

# A Preservation Plan for a Portion of SIHP Site 18418 Feature A

TMK: (3) 1-5-10:028

Pōpōkī Ahupua'a  
Puna District  
Island of Hawai'i

FINAL VERSION



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## 1. INTRODUCTION

At the request of Darrin and Debra Carlson (landowners), ASM Affiliates, Inc. has prepared this preservation plan for SIHP Site 18418 located on a 3.5-acre parcel (TMK: (3) 1-5-10:028) in Pōpōkī Ahupua‘a, Puna District, Island of Hawai‘i (Figures 1 and 2). The landowners plan to develop a single-family residence in the central portion of the parcel. An Archaeological Inventory Survey (AIS) of the property was recently completed by ASM Affiliates, Inc. (Dircks Ah Sam and Rechtman 2013), and as a result two features of two previously recorded sites (Site 18418 Feature A and Site 18149 Feature A) were the only archaeological sites documented on the property. Site 18418 Feature A, a trail alignment recorded in the *makai* portion of the parcel, was determined to be significant under Criterion D for information it yielded relative to the past use of the study area, and Criterion E for the important traditional cultural value that such sites hold for native Hawaiians of today. Preservation was the approved course of action for this site thus necessitating the need for the current document, which has been prepared in accordance with HAR 13§13-277.

### PROJECT AREA DESCRIPTION

TMK: (3) 1-5-10:028 is located southeast of the Hawaiian Paradise Park residential subdivision between the old Government Road (the Government Beach Road) and the coast at elevations ranging from 15 to 50 feet above sea level. The parcel is bounded along its *makai* edge (to the northeast) by sea cliffs (Figure 3), to the south-southeast by a privately owned, developed residential parcel (Parcel 029), to the north-northwest by a privately owned, undeveloped residential parcel (Parcel 027), and along its *mauka* edge by the old Government Road (Figure 4). A core-filled wall is present along the *mauka* and southeastern boundaries of the study parcel. Access to the parcel is through a gated driveway along the *makai* edge of the old Government Road (Figure 5). The driveway extends through a bulldozed gap in the wall across the southeastern portion of the project area towards the coast (Figure 6). Two modern concrete slabs are present in the *makai* portion of the study parcel; one near the southeastern boundary at the termination of the driveway (Figure 7), and another (once the location of a wooden structure that was recently torn down) near the northwestern boundary (Figure 8). A wire fence line extends from the coast at the study parcel's northern corner to the wall at the old Government Road (Figure 9), but does not follow the project area boundary, which was recently marked with lathe and flagging tape by surveyors. Other fences enclose an area between the driveway and the fence line near the northwestern boundary, inland of the two concrete slabs (Figure 10).

Terrain within the project area slopes gently to the northeast and consists of mixed ‘a‘ā and *pāhoehoe* lava flows (primarily *pāhoehoe*) that originated from Kilauea Volcano 450 to 700 years ago (Wolfe and Morris 1996). Soils in this area are classified as Opihikao extremely rocky muck (Sato et al. 1973). This soil typically consists of a thin layer of very dark brown muck about three inches thick that is generally underlain by *pāhoehoe* lava bedrock, and is strongly acidic. The muck is rapidly permeable, and the lava is very slowly permeable, but water moves rapidly through the cracks. Runoff is slow, and the erosion hazard is slight. Roots are matted over the *pāhoehoe* lava, but they can penetrate the cracks to a depth of two feet (Sato et al. 1973). This area typically receives 60 to 100 inches of rain per year (Jurvik and Jurvik 1998:57).

