

# Final—Archaeological Inventory Survey for Improvements to Girl Scout Camp Pi‘iholo, Makawao Ahupua‘a, Hāmākua Poko District, Island of Maui, Hawai‘i

TMK: (2) 2-4-013:074



## Prepared For:

Group 70 International  
925 Bethel Street, 5th Floor  
Honolulu, Hawaii 96813



July 2017

Keala Pono 

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## **MANAGEMENT SUMMARY**

An archaeological inventory survey was conducted for the Pi‘iholo Girl Scout Camp at TMK: (2) 2-4-013:074 in Makawao Ahupua‘a, Hāmākua Poko District on the island of Maui, in anticipation of wastewater improvements for the camp. The archaeological work included a pedestrian survey that covered 100% of the project area, as well as test excavations consisting of four trenches and two test units. One archaeological site was identified during pedestrian survey: SIHP (State Inventory of Historic Places) 50-50-06-8995, a rock alignment. Five historic buildings were also identified, and a historic architecture reconnaissance level survey (RLS) has been prepared for the structures. Subsurface testing yielded no archaeological resources, with stratigraphy consisting entirely of natural deposits. Because of the lack of subsurface findings, archaeological monitoring is not recommended.



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## INTRODUCTION

At the request of Group 70 International, Keala Pono Archaeological Consulting conducted an archaeological inventory survey (AIS) for TMK: (2) 2-4-013:074 in Makawao Ahupua‘a, Hāmākua Poko District on the island of Maui. Girl Scouts of Hawai‘i is planning wastewater improvements for the camp. The AIS was designed to identify any cultural resources that may occur in the area.

This report meets the requirements and standards of state historic preservation law, specifically Chapter 6e of the Hawai‘i Revised Statutes, and the State Historic Preservation Division’s (SHPD’s) *Rules Governing Standards for Archaeological Inventory Surveys and Reports* (§13-276).

The report begins with a description of the project area and a historical overview of land use and archaeology in the area. The next section presents methods used in the fieldwork, followed by the results of the archaeological inventory survey. Project results are summarized and recommendations are made in the final section. Hawaiian words, flora and fauna, and technical terms are defined in a glossary at the end of the document.

### Project Location and Description

The project area consists of 5.82 ha (14.37 ac.) in Makawao Ahupua‘a, Hāmākua Poko District on the island of Maui (Figure 1). This is at TMK: (2) 2-4-013:074, owned by the Girl Scout Council of Hawai‘i. The project area is bounded by Waiahiwi Road to the north and Camp Pi‘iholo Road to the east. As of 2004 several structures occupied the site. These include five plywood A-frame buildings with aluminum roofs, each with a 12 x 14 ft. rectangular floor plan covering 168 sq. ft. of space. The sixth, and largest structure, with a 56 x 26 ft. floor plan covering 1456 sq. ft. of space, has redwood/cedar walls and a wood shake roof on a concrete foundation. The five smaller plywood buildings had been erected by 1965, with the larger redwood/cedar building completed in 1968.

The Girl Scouts of Hawai‘i website describes Camp Pi‘iholo as follows:

Secluded in the up-country Makawao area, Pi‘iholo can be described as an intimate tree-surrounded getaway, approximately 20-30 minutes from the airport at Kahului and an hour and a half from Lahaina. It is ideal for small-to-medium camping groups, outdoor programs and conferences. Pi‘iholo has a well-furnished kitchen and lodge area and will accommodate up to 35 people. (Girl Scouts of Hawai‘i 2016)

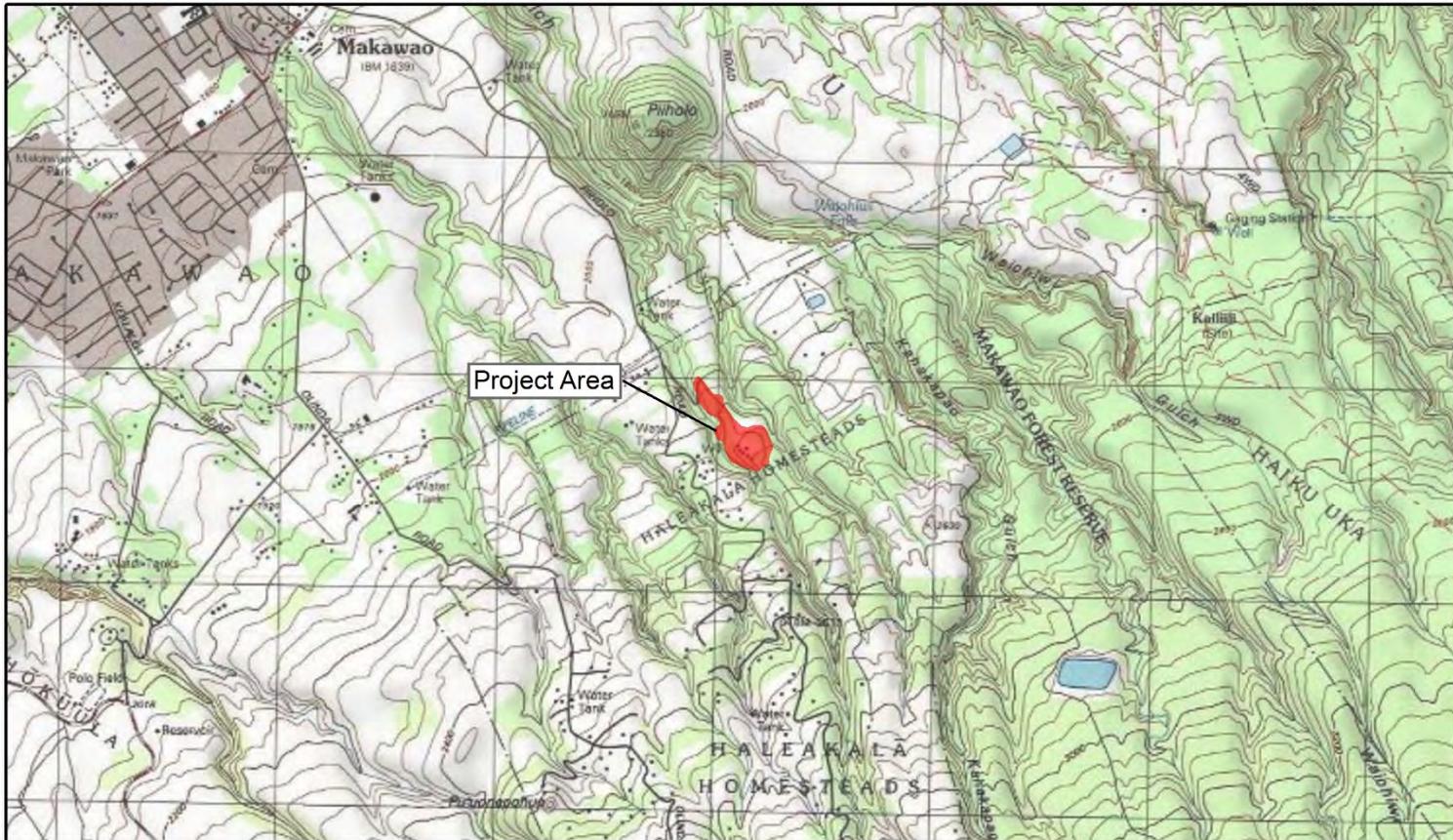
The proposed improvements for Camp Pi‘iholo are to abandon the existing Large Capacity Cesspools (LCC) and construct an onsite wastewater treatment system. Abandoning the LCC would be in accordance with Hawai‘i Administrative Rules (HAR) §11-23. The proposed onsite wastewater treatment system would consist of re-routing the existing building sewer line to discharge into an onsite septic tank for treatment, and construction of an absorption bed for disposal.

### Physical Environment

The island of Maui was created by two distinct shield volcanoes, Haleakalā in the east and Pu‘u Kukui in the west. The two separate land masses became connected by an isthmus when “lavas of Haleakala banked against the already existing West Maui volcano” (Macdonald et al. 1983:380). The project area is located in upcountry Maui, on the north slope of Haleakalā just to the east of the isthmus that forms the center of the island. The district of Hāmākua Poko is bounded by the ocean to the north, Haleakalā to the south, Māliko Gulch to the east, and Kailua Gulch to the west. Its neighboring districts are Wailuku to the northwest, Kula to the southwest, and Hāmākua Loa to the east. Hāmākua Poko is divided into three ahupua‘a: the ma kai Hāmākua Poko, the ma uka Makawao, and Halimaile in between. The project area, which consists exclusively of the Girl Scouts of Hawai‘i Camp Pi‘iholo, is immediately ma kai of the Haleakala Homesteads and Olinda Houselots, which occupy the ma uka end of Makawao Ahupua‘a. This is at an elevation of between 680 and 695 m (2,240 and 2,280 ft.) above sea level.

The majority of the project area and its surroundings are composed of rock lands (rRK) and soils in the Makawao series, specifically Makawao silty clay (MfC) (Figure 2). These are deep and very deep well-drained soils formed from material that has weathered from igneous rock and volcanic ash. These soils are found on 3% to 15% slopes with the depth to bedrock upwards of 100–150 cm (40–60 in.) below surface. This soil is well drained, with slow to medium runoff depending on the slope. Vegetation includes eucalyptus, guava, and various grasses and weeds (USDA Soil Series 2016). Average annual rainfall in the project area is 246 cm (96.8 in.), peaking in March and December (Giambellucca et al. 2013). Early European visitors to the region noted how “sufficient” and consistent rainfall here was in 1828. Springs were also abundant on the sides of Haleakalā (Hill et al. 2008: 26–7).

With this amount of rain at this altitude, the project area falls within the “wet forest and woodland” category of terrestrial ecosystem, which could traditionally range from closed-canopy forests of ōhi‘a, koa, and ‘ōlapa to open-canopy woodlands of ōhi‘a and uluhe. Such ecosystems host a diversity of Hawaiian honeycreepers and other native forest birds, as well as invertebrates. Invasive plant species, like those noted in the USDA Soil Series for the project area, are a threat to the native species that previously typified this ecosystem (Pratt and Gon 1998:126–127). The first Europeans to visit the region noted the “considerable timber” that covered the slopes of Haleakalā in Hāmākua Poko below the tree line in 1828. Hāmākua Loa, just to the east, was covered in kukui trees at this time (Hill et al. 2008:27). The project area is drained by Waiohiwi Gulch, a tributary of Māliko Gulch, which borders Makawao Ahupua‘a on the east and drains into Māliko Bay on the north shore of Maui (Gingerich 1999:15).



**Legend**

 Project Area

Keala Pono 



Layer Credits: USGS Topographical Haiku Point Quadrangle Map 1992 / Kilohana Point Quadrangle Map 1991

**Figure 1. Project area on USGS quadrangle maps.**

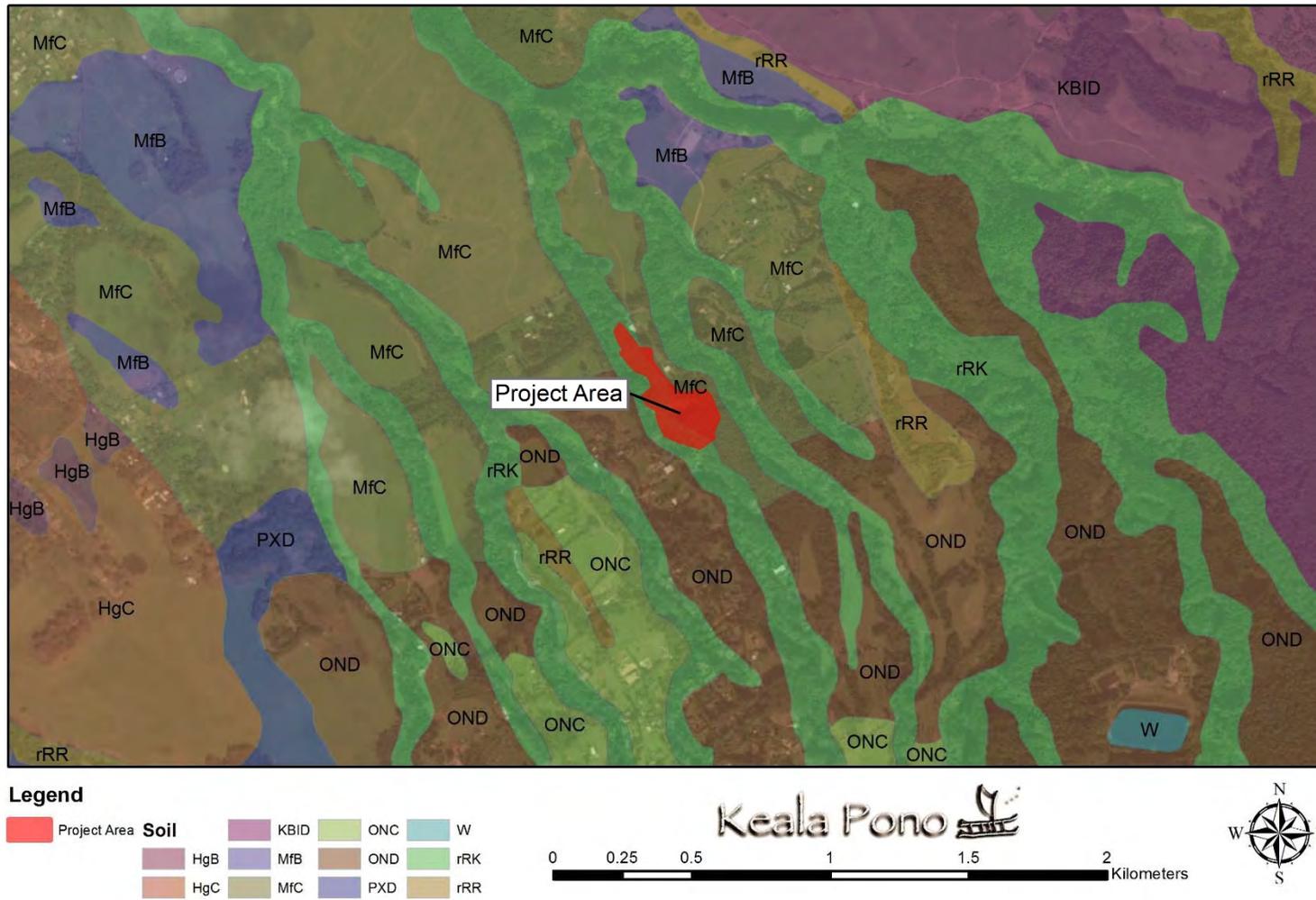


Figure 2. Soils in the vicinity of the project area (data from Foote et al. 1972).

## BACKGROUND

This section of the report presents background information as a means to provide a context through which one can examine the cultural and historical significance of the project lands. In the attempt to record and preserve both the tangible (i.e., traditional and historic archaeological sites) and intangible (i.e., mo‘olelo, ‘ōlelo no‘eau) culture, this research assists in the discussion of anticipated finds. Research was conducted at the Hawai‘i State Library and the SHPD library, and using online resources at the University of Hawai‘i at Mānoa libraries, as well as databases such as Ulukau, Kipuka, and Papakilo, as well as the State of Hawai‘i Department of Accounting and General Services (DAGS) website for historical maps. Historical maps, archaeological reports, Māhele data, and historical reference books were among the materials examined.

