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**PRELIMINARY DRAFT REPORT**  
Archaeological Literature Review and  
Field Inspection in Support of Pi‘iholo  
Solar LLC-HI-Registration Project,  
Makawao Ahupua‘a, Hāmākuapoko  
Moku, Island of Maui

TMKs: (2) 2-4-012:076 por.

*Prepared for:*  
**Nexamp Solar, LLC**  
1050 Queen St, Suite 100  
Honolulu, Hawaii 96814

*On Behalf of:*  
**Hawaiian Electric Company, Inc.**  
1001 Bishop Street, Suite 2900  
Honolulu, Hawaii 96813

April 2023



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## MANAGEMENT SUMMARY

<b>Document Title:</b>	Archaeological Literature Review and Field Inspection in Support of Pi‘iholo Solar LLC-HI-Registration Project, Makawao Ahupua‘a, Hāmākuapoko Moku, Island of Maui
<b>Date/Revised Date:</b>	April 2023
<b>Archaeological Permit #:</b>	SHPD Permit No. 23-08
<b>Project Location:</b>	1462 Makawao Avenue, Makawao, Maui
<b>Project TMK:</b>	(2) 2-4-012:076 por.
<b>Land Owner:</b>	Kapakalua LLC
<b>Project Proponents:</b>	Hawai‘i Electric Company (HECO)
<b>Project Tasks:</b>	Archaeological Literature Review and Field Inspection
<b>Project Acreage:</b>	17.16 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 Makawao. Work will include installation of equipment, fencing, site roads, and connectivity to the power source.
<b>SIHP #:</b>	None
<b>Findings:</b>	<p>No previous archaeological investigations have been conducted in the project area. A single previously identified possible traditional Hawaiian site is one kilometer south of the project area, which is tentatively associated with dryland agriculture and temporary habitation. During the historic period the project area was used for sugarcane cultivation and ranching, followed by pineapple cultivation, which continued into the 2000s.</p> <p>During field inspection, the ground surface was moderately vegetated with grasses, guava, and weeds. No archaeological sites were observed. Cattle were grazing the project area.</p>
<b>Human Skeletal Remains:</b>	None identified within the project area, and no human skeletal remains have been documented within a 500-meter radius of the project area.
<b>Project Effect:</b>	The recommended project effect determination is “no historic properties affected,” as the proposed project will have no effect on significant historic properties.
<b>Mitigation Recommendations:</b>	No further work is recommended.

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## INTRODUCTION

2 Under contract to the Nexamp Solar, LLC, Pacific Consulting Services, Inc. (PCSI) has prepared  
3 this Archaeological Literature Review and Field Inspection (ALRFI) report in support of the Pi‘iholo Solar  
4 LLC-HI-Registration Project in Makawao Ahupua‘a, Hāmākuapoko Moku, Island of Maui<sup>1</sup>. The project  
5 proponent is the Hawai‘i Electric Company (HECO), and the land owner is Kapakalua LLC. The extent of  
6 the proposed project is shown in Figure 1. The project scope of work includes installation of solar arrays,  
7 fencing, and equipment.

8 A historical, cultural, and archaeological background study and field inspection was conducted in  
9 order to evaluate any potential effect on historic properties and to recommend mitigation of any adverse  
10 effect, if warranted. This work was carried out in accordance with Hawaii Revised Statutes (HRS) Chapter  
11 6E, and Title 13 of the Hawaii Administrative Rules (HAR), Subtitle 13 (State Historic Preservation  
12 Division Rules), Chapter 275 (Rules Governing Procedures for Historic Preservation Review for  
13 Governmental Projects Covered Under Section 6E-8, HRS).

14

### PROJECT LOCATION AND DESCRIPTION

15 The current project is at 1462 Makawao Avenue in Makawao. The total project area measures 15.6  
16 acres (ac), or 6.13 hectares (ha). The project area consists of a portion of the 73.0-acre Tax Map Key (TMK)  
17 parcel (2) 2-4-012:076 (Figure 2). The project scope of work includes installation of solar arrays, fencing,  
18 and equipment. An overall site plan is shown in Figure 3.

19

### ENVIRONMENTAL SETTING

20 Makawao Ahupua‘a is located on the northwestern slope of Haleakalā volcano on Maui Island. The  
21 land section is the inland half of the traditional *moku* of Hāmākuapoko, with the coastal half consisting of  
22 the *ahupua‘a* of Hāmākuapoko. Makawao Ahupua‘a is roughly rectangular, oriented lengthwise between  
23 440 above mean sea level (amsl) to 1600 m amsl. The total *ahupua‘a* land area measures approximately  
24 7614.5 ac.

25

### TOPOGRAPHY AND SOILS

26 The project area is in the north rift zone of the Kula Volcanic Series of Haleakala. Cones in the  
27 vicinity include Pi‘iholo to the southeast, Pu‘uehu to the east, and Pu‘uomālei and Pu‘uki‘i to the north.

28 The project area is 8.5 km inland, or southeast, of the coastline at Māliko Bay. The parcel is level  
29 to gently sloping at 470.0 m amsl. Soils in the project area consist of Makawao silty clay with three to seven  
30 percent slopes (MfB), as shown in Figure 4. The Makawao series consists of well-drained soils on uplands,  
31 which developed in material weathered from basic igneous rock (Foote et al. 1972:89). MfB permeability  
32 is moderately rapid, runoff is slow, and the erosion hazard is slight (Foote et al. 1972:89).