1. Introduction

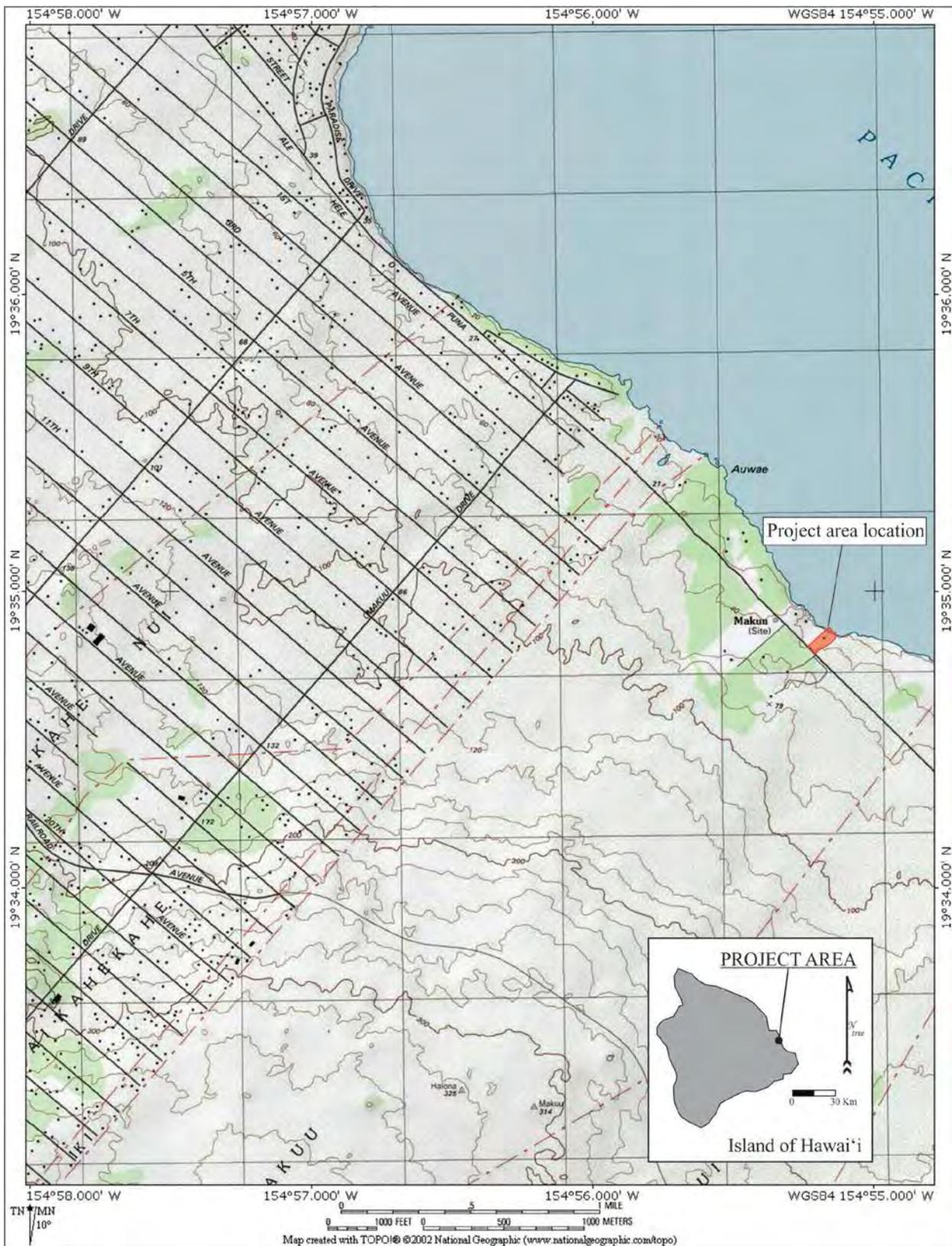


Figure 1. Project area location map.



Figure 2. Tax Map Key (TMK): (3) 1-5-10 showing the current study parcel (Parcel 028) shaded red.



Figure 3. *Makai* boundary of the current study parcel at the coast, view to the northwest.



Figure 4. Old Government Road along the *mauka* edge of the current study parcel, view to the southeast.



Figure 5. Access road to the current study parcel extending *makai* from the old Government Road, view to the west.



Figure 6. Driveway extending across the southeastern portion of the study parcel, view to the west.



Figure 7. Concrete slab foundation near the southeast boundary of the study parcel, view to the north.



Figure 8. Concrete slab located near the northwestern boundary of the study parcel, view to the north.



Figure 9. Fence line that extends between the coast and the wall at the old Government Road near the northwestern boundary of the study parcel, view to the southwest.



Figure 10. Fence line crossing the central portion of the study parcel, view to the northwest.

## 1. Introduction

Nearly the entire study parcel, with the exception of a small area in the west corner, has been previously bulldozed, and was once mowed lawn and pasture (Figure 11). Owing to this bulldozing, vegetation across much of the project area consists of a secondary growth of tall molasses grass (*Melinis minutiflora*), with stands of ironwood trees (*Casuarina equisetifolia*), hala (*Pandanus odoratissimus*), coconut palms (*Cocos nucifera*), guava (*Psidium guajava*), and autograph trees (*Clusia rosea*), along with various other non-native grasses, vines, weeds, and ferns, also present. The graded ground surface across the bulldozed portion of the project area consists of cobbles and thin soil, but in the western corner of the parcel, where a thick over story of vegetation shades out the ground cover, undisturbed *pāheohe* bedrock is present. Some *naupaka* (*Scaevola sericea*), hala, and coconut palms are also growing near the sea cliffs.



Figure 11. Aerial photograph (from Google Earth) showing the current study parcel (outlined in red).

## 2. ARCHAEOLOGICAL BACKGROUND

Several previous archaeological studies have been conducted within Maku‘u, Pōpōkī, and Hālonā *ahupua‘a* (Table 1 and Figure 12), and the current project area was previously the subject of an archaeological field inspection conducted by Rosendahl (1989) as well as an archaeological inventory survey conducted by Dircks Ah Sam and Rechtman (2013). Eight other studies were conducted in the coastal portions of the *ahupua‘a* in the immediate vicinity of the current project area (Barrera and Lerer 1990; Chaffee and Spear 1993; Chavert-Pond and Rosendahl 1993; Ewart and Luscomb 1974; Hudson 1932; Komori and Peterson 1987; Spear et al. 1995, Clark et al. 2008). A brief discussion of the findings of each of these previous studies, arranged in chronological order, follows below.