### Inoa ‘Āina: Place Names

Place names often reflect traditional views and uses of an area, thus providing important contextual information. Makawao literally means “forest beginning,” an apt name for an area situated right on the edge of what is today the Makawao Forest Reserve. The name of the Girl Scout camp, Pi‘iholo, translates to “climb run.” Pi‘iholo was originally the name of the cinder cone that rises up just northwest of the project area (Pukui et al. 1974:147, 184).

### ‘Ōlelo No‘eau

‘Ōlelo no‘eau, or Hawaiian proverbs and poetical sayings, provide insight into traditional beliefs and practices related to a given area. There are several ‘ōlelo no‘eau for Makawao.

E hu‘e mai ‘oe I ke koai‘e o Makawao!

*Try uprooting the koai‘e tree of Makawao!*

I defy you to tackle a lad of Makawao!

A boast from a native of Makawao, Maui. (Pukui 1983:37)

Ka ua Ūkiu o Makawao.

*The Ūkiu rain of Makawao.*

Refers to Makawao, Maui. (Pukui 1983:173)

Ka ua ‘ulalena o Pi‘iholo.

*The reddish-yellow rain of Pi‘iholo.* (Pukui 1983:173)

Keiki holoholo kuāua o Makawao.

*The lad of Makawao who goes about in the rain.*

Said of the native of that place who is not afraid of being wet. (Pukui 1983:184)

O ‘Alelele ke kawa kaulana o Makawao.

*‘Alelele, the famous diving pool of Makawao.*

Refers to Makawao, Maui. (Pukui 1983:200)

Ulu kukui o Liliko‘i

*Kukui grove of Liliko‘i.*

The kukui grove, in Makawao, Maui, was much visited by travelers, for it was a favorite spot of the chiefs. The nuts gathered from the trees produced a fragrant, tasty relish (Pukui 1983:301)

## **Mo'olelo**

Like 'ōlelo no'eau, mo'olelo offer insight into what life may have been like in the project area in ancient Hawai'i. They preserve topics of interest relevant to particular areas that were meant to be passed down the generations of those living in that place.

### **Kihapi'ilani**

This mo'olelo features two prominent figures in the history of Maui. Pi'ilani was the outstanding chief who united the island politically in the 1500s and is credited with initiating the long period of peace, stability, and prosperity that followed (Duensing 1998:viii). Pi'ilani constructed the West Maui portion of the noted Ala Loa, or "long road", which completely encircled the island. This mo'olelo, however, focuses on Pi'ilani's younger brother Kihapi'ilani, who is sometimes identified as his son. Son or brother, Kihapi'ilani followed through on the road-building project that his predecessor had begun by laying the East Maui section of the Ala Loa in 1516. Kihapi'ilani has also been credited with the conquest and unification of Maui, a difference of historical opinion reflecting the somewhat hostile relationship between these two chiefs (Handy et al. 1991:489).

Makawao features in the mo'olelo of Kihapi'ilani, who is described as the younger brother of Pi'ilani and heir to the kingdom of Maui. Pi'ilani did not care for his younger brother, however, attending more to strangers than to Kihapi'ilani. During one meal where Pi'ilani was entertaining guests, Kihapi'ilani was not served food and had to eat from his elder brother's bowl. Pi'ilani further humiliated his younger brother in front of the guests by yelling at him and throwing the bowl at his head, breaking it.

Kihapi'ilani decided to leave because of all the ill treatment he had endured at the hands of his brother. In secret he ran away to Kalaniwai, a place in Makawao. Here he took a wife and began plotting revenge against his older brother. Two old men eventually recognized him as a chief and asked him what he was doing in Makawao. He told them that he wanted revenge for how his brother had treated him. A mele is included at this point in the mo'olelo, recounting the history of the kings of Maui, as composed for the Maui Kings themselves.

Kihapi'ilani was sent by the old men to speak with one of their sisters, a prophetess named Pau in Waikapū. Before visiting Pau, Kihapi'ilani took 'uala from another man's field to plant for his wife at home. Once they were fully grown and harvested he revealed to his wife that he was a chief and that he was preparing to seek his revenge. The prophetess then sent him to speak with a 'man of learning with a dirty face' in Kalepolepo. Kihapi'ilani left in a canoe for Hawai'i Island, where he met with family and formed a war party to take revenge. When Kihapi'ilani's forces landed at Kapueokahi on Maui they found, however, that Pi'ilani was already dead (Fornander 1985 Vol 4:236–255).

### **The Kukui Tree**

As its title suggests, the kukui tree is the central focus of this mo'olelo. One of three famous kukui groves was on the island of Maui at Makawao. The kukui trees growing in these groves had stocky, stout trunks with many branches and green leaves. They commonly grew on hill tops and in mountain forests. It was said that they were found on all of the islands, but there was no place where they came from, as they were considered indigenous to Hawai'i.

Most parts of the kukui tree had some use. The leaves could be used to ripen bananas and to roast fish. The nut was edible after being roasted and the kernel could be pounded with salt to produce 'inamona, a tasty relish mentioned in the 'ōlelo no'eau above. The nut kernel, pounded with salt, could also be put to medicinal use as a topical treatment for sores on the body or head. Kukui flowers also served as treatment for certain ailments such as stomach ache, general weakness, or ulcers of the mouth.

The nut was also used for lamp light, prepared by cracking the shell, leaving the kernel, and stringing these together on the midrib of a coconut leaf. For feasts at night, sticks of four or five nut kernels were bunched

together and wrapped in ti leaves to slow their burn. Kukui nuts were even made into oil by first cooking, then rolling the kernels on a stone with a block of wood. The gum could be eaten or used for the hair. Kukui fungus was gathered, eaten, and eventually dried for export to China. Soot from the smoke of the nut could be used for tattooing. The shell could be utilized as kindling. The wood was used for fencing. The bark was used in canoe building, for blackboards, and ornamentally. A dye could also be extracted from the bark that was used in dying nets, printing kapa, and blackening canoes (Fornander 1985 Vol 5:670–677).

## Land Use and Subsistence

The general area of Hāmākua Poko, on the northern coast of East Maui, includes a number of small bays with good fishing where the gulches that carve through the northern slopes of Haleakalā drain into the ocean. The ma kai portions of this district are typified by gently sloping kula, lands. A profusion of lo‘i diverted water from the flatter ma kai stretches of Māliko Stream, which runs along the bottom of Māliko Gulch, the eastern border of this moku. Most streams in the area likely watered at least a few lo‘i as they ran through ma kai portions of this district. These open kula lands would also have favored the growing of ‘ulu, mai‘a, kō, and pi‘a. The good soil of slopes between gulches would have lent itself to sweet potato cultivation, as well. Uhi and ‘awa may also have been grown in the interior. Dryland kalo may have been cultivated in lower forest zones ma uka of the open kula lands (Handy 1991:498). There is a tradition that Māliko Gulch was once known for dryland kalo terracing, as well (Hill et al. 2008:25). Based on the ‘ōlelo no‘eau and mo‘olelo outlined above, it is very likely that the ma uka ahupua‘a of Makawao was home to an ancient and highly valued kukui forest.

The Ala Loa, the “long road” extended into East Maui by chief Kihapi‘ilani, passed through Hāmākua Poko by way of the coast, where streams that otherwise cut deep gulches in the landscape were most easily passable as they emptied into the ocean (Handy et al. 1991:498). None of the five traditional ‘centers of population’ in Maui were in this district, nor anywhere near the project area itself, which is in the ma uka portion of this moku (Handy et al. 1991:276). The sidewalls and valleys of Māliko and Hāmākuapoko Streams contain the most archaeological evidence for pre-contact use of the area, as they have not been as disturbed by later agricultural use. It is said that there was once evidence of a heiau somewhere in Māliko Gulch. A heiau was recorded by archaeologists along the ma uka portions of Kailua Gulch, however (Hill 2008:23–24).

Under the ancient Hawaiian system, one island or section of an island was the domain of an ali‘i nui or mō‘ī who had gained control through a combination of inherited rank and personal prowess (Handy et al. 1991:278). It was during the time of the ali‘i Kaka‘alaneo of Maui that land on the island was divided up and portioned out into districts, sub-districts, and smaller divisions. Each of these was ruled over by an appointee of the landlord of the next larger land division. All of these divisions and subdivisions were ultimately under the control of the chief who ruled a portion of, if not the entire, island. Traditional sources recount that this division on Maui came shortly after the time of Wā-kea, ancestor of all ali‘i (Handy et al. 1991:491). The unification of Maui by the brothers Pi‘ilani and/or Kihapi‘ilani simply brought together two comparable systems operating in East and West Maui, pulling them together under a single ali‘i nui or mō‘ī. Joerger remarks on the traditional division of land:

The Hawaiians made the divisions of the lands... following a mountain ridge, the bottom of a ravine, or the center of a stream or river. But oftentimes only the line of growth of a certain type of tree or grass marked a boundary, and sometimes only a stone determined the corner of a division. (Joerger 1974:1)

The largest divisions were the islands themselves. These were then divided into moku and smaller districts called kalana, though neither of these had designated administrators. The next unit down in size was the ahupua‘a, which was ruled over by a chief or a konohiki. Ahupua‘a could, in turn, be subdivided into ‘ili. These ‘ili could either be a simple subdivision of the ahupua‘a, where a konohiki acted as agent to the ahupua‘a chief, or could operate with greater autonomy as ‘ili kūpono, where a chief paid tribute directly to the mō‘ī (Joerger 1974:3–4).

The ancient land tenure system in Hawai‘i was feudal in nature. After the conquest of an area, a chief would generally take the choicest lands, allotting those that remained to chiefs who had assisted in the conquest. Those chiefs would, in turn, take the best of the lands allotted to them and distribute what remained to their followers.

Any lands distributed were revocable, meaning that the chief or administrator at the level above could revoke the land of subordinates at will. While this system was feudal in its top-down organization, the tenants on the land were not serfs tied to the soil. They could and did move freely from the land of one chief to another. Within this system, one's social superior could only lay claim to labor and the produce of the soil, not military service (Joerger 1974:5).

### **Māhele Land Tenure**

When King Kamehameha I united the islands under his single rule at the beginning of the 19<sup>th</sup> century, he continued to use the existing system for dividing and allotting land. Allotments were still on a revocable basis, and tenure was still non-military in nature. Taxes to Kamehameha I were owed by all, from ali'i nui down to tenant-commoners, in the form of land taxes and services that could be called on at the king's discretion. Everyone also owed obedience to the king at all times. After his death, Kamehameha I's son Liholiho was recognized as Kamehameha II. He inherited his father's absolute sovereign power over the islands. He made few changes in the distribution of lands, however, mostly maintaining the status quo until his death and the ascension of Kamehameha III (Joerger 1974:5–6).

Kamehameha III was faced with serious pressures from the growing presence of foreigners in the islands who were accustomed to possessing the title to lands outright, without the threat of dispossession by local rulers. To address these issues, and under pressure from the navies of those countries from which resident foreigners had come, Kamehameha III and his chiefs reviewed their national policy. This led to the enactment of the Bill of Rights of 1839. In defining and protecting the rights of Hawaiians, this bill led to many important changes, not the least of which was explicitly prohibiting landlords from dispossessing a tenant without sufficient cause. The Bill of Rights was followed by the first constitution of the Hawaiian Kingdom, granted by King Kamehameha III on October 8, 1840. This constitution changed the government from an absolute monarchy to a constitutional monarchy. Many changes followed suit, most importantly for land tenure was the declaration that, although all the land belonged to the king, it was not considered his private property. This ushered in the possibility of some form of land ownership for commoners (Joerger 1974:5–7).

The creation of the Board of Commissioners to Quiet Land Titles, or Land Commission, was the first major step in the process of land tenure reform. The Land Commission was responsible for validating or rejecting the claims of both native and foreign individuals to previously acquired lands, not to create new interests in land. The rulings of this commission were binding, barring appeal to the Hawaiian Supreme Court. Upon having a claim confirmed by the commission, and paying a commutation to the government, an awardee was issued a Royal Patent on the Award by the minister of the interior. The Land Commission was hindered in rendering awards to claimants in the greater portion of cases because they were not empowered to define or separate out the intertwined interests of king, chiefs, konohiki, and tenant-commoners in relation to land divisions, as inherited from the ancient feudal system that had held up until then (Joerger 1974:8–9).

The Māhele of 1848 addressed many of these problems. As early as 1846 the Land Commission had suggested that Hawaiian lands should be divided into three roughly equal parts. One third would be retained by the king, one third would go to the chiefs and konohiki, and the final third would go to common tenants. This required, first, the identification and separation of the relative rights and interest of the king, chiefs, and konohiki in the lands of the kingdom. The matter was discussed for a year before the Privy Council, in December 1847, created a committee to assist in determining the relative rights and interests that these ruling classes had in the land of Hawai'i (Joerger 1979:14–16).

The divisions that followed were recorded in the Māhele Book. Due to a lack of surveyors in the islands during the period, the Māhele was made without survey. All the lands were divided according to their ancient names and boundaries. The Māhele itself also did not convey any title to land. Chiefs and konohiki who participated were still required to present their claims before the Land Commission to receive awards of Konohiki land (the portion of all lands to be divided up among this ruling class) quitclaimed to them by Kamehameha III. Until awards were issued, titles to such lands remained with the government (Joerger 1974:20–21). Upon completion

of the Great Māhele, the King further subdivided his third into a smaller portion that was deemed his private property, the Crown Lands, and a larger portion that would be reserved as government lands (Joerger 1974:25).

Subsequent acts allowed the Land Commission to authorize the sale of lands in fee simple to resident aliens, and authorized the award of kuleana plots to native tenants. Until its dissolution in 1853, the Land Commission handled over 12,000 individual land claims. The Land Commission was, in effect, a judicial court that issued a Land Commission award (LCA) when it found in favor of a land claim. A Royal Patent was also issued, but it did not confer or confirm title to land. Rather, it served to quitclaim the government's (king's) interest in the land (Joerger 1974:8–12).

From time to time, Crown, Government, and Konohiki lands might be sold to create revenue for the government. It was not necessary for recipients of these grants to obtain an award (LCA) from the Land Commission. After laws passed in 1849 that clarified the rights of native tenants, the Land Commission was empowered to award fee simple titles to all native tenants who occupied and improved any portion of Crown, Government, or Konohiki Lands. Although 1,500,000 acres of land were set aside for the government and the people during the Māhele, fewer than 30,000 acres of land were awarded to native tenants as kuleana lands, even after an act clarified this process in 1850 (Joerger 1947:27–30).

### **Historic Land Use**

The Baldwin family, who had possession of the project area in the decades before they gifted it to the Girl Scouts, were central to nearly all major agricultural and economic developments in this part of Maui in the 20<sup>th</sup> century. Tracing their origins to a missionary family who arrived in Hawai'i in 1831, the Baldwins cultivated and processed sugar and pineapple and ran cattle on lands in and around Hāmākua Poko (Hart 2006:3–6; Siler 2014). As early as 1848 sugar was being grown on the successively-named Haliimaile, Brewer, Union, Hobron, Grove Ranch, and Paia Plantations in the ma kai portions of this district. Makawao Town became a focal point for the agricultural and ranching population of the area as these interests grew from the mid-19<sup>th</sup> into 20<sup>th</sup> centuries (Hill et al. 2008:28). With this emphasis on ranching, the paniolo culture flourished in Makawao.

