (SIHP 50-10-74-24132), and a lava tube with evidence of pre-Contact habitation (SIHP 50-10-74-24130). At the time of the survey the parcel was used for a horse pasture and showed evidence of mechanical clearing.

## Haun et al. 2006

Haun & Associates (Haun et al. 2006) conducted an archaeological survey of 1,360 acres in Kaunamano. To date, no report for the survey has been submitted to the SHPD. However, Alan Haun of Haun & Associates sent a site survey map to Pacific Legacy, which was included in an AIS report for adjacent lands (McIntosh et al. 2013). This map is presented in Figure 8, which shows the distribution of

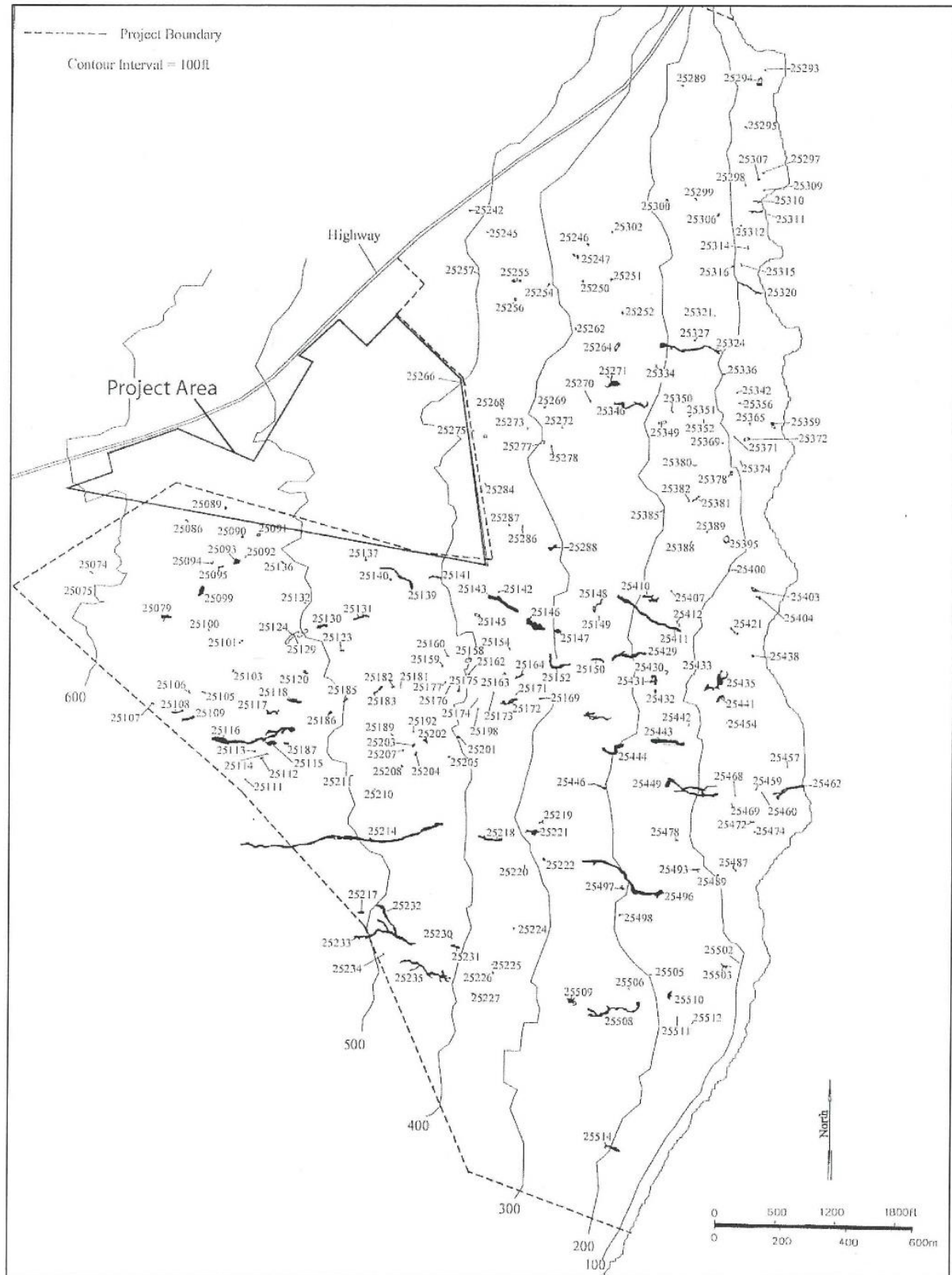


Figure 8. Site Map from Haun et al. 2006 Survey as Shown in McIntosh et al. (2013:Figure 7). See Figures 6 and 7 for Location of the Survey.