**Table 1. Previous archaeological studies in Maku‘u, Pōpōkī, and Hālonā *ahupua‘a***

Author/Date	Type of Study	Ahupua‘a
Barrera and Lerer 1990	Inventory Survey	Maku‘u
Bordner 1977	Reconnaissance Survey	Maku‘u
Chaffee and Spear 1993	Burial Testing	Maku‘u
Charvet-Pond and Rosendahl 1993	Inventory Survey	Maku‘u, Hālonā, Pōpōkī
Clark et al. 2007	Inventory Survey	Pōpōkī
Clark et al. 2008	Inventory Survey	Maku‘u
Conte et al. 1994	Inventory Survey	Maku‘u, Hālonā, Pōpōkī
Desilets and Rechtman 2004	Inventory Survey	Maku‘u, Hālonā, Pōpōkī
Dircks Ah Sam and Rechtman 2013	Inventory survey	Pōpōkī
Ewart and Luscomb 1974	Reconnaissance Survey	Various
Hudson 1932	Archaeological Survey	Various
Komori and Peterson 1987	Cultural and Biological Resource Survey	Various
McEldowney and Stone 1991	Archaeological/Environmental Survey	Various
Rechtman 2003	Archaeological Assessment	Maku‘u, Hālonā
Rosendahl 1989	Field Inspection	Maku‘u, Hālonā, Pōpōkī
Spear et al. 1995	Data Recovery	Maku‘u
Yent 1983	Archaeological Survey	Maku‘u

In addition to the coastal studies, seven other studies have been conducted at more inland locations within the *ahupua‘a* (Bordner 1977; Conte et al. 1994; Desilets and Rechtman 2004; McEldowney and Stone 1991; Rechtman 2003; Yent 1983, Clark et al. 2007) (see Table 1). These studies are not discussed in detail below, but are briefly discussed and referenced because of what they tell us about land use and subsistence within the *ahupua‘a* as a whole. McEldowney and Stone (1991) and Yent (1983) documented extensive lava tube systems containing cultural material related to Precontact habitation and burial in the extreme upland portions of the *ahupua‘a*. As a result of the remaining four upland studies, which included over 2,000 acres of total survey area, only three other features were recorded. One of these features was a cairn (Bordner 1977), another was a small terrace interpreted as a possible agricultural planting area (Desilets and Rechtman 2004), and the third was a complex of surface features that included a large enclosure, a constructed mound, a wall, and a platform that was interpreted as the location of unspecified Native Hawaiian ceremonial activities (Desilets and Rechtman 2004). The relative lack of archaeological features in the upland area of the *ahupua‘a* is understandable considering that most of the area consists of relatively young lava flows covered by dense (primarily native) vegetation.

The earliest coastal survey of archaeological resources in the vicinity of the current project area was conducted by Hudson (1932). Hudson attempted to inventory the sites of East Hawai‘i Island from Waipio Valley to the Ka‘ū District for the B. P. Bishop Museum. He recorded a wide range of archaeological features including *heiau*, burials, caves, habitations, trails, and agricultural features during his survey. The route of the survey took him through the coastal portion of Maku‘u, Pōpōkī, and Hālonā *ahupua‘a*. It does not appear, however, that Hudson (1932) recorded any features in the immediate vicinity of the current project area. Hudson noted that it was difficult to obtain information about sites in Puna because “most of them are located along the coast between Keaau and Kopoho where no one now lives, and it is difficult to locate descendants of the former Hawaiian population of the area who might be able to shed light on the nature and function of certain sites”, and that, “back from the sea the land is under cultivation in cane, used for pasture, or covered with dense vegetation which can be penetrated only with difficulty” (1932:304).

## 2. Archaeological Background

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Forty-two years later, Ewart and Luscomb (1974) of the Bishop Museum conducted a six-mile long archaeological reconnaissance survey of a proposed Kapoho-Keaukaha Highway route through the District of Puna from Waiakahiula Ahupua'a to Kea'au Ahupua'a. The survey area consisted of a 2,000-foot wide corridor that generally followed the route of the old Government Road that passes *mauka* of the current project area (see Figure 12). Ewart and Luscomb (1974) recorded numerous archaeological features and feature complexes in the vicinity of the current project area including walls, mounds, petroglyphs, trails, platforms, enclosures, and modified depressions. These features were variously interpreted as being associated with habitation, burial, agriculture, and ranching.

Komori and Peterson (1987) conducted a pedestrian survey of a proposed Pohoiki-Keaau transmission line corridor that passed roughly 1.5 miles inland (southwest) of the current project area (see Figure 12). Komori and Peterson recorded five agricultural site complexes, habitation and burial platforms, burial and refuge caves, and petroglyphs. According to Komori and Peterson (1987), the agricultural complexes were all located on or adjacent to 'a'ā lava flows or ash deposits that were more than 1,500 years old. Feature types observed at these agricultural complexes included walls, terraces, clearings, ditches, and modified outcrops. The other sites recorded by Komori and Peterson (1987) were all located on *pāhoehoe* lava flows that originated from Kīlauea Volcano between 300 and 500 years ago. Komori Peterson (1987) suggests that the construction and use of these sites likely dates to between A.D. 1450 and the present, and that the development of the inland agricultural complexes likely followed the establishment of permanent settlements at the coast sometime after A.D. 1450.