The paniolo, or Hawaiian cowboy, is a figure deeply embedded in the local culture of Hāmākua Poko Moku. Camp Pi'iholo is located in a wider landscape that has had a very active history of ranching and dairying. The first cattle arrived in the Hawaiian Islands as a gift to Kamehameha I in 1793, and within a dozen years there were cattle on Maui (Loomis 2006:60). The earliest Hawaiian cowboys were vaqueros, imported from the missions of Alta California, who were working for the Hawaiian monarchy by 1830. The term 'paniolo,' while initially referring to these isolated foreign professionals, came to represent a uniquely Hawaiian way of life where multiethnic cowboys developed local skills descended from the vaquero tradition. These paniolo have been romanticized in ways similar to other cowboys, although they are seen as perpetuating an indigenous ethos in Hawai'i, rather than obliterating it. Paniolo are noted for their incorporation of Hawaiian vocabulary into their trade language and their investment in Hawaiian culture (Mills et. al 2013:111, 114, 126).

Paniolo on Maui herded various breeds of beef and dairy cattle, sheep, and goats on Haleakalā Ranch lands ma uka of the project area, as well as cattle grazing lands to the southwest (Martin 1987:6–7). The town of Makawao, just ma kai of the project area, was also the locus of Maui's dairy operations. The Dairyman's Maui Branch, which later became part of the Haleakalā Dairy, operated from 1896 through its sale to Meadow Gold Dairy in 2000. It was the last dairy still in operation on Maui as of the 1990s. The dairy's supplies and its produce were hauled to and from its facilities in Makawao, traveling along a wagon road that went all the way to Pu'u Mahanalua Nui, just south of Lahaina in West Maui (Harrison 2013:79–80, 83). Ranch-related archaeological remains, as explored on the island of Hawai'i, are wide ranging and may include stone and wood foundations, ball-clay pipe fragments, horseshoes, glass trade beads, burned pig and cattle bone, bottle fragments, and lead waste. Paniolo-related artifacts also include rarer and more fragile objects like glass rings, buttons with jet facings or floral designs, fragments of fine ceramics, and cologne or medicine bottles (Mills et al. 2013:123).

By the mid-19<sup>th</sup> century, while ma kai portions of the district were planted in sugar (and later in pineapple), the ma uka lands of Makawao were cleared for ranching, with the far upper slopes of Haleakalā being preserved for watershed to supply sugar and cattle. Haleakala Ranch, owned chiefly by the Baldwin family, employed paniolo to run cattle on the slopes of the volcano. During WWII, the upcountry of Makawao saw the construction of ammunition depots, training areas, camps, and roads to service soldiers in the area. A 30-bed “Honor Farm” for low-security prisoners was built in 1953 in Waihou Springs, near Olinda. After closing in 1973, the facility was converted into a Department of Land and Natural Resources (DLNR) property used for various conservation purposes, including native bird captive breeding programs, from the mid-1980s to today (Hill et al. 2008:30, 36, 38–39; Parks 2002:6).

### **Evidence for Project Area Use in Historic Period**

The historic land use of the project area prior to its acquisition by the Girl Scouts in 1962 was difficult to reconstruct because no Land Commission Award (LCA) has been found for the project area. Historical maps and Real Property Assessment parcel ownership history, in addition to general histories of the area, have been the major source of land tenure and possible land use data in the project area.

Some of the first lands in Hawai‘i to be sold to individuals in fee simple were in this area of Makawao, as part of a Land Commission experiment before the Māhele of 1848. The lands that were divided up and sold prior to the Māhele must have fallen outside of the purview of the chiefs and konohiki whose disputed claims had yet to be resolved. Theophilus Metcalf’s map, dated 1848, depicts lands sold in the 1846 experiment, although the project area falls just outside those lands. During the Māhele, the project area was part of lands surrendered by the ali‘i Leleiōhoku to the crown. These lands were then converted into government lands.

Metcalf’s original 1848 map of Makawao covers the project area but the project area itself falls outside of any Māhele-era grants included in this early survey, and no detail is given outside of these grants. The project location is situated just south and west of the Kapai grant (Figure 3), which is depicted on maps from 1915 (Figure 4) and 1916 (Figure 5) in relation to the Haleakala Homesteads.

Hawaiian Government Surveyor-General W.D. Alexander’s 1886 map of Makawao, Maui overlays Metcalf’s earlier survey of Makawao land grants onto a detailed survey of the landscape and land use of the area as of 1886 (Figure 6). The project area can be located in relation to both the topography of gulches in the region and the Kapai Grant 770. No land ownership or buildings are shown within the project area itself. It is, however, situated in what the map describes as the “Upper Limit of the Kula,” presumably referring to open land suitable for grazing or cultivation, not far from the “Edge of Forest,” which had not yet been delimited as the Makawao Forest Reserve. Further ma uka of the project area, up the slopes of Haleakalā, a “Large Ohia Tree” named Kuhoolehua is depicted at the ma kai end of a “Koa Woods.” Other indications of land use in the area include a cattle pen near the ma uka limit of kula lands in Makawao. Halimaile Ahupua‘a, just ma kai of Makawao, contains the Haiku Sugar Co. lands and facilities, including a mill and lodging houses, Hinds Mill, and the former Brewers Plantation. All of these early surveys indicate that there was a “Model Farm” among these land grants, on land listed under Rev. J.S. Green’s name in the 1886 map.

An act of 1884 authorized and instructed the Minister of the Interior to cause unclaimed public lands to be set aside, surveyed, and laid out in lots for the creation of homesteads. The lots were to be from two to twenty acres in kula lands, like those that the project area occupies, but no more than two acres in wet taro lands. Convenient roads were to be laid out providing access to these lots. Applicants could occupy their lot tax-free for five years if they built a dwelling house and fenced in their parcel within two years. If an individual fulfilled their obligations and either paid up or successfully mortgaged the purchase price of their lot, they received a Royal Patent for it (Alexander 1891).

There is a 1907 map of “Haleakala Tract” that contains annotations up through 1918 (Figure 7). The project area falls into what was marked as Lot 135 and Lot 136 on this map, both running from the bottom of a gulch up towards Makawao Forest Reserve, which the map says was created by proclamation in 1908, amended in 1909.



**Legend**

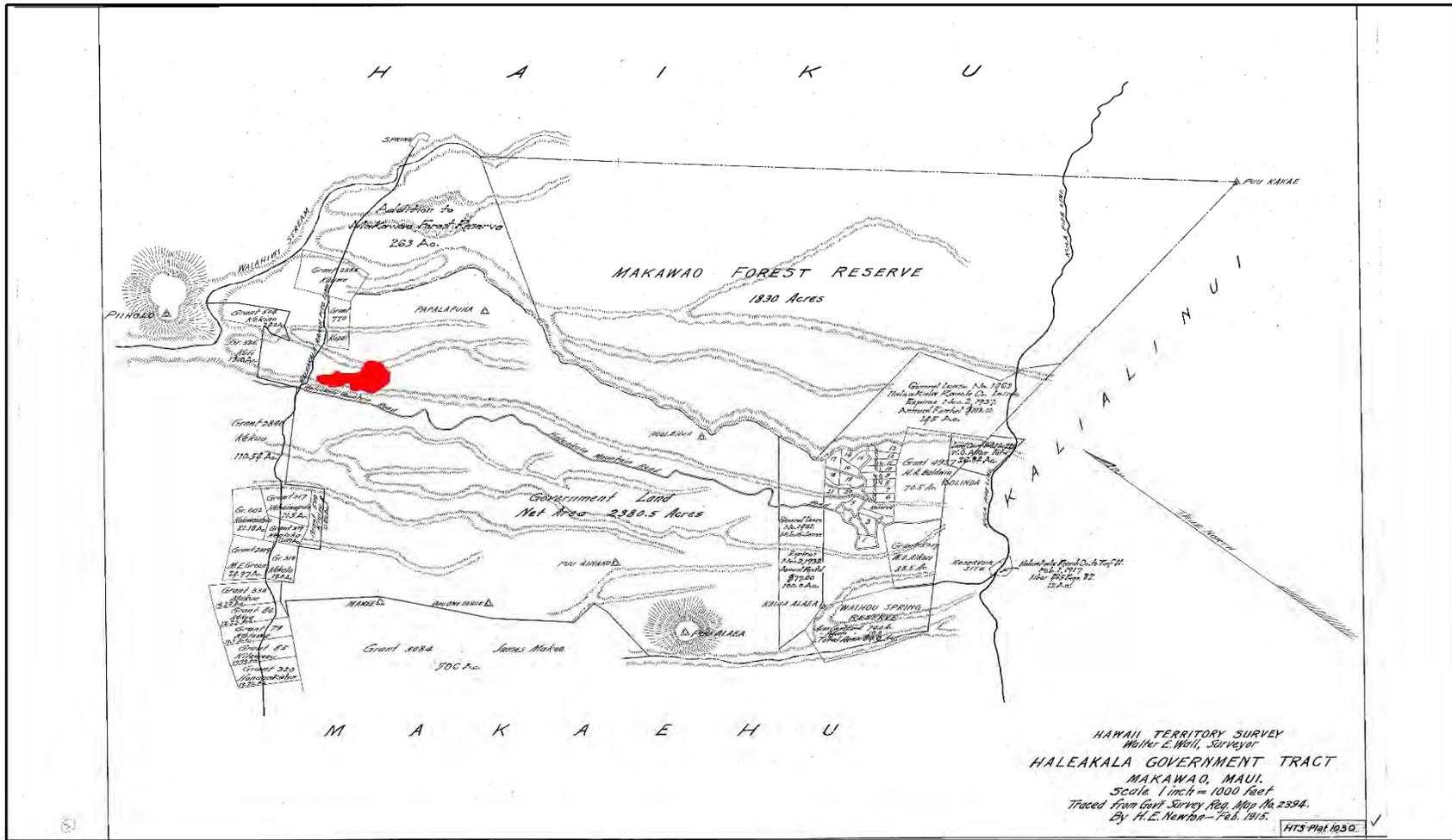
 Project Area

Keala Pono 

0 0.5 1 2 3 Kilometers



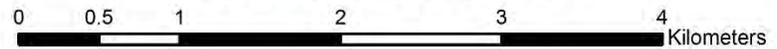
Figure 3. Portion of Metcalf's original 1848 map of Makawao.