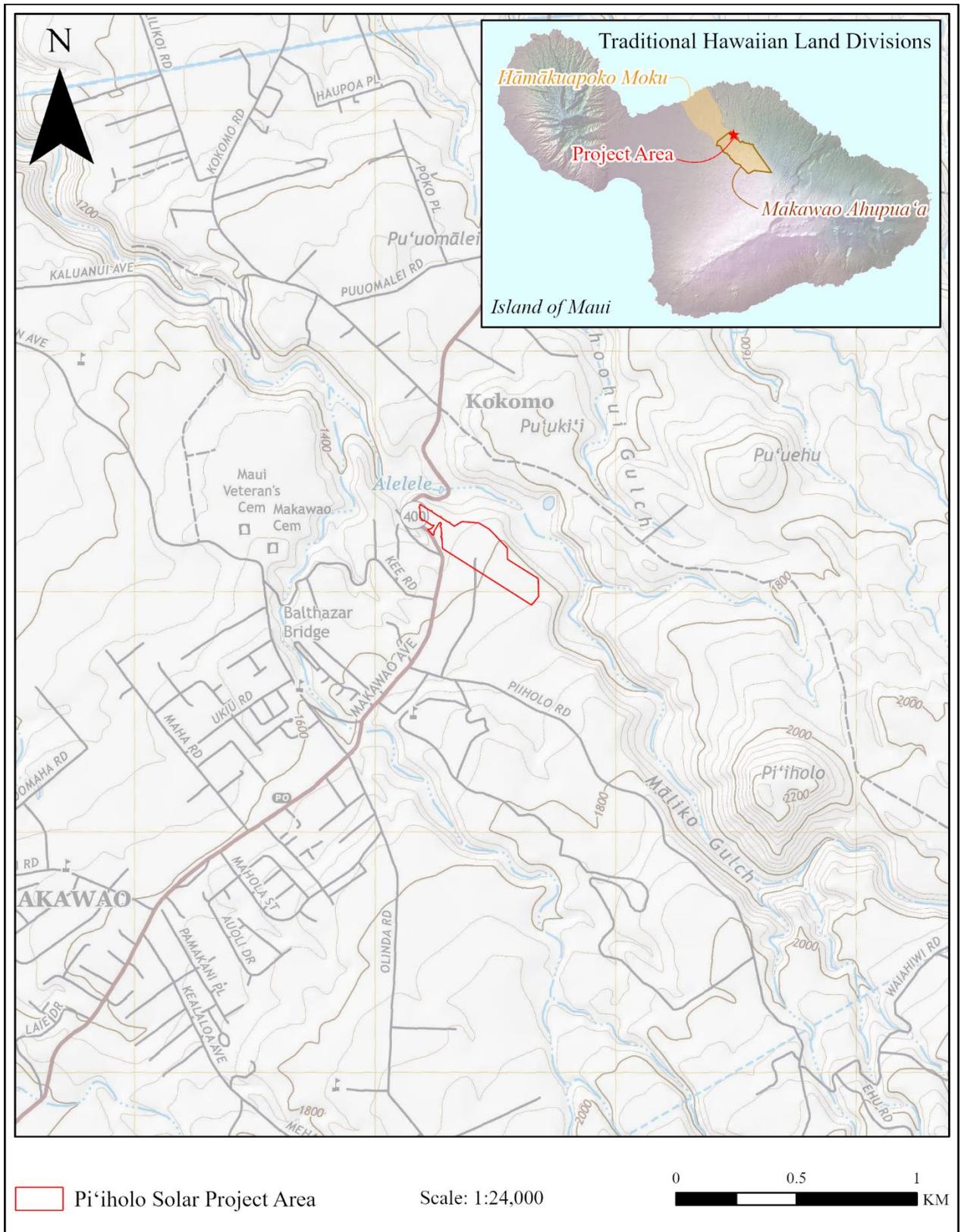
33

### HYDROLOGY AND VEGETATION

34 Annual rainfall averages 1,801.8 millimeters (mm), or 70.94 inches (in) (Giambelluca et al. 2013).  
35 A majority of the rain occurs between November and March. There are no perennial streams in the vicinity.  
36 Māliko Gulch is located on the north border of the project area.

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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.



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





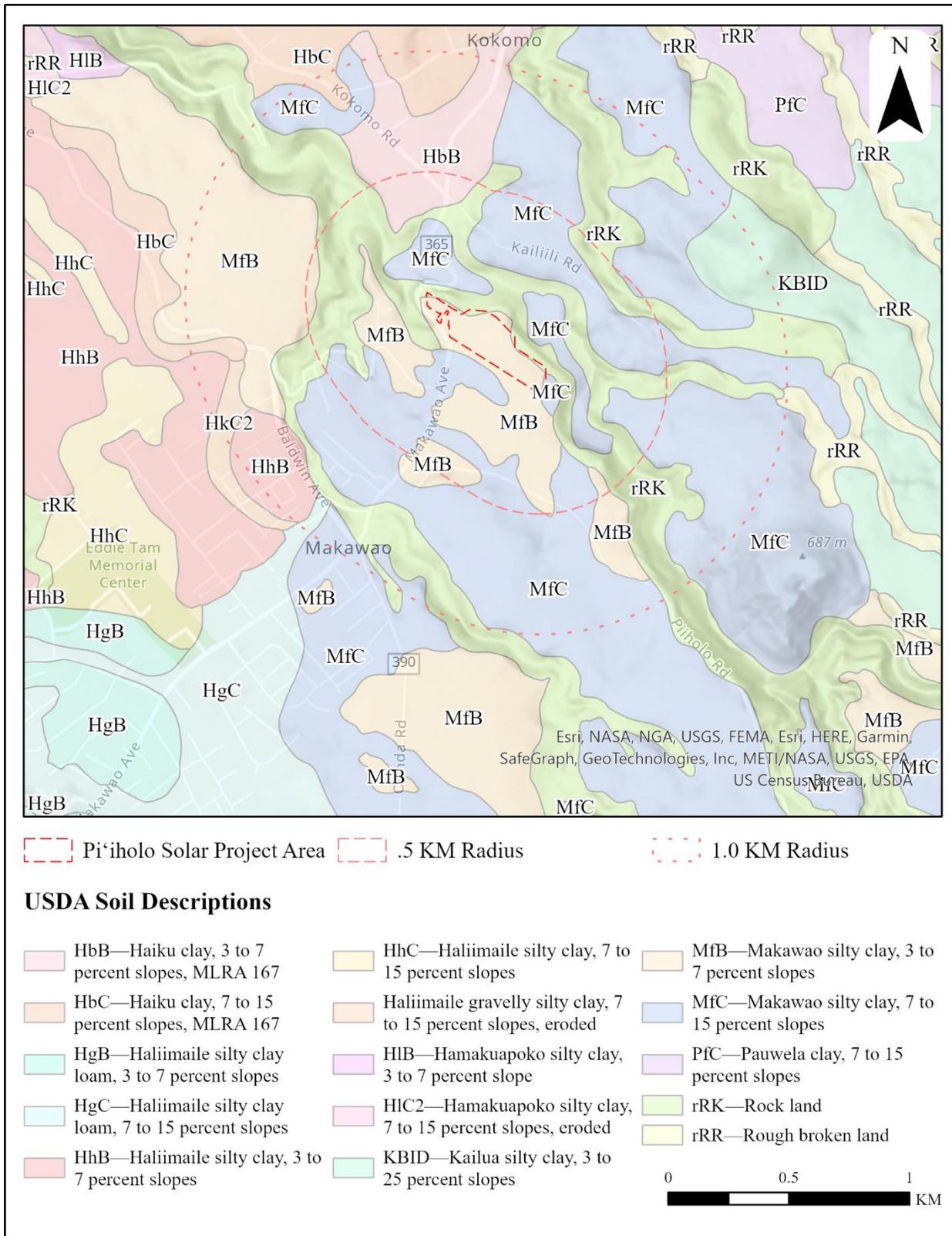


Figure 4. Soil Units Near the Pi'iholo Solar Project Area (Data Layer: USDA/NRCS 2015).

1 The project area is undeveloped and historically was used for ranching and cultivation of sugarcane  
2 and pineapple. Pineapple was grown on the parcel into the modern era and today the vegetation is primarily  
3 grasses such as Guinea grass (*Megathyrsus maximus*).

## 4 HISTORICAL BACKGROUND

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

## 9 TRADITIONAL HISTORY AND LAND USE

10 Although today the project area is within the modern boundaries of Hāmākuapoko Ahupua‘a and  
11 the Makawao District, traditional land boundaries were quite different prior to the Māhele (the 1848  
12 division of land). Formerly, Hāmākuapoko was a *moku* (district), or possibly *‘okana* (sub-district), and  
13 contained multiple *ahupua‘a* (Gonschor and Beamer 2014:66), including Makawao Ahupua‘a, the location  
14 of the current project area. After the Māhele, Hāmākuapoko became an *ahupua‘a* within the *moku* of  
15 Hāmākuapoko, along with Makawao and Hali‘imaile. Hāmākuapoko can be translated literally as “short  
16 hāmākua” (Pukui et al. 1974:39). In 1859, today’s Makawao District was delineated, which encompasses a  
17 large portion of Maui and the island of Kaho‘olawe (Coulter 1935:216). The western boundary of  
18 Hāmākuapoko Ahupua‘a was realigned around 1877. This Makawao District division is illustrated on a tax  
19 map in Figure 5. Interestingly, the new land divisions were used for administrative and judicial purposes,  
20 but concerning land titles older district names continued to be used (Gonschor and Beamer 2014:67).

21 According to Hawaiian historian Samuel Kamakau (1992:428–429), paved roads on the islands of  
22 Moloka‘i and Maui were constructed by Kihapi‘ilani, *ali‘i nui* (high chief) of Maui. Kihapi‘ilani had the  
23 roads built around 1516 after his conquest and unification of Maui. Handy and Handy (1972:489–490) state  
24 that at one point in time the Maui road traversed both the east and west ends, connecting the entire island.  
25 At gulches, the trail passed along the beach and sometimes travelers were ferried across streams or along  
26 the coast. Portions of this road area are still present on Maui. It is known as Ke Alaloa O Maui (“The Long  
27 Road of Maui”), but has also been called the “King’s Trail” or “Kipapa (pavement) of Kahipi‘ilani” (Handy  
28 and Handy 1972:489).