Rosendahl (1989) conducted a field inspection of the current study parcel (see Figure 12). With the exception of a stone wall along the south and east boundaries of the parcel, no surface structural or portable remains of any kind were identified on the property. Rosendahl (1989) relates that the lack of findings was due to widespread bulldozing that had occurred on the parcel at some point prior to the field inspection. Rosendahl concludes:

As a result of the negative findings of the field inspection, no further archaeological field work is necessary within the present project area. The evaluation and recommendation presented within this report are made solely on the basis of the field inspection survey work. There is always the possibility, however remote, that potentially significant, unidentified subsurface cultural remains and/or surface structural features will be encountered in the course of future archaeological investigations or subsequent development activities. In such situations, archaeological consultation should be sought immediately. (1989:2)

Beginning in 1990, three phases of archaeological study were conducted at TMK: (3) 1-5-10:033, a 14-acre parcel located along the coast to the northwest of the current project area (see Figure 12). Barrera and Lerer (1990) first conducted an Archaeological Inventory Survey of the parcel. As a result of that study, six archaeological site complexes, each with multiple features, were recorded on the parcel (SIHP Sites 14675, 14981, 14982, 14983, 14984, and 14985). These sites included a wide range of feature types such as modified outcrops, depressions, and lava blisters, walls, mounds, platforms, enclosures, and terraces, which were interpreted as being used for habitation, agriculture, and possible burial during Precontact and Historic times. Only two of the sites, Sites 14675 and 14985, were recommended for further study.

Chaffee and Spear (1993) followed up on Barrera and Lerer's (1990) work by conducting burial testing at Feature J of Site 14675 (a mound) and Features C, L, and M of Site 14985 (two platforms and a mound). Three of these features (Features J, L, and M) were found to contain subsurface vaults interpreted as burial chambers. Two of the vaults (at Features L and M of Site 14985, a mound and a platform) contained human skeletal remains, while Feature J of Site 14675 lacked human skeletal remains, but was interpreted as a burial feature anyway based on its formal attributes. The lack of human skeletal remains at Feature J was explained by the presence of a wetter micro-environment at that feature, as compared to the other two, which had accelerated the rate of decomposition of the skeletal material (Chaffee and Spear 1993:20). Two of the features (Features J and M) contained associated grave goods that dated to the Historic Period, suggesting a post-contact time frame for the interment of those individuals. With a surface pavement of *'ili'ili* and lacking a subsurface vault, Feature C was dissimilar in construction technique to the other three features; and based on the results of the Chaffee and Spear (1993) burial testing, Feature C of Site 14985 was determined to be a habitation platform.

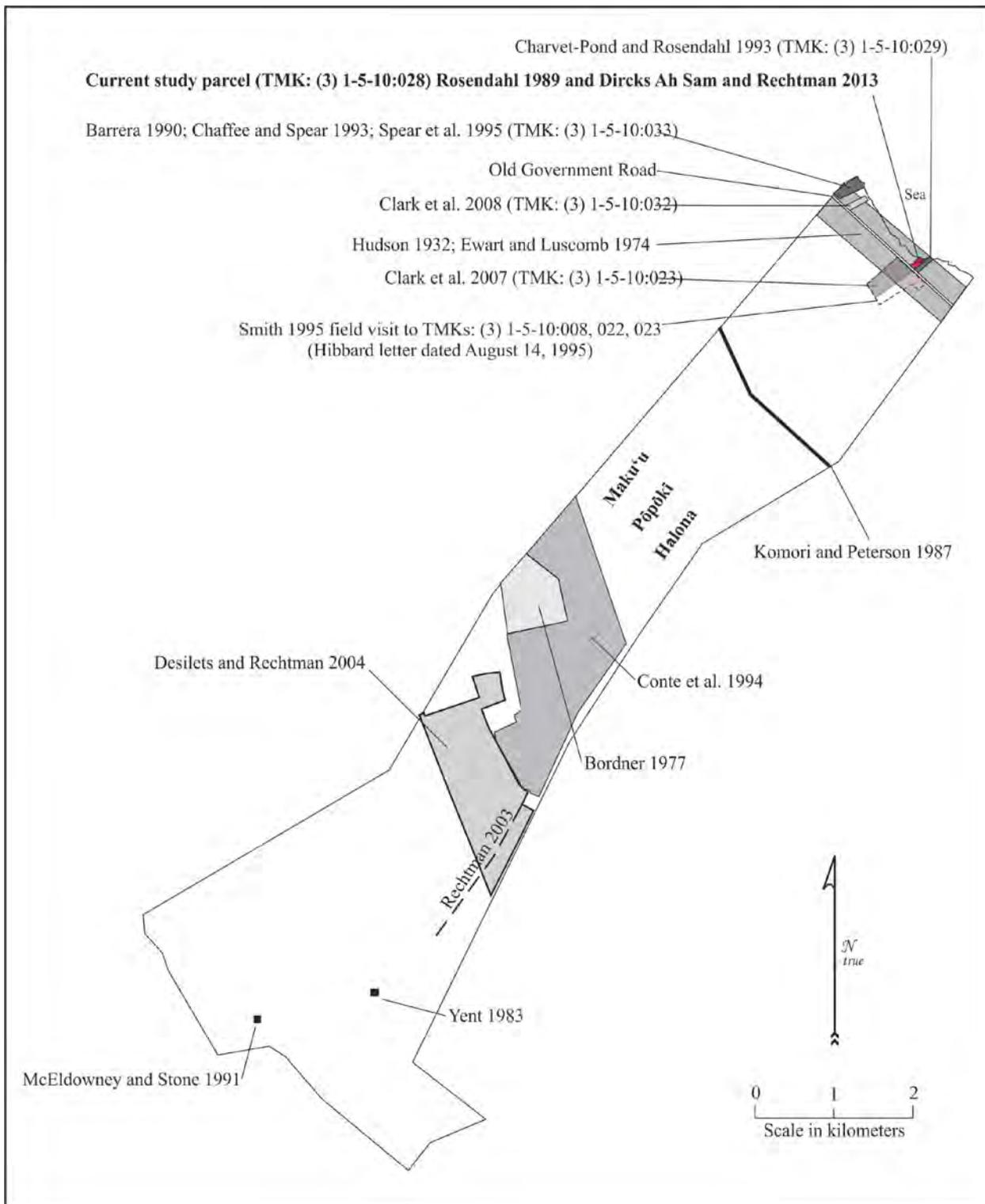


Figure 12. Locations of previous archaeological studies.