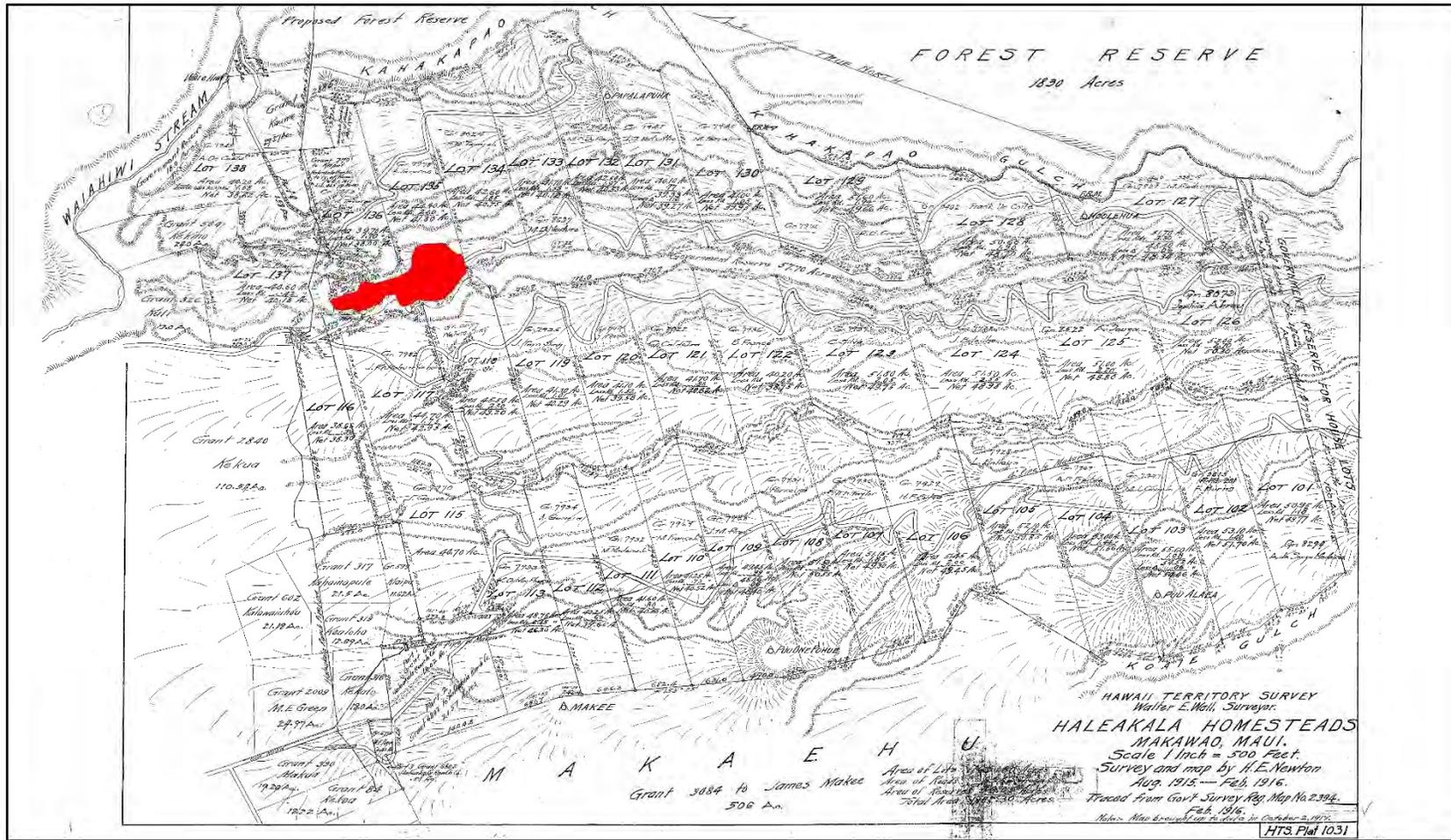
**Legend**

Project Area

Keala Pono



**Figure 4. Hawaii Territory Survey map of Haleakala Government Tract (Wall 1915).**



**Legend**

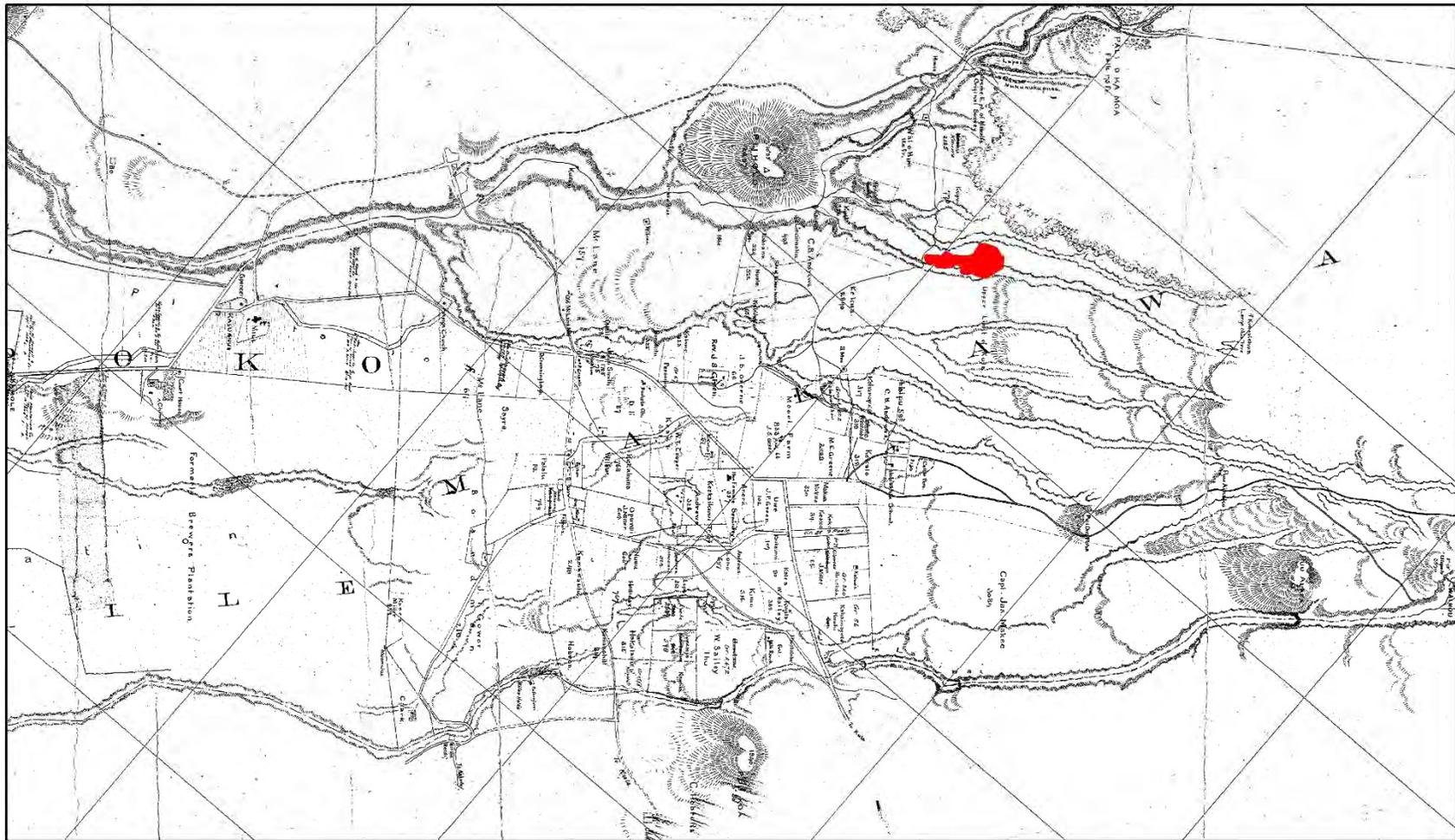
 Project Area

Keala Pono 

0 0.5 1 2 Kilometers



Figure 5. Hawaii Territory Survey map of Haleakala Homesteads (Wall 1916).



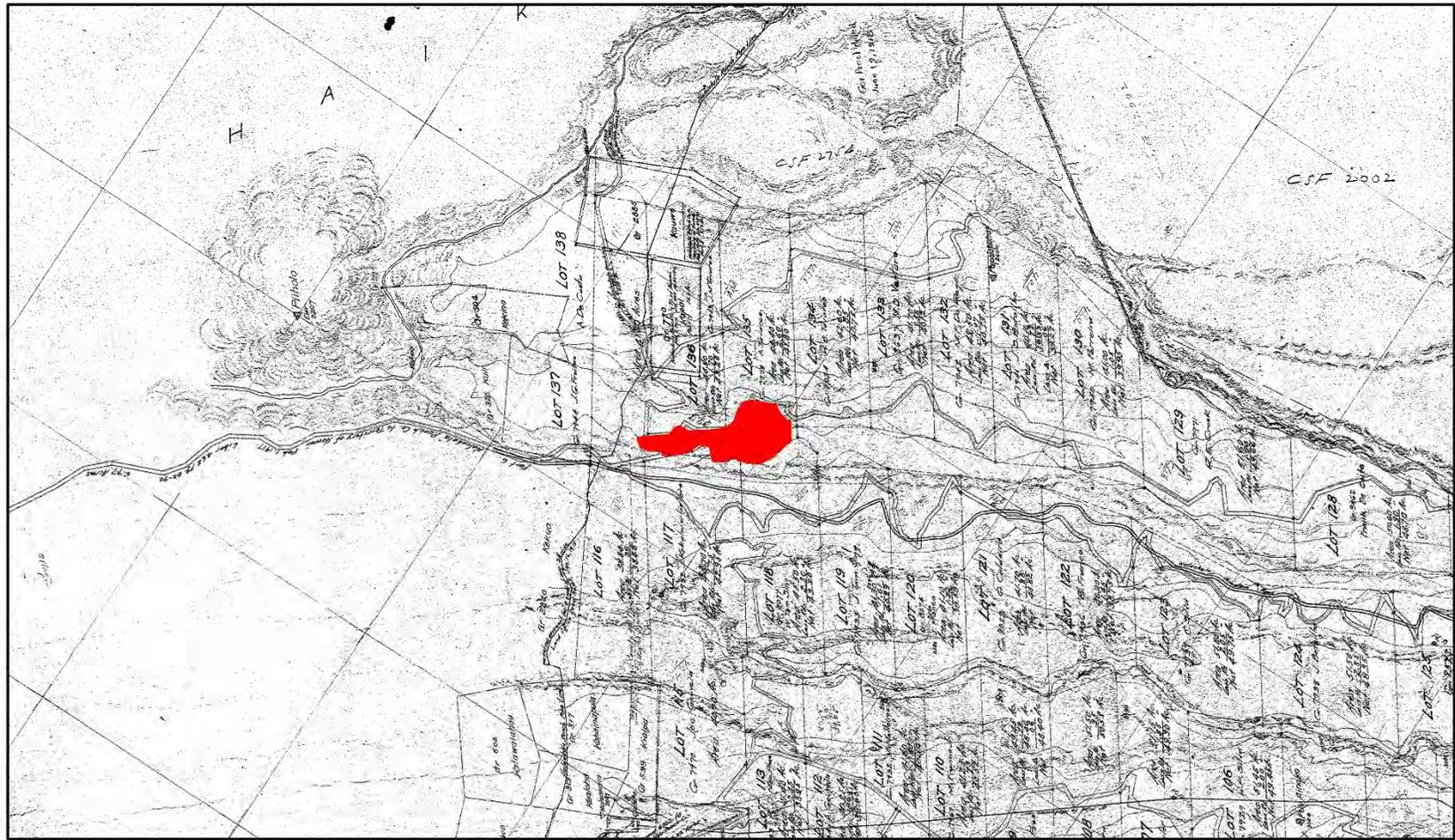
**Legend**

 Project Area

Keala Pono 



Figure 6. Portion of a Hawaiian Government Survey map of Makawao (Alexander 1886).



**Legend**

 Project Area

Keala Pono 

0 0.5 1 2 Kilometers



Figure 7. Portion of a Hawaii Territory Survey map of Haleakala Tract (Wall 1907).

The 41.80-acre Lot 135, the ma uka one of the two portions, went to an A. Tavares as Grant 7978. The 43.20-acre Lot 136, just ma kai of the other, went to J.M. Tavares as Grant 7943. This lot included a portion labeled “Grant 770 to Kapai” on Plat 1030, which the Territory of Hawaii acquired from the Haleakala Ranch Company in 1917. By 1907 the Haleakala Ranch pipeline passed ma kai of the project area and a “Forest Reserve” is illustrated, not yet bearing the name Makawao.

Makawao includes the project area in an undifferentiated parcel of Government Land ma uka of the Haleakala Ranch pipeline, ma kai of the Kula pipeline and reservoir, straddling the old Haleakala Mountain Road, with the Makawao Forest Reserve its neighbor to the east. This map includes the 263-acre addition that gave the reserve its present shape on the ma kai end (see Figure 4).

A map of the same area, now labeled the “Haleakala Homesteads,” was completed one year later, in February 1916 (see Figure 5). That same area labeled as the Haleakala Government Tract in the 1915 map, is shown in 1916 divided into 38 lots granted to individuals named on the map. As with the 1907 map cited above, the project area falls into what was marked out as Lot 135 and Lot 136, both running from the bottom of a gulch up towards Makawao Forest Reserve. This map states that the 41.80-acre Lot 135, the ma uka of the two portions, went to A. Tavares as Grant 7978. The slightly smaller 38-acre Lot 136, just ma kai of the other, went to J.M. Tavares as Grant 7943. This smaller lot included a portion labeled “Grant 770 to Kapai” on Plat 1030, which the Territory of Hawai‘i acquired from the Haleakala Ranch Company in 1917.

The final map from this era, dating to August 1918, is of “Makawao, Maui” (Figure 8). It is centered more ma kai than either Plat 1030 or Plat 1031. Still, the map just manages to capture the project area, although it falls within the Haleakala Homesteads, which are not depicted in any detail, despite that fact that this survey postdates Plat 1031. Most likely, this portion of the area simply was not of interest, as the focus of the survey lies elsewhere.

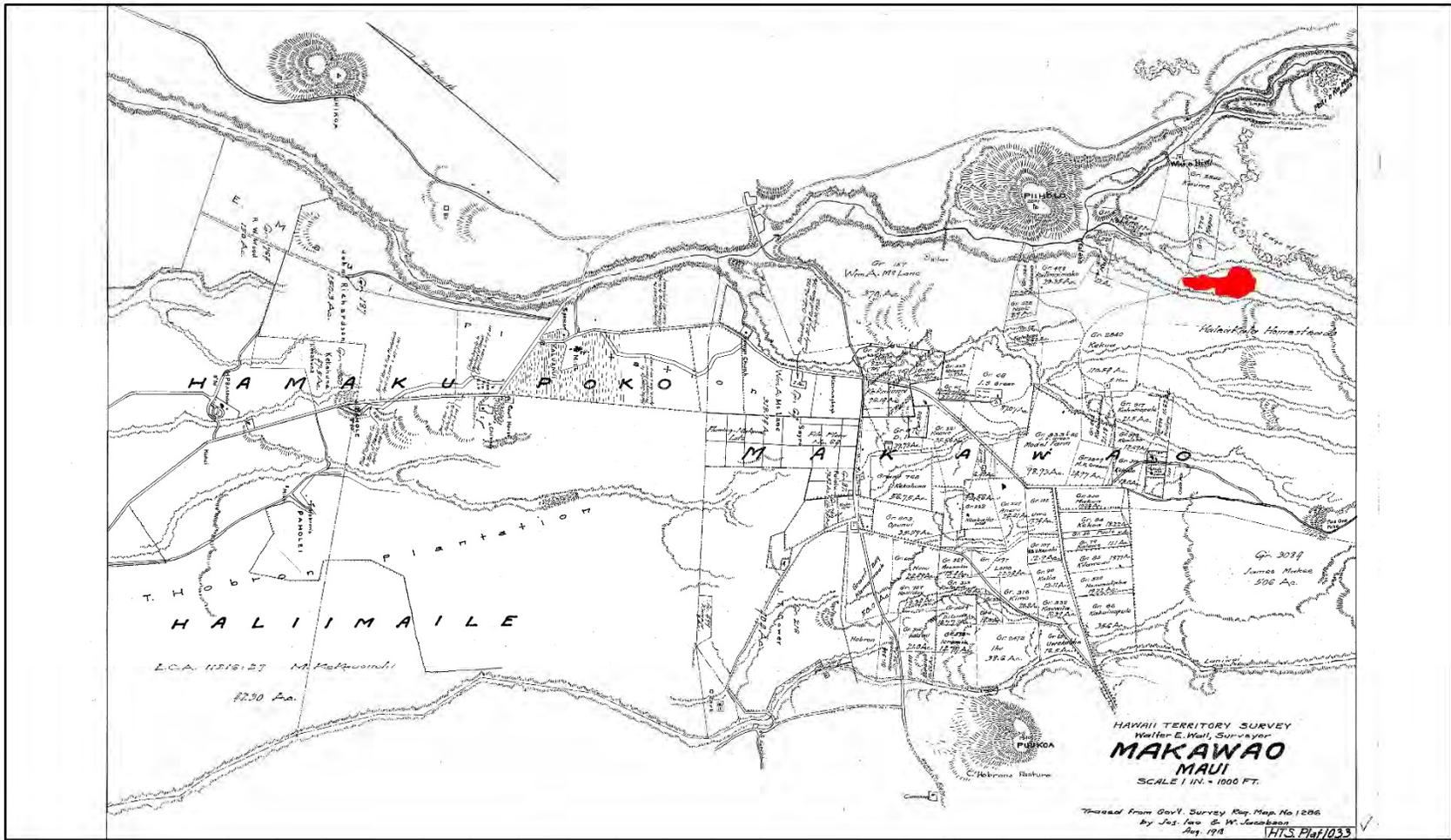
The most recent map, “Portion of Piiholo Road Parcels 1 to 13, Inclusive,” dates to 1983 and focuses on this road and the parcels of land that it incorporates (Figure 9). The project area is depicted on this map, just above the boundary of Lot 117 (Parcel 4) and Lot 118 (Parcel 5). There is no detail filled in for this portion of the map, however, and the features it depicts here are somewhat foreshortened. This map does make explicit, however, that the western boundary of Lots 135 and 136 “follows along middle of gulch.” What is interesting here, from the perspective of this area’s land use, is that Lot 116, just ma kai of Lot 117, has been designated a “Demonstration Farm” by Governor’s Executive Order 1819.

The Real Property Assessment parcel ownership history for the project area reveals how the property changed hands from 1945 through 1962. While nothing could be discovered of what became of the Tavares’ claims to Lots 135 (Gr. 7978) and 136 (Gr. 7943) in Haleakala Homesteads, the properties resurface in the final distribution of the estate of William Dwight Baldwin (d. 1943). In 1945 these 79.8 acres were finally distributed to his widow, Abigail H. Baldwin. By 1960 the estate of Abigail H. Baldwin (d. 1958) had been probated, with 11.90 acres of Lots 135 and 136 dispersed to her son Dwight H. Baldwin. In 1962 Dwight H. Baldwin gifted this 11.90-acre parcel to the Maui Council of Girl Scouts, which transferred ownership to the Girl Scout Council of the Pacific in 1966. Sometime between 1973 and 1974 a further 2.47 acres were acquired, bringing the area to its current size of 14.37 acres.

There are several land grants in the area, the most notable are those found on the historical maps above which include the following, listed in Table 1. The few Land Commission Awards that are in the immediate vicinity of the project area can be seen in Figure 2. Data for these are presented below in Table 2.