29 Makawao can be translated literally as “forest beginning” (Pukui et al. 1974:142). Traditionally,  
30 the area was forested with *koa* (*Acacia koa*) and other endemic trees, which were used for structures and  
31 canoes. In addition to timber, forest resources included bird feathers, which were collected by *kia manu*  
32 (feather collectors).

33 The rain that occurs near Pi‘iholo is referred to as *Ka ua ‘ulalena o Pi‘iholo*, or “The reddish yellow  
34 rain of Pi‘iholo” (Pukui 1983:173). There is also a proverb relating to Pi‘iholo that refers to a small or  
35 powerful person: *He iki ‘a ‘ali‘i ku makani o Pi‘iholo*, or “A small, wind-resisting ‘a ‘ali‘i bush of Pi‘iholo”  
36 (Pukui 1983:71).

37 There are few traditional references to the *ahupua‘a* of Makawao. Kamakau (1992) wrote of how  
38 prior to becoming *ali‘i nui*, Kihapi‘ilani and his wife Kumaka fled to the boundary of Kula and Makawao  
39 after an argument with Kihapi‘ilani’s brother, Lonoapi‘ilani. Lonoapi‘ilani had succeeded their father  
40 Pi‘ilani as *ali‘i nui* of Maui. Lonoapi‘ilani was suspicious and jealous of his brother’s kind nature and  
41 talents, and wanted to kill Kihapi‘ilani. For a time after fleeing, Kihapi‘ilani’s identity was kept secret, but  
42 his actions hinted he was not a commoner. When there was a famine in Kula and Makawao, he cleared  
43 ferns and planted sweet potatoes, doing the work of 80 men. When harvesting the field nearby, a man spoke  
44 to another, “There must be a chief near by for this is the first time that a rainbow is spread before the trees”  
45 (Kamakau 1992:24).



1 Archaeological evidence indicates that initial settlement of the Hawaiian Islands occurred between  
2 AD 1000 and 1200 (Kirch 2011). On Maui, this occurred on the windward coast where there was fertile  
3 land, and abundant rainfall and fresh water. The current project area is in the upland forest where early on  
4 would have been used for temporary habitation during resource procurement.

5 The main crop traditional grown in the region was *'uala* (sweet potato) (Kirch 1985:138), followed  
6 later by Irish potatoes (Barrère 1975:45, 60–61). The area was described by Handy and Handy (1972:131)  
7 as follows:

8 Where potatoes are planted in crumbling lava with humus, as on eastern Maui and in Kona,  
9 Hawaii, the soil is softened and heaped carelessly in little pockets and patches using  
10 favorable spots on slopes the crumbling porous lava gives ample aeration without much  
11 mounding [Handy and Handy 1972:131].

12 Handy also described the importance of *'uala* due to the dry environment:

13 Kula was always an arid region, throughout its long, low seashore, vast stony *kula* [dryland  
14 field] lands, and broad uplands. On the coast, where fishing was good, and on the lower  
15 westward slopes of Haleakala a considerable population existed, fishing and raising  
16 occasional crops of potatoes along the coast, cultivating large crops of potatoes inland,  
17 especially in the central and northeastern section including Keokea, Waiohuli, Koheo,  
18 Kaunoulu, and Waiakoa, where rainfall drawn round the northwest slopes of Haleakala  
19 increases toward Makawao [Handy 1940:161]

20 Handy and Handy noted in the 1930s that there was evidence of *lo'i* in Kailua and Māliko gulches  
21 at lower elevations. “Maliko Stream, flowing in a gulch that widens and has a flat bottom to seaward, in  
22 pre-sugar-plantation days had a considerable number of *lo'i*” (Handy and Handy 1972:498).

### 23 HISTORIC LAND USE

24 After his conquest and the unification of the Hawaiian Kingdom (less Kaua'i), Kamehameha,  
25 Kamehameha I divided Maui among his warrior chiefs, as on other islands. These lands were considered  
26 *aina ho'oilina*, or “inherited lands” and were not to be taken by the king or the government (Barrère 1975:30).

27 In 1838, Edwin Miner and William McLane acquired a 50-year lease at \$50 per year from Hoapili,  
28 governor of Maui, for a sugar plantation and ranching. This land included the current project area. They  
29 were guaranteed water rights and were able to employ workers free of *konohiki* (land agents for the *ali'i*)  
30 demands. The governor also agreed to build an ox cart road to the coast for their cattle. As part of the deal,  
31 Miner and McLane were required to obey all laws and construct a school. In 1849, John T. Gower joined  
32 Miner and McLane as a partner. According to background research conducted by ethnographer Maria Orr,  
33 “McLane owned or leased huge areas including and surrounding the current parcels [land immediately west  
34 of the current project area] from before Māhele until at least ca. 1872. His ranching lands covered large  
35 areas, and his sugar-plantation fields covered the project area and large areas east of it [the current project  
36 area], as well as other nearby lands” (Orr 2013:11).

37 In 1846, James Jarves, editor of *The Polynesian*, traveled through Makawao and wrote a description  
38 of McLane's land:

39 At present, beside the patches of the natives who cultivate this region tolerably extensively,  
40 Mr. McLane's is the only plantation. It occupies a most delightful situation. His house—  
41 and a real Yankeeified look it has, with its red sides and porticoed front, stands in the midst  
42 of a koa grove. Plants bloom in careless profusion about it; the rose bushes grow most  
43 luxuriantly, forming hedges crowned the round with their rich flowers, filling the air with  
44 fragrance; geraniums rival them in numbers and sweetness; well kept fields of cane extend  
45 in front of the house over 100 acres; fences enclose it in part and separate it from verdant  
46 pasture ground; corn and pumpkins have their allotted space; clumps of trees here and there

1 resemble orchards; nothing, in short, is wanting but the real apples, pears, peaches and  
2 plums themselves to render the coup d'oeuil as gratifying to the palate as to the eye. Perhaps  
3 these will appear in time.

4 McLane's sugar mill is about a half-mile below his house. The sugar of this region ripens  
5 the same as at Mr. Torbert's place and is of excellent quality. The produce to the acre is  
6 about one ton. At present the mill is worked by animal power, but Mr. McLane proposes  
7 erecting a wind-mill as more economical [Jarves 1846]

8 In 1845 and 1846, Makawao District was part of a land experiment implemented by Kamehameha.  
9 Land was sold as grants for one dollar per acre. 900-acres were purchased by native Hawaiians and the  
10 remaining land was leased to *haole* (white person) ranchers. Kuykendall (1968) describes the program, and  
11 mentions McLane's plantation:

12 During the King's tour of Maui in December, 1845, and January 1846, the party visited  
13 Makawao and it was announced that the entire district, with the exception of McLane's  
14 plantation, was to be offered for sale to the people in fee simple. Rev. J.S. Green, pastor of  
15 the Hawaiian church at Makawao, undertook to manage the business of selling the land. In  
16 afterwards relating his experience in connection with the project, Green said he called the  
17 people together, showed them his instructions from the government, and explained the plan  
18 to them [Kuykendall 1968:283].