## 2. Archaeological Background

Spear et al. (1995) conducted additional data recovery excavations at some of the remaining features of Sites 14675 and 14985 located northwest of the current project area (see Figure 12). Five features—Feature B (an enclosure), Feature C (a terrace), Feature R (a sealed lava blister), Feature Y (a faced mound), and Feature AP (an enclosure)—were tested at Site 14675, and Feature J (a terrace) of Site 14985 was also tested. Artifacts recovered during the excavations were limited to two types of material; (1) basalt (flakes, manuports, an abrader, and a hammerstone/anvil), and (2) volcanic glass (flakes, debitage, and cores). Most of this material was recovered from Feature J of Site 14985. That feature also yielded a radiocarbon date with a 2 sigma calibrated result of A.D. 1660 to 1950. Based on the data recovery findings Spear et al. (1995) conclude that the large size of most of the tested features suggested that they were used for permanent habitation purposes during the late Precontact Period until perhaps the late nineteenth century. One feature (Feature Y of Site 14675), based on its construction and lack of cultural debris, was interpreted as being used for agricultural purposes.

Charvet-Pond and Rosendahl (1993) conducted an Archaeological Inventory Survey of TMK: (3) 1-5-10:029, a 3.6-acre coastal parcel located adjacent to the southeast edge of the current study parcel (see Figure 12). As a result of the survey five archaeological sites consisting of twelve features were recorded on the subject parcel. The sites included a Precontact coastal trail (Site 18418 Feature A), two Historic cattle walls (Site 18419), a coastal terrace complex interpreted as a possible agricultural shrine or *heiau* (Site 18420), two “bait cups” located within the coastal basalt bench (Site 18421), and an agricultural complex containing twenty-six individual features (Site 18422). One of the Site 18419 cattle walls extends along the southeastern boundary of the current study parcel, and Feature A of Site 18418, a coastal trail, extends in the general direction of the current project area, but stops at the Site 18419 cattle wall. The features of Site 18422 included modified outcrops, modified depressions, terraces, walls, and mounds. Nine of these agricultural features were subject to subsurface testing, which yielded fifty-nine volcanic glass cores and flakes. Subsurface testing was also conducted at Sites 18418, 18420, and 18421, which revealed a complete lack of cultural material at those sites. Based on the predominance of agricultural features and relative lack of cultural debris within their project area, Charvet-Pond and Rosendahl (1993) suggest that many of the activities formerly conducted there were likely related to Precontact agricultural pursuits. It is for this reason that they interpreted Site 18420, a five-feature complex, as a possible agricultural shrine or *heiau*. Three of the terraces of the complex were located on an adjacent parcel to the southeast (TMK: (3) 1-5-10:030), and were therefore not tested, but Charvet-Pond and Rosendahl (1993) suspect that based on their formal attributes, it is possible that one or all of them may also contain burials. The main feature of Site 18420 is a 1.0+ meter high, two-tiered terrace with a water-worn cobble surface. Although several possible functional interpretations are discussed for this feature (e.g. fishing shrine, burial, Precontact or Historic habitation), all are discarded in favor of the agricultural *heiau* interpretation. This interpretation was arrived at based on the feature’s formal attributes, the lack of cultural debris, and its proximity to the agricultural features of Site 18422.

In 1995, former State Historic Preservation Division (SHPD) staff archaeologist Marc Smith conducted a site inspection of TMKs: (3) 1-5-10:008, 022, and 023, located to the southwest of the current project area, *mauka* of the old Government Road (see Figure 12) at the request of a Mr. Tom Brennen (Don Hibbard letter dated August 14, 1995; on file at DLNR-SHPD). Don Hibbard, former SHPD administrator, describes the archaeological features that were observed during that visit:

Stone structures were observed in Parcel 23. These consisted of a single platform, stacked stone walls, mounds, and modified outcrops. It appears that these structures may be associated with early agricultural practices and may be significant as they reflect past land use patterns, and for their information content. Also on historic maps a mauka-makai trail cuts across all three parcels. Where this trail was visible in the field it appears as a jeep road, with very few modifications. It is unclear who owns the trail easement, but it may be significant in that it reflects past land use practices. Because of the proximity to historic Maku‘u, unmarked grave sites could be expected, however, during this site inspection no burials were observed.

Hibbard goes on to recommend that the features be recorded prior to any modifications to the parcel, and that the information should be submitted to DLNR-SHPD for their review and comment. Also, that if any significant historic sites are encountered, that as part of any permit action, a mitigation plan detailing a data recovery and/or preservation commitment should also be submitted.