216 recorded sites (SIHP 50-10-74-25072–25515). Additionally, a draft of the report was summarized in Clark and Barna (2017). The Haun et al. (2006) survey, like the Rechtman 2006-2007 survey and Clark et al. (2013) survey, is likely indicative of archaeological sites present in the current project area, which describes a multitude of pre-Contact Hawaiian archaeological sites in the area. Due to the lack of available data on any of these three reports, the summary from Clark and Barna (2017) is included below to not misinterpret the results by further summarizing:

Despite widespread mechanical disturbance within the project area, 444 archaeological sites (Sites 25072-25515) containing a total of 3,935 individual features were identified as a result of [the] Haun et al. (2006) survey. The vast majority of which (n=380 sites; 86%) are thought to have been utilized solely during Precontact times. Seventeen sites (4%) exhibited evidence of both Precontact and Historic utilization, twenty-three (5%) of use during Precontact and Modern times, and the use of four sites (1%) spanned all three of the time periods. Nineteen of the sites (4%) are Historic in age and utilization, and one of the Historic sites was also utilized during Modern times. Roughly twenty percent of the features (n=762) recorded were interpreted as having been used for temporary and permanent habitation-related purposes. One hundred and sixty-one permanent habitation sites comprised of 456 features (281 enclosures, forty-nine platforms, twenty-two terraces, nineteen lava tubes, nineteen lava blisters, nineteen walls, eighteen modified sinkholes, sixteen pavements, four alignments, four walled terraces, three walled platforms, one mound, and one midden scatter) were identified. In addition, 219 temporary habitation sites comprised of 306 features (108 C-shapes, 105 lava tube chambers, twenty-four lava blisters, twenty enclosures, nineteen U-shapes, thirteen L-shapes, eight terraces, five modified sinkholes, three platforms, and a wall) were recorded.

Lava tubes and lava blisters are numerous within the coastal *pāhoehoe* flows of this portion of Ka‘ū. Haun et al. (2006) identified 276 of these natural features within their project area, 173 of which (63%) exhibited signs of human occupation or use. The remaining 103 lava tubes and blisters, the majority of which were small blisters or tubes with marked ceiling collapse, were carefully examined for cultural remains or internal modifications, but no evidence of utilization was identified. Forty-four lava blisters were recorded by Haun et al. (2006), of which 89% (n=39) were used solely for shelter purposes; twenty-four were used for temporary habitation purposes (one of these also contained a burial), nineteen were associated with permanent habitation sites (two of which were used for storage purposes, and one contained a burial), and one was used only for burial purposes.

Haun et al. (2006) also recorded several special function features including two canoe sheds and seventeen features at eight sites that were interpreted as having been used for ceremonial purposes as well as eight *papamū* [Hawaiian game board], fifty-one salt pans, fourteen trails, and fifteen cairns. In addition, forty-eight petroglyphs were identified at nine locations within the Haun et al. (2006) project area. The petroglyphs included thirty-eight anthropomorphic and unidentifiable figures, four names, two sets of initials, one letter, one geometric design, and one image that appeared to represent a bird. Three of the petroglyphs were lone images, one of which was associated with a permanent habitation/ceremonial complex, the others were found in groups of two to sixteen images. The majority of the images were pecked into bare *pāhoehoe* surfaces, but three sets of images are associated with lava tubes, including two panels at Site 25079 that were first described by Westervelt in 1904.

More than seventy-five percent (n=2,982) of the features were interpreted as having been used for Precontact agricultural purposes, and were described as a single site complex (Site 25515), which covered nearly their entire study area. Features subsumed by this agricultural site designation include 1,821 mounds, 1,085 modified outcrops, forty-four walls, fourteen enclosures, five terraces, thirteen depressions, a platform, and a filled crack. Haun et al. (2006) reported the highest agricultural feature density in the central and north-central portions of the project area, at elevations ranging from 150 to 600 feet above sea level. According to Haun et al. (2006) the increase in agricultural feature density also corresponds to the start of the 40-inch rainfall gradient.

Haun et al. (2006) excavated fifty-four test units at a total of forty-nine sites. The tested features included fourteen burial platforms, five permanent habitation/burial platforms, one burial terrace, one temporary habitation/burial platform, one burial lava blister, eighteen permanent habitation

platforms, one permanent habitation terrace within a lava tube, one permanent habitation terrace in a sinkhole, three temporary habitation platforms, three temporary habitation terraces, two temporary habitation terraces in a lava tube, one agricultural filled crack, one agricultural platform, and one agricultural terrace. Food remains recovered from the excavations included marine shell and fish, pig, dog, and bird bone. Volcanic glass flakes were the most common traditional Hawaiian artifacts observed or recovered from the test excavations. Other indigenous artifacts included basalt flakes and cores, hammerstones, abraders, adzes, net sinkers, groundstone, an *ula maika*, a poi pounder fragment, fishhooks, *Cypraea* sp., octopus lures, shell scrapers, a wooden digging stick, a fire starter, and worked bone, coral, and marine shell.