### **Previous Archaeology**

There are a few projects that have been carried out in the vicinity of the project area (Table 3). The following paragraphs summarize reports that were found in the SHPD Kapolei library for projects within approximately 2.5 km of the project area. Project locations are illustrated in Figure 10.

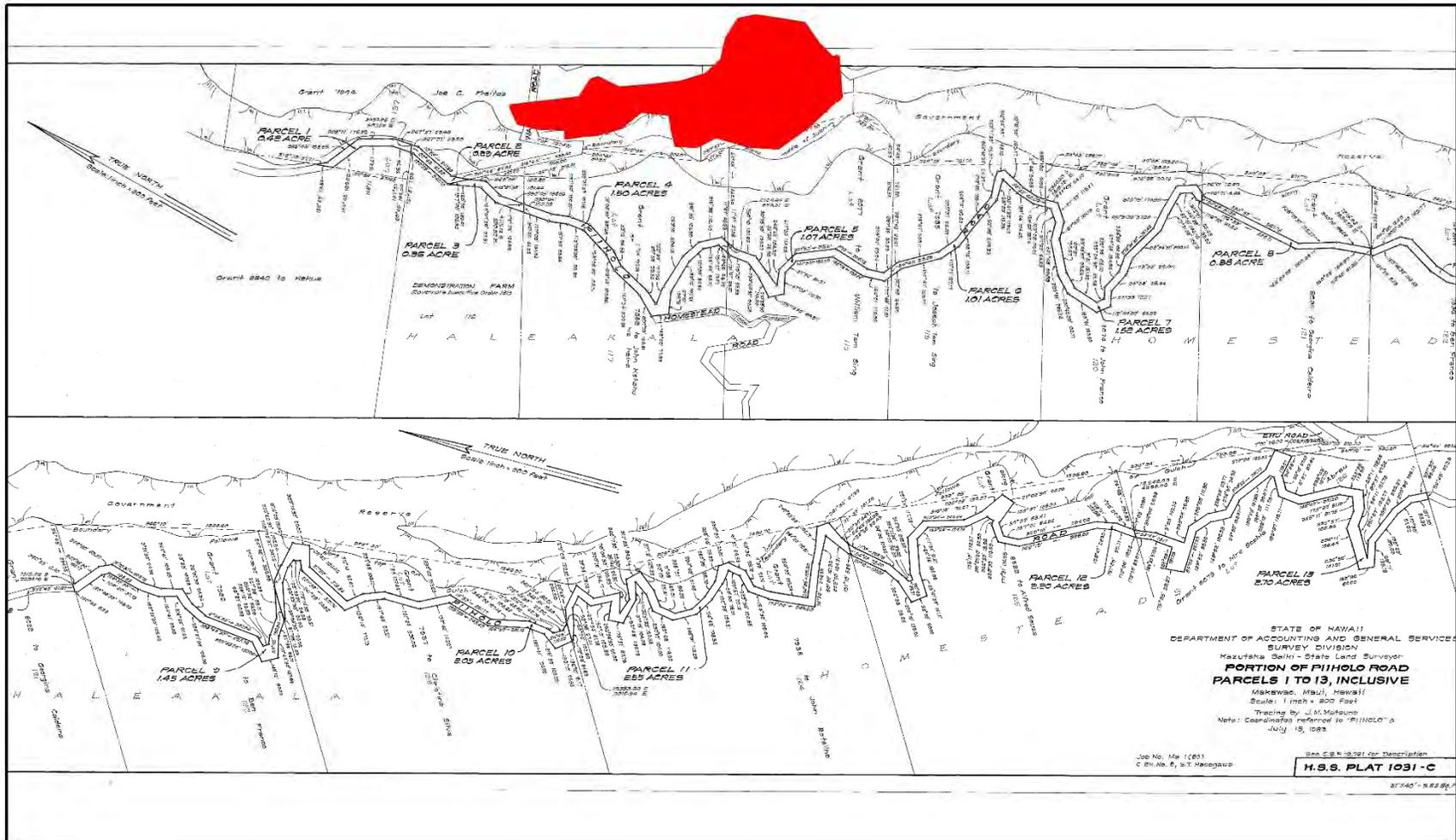


**Legend**

 Project Area



Figure 8. Portion of a Hawaii Territory Survey map of Makawao (Wall 1918).



**Legend**

Project Area

Keala Pono

0 0.25 0.5 1 Kilometers



Figure 9. State of Hawaii Dept. of Accounting and General Services map of Pi'iholo Road parcels (Saiki 1983).

**Table 1. Land Grants Near the Project Area**

Land Grant Number	Claimant	District	Ahupua‘a
504	Kekino	Hāmākuapoko/Makawao	?
770	Kapai	Hāmākuapoko/Makawao	Makawao
2885	Kauwe	Hāmākuapoko/Makawao	Hā‘iku?/Makawao

**Table 2. LCAs Near the Project Area**

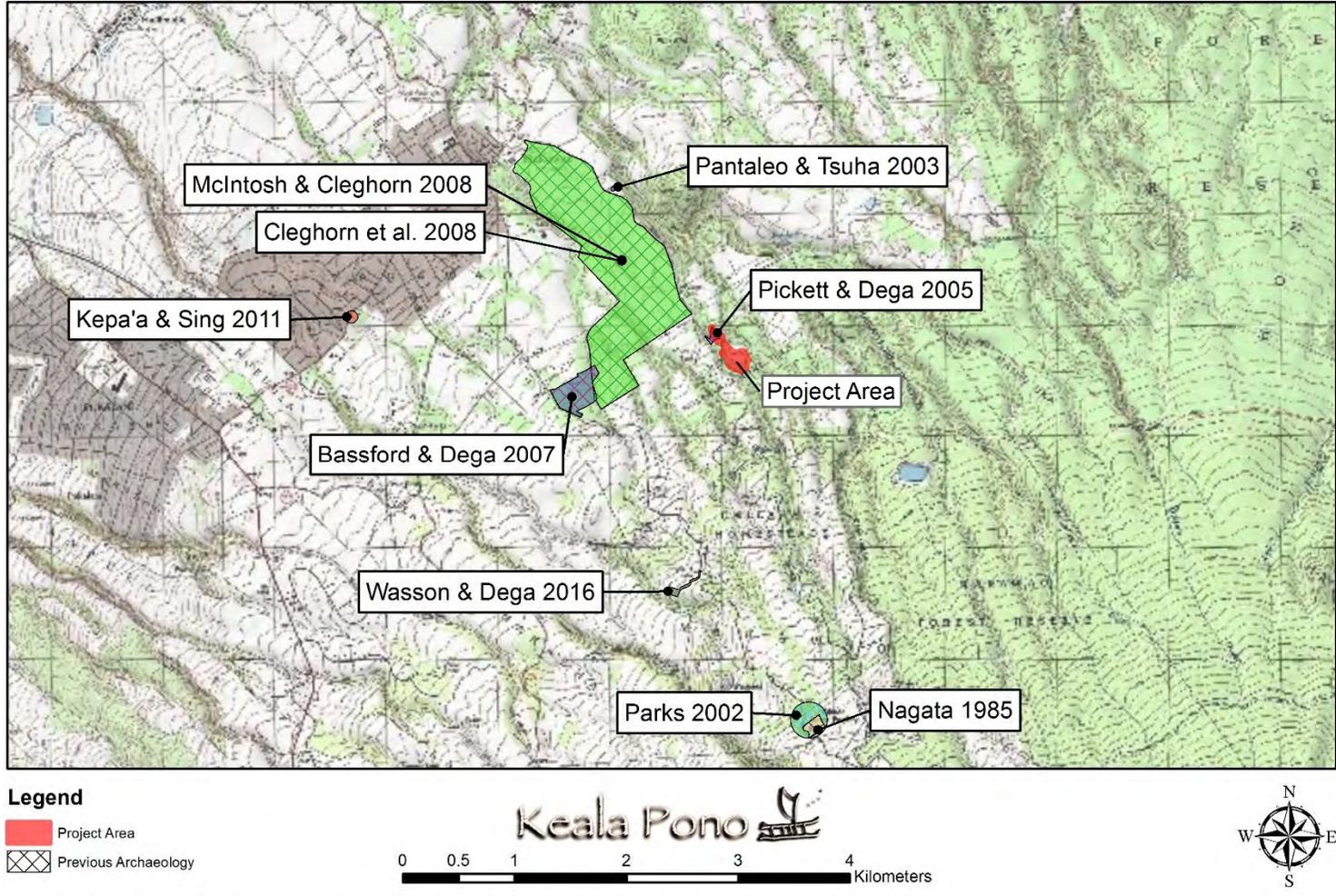
LCA	Māhele Vol./Pg.	Awardee	Location	RP	Bk./Pg.
5279:4	8/81	Palekai	Keokea, Kula, Maui	6523	24/419
6179-B-2	7/188	Kalama	Keokea, Kula, Maui	6490	24/351
6415:2	8/87	Kekua	Keokea, Kula, Maui	6401	24/174
6425:2	8/91	Kaehukulani	Keokeo, Kula, Maui	3101	13/685
6540:11	8/90	Kalekahi	Keokea, Kula, Maui	6400	24/171
6720-B-4	8/538	Nahelu	Keokoa, Kula, Maui	3102	13/687
6724	7/191	Kahukulani	Keokea, Kula, Maui	6580	24/533

Relatively little archaeology has been done in this portion of Makawao. An early island-wide survey did not find any archaeological resources within the project vicinity (Walker 1933). Many decades later a field inspection was conducted by the DLNR for the Olinda Project at Haleakala Homesteads, prior to the conversion of the shuttered “Honor Farm” at Waihou Springs into a conservation facility (Nagata 1985). This surface survey found no archaeological features.

A later archaeological investigation in land adjacent to that of the DLNR Olinda Project was conducted by the U.S. Fish and Wildlife Service for a proposed native plant propagation facility (Parks 2002). This investigation found two post-Contact artifacts, a rusted shell of a pickup truck from the 1930s or 1940s, and portions of aggregate concrete slabs. These were probably the result of recent agricultural practices on the site, and the archaeologist concluded that they were not of historic significance.

A 2003 survey for a proposed well to serve the Upcountry Town Center in Pukalani found no evidence of cultural features on the surface or in exposed subsurface deposits (Pantaleo and Tsuha 2003). This was located in a parcel of land on Pi‘iholo Road, on the ma kai side of Pi‘iholo cinder cone. The whole area had previously been disturbed by cultivation and ranching activities.

In 2005 an archaeological survey was conducted on a 13-acre parcel in the immediate vicinity of the current project area (Pickett and Dega 2005). The lot that was surveyed had, in fact, been part of Grant 7943 of the Haleakala Homesteads, which had gone to Joe M. Tavares (Pickett and Dega 2005:16). It was the western end of this original grant, along with the western end of its neighboring ma uka grant, that were portioned off and eventually formed the Girl Scout’s Pi‘iholo Camp (see above). The 2005 survey found two historic surface structures and two historic sub-surface structures deemed to be of archaeological significance. The surface finds consisted of a Portuguese oven and a concrete cistern. One of the subsurface finds was a hole associated with an



Layer Credits:USGS Topographical Haiku Point Quadrangle Map 1992 / Kilohana Point Quadrangle Map 1991

**Figure 10. Previous archaeological studies in the vicinity of the project area.**

**Table 3. Previous Archaeological Studies in the Vicinity of the Project Area**

<b>Author &amp; Year</b>	<b>Location</b>	<b>Work Completed</b>	<b>Findings</b>
Walker 1933	Maui	Island-Wide Survey	No findings near Camp Pi'iholo.
Nagata 1985	Haleakalā Homesteads	Field Inspection	No findings.
Parks 2002	Olinda Native Plant Propagation Facility	Cultural Resources Investigation	Recorded two isolated artifacts, a rusted out truck, and slabs of aggregate concrete.
Pantaleo and Tsuha 2003	Pi'iholo Road Well Site, Upcountry Town Center, Pukalani	Addendum Archaeological and Cultural Assessment	No findings.
Pickett and Dega 2005	13-acre area in Pi'iholo	Archaeological Inventory Survey	Documented Site 50-50-06-5657, which contains 4 post-Contact features: a Portuguese oven, a concrete cistern, a hole with an associated internal chamber, and a trash pit or privy.
Bassford and Dega 2007	Ka Lani O Lio (Horse Heaven) subdivision of vacant pasturelands	Archaeological Inventory Survey	Identified 6 sites comprised of 14 features. These are a variety of post-Contact features subsumed under the site numbers 50-50-06-6230 through 6235.
Cleghorn et al. 2008	Pi'iholo Road	Archaeological Monitoring Plan	In Addendum: burial of Asian/Non-Hawaiian female over 50 years old.
McIntosh and Cleghorn 2008	Pi'iholo Road	Archaeological Inventory Survey	Documented an adze fragment, retaining wall, concrete slab, and historic waterline pieces, some still in use.
Kepa'a and Tam Sing 2011	Makawao, Lā'ie Hill	Archaeological Assessment	Recorded one historic building.
Wasson and Dega 2016	TMK (2) 2-4-026:001 (por.)	Archaeological Assessment	No findings.

internal chamber, which could have been the result of bottle diggers, but which the owner of the property suggested might have been used for 'ōkolehao and/or gin processing. The second subsurface feature appeared to be a trash pit or privy. Excavation of this feature was conducted to a depth of 1.4 meters below the surface. The fill material was loose and contained an array of trash (glass shards, canning jars with rusty metal lids, a mortar, other concrete pieces, and a wide range of rusty metal pieces) that dated as early as the 1930s and '40s. It is possible that this feature was a secondary deposit, as there was no discernible pattern to the findings. Since the area had previously been altered for agriculture and pasture land, pre-Contact sites that may have once existed had likely been obliterated long ago.

An extensive archaeological survey was conducted for the Ka Lani O Lio (Horse Heaven) subdivision, to the west of the Camp Pi'iholo project area (Bassford and Dega 2007). A total of six sites, comprised of 14 features, were discovered and recorded at this time. These included a set of rock and mortar stairs, a road, foundations, a terrace, a reservoir, retaining walls, and cisterns, all of which were interpreted as having been associated with habitation and agricultural activities in the historic period. One charcoal lens, three trash pits, and three cisterns provided evidence of historic-period habitation, agriculture, and water storage, possibly associated with the Old Haleakala Government School. The oldest objects recovered dated from the late 1800s to mid-1920s, including porcelain and glass fragments discovered during backhoe testing. Some features had been previously disturbed by pothunters' excavations and backfilling activities.

A field survey and monitoring plan were completed for a plot on Pi'iholo Drive occupying most of the land between Makawao Town and the project area (McIntosh and Cleghorn 2008; Cleghorn et al. 2008). The survey discovered one pre-Contact artifact (a polished basalt adze fragment) and a pre-Contact retaining wall and soil terrace, and also confirmed the location of a known human burial. The burial had been an inadvertently discovery by the Maui Land and Pineapple Company in 2003, during the excavation of a water line along Pi'iholo Road. The individual recovered and reburied was an approximately 30 year-old female of Asian ethnicity, found in a flexed position in a clay matrix with no evidence of a coffin. The adze fragment was discovered in the center of an eroded pineapple road, but no cultural deposits were observed in the area. The survey also identified a small segment of basalt slope retaining wall with soil terrace at the bottom of an unnamed gulch. Some re-stacking of a portion of it indicates it might have been reused as a piggery in the 20<sup>th</sup> century. Various other modern pipes, pipelines, and a concrete slab were also recorded.