Clark et al. (2007) conducted an Archaeological Inventory Survey of a 38-acre parcel (TMK: (3) 1-5-10:023; one of the parcels inspected by Marc Smith in 1995) located to the southwest of the current project area, *mauka* of the old Government Road (see Figure 12). As a result of that study, five archaeological sites were recorded, including a Precontact agricultural shrine or small *heiau* (Site 26165), a Historic trail/roadway (Site 26166), a habitation complex (Site 26167), and two agricultural complexes (Sites 26168 and 26169). These sites were

interpreted as being variously related to Precontact and continued early Historic Hawaiian use of the area for habitation, ceremonial, and agricultural purposes. Primary habitation occurred at Site 26167, an enclosed complex where a subsurface deposit of marine shell, fish bone, and pig bone found within a terrace indicated that the nearby coastal marine resources and terrestrial resources were exploited for subsistence purposes. Agriculture was practiced at Sites 26168 and 26169 where soil-filled depressions in a *pāhoehoe* lava flow could have been mulched and planted in diverse crops. The shrine recorded by Clark et al. (2007) (Site 26165) occupied a prominent location on an 'a'ā slope overlooking a low-lying *pāhoehoe* area that contained numerous agricultural features of Site 26169. The shrine consisted of a terrace constructed in three levels, that had a ramped entrance paved with water-worn cobbles leading to a square, water-worn cobble paving on the second level, and a slab lined pit on the third level. Clark et al. (2007) suggest that the cobble paving may have been intended as a spot for leaving offerings, and the slab lined pit could have supported a wooden *ki'i* (idol). A Historic trail/roadway dating to the early part of the 20<sup>th</sup> century was also recorded. The roadway formerly ran from the old Government Road inland to Maku'u Station along the old railroad line.

Clark et al. (2008) conducted an Archaeological Inventory Survey of a 5.586-acre parcel (TMK: (3) 1-5-10:032) located northwest of the current project area, between the old Government Road and the coast (see Figure 12). As a result of that study, nine archaeological sites containing a total of 67 features were recorded within their project area. The sites included a core-filled wall along the old Government Road (Site 26658), an enclosure/pavement used for Historic habitation purposes (Site 26659), a Historic habitation complex (Site 26660), a modified bedrock hole used for water collection and storage (Site 26661), three concealed bedrock overhangs interpreted as Historic burial features (Sites 26662, 26663, and 26664), a platform interpreted as a Precontact burial feature (Site 26665), and a large agricultural complex (Site 26666) containing 55 features that spanned the entire project area. Six test units were excavated at five of the recorded sites. In addition to the recorded archaeological sites, the presence of a petroglyph field was noted on the coastal shelf *makai* of their project area.

The current study parcel was recently the subject of an archaeological inventory survey the results of which were summarized by Dircks Ah Sam and Rechtman (2013) and their site distribution map is shown in Figure 13.

As a result of the current inventory survey features of two previously recorded archaeological sites (SIHP Sites 18419 and 18418) were identified within the current study parcel. These sites were originally recorded on the neighboring parcel to the southeast by Charvet-Pond and Rosendahl (1993) and include a core-filled wall (Site 18419 Feature A) and a trail section (a portion of Site 18418 Feature A). The bulk of the study area, with the exceptions of the locations of the two recorded sites and a small area in the parcel's western corner had been previously bulldozed. There were no archaeological features observed on the unmodified *pāhoehoe* bedrock in the western corner of the study parcel, nor were any resources observed with the bulldozed portion of the parcel.