Human burials were identified at thirty-five features within thirty-two of the sites recorded by Haun et al. (2006). The burials included five platforms and a lava blister that were associated with six different permanent habitation sites, and seven lava tubes and a lava blister that were also used for temporary habitation purposes. The burial features, which contained a minimum of fifty-seven individual sets of human skeletal remains, included twenty-one platforms, ten lava tubes, three lava blisters, and a terrace. Haun et al. (2006) note that the burial platforms and terraces within the Kaunāmano project area have vertically-faced sides with level, well-paved, upper surfaces, and that they are typically smaller than the platforms used for habitation Haun et al. 2006 in Clark and Barna 2017:60, 62].

#### **2006-2007 Rechtman Consulting, LLC AIS**

Information pertaining to an archaeological inventory survey in 2006-2007 by Rechman Consulting, LLC, was found during background research in a single report, Clark et al. (2008), and in HICRIS. To date, no report for the survey has been submitted to the SHPD. The survey covered more than 2,000 acres in Kāhilipali Nui and Kāhilipali Iki *ahupuaʻa*. This survey is likely indicative of the archaeological potential in the current project area based on proximity. The following is a summary of the work from a contemporaneous report by Rechtman Consulting, LLC:

[I]nitial field results indicate that areas of the parcel that were not previously grubbed for pasture improvement purposes contain numerous archaeological features dating to both the Precontact and Historic Periods. Identified feature types include platforms, enclosures, terraces, modified outcrops, modified depressions, mounds, alignments, pavements, cairns, walls, lava blisters, lava tubes, trails, and petroglyphs that were variously used for habitation, shelter, agriculture, burial, ceremony, boundary, storage, quarry, and ranching. These features stretched from the coast nearly to Naʻālehu Town. Initial indications are that the inland portions of the *ahupuaʻa* were areas of intensive Precontact settlement. These findings should be considered preliminary until the final inventory survey report is prepared for the parcel [Clark et al. 2008:10].

#### **Clark et al. 2008**

Rechtman Consulting, LLC conducted an AIS of 42.5 acres northeast of the current project area in the neighboring Kāhilipali Nui Ahupuaʻa (Clark et al. 2008). The land has been used for ranching from the historic period through the modern era. The land was also the site of a camp for the Nāʻālehu Plantation. Three historic properties were recorded, all of which were associated with ranching during the historic period: three stone and concrete lined trenches (SIHP 50-10-74-26408), a concrete water trough (SIHP 50-10-74-26409), and a core-filled wall (SIHP 50-10-74-26410).

#### **Escott 2009**

In 2009, Scientific Consulting Services conducted an AIS of a parcel in Nāʻālehu (Escott 2009). The title of the report indicates it was at the 3.098-aces TMK (3) 9-5-021:035, but the HICRIS data indicates the survey was in (3) 9-5-010:001, which is the parcel immediately to the south, and the HICRIS maps shows a 4-acre project area extending into neighboring parcels. Additionally, a letter in HICRIS notes a Hawaiian cemetery in the TMK (3) 9-5-021:031, which immediately north of Parcel 035 (Aiu 2008). The report is not in HICRIS. The following is a summary from Clark and Barna (2017):

As a result of the survey, Escott (2009) recorded three archaeological sites including a Historic to early modern-era community cemetery (Site 26668), a Historic to early modern house site (Site 26669), and the remains of three early modern bath houses (Site 26670). The cemetery, a 0.42-acre rectangular area along the northern border of the study area, contained sixteen features including rough stone pavements, terraces, small rock mounds, cement graves, and three headstones, fifteen of which Escott (2009) considered likely to contain burials. Dates present on two of the headstones indicate that the deceased individuals were interred in 1908 and 1921, respectively. The construction of the house site, likely during the late nineteenth century, appeared to predate the use of the cemetery. The house complex contained twenty-five features that included rock walls, enclosures, a platform, clearing and trash mounds, a hog wire fence, a house foundation, terraces, and several other cement foundations associated with water supply and bathing. The remains of the three bath houses were found separate from the house site and were associated with single-men cottages constructed by the Hutchinson Plantation north of the Escott (2009) study area. By the time of the Escott study, the cottages had been demolished, but the cement foundations of the bath houses were still present in close proximity to the cemetery [Escott 2009 in Clark and Barna 2017:58–59].

#### **Rechtman 2011**

Rechtman Consulting, LLC conducted an AIS of a 2.24 acre parcel in Nā‘ālehu, which is the site of today’s New Bay Clinic Ka‘ū Community Healthcare Facility (Rechtman 2011). This report was not available in HICRIS during preparation of this report, but the survey was summarized in another Rechtman Consulting, LLC report by Clark and Barna (2017:59). Six historic period archaeological sites were identified. SIHP 50-10-74-28925 comprises a twentieth century residential complex. SIHP 50-10-74-28926, 50-10-74-28927, and 50-10-74-28990 are each stacked stone wall segments dating to the mid-nineteenth century. SIHP 50-10-74-28928 is a core-filled wall enclosure. SIHP 50-10-74-28929 comprises four rock piles related to nineteenth or twentieth century land clearing.