A 2011 survey and excavation of a parcel of land just outside of the southwest edge of Makawao Town determined that no archaeological sites or cultural material were present in area (Kepa'a and Tam Sing 2011). The only structure reported on the property was a residential home built in 1927.

Finally, an archaeological survey was conducted on a 2-acre house lot just off Olinda Road, well to the west and ma uka of the project area (Wasson and Dega 2016). A 100% pedestrian survey was completed, as well as the excavation of five stratigraphic trenches. There were no findings.

### **Summary of Background Research**

The moku of Hāmākua Poko, as the wider region of Maui in which the project area is located, has always encompassed a variety of ecosystems. While still including small stretches of preserved forest, the pre-Contact slopes of Haleakalā were covered (at least up to the tree line) in koa, ōhi'a, and kukui trees that supported an abundance of indigenous birds. The ample rain falling upslope flowed down gulches that time had worn into the sides of the volcano, flattening as they approached their outlets at the shore. The edges of this moku are actually determined by two such gulches, Māliko Gulch to the east and Kailua Gulch to the west. As these waters traveled ma kai, the forest thinned out into open ground nearer the shoreline, where marine resources abounded but rainfall tapered off.

In pre-Contact times, the ma kai portions of this moku were most densely populated. Irrigated kalo terraces were fed by water from the gulches. The more open kula lands, ma kai of the upslope forests supported a variety of other crops that supplemented the local diet. The forests were important as a source of timber, kukui, and bird

feathers, as well as being crucial for the hydrology of the region. These upland areas tended to be reserved for ceremonial activities, rather than habitation, as attested to by heiau recorded through previous archaeology in the region. In addition to those resources collected from the forests, dryland kalo may have been grown in these ma uka portions of the moku.

The traditional Hawaiian system of land use and land division was suited to the society that Native Hawaiians had developed in the islands since their arrival from further west in Polynesia. It was a feudal system where land was held by chiefs, overseen by local konohiki, and worked by commoners. This system was gradually consolidated by mō'ī who conquered and ruled over each island of the archipelago. King Kamehameha I brought nearly the entire island chain under the rule of a single mō'ī, establishing the Kingdom of Hawai'i in 1810. In 1820 Euro-American missionaries arrived in the islands, on the heels of the breaking up of the kapu system (the ancient code of conduct that structured daily life in pre-Contact Hawai'i). Traditional Hawaiian cultural and social forms, including the old system of subsistence and land tenure, were anathema to these recently arrived missionaries, who were intent on molding local life in the shape of moralized western industry. Towards this end, the landscape throughout the Hawaiian Islands was divided up for sale as private land in the Māhele of 1848, or slightly earlier, as was the case in this part of Maui. This enabled recent settlers and their descendants, like the Baldwin family, to purchase land and invest capital in infrastructure for the sake of plantation agriculture and large-scale cattle ranching in the district.

The influence of those European-American missionaries led to an ever-greater erosion of traditional practices, and landscapes, which accelerated as missionary descendants and more recently arrived settlers built up the local economy for sugar cultivation and ranching, beginning in the mid-19<sup>th</sup> century. In Hāmākua Poko, the forests which would have previously encompassed the project area were cleared for pastureland on the ma uka slopes of Haleakalā. Upslope sources of water were tapped, sometimes culverted into pipelines running the breadth of the moku, for cattle and the sugar and pineapples growing in the ma kai portions of the district.

### **Anticipated Finds and Research Questions**

The potential for discovering archaeologically significant materials on the parcel of land comprising this project area is not terribly high, but it is possible. This once-forested portion of Makawao Ahupua'a was culturally significant in the pre-Contact period, given what has been preserved in the 'ōlelo no'eau and mo'olelo for the area, as well as heiau that are known for the region. Subsequent cattle ranching and homesteading activities are assumed to have obliterated most traces of ancient land use from the surface in this area, especially on the open kula lands above the gulches. No archaeological subsurface features or surface finds have been formally documented on the parcel comprising the current project area. Nearby archaeological surveys in Makawao Ahupua'a have recovered the occasional pre-Contact artifact from the surface and confirmed the presence of a subsurface burial on the kula lands, as well as a possibly pre-Contact basalt wall in the bottom of a smaller gulch.

Archaeological survey on an adjacent parcel of land with a historic connection to the project area recorded multiple historic-period features likely dating to the Tavares homestead. There is certainly a potential for pre- and post-Contact material that predate the Girl Scout Camp to be present both on and below the surface in the project area, including on the flatlands and in the gulch that forms the western boundary of the parcel.

There are also several historic buildings on the Girl Scout Camp property. These include five plywood A-frame buildings with aluminum roofs, each with a 12 x 14 ft. rectangular floor plan covering 168 sq. ft. of space. There is also a larger structure, with a 56 x 26 ft. floor plan covering 1456 sq. ft. of space, with redwood/cedar walls and a wood shake roof on a concrete foundation. The five smaller plywood buildings had been erected by 1965, making them more than 50 years old. The larger redwood/cedar structure was completed in 1968, therefore it is not currently more than 50 years old but will be considered a historic building in a few years.

Research questions will broadly address the identification of the above archaeological resources and may become more narrowly focused based on the kinds of resources that are found. Initial research questions are as follows:

1. Is there any evidence of pre-Contact use of the project area and what is the nature of that use?

2. Are there vestiges of historic use of the project area, such as habitation or ranching remnants?
3. If cultural resources are found, how do they relate to the settlement pattern of the wider region?

Once these basic questions are answered, additional research questions may be developed in consultation with SHPD, tailored to the specific kinds of archaeological resources that were identified.

## METHODS

The archaeological inventory survey was conducted on December 5, 2016 by Lizabeth Hauani‘o, BA., Jeffrey Lapinad, and Kevin Sprenger and on December 8 by Windy McElroy, PhD and Dietrix Duhaylonsod, BA. Dr. McElroy served as Principal Investigator, overseeing all aspects of the project.

For the pedestrian survey, the ground surface was visually inspected for surface archaeological remains, with transects walked for the entire area. Archaeologists were spaced approximately 10 m apart. Of the 5.82 ha (14.37 ac.) survey area, 100% was covered on foot. Vegetation was mostly light, consisting of landscaped grass within the camp and large trees surrounding the landscaped portion of the camp. Vegetation did not affect visibility of the ground surface (Figure 11). Archaeological sites were identified visually, with anything that appeared to be more than 50 years old documented as a site.

Test trenches (TR) were excavated in four locations, and two test units (TU) were excavated at Site 8995. The trenching strategy was approved by SHPD beforehand via email. A mini excavator was used for excavation of the trenches (Figure 12), while the test units were excavated by hand with trowels and whisk brooms. Vertical provenience was measured from the surface. All sediment excavated from the test units was screened through 1/8 inch mesh. Sediments excavated from the trenches were not screened. Profiles were drawn and photographed, and sediments were described using Munsell soil color charts, a sediment texture flowchart (Thien 1979), and the U.S. Department of Agriculture soil manual. Trench and test unit locations were recorded with a 3 m-accurate Garmin GPSmap 62st, and all were backfilled after excavation.

The scale in all field photographs is marked in 10 cm increments. The north arrow on all maps points to magnetic north. Throughout this report rock sizes follow the conventions outlined in *Field Book for Describing and Sampling Soils*: Gravel <7 cm; Cobble 7–25 cm; Stone 25–60 cm; Boulder >60 cm (Schoeneberger et al. 2002:2–35). One artifact was collected, and it is temporarily being curated at the Keala Pono office in Kāne‘ohe before being returned to the landowner.



**Figure 11. Vegetation conditions in wooded area south of the landscaped camp. Orientation is to the south.**



**Figure 12. Excavation of TR 3 with mini excavator. Orientation is to the northwest.**

## RESULTS

Pedestrian survey and subsurface testing were conducted in the 5.82 ha (14.37 ac.) project area. One archaeological site, a rock alignment was identified during the pedestrian survey. Excavation of four trenches and two test units did not yield any evidence of subsurface cultural material, deposits, or features. Five historic structures occur within the project area; a reconnaissance level survey (RLS) has been conducted for the buildings.

### Community Consultation

A cultural impact assessment (CIA) was completed for this project. Two interviews were conducted with community members Pueo Pata and Keali'i Reichel. The interviewees did not identify any archaeological sites on the subject property. They shared several concerns and recommendations for the improvements to the Girl Scout Camp. A major concern is the potential increase in traffic during construction and use of the camp. Other concerns are possible runoff during construction, increased human presence in gathering and hunting places, as well as changing the cultural landscape and viewshed. Recommendations include requiring carpooling or busses as transportation to the camp; educating guests and workers on cultural etiquette and how to mālama the 'āina; employing eco-friendly strategies that are aligned with traditional Hawaiian practices; consulting a specialist in hāhā/kuhikuhipu'uone to identify sensitive areas within the camp; and reforesting wooded areas to their original state.

### Pedestrian Survey

The surface survey included 100% of the 5.82 ha (14.37 ac.) project area. One surface archaeological site, SIHP 50-50-06-8995, was observed. One surface artifact was collected. This is a ceramic fragment that was found 15 m south of Cabin 5, unassociated with Site 8995 (see Laboratory Analysis section).

There are also several buildings within the property, and as noted above, five structures are known to be more than 50 years old. These are five plywood A-frame buildings with aluminum roofs, each with a 12 x 14 ft. rectangular floor plan covering 168 sq. ft. of space. They were constructed by 1965. An RLS has been completed for the five structures and they will not be discussed further here.

#### Site 50-50-06-8995

SIHP 50-50-06-8995 consists of a linear alignment of embedded cobbles and stones, located between the parking area and main lodge of Camp Pi'iholo (Figure 13). The site measures 25 m long and 5 m wide (Figure 14). The rocks of the alignment stand roughly 8 cm tall. There are two segments of aligned rocks, which are oriented in the same direction but do not line up; they are offset by roughly 1.5 m (Figures 15 and 16). The site is in poor condition, with some rocks possibly missing or disturbed. The age and function of the site are undetermined.

One trench and two test units were placed along the alignment (see Subsurface Testing section), although no evidence was recovered to determine the age or function of the site. No traditional or historic cultural material or modern debris were unearthed; stratigraphy consisted only of natural deposits.

Given the location of the site, it is possible that it marks an old parking area before the current parking area was designated. If this is the case, the site may date to construction of the main lodge (1968), which would make it less than 50 years old; or to construction of the cabins (1965), in which case it would be just over 50 years old. Alternatively, the site may be a traditional or historic feature of unknown function that pre-dates the Girl Scout Camp.



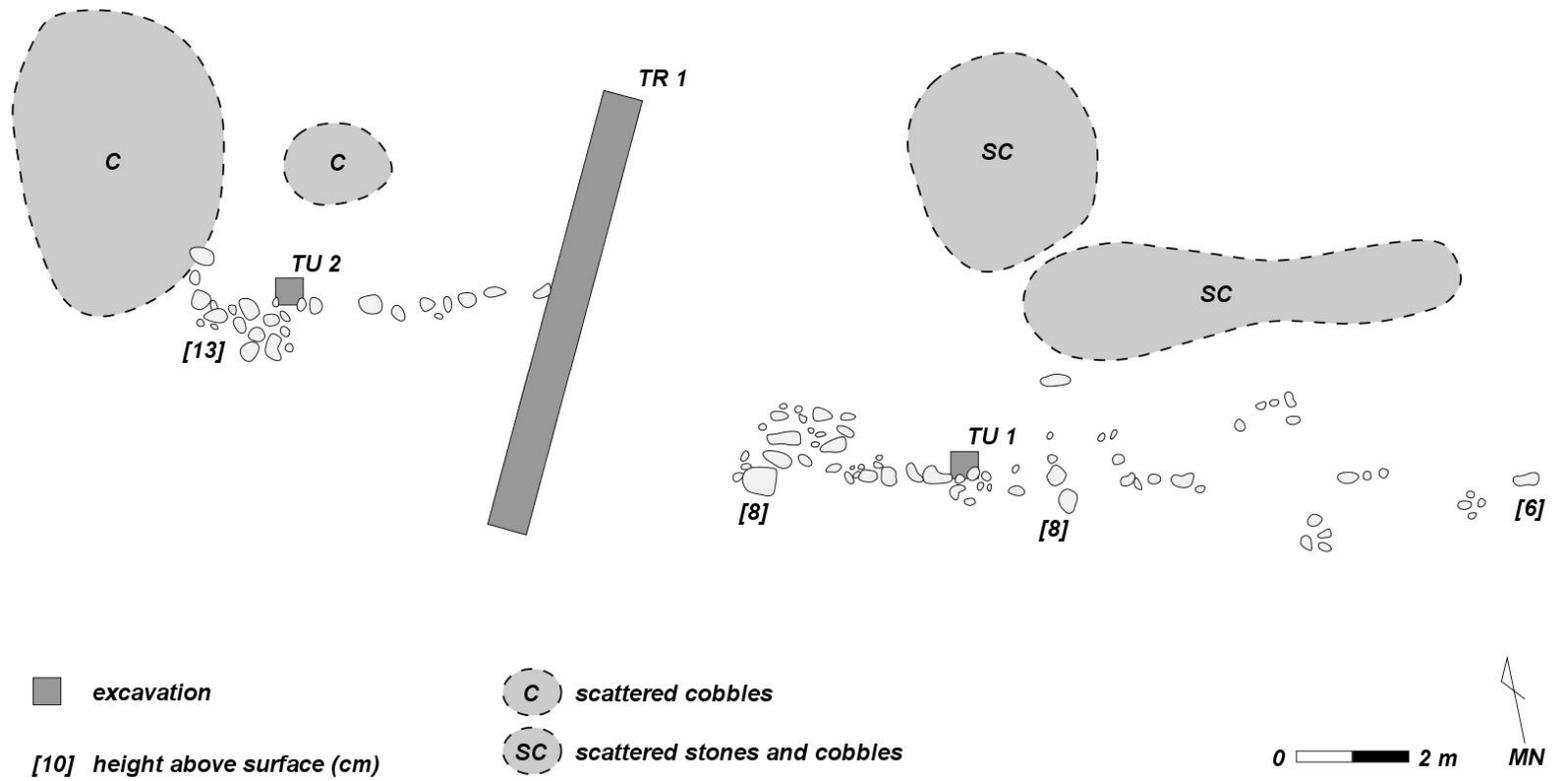


Figure 14. Plan view drawing of Site 8995.



**Figure 15. Eastern portion of Site 8995, facing west.**



**Figure 16. Western portion of Site 8995, facing north.**

## **Subsurface Testing**

A trenching plan was approved by SHPD before excavations began. Originally, five trenches were planned within the area proposed for wastewater improvements, to determine the presence or absence of subsurface archaeological deposits or material. However, when Site 8995 was identified, one of the trenches was replaced with two controlled test units to document the site more carefully (Figures 17–18 and Table 4). The goal of the controlled test units was to collect material that might determine the age and function of the site, although none was found. No subsurface archaeological resources were identified in the test units or trenches, and stratigraphy consisted entirely of natural deposits.