19 The following text is from a letter from Rev. J.S. Green published in *Polynesian* in 1846 in which  
20 he relates his experience selling land grants. Some of the text is illegible in the newspaper which is why  
21 there are gaps in the text:

22 Dear Sir, —You are aware that in Jan., [illegible], the King, at that time on a visit to  
23 Makawao gave his consent to the selling of the [illegible] lands of this small district to the  
24 native inhabitants. As there seemed to be no one ready to negotiate with the people for the  
25 business, I consented to lay the matter before them and do what I could to induce them to  
26 purchase small lots. Immediately I called together the most [illegible] and best informed  
27 class, chiefly members of the church, showed them my instructions from the government,  
28 offered them land for \$1 per acre and assured them that they would be entitled to a deed in  
29 fee simple so soon as they should pay for their lands. A few of them purchased at once,  
30 others had less confidence that lands [illegible] purchased would be secure, but soon  
31 [illegible] their scruples, while others still could not for a long time, be persuaded that there  
32 was not some *catch* about it—some design to enrich the chiefs at their expense. But nearly  
33 all of these were finally talked out of their suspicions and took up each a small piece of  
34 land. With the forty individuals I have opened and closed grants for land, sold them lands  
35 and have either offered them deeds, or am having them filled out this time. But these forty  
36 do not include [illegible] who are obtaining lands. About sixty individuals have already a  
37 claim to a few acres.; two [illegible] and occasionally there are four, having purchased  
38 together. Most of them have from [illegible] to ten acres each, though several have twenty  
39 [illegible] has fifty, more I fear than he will be able to [illegible] soon to cultivate.

40 This opens the way for saying that the people who have thus obtained small farms are  
41 becoming more industrious. On my arrival in March, [illegible] absence of several weeks,  
42 I was much [illegible] to find that of the 900 acres purchased [illegible] people, a goodly  
43 portion of it was either [illegible] to cue or was in a course of preparation. The soil is light  
44 and easily prepared for potatoes or corn. I find that the work is progressing, and I hope that  
45 in a year or [illegible] field will “laugh with abundance.”

1 The weather is delightfully cool, with occasional light showers. We need rain, though 'tis  
2 extremely dry. 'Tis wheat harvest with ...am sorry to say, however, that we have a small  
3 field waving to the wind. Much that we sowed was destroyed by the *pelua*, (worm.)

4 One the whole I am happy to say, that the experiment of getting the lands of this district  
5 into the hands of the people has exceeded my expectations. More than \$1000 I have paid  
6 into the Hawaiian Treasury since 1846, and some 900 acres are in the possession of the  
7 people, and as I have remarked much of it is being cultivated. With superintendence and  
8 example, the people will go ahead I hope, and I shall do what I can to help them.

9 Of the prospects of the other portions of my field I may speak in my next.

10 Yours for the Hawaiian nation,

11 June 20 J.S. Green.

12 [Letter in *The Polynesian*, July 14, 1849].

13 Green also wrote several other letters published in *The Polynesian* that describe McLane's property,  
14 ranching, and sugar plantation, which can be found in Maly and Maly (2001). One problem Green mentions  
15 is how destructive the cattle were, particularly in cane fields.

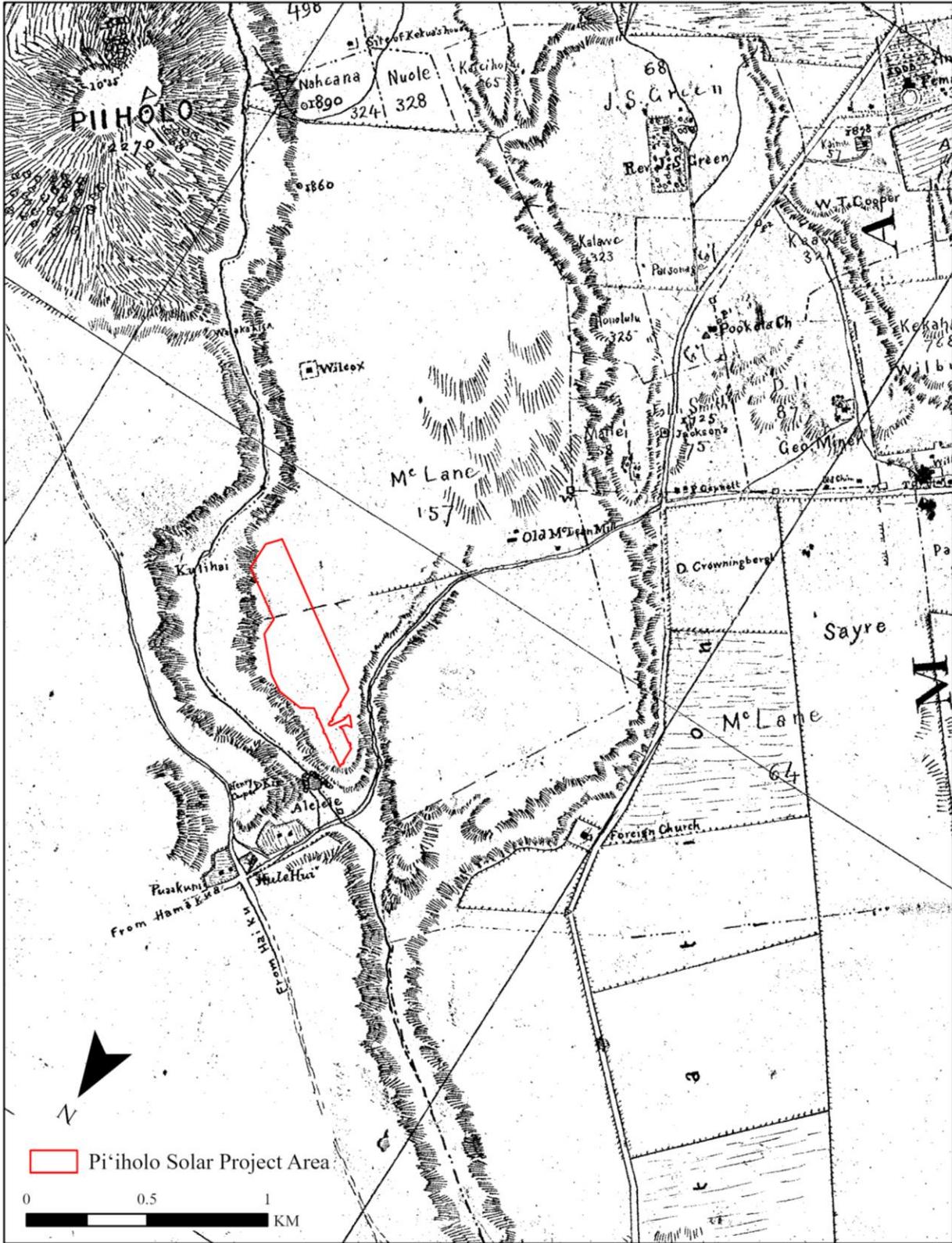
16 Traditional land divisions of the fifteenth and sixteenth centuries persisted until the 1848 Māhele,  
17 which introduced private property into Hawaiian society (Kamakau 1991:54). During the Māhele, the Land  
18 Commission required the Hawaiian chiefs and *konohiki* to present their claims to the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

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

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

35 The Crown Lands became Government Lands when the Hawaiian Government was overthrown in  
36 1895, making them public domain for sale by fee simple (Hammatt 2013:A-5). Patents were the certificates  
37 issued for the sale of such lands. Beginning in 1900, when Hawaii became a U.S. territory, the certificates  
38 were called Land Patents, or Land Patent Grants (Hammatt 2013:A-5).The Crown Lands became  
39 Government Lands when the Hawaiian Government was overthrown in 1895, making them public domain  
40 for sale by fee simple (Hammatt 2013:A-5). Patents were the certificates issued for the sale of such lands.  
41 Beginning in 1900, when Hawaii became a U.S. territory, the certificates were called Land Patents, or Land  
42 Patent Grants (Hammatt 2013:A-5).