#### **Clark et al. 2013 [Rechtman 2007, Clark and Rechtman 2009]**

Rechtman Consulting, LLC conducted an archaeological survey of a roughly 1,175-acre parcel, which includes nearly all Kāwala Ahupua‘a south of the highway (Clark et al. 2013). This work followed a reconnaissance survey of the entire area (Rechtman 2007) and an inventory survey of a proposed north-south corridor through the *ahupua‘a* (Clark and Rechtman 2009). These three reports are not available in the HICRIS and the SHPD library does not have the report, per the SHPD librarian. It is explained below that an initial AIS report was withdrawn from submission to the SHPD when it was decided to complete an AIS from the entire parcel.

HICRIS does show site locations and has brief sites description. The Clark et al. (2013) survey, like the Rechtman 2006-2007 survey and Haun et al. (2006) survey, is likely indicative of archaeological sites present in the current project area, which describes a multitude of pre-Contact Hawaiian archaeological sites in the area, in addition to historic period ranching features. Due to the lack of available data on any of these three reports, the summary from Clark and Barna (2017) is included below to avoid misinterpreting the results by further summarizing:

[The] entire study area had been the subject of a prior reconnaissance survey (Rechtman 2007) and a subsequent AIS for a proposed 3.2-kilometer (10,498-foot) long, 100-foot (30-meter) wide road corridor that mostly followed existing ranch roads across a portion of the subject parcel (Clark and Rechtman 2009). As a result of these two earlier studies, seven sites (Sites 26881-26887) containing various Historic features, Precontact features, and lava tubes were documented. The seven sites included a core-filled wall (Site 26881), a crude enclosure (Site 26882), and a low-lying, two-tiered platform (Site 26883) located in the northwestern portion of the parcel; and a Historic/modern cattle corral complex (Site 26884), a core-filled wall (Site 26885), a modified outcrop (Site 26886), and a large enclosure with core-filled walls (Site 26887) in the central portion of the parcel. A draft of the Clark and Rechtman (2009) AIS was submitted to DLNR-SHPD, and comments were received in January of 2010, which resulted in the withdrawal of the draft in favor of completing an AIS (Clark et al. 2013) for the entire property in consultation with Keanu family descendants.



As a result of the inventory fieldwork, five sites (Sites 25072, 25214, 25233, 25237, and 25238) previously recorded by Haun et al. (2006) and the seven sites (Sites 26881-26887) recorded by Clark and Rechtman (2009) were relocated. In addition, 192 newly identified sites (Sites 29505-29696), comprised of 468 distinct features, were recorded within their project area. Functional site types include the following: habitation (N=71); windbreaks and shelters (N=27); burials (N=21); ceremonial (N=6); petroglyphs (N=7); papamū (N=16); agricultural-related (N=5); roads (N= 3); animal pens (N=5); ranching-related (N=24); and indeterminate (N=51); in addition to remnants of several trail and pathways.

Fifty-seven sites were assigned a habitation function associated with the Precontact Period, representing 205 features (roughly 43% of the total number of features recorded), and including the following formal types: nine lava tubes, twenty complexes, five enclosures, four enclosure remnants, two enclosures/platforms, one enclosure/terrace, one lava blister/enclosure, five modified outcrops, one modified sink, two modified sinks/lava tubes, one pavement, three platforms or platform remnants, one rock pile, one wall remnant/pavement and one wall/platform remnant. Clark et al. (2013) assigned twelve sites (representing ninety-three distinct features) a habitation function associated with utilization during both the Precontact and Historic Periods. These sites included the following formal types: four lava tubes, five complexes, a modified overhang, one enclosure remnant and one enclosure/enclosure remnant. Two complexes (Sites 29597 and 29678), containing a total of fourteen features, were determined to have a habitation function associated with only the Historic Period. Clark et al. (2013) assigned twenty sites (modified outcrops, walls or wall remnants, and enclosures) a windbreak function. Eighteen of the twenty sites were interpreted as affiliated with the Precontact Period, with one site (Site 29591) of indeterminate age, and one site (Site 29561) dating to the Precontact/Historic Period.

Twenty-one sites identified by Clark et al. (2013) contained burials; ten of which were located within lava tubes or concealed blisters, and the remaining eleven burials located within constructed surface features. Clark et al. (2013) determined that six sites had a ceremonial function based on the substantial construction of the individual feature or complex, the presence of associated cultural material (or significant lack thereof), the formal attributes of the features (such as an enclosure with attached platform), and the general location of the feature. Clark et al. (2013) also recorded three sites (Sites 29549, 29661 and 29665) containing at a minimum of seven petroglyphs (with some twenty plus possible at Site 29661). Petroglyphs were also observed at four Precontact and Precontact/Historic habitation sites (Sites 29570, 29574, 29626, and 29641). With the exception of Site 29626, all petroglyphs were found on surface features, or on exposed areas or slabs of *pāhoehoe* bedrock. The petroglyph present at Site 29626 was an anthropomorphic figure located on a small, flat boulder at the entrance of the tube. *Papamū* were observed (sixteen complete or fragmented *kōnane* boards) at four habitation sites and seven non-habitation sites. Ten of the *papamū* were found on areas of exposed bedrock, while six *papamū* were found on loose portions of flat, *pāhoehoe* slabs.