### **Test Units**

TU 1 was placed on the southeast side of Site 8995, along the rocks of the alignment (see Figure 14). The unit measured 50 x 50 cm. It was excavated to 21 cm below surface (cmbs), where tightly packed rocks impeded further excavation (Figure 19). Stratigraphy consisted of a single natural deposit of silty clay (Figure 20, see Table 4). No archaeological deposits or material were identified.

TU 2 was placed on the northwest side of Site 8995, along the rocks of the alignment (see Figure 14). The unit measured 50 x 50 cm. It was excavated to 20 cmbs, where tightly packed rocks impeded further excavation (Figure 21). Stratigraphy consisted of a single natural deposit of silty clay (Figure 22, see Table 4). No archaeological deposits or material were identified.

### **Trenches**

Stratigraphy was nearly identical in TR 1–3 (see Table 4); this is illustrated in Figures 23–24. Stratigraphy differed in TR 4, where a deposit rich in saprolitic rock was encountered at the base of the trench (Figures 25–26; see Table 4).

TR 1 was located within Site 8995, between the offset portions of the alignment (see Figure 14). The trench measured 8.1 m long and 50 cm wide. It was excavated to 180 cmbs. Stratigraphy consisted of a series of four natural deposits of silty clay. No archaeological deposits or materials were identified.

TR 2 was placed 10 m southwest of TR 1 (see Figure 17). The trench measured 7.2 m long and 50 cm wide. It was excavated to 180 cmbs. Stratigraphy consisted of a series of four natural deposits of silty clay. No archaeological deposits or materials were identified.

TR 3 was excavated 5 m south of TR 2 (see Figure 17). The trench measured 6.2 m long and 50 cm wide. It was excavated to 200 cmbs. Stratigraphy consisted of a series of four natural deposits of silty clay. No archaeological deposits or materials were identified.

TR 4 was placed 5 m south of TR 3 (see Figure 17). The trench measured 6.9 m long and 50 cm wide. It was excavated to 180 cmbs, where a deposit rich in saprolitic rock was encountered. Stratigraphy consisted of a series of three natural deposits of silty clay, the basal deposit consisting mostly of saprolitic rock. No archaeological deposits or materials were identified.



Figure 17. Location of trenches and test units on aerial imagery. The project area is outlined in red.

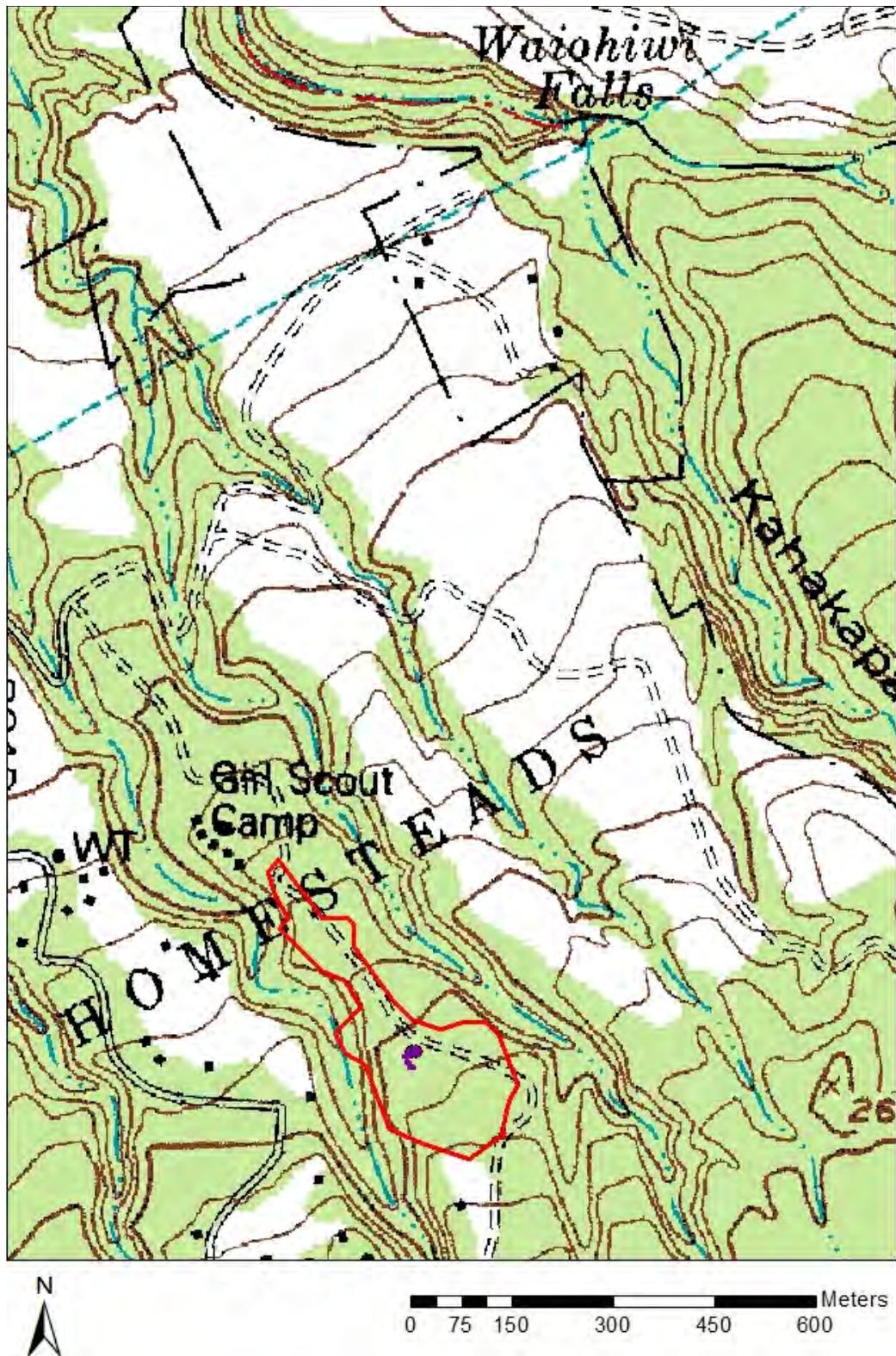


Figure 18. Wider view of trench/test unit locations (in purple) on a 1992 Haiku Point quadrangle map. The project area is outlined in red.

**Table 4. Sediment Descriptions**

<b>Excavation</b>	<b>Layer</b>	<b>Depth (cmbs)</b>	<b>Color</b>	<b>Description</b>	<b>Interpretation</b>
TU 1	I	0–21+	5YR 3/4	Silty clay; 5% basalt cobbles; base of excavation.	Natural Colluvium
TU 2	I	0–20+	5YR 3/4	Silty clay; 5% basalt cobbles; base of excavation.	Natural Colluvium
TR 1	I	0–50	5YR 3/4	Silty clay; 5% basalt cobbles; smooth, gradual boundary.	Natural Colluvium
	II	50–120	2.5YR 4/8	Silty clay; 25% saprolitic rock; smooth, gradual boundary.	Natural Colluvium
	III	120–160	2.5YR 3/3	Silty clay; 25% saprolitic rock; smooth, gradual boundary.	Natural Colluvium
	IV	160–180+	2.5YR 3/4	Silty clay; 25% saprolitic rock; base of excavation.	Natural Colluvium
TR 2	I	0–20	5YR 3/4	Silty clay; 5% basalt cobbles; smooth, gradual boundary.	Natural Colluvium
	II	20–50	2.5YR 4/8	Silty clay; 25% saprolitic rock; smooth, gradual boundary.	Natural Colluvium
	III	50–120	2.5YR 3/3	Silty clay; 25% saprolitic rock; smooth, gradual boundary.	Natural Colluvium
	IV	120–180+	2.5YR 3/4	Silty clay; 25% saprolitic rock; base of excavation.	Natural Colluvium
TR 3	I	0–15	5YR 3/4	Silty clay; 5% basalt cobbles; smooth, gradual boundary.	Natural Colluvium
	II	15–70	2.5YR 4/8	Silty clay; 25% saprolitic rock; smooth, gradual boundary.	Natural Colluvium
	III	70–150	2.5YR 3/3	Silty clay; 25% saprolitic rock; smooth, gradual boundary.	Natural Colluvium
	IV	150–200+	2.5YR 3/4	Silty clay; 25% saprolitic rock; base of excavation.	Natural Colluvium
TR 4	I	0–30	5YR 3/4	Silty clay; 5% basalt cobbles; smooth, gradual boundary.	Natural Colluvium
	II	30–90	2.5YR 4/8	Silty clay; 25% saprolitic rock; smooth, gradual boundary.	Natural Colluvium
	III	90–180+	2.5YR 3/3	Silty clay; 80% saprolitic rock; base of excavation.	Natural Colluvium with Weathered Bedrock



Figure 19. TU 1 plan view photo, base of excavation. The top of the photo is toward the south.

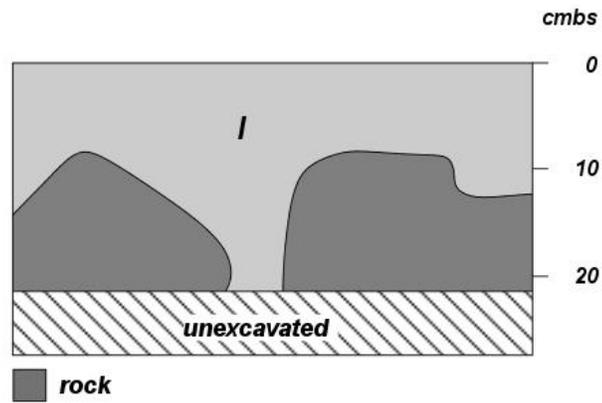


Figure 20. TU 1 west face profile drawing.



Figure 21. TU 2 plan view photo, base of excavation. The top of the photo is toward the west.

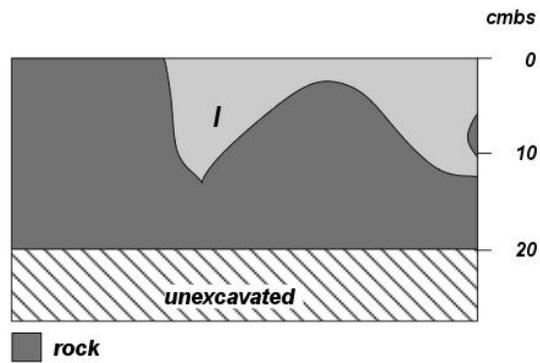


Figure 22. TU 2 south face profile drawing.

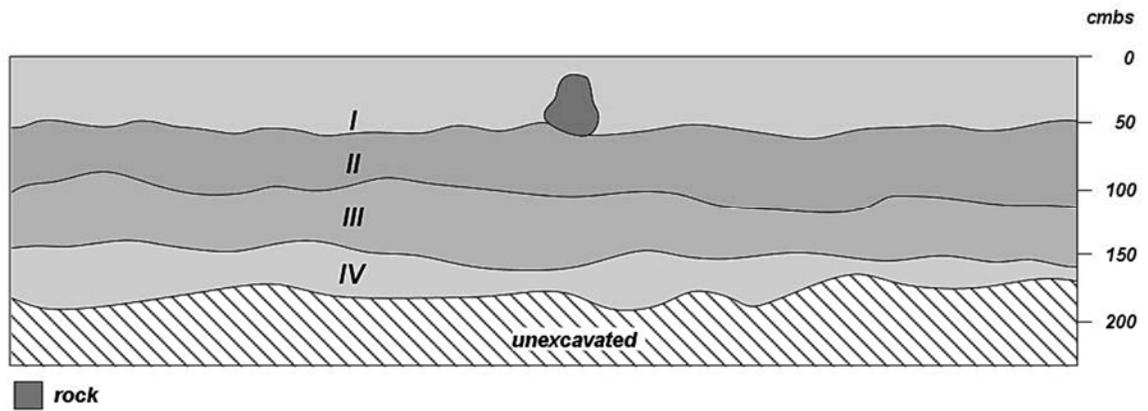


Figure 23. TR 1 west face profile drawing. Note that only one rock of Site 8995 was visible in the trench.



Figure 24. TR 1 west face photo.

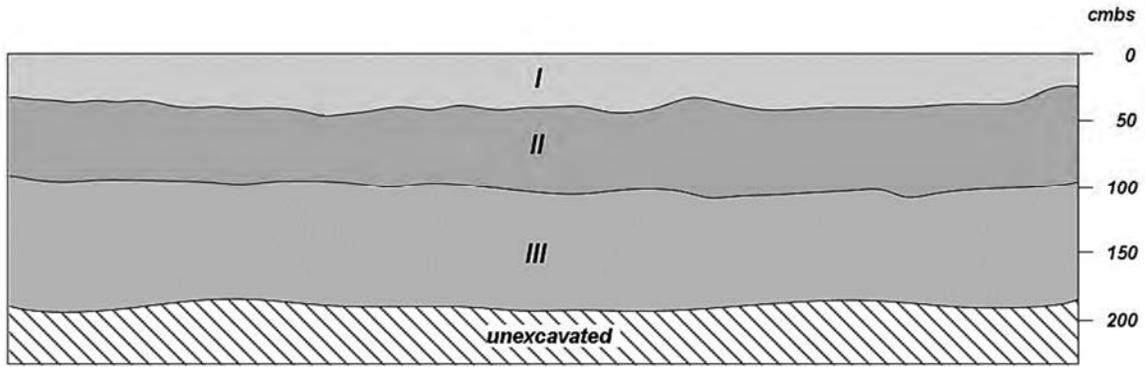


Figure 25. TR 4 north face profile drawing.



Figure 26. TR 4 north face photo.

### Laboratory Analysis

One ceramic sherd was collected during the archaeological inventory survey. It was found on the surface, 15 m south of Cabin 5. This was an isolated find, unassociated with SIHP 50-50-06-8995. The sherd is part of a bowl base and is white with a brown bird motif (Figure 27). It measures 6 cm long by 5 cm wide. A portion of the footring is present at the base of the bowl and if complete would have measured 8 cm in diameter. The date of manufacture and origin of the vessel is undetermined.



**Figure 27. Ceramic sherd found on the surface, unassociated with Site 8995.**

### **Summary of Findings**

Pedestrian survey of 5.82 ha (14.37 ac.) at Girls Scout Camp Pi'iholo identified one archaeological site, SIHP 50-50-06-8995. Five historic buildings area also located on the property, and a historic architecture RLS has been prepared for the structures. Subsurface testing, consisting of four trenches and two test units, did not identify any subsurface cultural material, deposits, or features. Stratigraphy consisted entirely of natural deposits. One ceramic sherd was collected. It was a surface find, unassociated with Site 8995.

## CONCLUSION AND RECOMMENDATIONS

An archaeological inventory survey was conducted for the Pi‘iholo Girl Scout Camp at TMK: (2) 2-4-013:074 in Makawao Ahupua‘a, Hāmākua Poko District on the island of Maui, in anticipation of wastewater improvements to the camp. The archaeological work included pedestrian survey that covered 100% of the 5.82 ha (14.37 ac.) project area, as well as test excavations consisting of four trenches and two test units.