43 At the Māhele, Kaleipaihala surrendered Makawao in lieu of commutation to the government. The  
44 current project area was a portion of the 370-acre Land Grant 157, which McLane purchased for 740 dollars  
45 in 1849 (Figure 6). In the 1850s, the sugar boom ended and in 1852 McLane, Miner, and Gower's sugarcane  
46 operation was sold at auction. By 1857, the only sugar plantations left on Maui were at Makawao, which



1  
 2 Figure 6. Portion of Lyons's (1872) Map of Makawao, Maui Showing the Project Area in Grant 157.

1 were the Brewer Plantation and the East Maui Plantation. The following is a chronology of McLane’s land  
2 holding from Maly and Maly (2001):

3 William McLane (his wife, Maile Makalena), and Edwin Miner retained their leasehold  
4 interest in land at Makawao for a few years, and then gave it up. McLane acquired fee  
5 simple interest in parcels he acquired directly from the Government, or from natives who  
6 had been granted Royal Patents (see Mortgage Book 1:386\_387 and Liber 4:61). In 1847  
7 and 1849, William McLane acquired two parcels of land (totaling 688.94 acres) at  
8 Makawao (Grants 64 and 157). In addition to the ranching interests, McLane developed a  
9 sugar plantation (McLane’s Plantation) on a portion of his Makawao holdings, parcels of  
10 which were later sold to various individuals, and for a while were operated as the Dow and  
11 Parks’ Plantation (see Register Map No.’s 186 and 603 for locations described in boundary  
12 references of Makawao, as well as those which were a part of the McLane holdings) [Maly  
13 and Maly 2001:303].

14 In 1888, Haleakala Ranch was established, and historical maps indicate that the ranch owned the  
15 current project area ca 1900. In 1926, a portion of the current project area was deeded to J.F. de Rego, and  
16 in 1929 the remaining portion was sold to Keahua Ranch Company, which cultivated pineapple. Keahua  
17 Ranch Company changed their name to Haleakala Pineapple Co., Ltd., which then later formed as Maui  
18 Pineapple Company. Historical aerial imagery dated 1965 shows the project area cultivated in pineapple  
19 (Figure 7), which remained the land use into the modern era.

20 In the 2010s, Ms. Mary “Maizie” Cameron Sanford was interviewed for a cultural impact  
21 assessment in Makawao. She recalled the McLane’s land from the early to mid-1900s:

22 It was cattle pasture; I don’t know who owned it. And this was pineapple fields from behind  
23 the houses on Baldwin Avenue all the way to Maliko Gulch, when I was a teenager. That  
24 was in Maui Pineapple country, before A & B took it over.

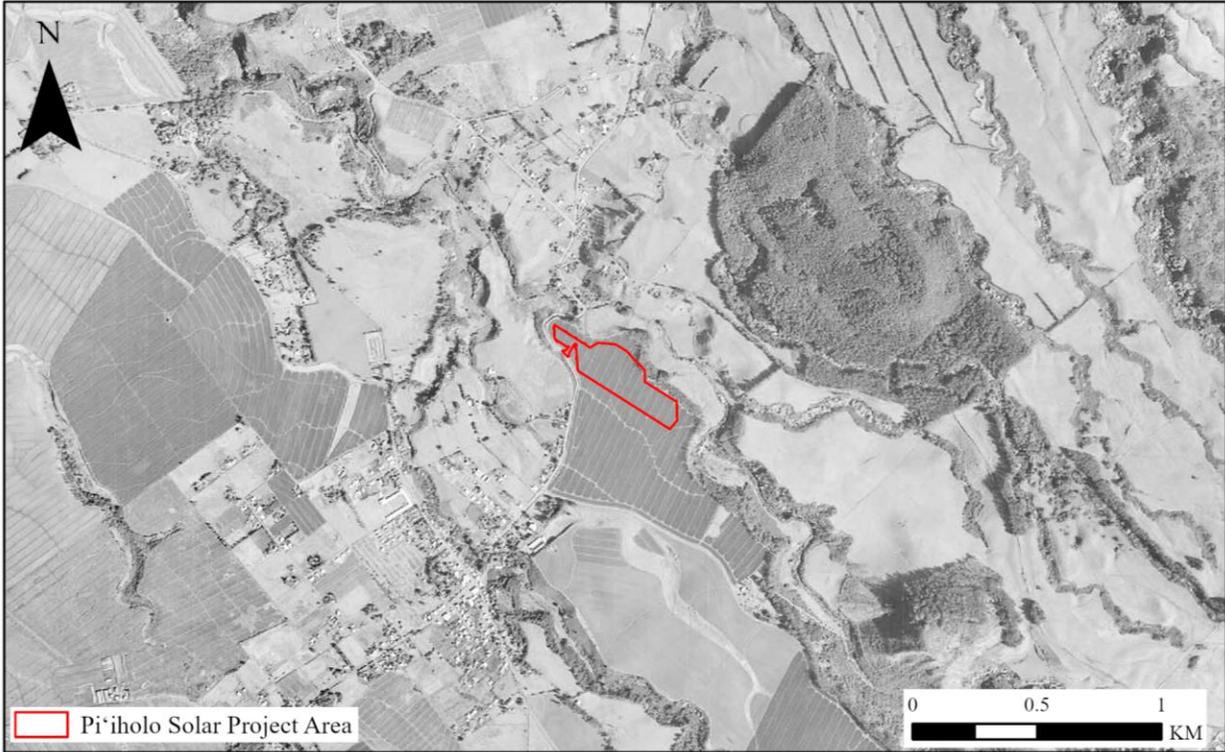
25 Pasture, never sugar in my memory, then pineapple. It might have been sugar a generation  
26 before. I don’t think it was Haleakalā Ranch, because the cows in there were Black Angus  
27 and there was a lot of haole koa growing. It’s definitely not a ranch pasture; it was  
28 disconnected from the ranch. Ranch pastures were above Makawao...It must have been  
29 part of Grove Ranch, which was connected with Maui Ag Company because I think they  
30 had the Black Angus [Orr 2013:46].

### 31 PREVIOUS ARCHAEOLOGY

32 Few archaeological investigations have been conducted in the Makawao area, and no  
33 archaeological work has been conducted in the Pi’iholo Solar project area. To date, no historic properties  
34 have been recorded within one kilometer of the project area. Table 1 summarizes all previous archaeological  
35 investigations conducted within a one-kilometer radius, which are indicative of sites that may be present in  
36 the current project area. The project locations are shown in Figure 8 and previously identified sites are  
37 shown in Figure 9. All site numbers follow SIHP 50-50-06-0.

38 In 1990, archaeologist Teresa Dohham surveyed five parcels in upland Maui that were proposed as  
39 sites for a new high school (Donham 1990). Parcel 5 was located roughly one kilometer east of the current  
40 project area and is the only one of the five parcels shown on Figure 7. At Parcel 5, finds were limited to an  
41 isolated lithic adze. At the time of the survey the field had been recently plowed and ground visibility was  
42 excellent.