2. Archaeological Background

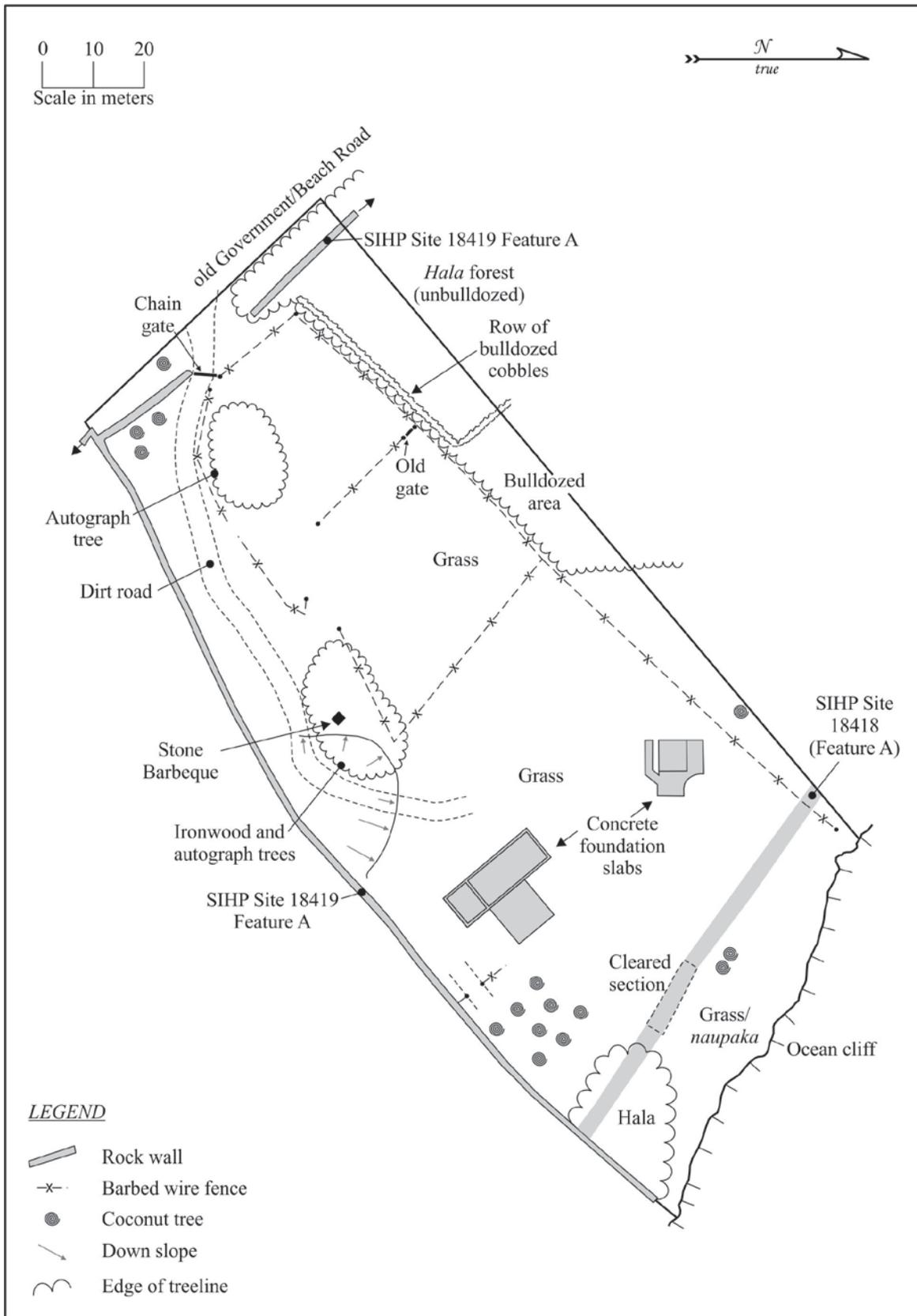


Figure 13. Site distribution map from Dircks Ah Sam and Rechtman (2013).

### 3. CULTURE-HISTORICAL CONTEXT

The current project area is located within Pōpōkī Ahupua‘a, a land unit of the District of Puna, one of six major districts on the island of Hawai‘i. No specific Hawaiian traditions or legendary accounts concerning Pōpōkī Ahupua‘a were located while conducting research for this report, but Barrère (1959) summarizes the Precontact geopolitics of the Puna District as follows:

Puna, as a political unit, played an insignificant part in shaping the course of history of Hawaii Island. Unlike the other districts of Hawaii, no great family arose upon whose support one or another of the chiefs seeking power had to depend for his success. Puna lands were desirable, and were eagerly sought, but their control did not rest upon conquering Puna itself, but rather upon control of the adjacent districts, Kau and Hilo. (Barrère 1959:15)

Despite its perceived lack of importance with respect to the emerging political history of Hawaiian leadership, Puna was a region famed in legendary history for its associations with the goddess Pele and god Kāne (Maly 1998). Because of the relatively young geological history and persistent volcanic activity the region’s association with Pele has been a strong one. However, the association with Kāne is perhaps more ancient. Kāne, ancestor to both chiefs and commoners, is the god of sunlight, fresh water, verdant growth, and forests (Pukui 1983). It is said that before Pele migrated to Hawai‘i from Kahiki, there was “no place in the islands . . . more beautiful than Puna” (Pukui 1983:11). Contributing to that beauty were the groves of fragrant *hala* and forests of ‘ōhi‘a *lehua* for which Puna was famous:

*Puna pāia ‘ala i ka hala* (Puna, with walls fragrant with pandanus blossoms)

Puna, Hawai‘i, is a place of *hala* and *lehua* forests. In olden days the people would stick the bracts of *hala* into the thatching of their houses to bring some of the fragrance indoors. (Pukui 1983:301)

The inhabitants of Puna were likewise famous for their expertise and skill in *lauhala* weaving. “To this day, Puna is known for its growth of *hala*, and the floors and furniture of some of the old households are still covered with fine woven mats and cushions. Weaving remains an important occupation of many native families of Puna” (Maly 1998:6).

Following the death of Kamehameha I in 1819, the Hawaiian religious and political systems underwent a radical transformation; Ka‘ahumanu proclaimed herself “*Kuhina nui*” (Prime Minister), and within six months the ancient *kapu* system was overthrown. Within a year, Protestant missionaries arrived from America (Fornander 1973; I‘i 1959; Kamakau 1961). In 1823, British missionary William Ellis and members of the American Board of Commissioners for Foreign Missions (ABCFM) toured the island of Hawai‘i seeking out communities in which to establish church centers for the growing Calvinist mission. Ellis recorded observations made during this tour in a journal (Ellis 1963). His writings contain descriptions of residences and practices that are applicable to the general study area:

The population in this part of Puna, though somewhat numerous, did not appear to possess the means of subsistence in any great variety or abundance; and we have often been surprised to find desolate coasts more thickly inhabited than some of the fertile tracts in the interior; a circumstance we can only account for, by supposing that the facilities which the former afford for fishing, induce the natives to prefer them as places of abode; for they find that where the coast is low, the adjacent water is usually shallow.

We saw several fowls and a few hogs here, but a tolerable number of dogs, and quantities of dried salt fish, principally albacores and bonitos. This latter article, with their *poē* [*poi*] and sweet potatoes, constitutes nearly the entire support of the inhabitants, not only in this vicinity, but on the sea coasts of the north and south parts of the island.