Only five of the 204 sites recorded by Clark et al. (2013) were identified as having an agricultural function. The majority of these sites were modified natural features such as sinks and depressions (n=4), with the exception of a single enclosure (Site 29605). These sites were determined to represent the opportunistic use of soil areas in a relatively soilless environment rather than large scale agricultural systems, such as may have occurred on the slopes above the town of Nā'ālehu where *Māhele* records indicate widespread agriculture was practiced during the early Historic Period. Clark et al. (2013) also recorded two roads and a portion of Site 25238, which was previously documented by Haun et.al (2006). The roads were interpreted as dating to the Historic Period. In addition to formal roadways, numerous bulldozer cuts and ranch access roads in varying states of use and disrepair were noted throughout their project area. Five sites(all enclosures and enclosure remnants) were interpreted by Clark et al. (2013) as having an animal pen function, temporally affiliated with the Historic or Precontact/Historic Periods. Twenty-four sites (containing twenty-seven features) were categorized by Clark et al. (2013) as ranching-related. These sites were uniformly distributed throughout their project area, which was consistent with the ongoing and Historic use of the entire property for ranching purposes since ca.1868. Site types within this classification included Historic (core-filled) walls and fence lines that functioned to inhibit or otherwise direct the movement of goats or cattle; enclosures that functioned as pens for goats, cattle

1 or pigs; troughs, tanks, and waterlines that provided a source of water for the grazing cattle; and  
2 concrete foundations, ramps, and other special function features as well as buildings constructed  
3 and used by the ranch for various purposes. Clark et al. (2013) also recorded forty-one sites  
4 (containing forty-nine features) that were assigned an indeterminate function. Most of the sites were  
5 poorly preserved remnants that had been impacted by land disturbing activities, for which functional  
6 interpretation is unclear. The poor condition of the features made assigning a temporal designation  
7 difficult, as a result the age of most of the sites remained indeterminate.

8 Clark et al. (2013) excavated thirty-two test units, twenty-six of which revealed information that  
9 aided in the determination of function of the feature: the presence of burials (N=7); ceremonial  
10 (N=1); architectural and cultural material related to habitation activities (N=16); and agricultural  
11 function (N=2). Artifacts recovered include abraders made from basalt, scoria, coral, and Echinoidea  
12 spine, adze fragments and flakes, volcanic glass, fish hook fragments and blanks, water-worn  
13 cobbles, avian and fish bone awls, and worked mammal (*Sus* sp. and *Canis* sp.) bone. Marine shell,  
14 charcoal and *kukui* were the most commonly recovered cultural material. No historically introduced  
15 wood species were identified in the recovered cultural material, indicating that the wood was burnt  
16 prior to the Historic Period and that the tested features were utilized prior to that Period. In addition,  
17 the types of artifacts recovered and the lack of Historic artifacts other than a single glass bead  
18 suggested abandonment of these features prior to or during the early Historic Period [Clark et al.  
19 2013 in Clark and Barna 2017:62–63].

## 20 **McIntosh et al. 2013**

21 Pacific Legacy conducted an archaeological inventory survey of two parcels proposed for the  
22 Nā‘ālehu Waste Water Treatment Plant (WWTP) east of Nā‘ālehu town, on the south side of the highway  
23 and a reconnaissance survey of the larger parcel between the two (McIntosh et al. 2013). The area was  
24 known to be the approximate location of Kahua ‘Olohii *makahiki* field (SIHP 50-10-74-29743). The  
25 inventory survey identified five sites in the east parcel and three sites in the west parcel, while 17 sites were  
26 identified during the reconnaissance level survey in the central parcel.

27 The west parcel was previously grubbed and had a lower concentration of traditional Hawaiian  
28 archaeological sites than the east and central parcels. The three recorded sites in the west parcel were cattle  
29 or ranching walls, SIHP 50-10-74-29387 and 29388, and one site consisted of a traditional petroglyph,  
30 SIHP 50-10-74-29389. Test excavations conducted at SIHP 50-10-74-29387 recovered historic debris.

31 In the east parcel, the following five sites were recorded: SIHP 50-10-74-25266, a lava tube  
32 containing at least one set of human remains; SIHP 50-10-74-29385, a stone mound (Feature A) and a stone  
33 platform (Feature B); SIHP 50-10-74-29386 and 29391, both cattle walls; and Site 50-10-74-29390, a  
34 section of railroad bed. Test excavations were conducted at Feature A, SIHP 50-10-74-29385, which  
35 determined it was not a burial, but likely a clearing mound.

36 The 17 sites identified during the reconnaissance survey between the two parcels subject to  
37 inventory level survey consisted of 11 pre-Contact sites functionally interpreted as burial, habitation,  
38 communication, and recreation sites, four ranching walls, and a wall segment and enclosure of uncertain  
39 age and function.