43 In 2007, Pacific Legacy, Inc. conducted an archaeological inventory survey of 325-acres of former  
44 pineapple and active pastureland (McIntosh and Cleghorn 2008) located rough 500 meters south of the  
45 current project area. Prior to the survey, the inadvertent discovery of human skeletal remains occur at the  
46 southeast corner of the property, over two kilometers southwest of the Pi’iholo Solar project area. The burial

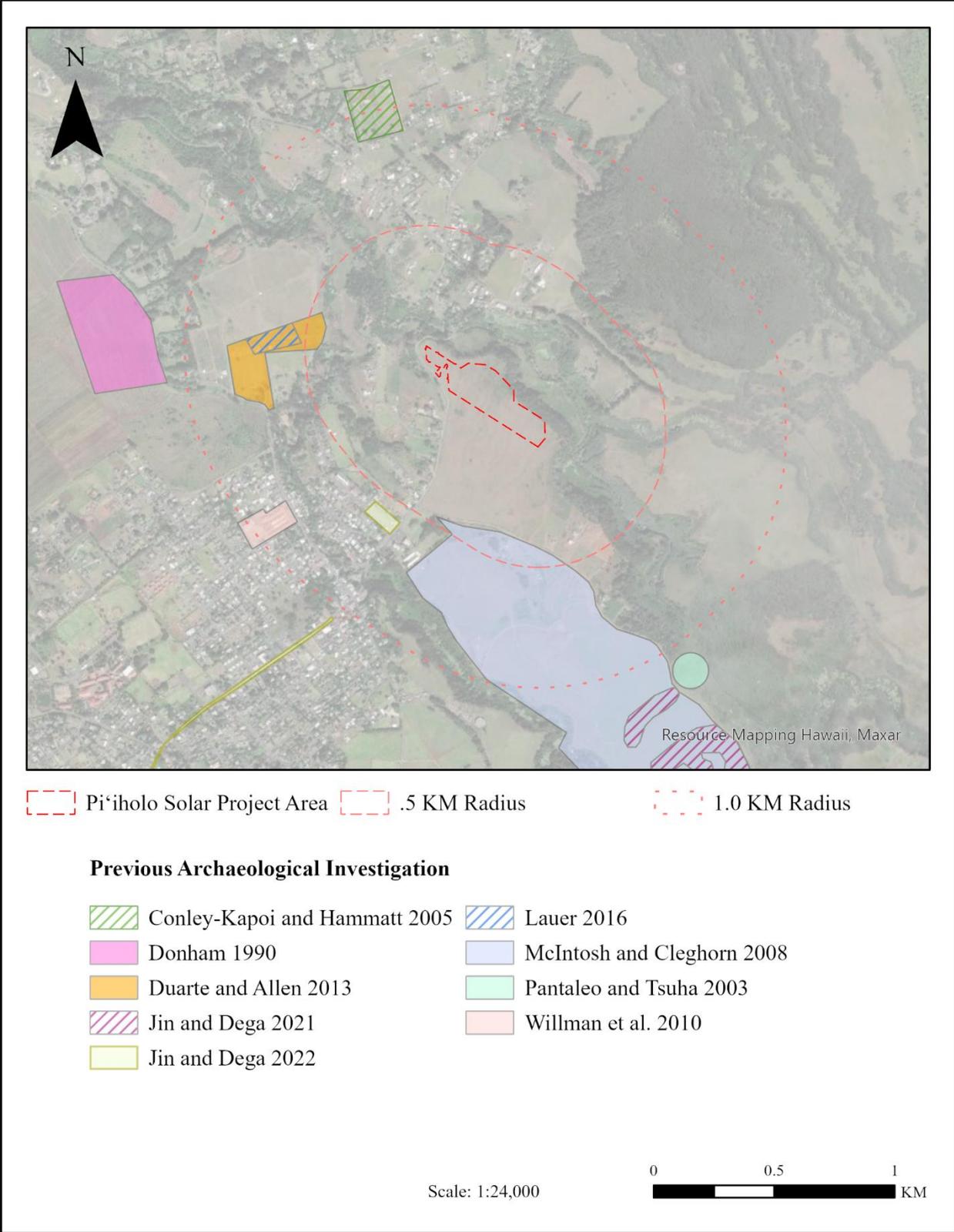


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Figure 7. 1965 Aerial Image Showing Project Area Cultivated in Pineapple (USDA 1965).

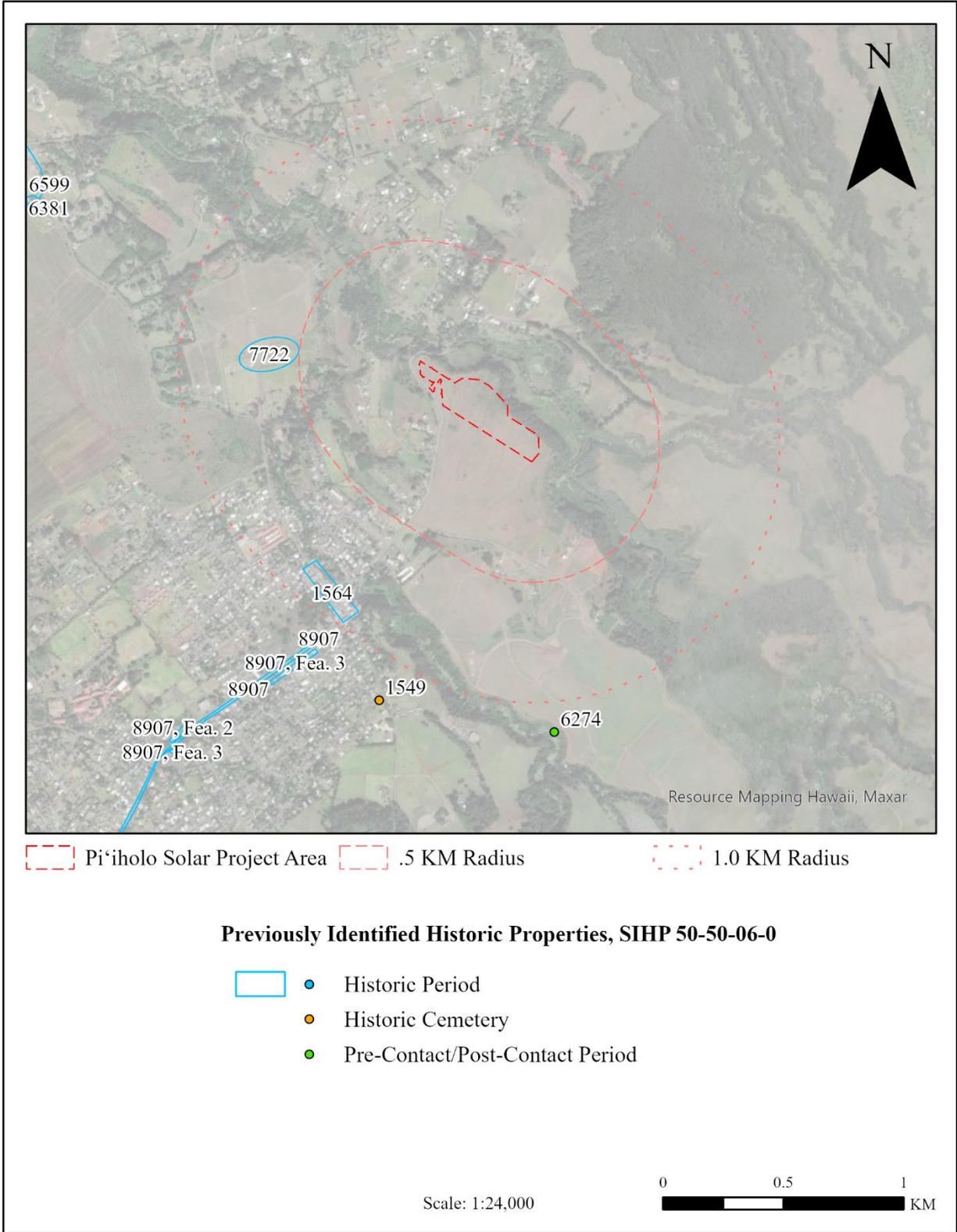
Table 1. List of Previous Archaeological Studies and Identified Sites Near the Pi‘iholo Solar Project Area.