One surface archaeological site was identified during pedestrian survey of the parcels. This consists of SIHP 50-50-06-8995, a rock alignment. Subsurface testing did not yield any evidence of subsurface archaeological material, features, or deposits, and did not provide any information to determine the age or function of the site. Stratigraphy in all excavations consisted entirely of natural deposits. Five historic buildings are also located within the project area; an RLS has been prepared for the structures. One ceramic sherd was collected. It was a surface find, unassociated with Site 8995.

### Significance Determinations

To determine if a historic property is significant under Hawaii Administrative Rules (HAR) for historic preservation, or is eligible for National Register of Historic Places (NRHP) listing, it must be assessed for significance per HAR §13-275-6(b):

(b) To be significant, a historic property shall possess integrity of location, design, setting, materials, workmanship, feeling, and association and shall meet one or more of the following criterion:

(1) Criterion “a”. Be associated with events that have made an important contribution to the broad patterns of our history;

(2) Criterion “b”. Be associated with the lives of persons important in our past;

(3) Criterion “c”. Embody the distinctive characteristics of a type, period, or method of construction, represent the work of a master, or possess high artistic value;

(4) Criterion “d”. Have yielded, or is likely to yield, information important for research on prehistory or history; or

(5) Criterion “e”. Have an important value to the native Hawaiian people or to another ethnic group of the state due to associations with cultural practices once carried out, or still carried out, at the property or due to associations with traditional beliefs, events or oral accounts--these associations being important to the group’s history and cultural identity.

SIHP 50-50-06-8995 is not significant under any of the above criteria (Table 5). It is not associated with important events or people, does not exhibit distinctive characteristics, is not likely to yield further information, and is not valuable to any ethnic group. No further work is recommended.

**Table 5. Significance Determination**

Site	Description	Function	Criterion	Justification	Recommendation
8995	Alignment	Undetermined	Not Significant	Not associated with important events or people; does not exhibit distinctive characteristics; not likely to yield further information; not valuable to any ethnic group.	No Further Work

Given the lack of subsurface findings, archaeological monitoring is not recommended. However, even though human remains were not found during the survey, it is still possible that they may be unearthed during construction. Should human burial remains be discovered during construction activities, work in the vicinity of the remains should cease and the SHPD should be contacted.

## REFERENCES

- Alexander, W.D.  
1886 *Makawao Maui*. Hawaiian Government Survey Reg. Map 1286WIDE. Scale 1 in. = 1,000 ft.  
1891 "A Brief History of Land Titles in the Hawaiian Kingdom." <http://www.Hawaiiankingdom.org/land-system.shtml>.
- Bassford, S. and M. Dega  
2007 *An Archaeological Inventory Survey of A 47.289-Acre Property Proposed For the Ka Lani O Lio (Horse Heaven) Subdivision Ha'ikū Ahupua'a, Makawao District, Island of Maui, Hawai'i [TMK: (2) 2-4-012:001 (Por.)*. Scientific Consultant Services Inc. Honolulu, Hawai'i.
- Cleghorn, P. M. Kirkendall, and J. McIntosh  
2008 *Archaeological Monitoring Plan for the Piiholo South, LLC*. Pacific Legacy, Kailua, Hawai'i.
- Duensing, D.E.  
1998 *Maui in History A Guide to Resources*. The History and Humanities Program of the State Foundation on Culture and the Arts in Cooperation with The Maui Historical Society, Honolulu.
- Fornander, A.  
1985 *Fornander Collection of Hawaiian Antiquities and Folk-lore*. Bishop Museum Press, Honolulu.
- Giambelluca, T.W., Q. Chen, A.G. Frazier, J.P. Price, Y.-L. Chen, P.-S. Chu, J.K. Eischeid, and D.M. Delparte  
2013 Online Rainfall Atlas of Hawai'i. Bull. Amer. Meteor. Soc. 94, 313-316, doi: 10.1175/BAMS-D-11-00228.1.
- Gingerich, S.B.  
1999 *Ground Water and Surface Water in the Haiku Area, East Maui, Hawai'i. Water-Resources Investigations Report 98-4142*. U.S. Geological Survey, Honolulu.
- Girl Scouts of Hawai'i  
2016 "Camp." <http://girlscouts-hawaii.org/camps/>
- Handy, E.S., E.G. Handy, and M.K. Pukui  
1991 *Native Planters in Old Hawai'i; Their Life, Lore, and Environment*. Revised edition. Bernice P. Bishop Museum Bulletin 23, Bishop Museum Press, Honolulu.
- Hart, C. & Partners, Inc.  
2006 *General Plan 2030: Maui Island Plan. Maui Island History: Lessons from the Past – A Guide to the Future*. Chris Hart & Partners, Inc. Wailuku, Hawai'i.
- Hill, R., T. Lee-Greig, and H.H. Hammatt  
2008 *An Archaeological Literature Review and Field Inspection Report for the Proposed Makawao Avenue and Makani Road Improvements, Hāmākua Poko Ahupua'a, Makawao District, Maui Island. TMK: (2) 2-4-006:034, TMK: (2) 2-4-018:022*. Cultural Surveys Hawai'i, Inc., Kailua, Hawai'i.
- Joerger, P.  
1974 *The Great Mahele*. University of Hawai'i Press, Honolulu.
- Kepa'a, L. and T.L. Tam Sing  
2011 *An Archaeological Assessment for a 2.693 Acre Parcel in Makawao Ahupua'a, Makawao District, Hāmākua Poko Moku, Island of Maui (TMK 2-4-009:010)*. Archaeo.Hawaii, LLC, Kula, Hawai'i.
- Macdonald, G.A., A.T. Abbott, and F.L. Peterson  
1983 *Volcanoes in the Sea: The Geology of Hawai'i*. University of Hawai'i Press, Honolulu.
- McIntosh, J. and P. Cleghorn  
2008 *Archaeological Inventory Survey of CA. 325 Acres in Hali'imaile Ahupua'a, Makawao District, Island of Maui*. Pacific Legacy Inc., Kailua, Hawai'i.
- Metcalf, T.  
1848 *Makawao*. Hawaiian Government Survey Reg. Map 0172. Scale 1 in. = 12 ch.
- Nagata, R.  
1985 *Field Inspection Report: Olinda Project at Haleakala Homesteads*. Department of Land and Natural Resources, Honolulu.

- Pantaleo, J. and K. Tsuha  
2003 *Archaeological and Cultural Assessment of the Proposed Piiholo Road Well Site Hali'imaile Ahupua'a, Makawao, Maui Island*. Jeffrey Pantaleo Consultants, LLC, Honolulu.
- Parks, V.  
2002 *Olinda Mid-Elevation Native Plant Propagation Facility: Cultural Resources Investigation*. U.S. Fish and Wildlife Service, Sherwood, Oregon.
- Pickett, J.L. and M. Dega  
2005 *An Archaeological Inventory Survey of 13 Acres in Pi'iholo, Ha'ikū Ahupua'a, Makawao District, Maui Island, Hawai'i [TMK: (2) 2-4-013-075]*. Scientific Consultant Services, Honolulu.
- Pratt, L.W. and S.M. Gon, III  
1998 "Terrestrial Ecosystems" in Sonia P. Juvik and James O. Juvik (eds.) *Atlas of Hawai'i*, Third Edition. Pp. 121-129. University of Hawai'i Press, Honolulu.
- Pukui, M.K.  
1983 *Ōlelo No'eau; Hawaiian Proverbs and Poetical Sayings*. Bernice P. Bishop Museum Special Publication No. 71. Bishop Museum Press, Honolulu.
- Pukui, M.K., S.H. Elbert, and E.T. Mookini  
1974 *Place Names of Hawai'i*. University of Hawai'i, Honolulu.
- Saiki, K.  
1983 *Portion of Piiholo Road Parcels 1 to 13, Inclusive*. State of Hawai'i Department of Accounting and General Services Survey Division Plat 1031-C. Scale 1 in. = 200 ft.
- Schoeneberger, P.J., D.A. Wysocki, E.C. Benham, and W.D. Broderson (editors)  
2002 *Field Book for Describing and Sampling Soils, Version 2.0*. Natural Resources Conservation Service, National Soil Survey Center, Lincoln, Nebraska.
- Siler, J.  
2014 "The Historic Hawai'i Ranch of the Baldwin Family," *The Wall Street Journal*. Real Estate. April 24.
- Thien, S.  
1979 A Flow Diagram for Teaching Texture-By-Feel Analysis. *Journal of Agronomic Education* 8:54-55.
- USDA Soil Series.  
2016 WWW: [https://soilseries.sc.egov.usda.gov/OSD\\_Docs/M/MAKAWAO.html](https://soilseries.sc.egov.usda.gov/OSD_Docs/M/MAKAWAO.html)
- Walker, W.  
1933 *Archaeological Survey of the Island of Maui*. University of Hawai'i Library, Unpublished.
- Wall, W.E.  
1907 *Haleakala Tract*. Hawaii Territory Survey Reg. Map 2394WIDE. Scale 1 in. = 500 ft.  
1915 *Haleakala Government Tract Makawao, Maui*. Hawaii Territory Survey Plat 1030. Traced from Reg. Map 2394. Scale 1 in. = 1,000 ft.  
1916 *Haleakala Homesteads Makawao, Maui*. Hawaii Territory Survey Plat 1031. Traced from Reg. Map 2394. Scale 1 in. = 500 ft.  
1918 *Makawao Maui*. Hawaii Territory Survey Plat 1033. Traced from Reg. Map 1286. Scale 1 in. = 1,000 ft.
- Wasson, E.C. and M.F. Dega  
2016 *An Archaeological Assessment for a 2 Acre House Site, Olinda Ahupua'a, Makawao District, Island of Maui, Hawai'i [TMK (2) 2-4-026:001 por]*. Scientific Consultant Services Inc., Honolulu.

## GLOSSARY

<b>‘āina</b>	Land.
<b>ali‘i</b>	Chief, chiefess, monarch.
<b>ali‘i nui</b>	High chief.
<b>‘awa</b>	The shrub <i>Piper methysticum</i> , or kava, the root of which was used as a ceremonial drink throughout the Pacific.
<b>eucalyptus</b>	Forest trees of the genus <i>Eucalyptus</i> , more than 90 species of which have been introduced to Hawai‘i.
<b>guava</b>	The invasive tree or shrub <i>Psidium guajava</i> , which forms dense thickets in disturbed areas.
<b>hāhā</b>	To grope or feel; trap made of small branches for catching fresh-water fish. Also same as hā, stalk; striped taro leaves baked or boiled for consumption. Kahuna hāhā is a professional who can diagnose pain or sickness by feeling one’s body.
<b>heiau</b>	Place of worship and ritual in traditional Hawai‘i.
<b>holoholo</b>	To go out or go for a walk or ride.
<b>‘ili</b>	Traditional land division, usually a subdivision of an ahupua‘a.
<b>‘ili kūpono</b>	An ‘ili within an ahupua‘a that was nearly independent. Tribute was paid to the ruling chief rather than the chief of the ahupua‘a, and when an ahupua‘a changed hands, the ‘ili kūpono were not transferred to the new ruler.
<b>‘inamona</b>	A relish made of mashed kukui nut ( <i>Aleurites moluccana</i> ) and salt.
<b>kalana</b>	A division of land smaller in size than a moku, or district.
<b>kalo</b>	The Polynesian-introduced <i>Colocasia esculenta</i> , or taro, the staple of the traditional Hawaiian diet.
<b>kapa</b>	Tapa cloth.
<b>kapu</b>	Taboo, prohibited, forbidden.
<b>kī</b>	The plant <i>Cordyline terminalis</i> , whose leaves were traditionally used in house thatching, raincoats, sandals, whistles, and as a wrapping for food.
<b>ki‘i</b>	Image, drawing, idol, petroglyph.
<b>kō</b>	The Polynesian introduced <i>Saccharum officinarum</i> , or sugarcane, a large grass traditionally used as a sweetener and for black dye.
<b>koa</b>	<i>Acacia koa</i> , the largest of the native forest trees, prized for its wood, traditionally fashioned into canoes, surfboards, and calabashes.
<b>konohiki</b>	The overseer of an ahupua‘a ranked below a chief; land or fishing rights under control of the konohiki; such rights are sometimes called konohiki rights.
<b>kuhikuhi</b>	To point, show, demonstrate, or teach.
<b>kukui</b>	The candlenut tree, or <i>Aleurites moluccana</i> , the nuts of which were eaten as a relish and used for lamp fuel in traditional times.
<b>kula</b>	Plain, field, open country, pasture, land with no water rights.
<b>kuleana</b>	Right, title, property, portion, responsibility, jurisdiction, authority, interest, claim, ownership.

<b>lo‘i, lo‘i kalo</b>	An irrigated terrace or set of terraces for the cultivation of taro.
<b>ma kai</b>	Toward the sea.
<b>ma uka</b>	Inland, upland, toward the mountain.
<b>Māhele</b>	The 1848 division of land.
<b>mai‘a</b>	The banana, or <i>Musa</i> sp., whose fruit was eaten and leaves used traditionally as a wrapping for cooking food in earth ovens.
<b>maile</b>	<i>Alyxia olivaeformis</i> , a fragrant native shrub used for twining.
<b>mālama</b>	To care for, preserve, or protect.
<b>mele</b>	Song, chant, or poem.
<b>mānāleo</b>	Native speaker. A term invented by Larry Kimura and William H. Wilson in the late 1970s.
<b>mō‘ī</b>	King.
<b>moku</b>	District, island.
<b>mo‘o</b>	Lizard, dragon, water spirit.
<b>mo‘olelo</b>	A story, myth, history, tradition, legend, or record.
<b>‘ōhi‘a</b>	Two kinds of forest trees. See also o‘ōhi‘a‘ai and ‘ōhi‘a lehua.
<b>‘ōlapa</b>	The native tree <i>Cheirodendron trigynum</i> , the leaves of which were used in <i>lei</i> , and fruit, leaves, and bark made into dye.
<b>‘ōlelo no‘eau</b>	Proverb, wise saying, traditional saying.
<b>pā</b>	Fence, wall, enclosure; dish, flat basin; the mother-of-pearl shell ( <i>Pinctada margaritifera</i> ).
<b>paniolo</b>	Cowboy.
<b>pi‘a</b>	The yam <i>Dioscorea pentaphylla</i> eaten throughout the Pacific and tropical Asia.
<b>post-Contact</b>	After A.D. 1778 and the first written records of the Hawaiian Islands made by Captain James Cook and his crew.
<b>pre-Contact</b>	Prior to A.D. 1778 and the first written records of the Hawaiian Islands made by Captain James Cook and his crew.
<b>pu‘u</b>	Hill, mound, peak.
<b>‘uala</b>	The sweet potato, or <i>Ipomoea batatas</i> , a Polynesian introduction.
<b>uhi</b>	The yam <i>Dioscorea alata</i> , commonly grown for food.
<b>‘ulu</b>	The Polynesian-introduced tree <i>Artocarpus altilis</i> , or breadfruit.
<b>uluhe</b>	Ferns of the genera <i>Dicranopteris</i> , <i>Hicriopteris</i> , and <i>Sticherus</i> . Also known as the false staghorn fern, they form dense thickets.