## 40 **Escott 2014a,b**

41 Scientific Consultant Services, Inc. conducted an AIS with subsequent subsurface testing at a  
42 22.44-acre parcel on the north side of Kamaoa Road in Pu‘u Maka‘a Ahupua‘a (Escott 2014a,b). This report  
43 was not available for review during preparation of this report. According to Kēpa‘ā et al. (2020:39), a total  
44 of 21 archaeological sites comprising 202 features were recorded. Documented sites included ranching  
45 walls, pre-Contact habitation and agricultural sites, and a historic house site with two associated burials.

## 46 **Henry and Haun 2014**

47 An archaeological inventory survey was conducted at a 31.365-acre parcel Kiolaka‘a Ahupua‘a  
48 (Henry and Haun 2014). A total of 15 sites comprising 350 features were recorded. Ten of the sites were

1 interpreted as pre-Contact, four historic, and one as pre-Contact with addition use in the historic period.  
2 The features included 229 mounds, 75 modified outcrops, 30 terraces, nine enclosures, four walls, two  
3 cairns, and one lava blister. Functionally the sites represent agriculture (331 features), permanent habitation  
4 (12 features), livestock control (four features), marker (two features), and possible ceremonial (one feature).

#### 5 **Clark and Barna 2017**

6 ASM Affiliates conducted an archaeological inventory survey at the 13-acres Kahua ‘Olohū  
7 *makahiki* field (SIHP 50-10-74-29743) (Clark and Barna 2017), which was previously subject to  
8 reconnaissance survey (McIntosh et al. 2013). Kahua ‘Olohū *makahiki* field was described by Reverend  
9 William Ellis in 1823, as discussed above. No additional sites or features were recorded during the AIS.

#### 10 **Kepa‘a et al. 2020**

11 ASM Affiliates conducted an archaeological inventory survey in a 20-acre portion of a parcel on  
12 the north side of the highway in Mahai‘ula Ahupua‘a (Kepa‘a et al. 2020). Five sites comprising 18 features  
13 were recorded, which were indicative homesteading. These sites included two twentieth century rock walls  
14 (SIHP 50-10-73-31165), a complex of two small rock mounds (SIHP 50-10-73-31166), a complex of eight  
15 features associated with the twentieth homestead site (SIHP 50-10-73-31167), a complex of five features  
16 associated with the twentieth century agriculture (SIHP 50-10-73-3 1168), and a twentieth century rock  
17 wall (SIHP 50-10-73-31169). A lava tube with no evidence of traditional Hawaiian or historic use was also  
18 noted in the project area. Local informants and records indicated that the land was leased by the Miyahara  
19 family in the mid to late 1900s for farming, and that some of the walls on the property were built in the  
20 1960s.

#### 21 **ANTICIPATED FINDS**

22 Based on previous archaeological investigations in the vicinity traditional Hawaiian and historic  
23 period archaeological site are likely extant in the project area. The current project area is in the lower portion  
24 what is archaeologically known as the Inland Zone on Hawai‘i, which is described as having a high site  
25 density by Cordy (1990:2). Cordy writes, “This zone is expected to contain near continuous agricultural  
26 architectural features. Archival work has established the lower limit of the fields at 600 feet in Kama‘oa  
27 and Wai‘ohinu ahupua‘a” (Cordy 1990:2). The current project area is at roughly 840–920 feet elevation.  
28 Cordy anticipated informal fields for ‘uala between 400–800 feet elevation and terraced and walled formal  
29 field systems between 800–1000 feet elevation. To the north of the project area is Wai‘ōhinu Valley, which  
30 contained wet-cultivated taro field and had the only abundant water source in the district (Kelly 1969:24).  
31 Cordy notes that archival research has documented dryland field systems in Kiolaka‘a and in Wai‘ōhinu,  
32 and that walled fields were documented during archaeological work in Wai‘ōhinu (Cordy 1990). Regarding  
33 other expected archaeological sites in the area:

34 At these higher elevations sizable populations resided, and permanent house sites and associated  
35 heiau are noted in the archival documents (Cordy 1986, in preparation) and in archaeological work  
36 (Stokes 1919; Thrum 1938). Graves are expected near the houses. These houses and heiau  
37 particularly cluster along the old Kama‘oa Road west of Wai‘ohinu and the Belt Road from  
38 Wai‘ohinu to the east, which formed the old inland ala aupuni or Government trail. These upper  
39 fields and house site areas generally appear to be inland of the spaceport borders, but the lower  
40 portions of the field systems appear to be within the borders. Archival documents note that inland -  
41 heading trails (mauka – makai trails) cross - cut these zones, extending from the shore up into the  
42 agricultural fields. These may have archaeological remnants [Cordy 1990:2–3].



## FIELD INSPECTION

A field inspection of the proposed project area was conducted on 6 April 2023. The purpose of the field inspection was to assess the current land use and overall character of the area. The locations and directions of Photographs 1–3 (Figure 10) are shown in Figure 9.

## FIELD INSPECTION RESULTS

Currently the project area is undeveloped, with isolated evidence of prior ground disturbance. The area is covered with tall grasses, *koa haole*, *kiawe*, christmasberry, and other shrubs and low-canopy trees (Figure 10).