Reference	TMK(s) (2)/ Location	Nature of Study	SIHP 50-50- 06-0	Description
Walker 1931	Island-wide	Archaeological Survey	-	No sites near the current project area
Donham 1990	2-3-009:007,013; 2-3-007:010 por., 012; 2-4-001:006 por./ Hāli‘imaile, Hoku‘ula, Kailua, and Maka‘eha Ahupua‘a	Archaeological Inventory Survey		Four lithic artifacts and a ceramic sherd were collected from Parcel 4, and a single lithic artifact was collected from Parcel 5
Pantaleo and Tsuha 2003	2-4-012:006 por./ Pi‘iholo Road	Archaeological and Cultural Impact Assessment	-	No cultural resources identified; the area was traditionally used for seasonal gathering of <i>koa</i> and bird feathers
Conley-Kapoi and Hammatt 2005	(2) 2-7-002:043/ 10.49-Acre Ron Searle Property	Archaeological Assessment	-	No cultural resources identified; land impacted by historic and modern agricultural activities
McIntosh and Cleghorn 2008	2-4-012:005, 009/ 325-acre parcel	Archaeological Inventory Survey	5501	Historic period burial, over 2.0 km from the current project area
			6274	Slope retaining wall and an associated soil terrace
Willman et al. 2010	2-4-05:10/ Makawao Elementary School	Archaeological Monitoring	-	No cultural resources identified; the parcel was previously disturbed by historic period agriculture and the historic/modern use of the elementary school
Durante and Allen 2013	2-4-002:009 and 007 por./ Maui Veterans Cemetery	Archaeological Inventory Survey	7722	Six historic features; archaeological monitoring recommended for only Feature 1, a historic period manhole box
Lauer 2016	2-4-002:009 por./ Maui Veterans Cemetery	Archaeological Monitoring	7722	Feature 1, a historic period manhole box was destroyed prior to archaeological monitoring
Jin and Dega 2021	2-4-012:040, 041, 042, 043, 044, 045/ Pi‘iholo South Subdivision	Archaeological Assessment	-	No cultural resources identified; work included pedestrian survey 15 test trenches
Jin and Dega 2022	2-4-006, 007, 009, 018, 021, 022, 024, 028, 029, 031, and 036 and 017:021 por./ Makawao Avenue Pavement Reconstruction	Archaeological Inventory Survey	8907	Historic period road; Makawao Avenue from milepost .8 to the intersection with Ai Street



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2 Figure 8. Previously Archaeological Investigations Near the Pi'iholo Solar Project Area.



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Figure 9. Previously Identified Historic Properties Near the Pi'iholo Solar Project Area.

1 was designated SIHP 5501 and consisted of the remains of a female of Asian ethnicity. The burial appeared  
2 to be in the primary disposition, but no evidence of a coffin was present. The matrix consisted of heavy  
3 clay and the in situ remains were 60 cm below the ground surface. The burial was isolated and not believed  
4 to be part of a formal cemetery. The disturbed remains were reinterred at the in situ location.

5 During an archaeological inventory survey in 2007 by Pacific Legacy, Inc., a single new site was  
6 identified, which was designated SIHP 6274. The site is just over one kilometer south of the current project  
7 area in an unnamed gulch. This site consists of a slope retaining wall constructed of stacked basalt cobbles  
8 and boulders forming a terrace. The retaining wall functions to prevent the slope from eroding onto the soil  
9 terrace. The site possibly dates to the pre-Contact period but appeared to be recently used. Local informant  
10 Mr. Billy Abreu stated there was a piggery in the 1950s and 1960s on the site (McIntosh and Cleghorn  
11 2008:21). The landowners preserved the retaining wall and terrace. Additionally, an adze fragment was  
12 recovered from the north central portion of the parcel along a former pineapple road.

13 Prior to planned expansion of the Maui Veterans Cemetery, International Archaeology, LLC,  
14 conducted an archaeological inventory survey of the existing 2.9 ha cemetery and the 4.5 ha area proposed  
15 for expansion (Duarte and Allen 2013). Six surface features were recorded and designated SIHP 7722:  
16 Feature 1, a historic period manhole box; Feature 2, a late historic or possibly modern concrete masonry  
17 unit (CMU) cistern or well; Features 3, 4, and 6, historic period isolated blocks made of a coarsely tempered  
18 concrete similar to a type known as *puna kameki* (an old type often seen in plantation settings [Duarte and  
19 Allen 2013:42]); and Feature 5, an isolated rounded basalt boulder. Six shovel test pits encountered  
20 disturbed agricultural soil (Layer I), and a deeper and less disturbed soil with no cultural materials (Layer  
21 II). No further work was recommended for Features 2–6; archaeological monitoring was recommended for  
22 the destruction of Feature 1 due to the possibility of encountering evidence of historic period plantation  
23 agriculture or ranching activities. However, prior to the implementation of archaeological monitoring, the  
24 feature was destroyed by an unknown party (Lauer 2016:31).

25 An archaeological inventory survey, which was initially an ALRFI, by Scientific Consultant  
26 Services, Inc., was conducted for construction along Makawao Avenue (Jin and Dega 2022). The three  
27 features recorded were historic basalt curbstones that line portions of the roadway, which were designated  
28 SIHP 8907, along with a stretch of Makawao Avenue from milepost .8 to the intersection with Ai Street.  
29 The site is over one kilometer from the current project area. Also noted in the report is SIHP 1564, the  
30 Makawao Central District, which comprises historic period residential and commercial buildings along both  
31 sides of Baldwin Avenue, between Makawao Avenue and Brewer Road.

## 32 **ANTICIPATED FINDS**

33 No previous archaeological investigations have been conducted in the project area. A single  
34 previously identified site is over 1.0 km south of the project area, which is a possible traditional Hawaiian  
35 site associated with dryland agriculture and temporary habitation. Traditional Hawaiian sites are possible  
36 on the northwest border of the project area near Māliko Gulch but would be outside the project area  
37 footprint. From the mid-1800s through the late 1900s the project area was used for sugarcane cultivation,  
38 ranching, and pineapple cultivation. Historical and modern aerial imagery indicates the entire project area  
39 was cultivated in pineapple until the 2000s; therefore, historic properties are unlikely to be extant.

## 40 **FIELD INSPECTION**

41 An archaeological field inspection was conducted by a PCSI archaeologist, Richard Nees, B.A., on  
42 22 March 2023. Dennis Gosser, M.A., served as Principal Investigator for the project. Field inspection  
43 consisted of visually inspecting the ground surface of a portion of the 15.6-acre parcel and photographing  
44 swaths of the landscape.

1 **FIELD INSPECTION RESULTS AND DISCUSSION**

2 Locations of Photographs 1–5 are shown on an aerial image dated 23 January 2022 in Figure 11;  
3 the photograph numbers correspond to those in Figures 12 through 16. During field inspection, the ground  
4 surface was moderately vegetated with grasses, weeds, and guava. No archaeological sites were observed.  
5 The presence of cattle in the project area prevented a complete walkthrough of the project area.

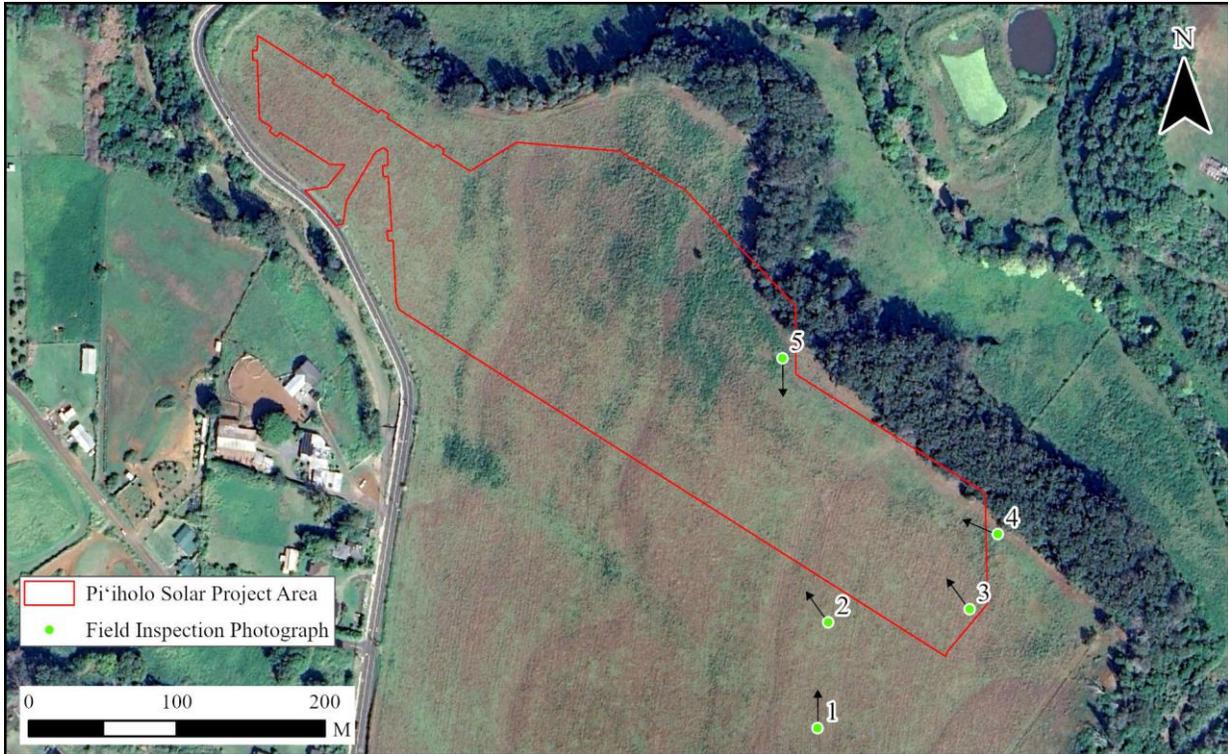
6 **SUMMARY AND ASSESSMENT**

7 The proposed Pi‘iholo Solar LLC-HI-Registration project area is situated east of Makawao Avenue  
8 in Makawao. The project proponent is HECO, and land owner is Kapakalua LLC. The project area includes  
9 15.6 acres of TMK (2) 2-4-012:076 (see Figures 1 and 2). An archaeological literature review that addresses  
10 historical, cultural, and archaeological background, and a field inspection were conducted in order to  
11 evaluate any potential effect on historic properties in the project area, and to recommend mitigation of any  
12 adverse effect, if warranted. This work was carried out in accordance with Hawaii Revised Statutes (HRS)  
13 Chapter 6E, and Title 13 of the Hawaii Administrative Rules (HAR), Subtitle 13 (State Historic  
14 Preservation Division Rules), Chapter 275 (*Rules Governing Procedures for Historic Preservation Review*  
15 *for Governmental Projects Covered Under Sections 6E-7 and 6E-8, HRS*).

16 No previous archaeological investigations have been conducted in the project area. A single  
17 previously identified traditional Hawaiian site is over 1.0 km south of the project area, which is associated  
18 with dryland agriculture and temporary habitation. Traditional Hawaiian sites are possible on the northwest  
19 border of the project area near Māliko Gulch but would be outside the project area footprint. From the mid-  
20 1800s through the late 1900s the project area was used for sugarcane cultivation, ranching, and pineapple  
21 cultivation, which occurred into the 2000s. These activities likely obliterated any remnants of traditional  
22 Hawaiian activity. During field inspection, no archaeological sites were observed. Grasses, weeds, and  
23 guava were observed, and the cattle were actively grazing.

24 **RECOMMENDATIONS**

25 The recommended project effect determination is “no historic properties affected,” as the proposed  
26 project will have no effect on significant historic properties. Due to extensive land disturbance in the historic  
27 and modern era, no further work recommended.



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Figure 10. Locations of Photographs 1–5 (see Figures 12–16) Shown on Aerial Image Dated January 2022 (Google Earth 2023); Arrows Indicate Facing Direction.



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Figure 11. Photograph 1, Facing North.



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Figure 12. Photograph 2, Facing Northwest.



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Figure 13. Photograph 3, Facing Northwest.



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Figure 14. Photograph 4, Facing West-Northwest.



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Figure 15. Photograph 5, Facing South.

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## GLOSSARY OF HAWAIIAN TERMS

- 1  
2 *ahupua'a*—land division and community  
3 Land division usually extending from the uplands to the sea, so called because the boundary was  
4 marked by a heap (*ahu*) of stones surmounted by an image of pig (*pua'a*) or because a pig or other  
5 tribute was laid on the altar as tax to the chief. The landlord or owner of an *ahupua'a* might be a  
6 *konohiki* (Pukui and Elbert 1986:9)
- 7 *aina ho'oilina*—inherited land  
8 Inherited property or estate (Pukui and Elbert 1986:11)
- 9 *ali'i*—chief or chiefess  
10 Chief, chiefess, officer, ruler, monarch, peer, headman, noble, aristocrat, king, queen, commander  
11 (Pukui and Elbert 1986:20); implies hereditary rank
- 12 *hoa'āina*—common people of the land, native tenants  
13 Tenant, caretaker, as on a *kuleana* (Pukui and Elbert 1986:73)
- 14 *haole*—foreigner, typically white  
15 White person, American, Englishman, Caucasian; American, English; formerly, any foreigner;  
16 foreign, introduced, of foreign origin, as plants, pigs, chickens; entirely white, of pigs (Pukui and  
17 Elbert 1986:58)
- 18 *'ili*—division of land smaller than an *ahupua'a*  
19 Land section, next in importance to *ahupua'a* an usually a subdivision of an *ahupua'a* (Pukui and  
20 Elbert 1986:97)
- 21 *kia manu*—bird catcher, feather collectors  
22 Birdcatcher, birdcatching by gumming; to catch birds by gumming (Pukui and Elbert 1986:146)
- 23 *konohiki*—land managers  
24 Headman of an *ahupua'a* land division under the chief; land or fishing rights under the control of  
25 the *konohiki* (Pukui and Elbert 1986:166)
- 26 *kula*—dryland field  
27 Plain, field, open country, pasture. An act of 1884 distinguished dry or *kula* land from wet or taro  
28 land (Pukui and Elbert 1986:179)
- 29 *kuleana*—small piece of land under the responsibility of a tenant  
30 Right, privilege, concern, responsibility, title, business, property, estate, portion, jurisdiction,  
31 authority, liability, interest, claim, ownership, tenure, affair, province (Pukui and Elbert 1986:179)
- 32 *lo'i*—wetland taro field  
33 Irrigated terrace, especially for taro, but also for rice (Pukui and Elbert 1986:209)
- 34 *moku*—district  
35 District, island, islet, section, forest, grove, clump, severed portion, fragment, cut, laceration,  
36 scene in a play (Pukui and Elbert 1986:252)
- 37 *'okana*—sub-district  
38 District or subdistrict, usually comprising several *ahupua'a* (Pukui and Elbert 1986:281)
- 39 *puna kameki*—cement  
40 Eng. *Puna kameki*, (Pukui and Elbert 1986:126)
- 41 *'uala*—Hawaiian sweet potato  
42 The sweet potato (*Ipomoea batatas*), a perennial, wide-spreading vine, with heart-shaped, angled,  
43 or lobed leaves and pinkish-lavender flowers. The tuberous roots are a valuable food, and they vary  
44 greatly in many ways, as in color and shape. Though of South American origin, the plant has been

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a staple food since ancient times in many parts of Polynesia, as well as in some other regions (Pukui and Elbert 1986:362)