## SUMMARY AND ASSESSMENT

The proposed Nā‘ālehu Solar LLC-HI-Registration Project is situated 300 meters south of Māmalahoa Highway between Wai‘ōhinu and Nā‘ālehu towns. The project proponent is HECO, and land owner is Danielle K. Taggerty-Onaga. The project area includes 20.0 acres of TMK (3) 9-5-007:029 (see Figures 1 and 2). An archaeological literature review that addresses historical, cultural, and archaeological background, and a field inspection were conducted in order to evaluate any potential effect on historic properties in the project area, and to recommend mitigation of any adverse effect, if warranted. This work was carried out in accordance with Hawaii Revised Statutes (HRS) Chapter 6E, and Title 13 of the Hawaii Administrative Rules (HAR), Subtitle 13 (State Historic Preservation Division Rules), Chapter 275 (*Rules Governing Procedures for Historic Preservation Review for Governmental Projects Covered Under Sections 6E-7 and 6E-8, HRS*).

Previous archaeological survey in the project area is limited to a brief field inspection in 1972, which did not record any archaeological sites (Bonk 1972). More recent surveys in the vicinity have recorded many traditional Hawaiian and historic period archaeological sites on undeveloped land, and it is likely that such sites are extant in the current property. This portion of Ka‘ū is known to have been an important place of settlement and agriculture during the pre-Contact period and early historic periods. Historic land use likely included cattle grazing, so ranching features may also be present.

## RECOMMENDATIONS

Due to the inadequate nature of the previous archaeological survey in the proposed project area, there is insufficient information to determine the proposed project’s effect on potential historic properties. An archaeological inventory survey (AIS) under the direction of an SHPD-approved work plan is recommended to adequately identify and document any archaeological historic properties that may be present, to assess their significance, to determine the potential impacts of this project on any identified archaeological historic properties, and to identify and ensure appropriate mitigation is implemented, if needed.

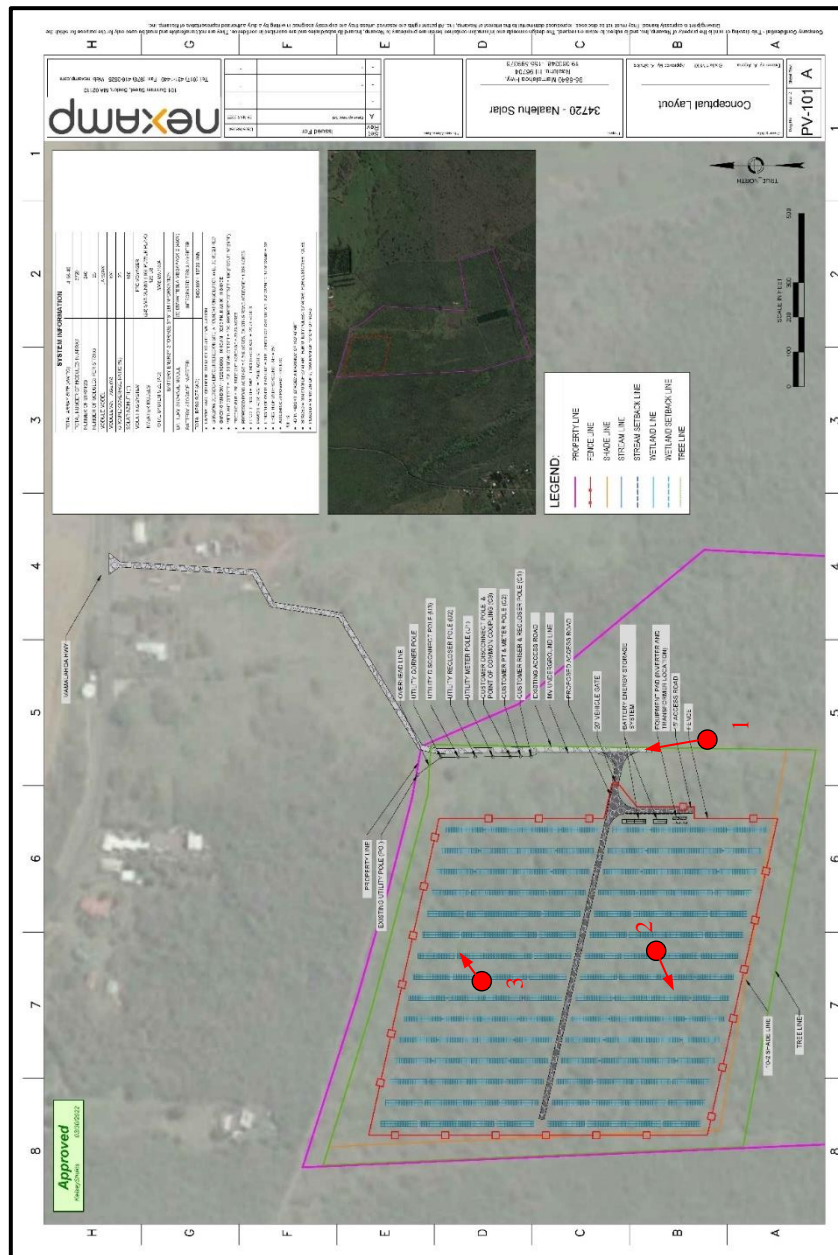


Figure 9. Site Plan Showing Field Inspection Photograph Locations and Directions (see Figure 10).

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Figure 10. Current Conditions within the Proposed Project Area. Top: Photo 1, View to North. Middle: Photo 2, View to Southwest Showing the General Vegetation Regime. Bottom: View to North Showing the Typical Undergrowth and Possible Disturbance Pattern (see Figure 9 for locations).

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13

## GLOSSARY OF HAWAIIAN TERMS

*ahupua'a*—land division and community

Land division usually extending from the uplands to the sea, so called because the boundary was marked by a heap (*ahu*) of stones surmounted by an image of pig (*pua'a*) or because a pig or other tribute was laid on the altar as tax to the chief. The landlord or owner of an *ahupua'a* might be a *konohiki* (Pukui and Elbert 1986:9)

*aina ho'oilina*—inherited land

Inherited property or estate (Pukui and Elbert 1986:11)

*ali'i*—chief or chiefess

Chief, chiefess, officer, ruler, monarch, peer, headman, noble, aristocrat, king, queen, commander (Pukui and Elbert 1986:20); implies hereditary rank

*ali'i nui*—high chief

High chief (Pukui and Elbert 1986:20)

*hoa'āina*—common people of the land, native tenants

Tenant, caretaker, as on a *kuleana* (Pukui and Elbert 1986:73)

*'ili*—division of land smaller than an *ahupua'a*

Land section, next in importance to *ahupua'a* an usually a subdivision of an *ahupua'a* (Pukui and Elbert 1986:97)

*kahu*—guardian

Honored attendant, guardian, nurse, keeper of *'unihipili* bones, regent, keeper, administrator, warden, caretaker, master, mistress; pastor, minister, reverend, or preacher of a church (Pukui and Elbert 1986:113)

*kalana*—Land division smaller than a district

Division of land smaller than a moku or district (Pukui and Elbert 1986:121)

*konohiki*—land managers

Headman of an *ahupua'a* land division under the chief; land or fishing rights under the control of the *konohiki* (Pukui and Elbert 1986:166)

*kula*—dryland field

Plain, field, open country, pasture. An act of 1884 distinguished dry or *kula* land from wet or taro land (Pukui and Elbert 1986:179)

*kuleana*—small piece of land under the responsibility of a tenant

Right, privilege, concern, responsibility, title, business, property, estate, portion, jurisdiction, authority, liability, interest, claim, ownership, tenure, affair, province (Pukui and Elbert 1986:179)

*lo'i*—wetland taro field

Irrigated terrace, especially for taro, but also for rice (Pukui and Elbert 1986:209)

*maika*—Hawaiian lawn bowling

Ancient Hawaiian game suggesting bowling; the stone used in the game; shot, shot-put. Cf. *'ulu maika* (Pukui and Elbert 1986:223)

*makahiki*—a traditional Hawaiian festival occurring in the fall

Ancient festival beginning about the middle of October and lasting about four months, with sports and religious festivities and taboo on war; this is now replaced by Aloha Week (Pukui and Elbert 1986:225)

*moku*—district

District, island, islet, section, forest, grove, clump, severed portion, fragment, cut, laceration, scene in a play (Pukui and Elbert 1986:252)

1 *mo 'ōlelo*—legend

2 Story, tale, myth, history tradition, legend, journal, log, yarn, fable, essay, chronicle, record, article  
3 (Pukui and Elbert 1986:254)

4 *'okana*—sub-district

5 District or subdistrict, usually comprising several *ahupua'a* (Pukui and Elbert 1986:281)

6 *pāhale*—house lot

7 House lot, yard, fence (Pukui and Elbert 1986:299)

8 *pahe'e*—spear throwing

9 Spear throwing (FS 114–5); dart-throwing; sport of sliding a stick over a smooth surface; the dart  
10 itself (Pukui and Elbert 1986:299)

11 *pulu*—plant material from a fern used as stuffing

12 A soft, glossy, yellow wool on the base of tree-fern leaf stalks (*Cibotium spp.*). It was used to stuff  
13 mattresses and pillows and at one time was exported to California. Hawaiians stuffed bodies of their  
14 dead with *pulu* after removing vital organs (Pukui and Elbert 1986:354)

15 *'uala*—Hawaiian sweet potato

16 The sweet potato (*Ipomoea batatas*), a perennial, wide-spreading vine, with heart-shaped, angled,  
17 or lobed leaves and pinkish-lavender flowers. The tuberous roots are a valuable food, and they vary  
18 greatly in many ways, as in color and shape. Though of South American origin, the plant has been  
19 a staple food since ancient times in many parts of Polynesia, as well as in some other regions (Pukui  
20 and Elbert 1986:362)

21 *wahi pana*—legendary place

22 Legendary place (Pukui and Elbert 1986:377)

23