Besides what is reserved for their own subsistence, they cure large quantities as an article of commerce, which they exchange for the vegetable productions of Hilo and Mamakua [Hāmākua], or the *mamake* and other tapas of Ora [‘Ōla‘a] and the more fertile districts of Hawaii. (Ellis 1963:190-191)

One year after Ellis’ tour, the ABCFM established a base church in Hilo. From that church (Hāili), the missionaries traveled to the more remote areas of the Hilo and Puna Districts. David Lyman who came to Hawai‘i in 1832, and Titus Coan who arrived in 1835 were two of the most influential Congregational missionaries in Puna and Hilo. As part of their duties they compiled census data for the areas within their missions. In 1835, 4,800 individuals

### 3. Culture-Historical Context

are recorded as residing in the district of Puna (Schmitt 1973); the smallest total district Population on the island of Hawai‘i. In 1841, Titus Coan recorded that most of the 4,371 recorded residents of Puna, lived near the shore, though there were hundreds of individuals who lived inland (Holmes 1985). One of the coastal settlement areas was Maku‘u in the immediate vicinity of the current project area (the, U.S.G.S. 7.5 min series quadrangle of Paho North, HI shows the approximate location of the village, labeled as MAKUU Site; see Figure 1).

In 1846, Chester S. Lyman, “a sometime professor” at Yale University visited Hilo, Hawai‘i, and stayed with Titus Coan (Maly 1998). Traveling the almost 100 mile long stretch of the “Diocese” of Mr. Coan, Lyman reported that the district of Puna had somewhere between 3000-4000 inhabitants (Maly 1998). Entering Puna from Hilo, and traveling southeast along the coast, Lyman described Maku‘u as a small scattered village, and offered the following observations of the Puna coast:

...The groves of Pandanus were very beautiful, and are the principal tree of the region. There is some grass and ferns, and many shrubs; but the soil is very scanty. Potatoes are almost the only vegetable that can be raised, and these seem to flourish well amid heaps of stone where scarcely a particle of soil could be discovered. The natives pick out the stones to the depth often of from 2 to 4 feet, and in the bottom plant the potato—how it can expand in such a place is a wonder.

Nearly all Puna is like this. The people are necessarily poor—a bare subsistence is all they can obtain, and scarcely that. Probably there are not \$10 in money in all Puna, and it is thought that not over one in five hundred has a single cent. The sight of some of these potatoe patches would make a discontented N.E. farmer satisfied with his lot. Yet, I have nowhere seen the people apparently more contented & happy. (Maly 1998:35)

By the middle of the nineteenth century the ever-growing population of Westerners forced socioeconomic and demographic changes that promoted the establishment of a Euro-American style of land ownership in Hawai‘i, and the *Māhele* became the vehicle for determining ownership of native lands. During the *Māhele*, land interests of the King (Kamehameha III), the high-ranking chiefs, and the low-ranking chiefs, the *konohiki*, were defined. The chiefs and *konohiki* were required to present their claims to the Land Commission to receive awards for lands provided to them by Kamehameha III. They were also required to provide commutations to the government in order to receive royal patents on their awards. The lands were identified by name only, with the understanding that the ancient boundaries would prevail until the land could be surveyed. This process expedited the work of the Land Commission (Chinen 1961:13).

During the *Māhele* all lands were placed in one of three categories: Crown Lands (for the occupant of the throne), Government Lands, and *Konohiki* Lands. All three types of land were subject to the rights of the native tenants therein. In 1862, the Commission of Boundaries (Boundary Commission) was established in the Kingdom of Hawai‘i to legally set the boundaries of all the *ahupua‘a* that had been awarded as a part of the *Māhele*. Subsequently, in 1874, the Commissioners of Boundaries were authorized to certify the boundaries for lands brought before them. The primary informants for the boundary descriptions were old native residents of the lands, many of which had also been claimants for *kuleana* during the *Māhele*. This information was collected primarily between A.D. 1873 and 1885 and was usually given in Hawaiian and transcribed in English as they occurred. Boundary descriptions were not collected for all *ahupua‘a*. The boundaries of Pōpōkī were never certified, which is why it is so often grouped with Maku‘u and Hālonā *ahupua‘a*.

As a result of the *Māhele* of 1848, the *ahupua‘a* of Maku‘u, Pōpōkī, and Hālonā were retained as Government Lands, and no *kuleana* parcels were awarded in the *ahupua‘a* (Charvet-Pond and Rosendahl 1993:C-2). Between 1852 and 1855 portions of all three *ahupua‘a* were divided and sold as fee simple Land Grants. The Land Grants were sold to Native tenants who were interested in acquiring the land upon which they lived, or land that they felt they could cultivate (Maly 1999:64). Three Land Grants were sold in the coastal portion of Maku‘u, Pōpōkī, and Hālonā *ahupua‘a*; Grant No. 1013 to Maiāu in 1852, Grant No. 1014 to Kea in 1852, and Grant No. 1537 to Kapohano(a) in 1855 (Figure 14). The current project area is a portion of Grant No. 1537 to Kapohano (sometimes spelled Kapohana). Kepā Maly translates the boundary description of Grant No. 1537 as follows:

This parcel begins at the shore on the Northern corner of this lot, adjoining the land of Kea, and proceeding along this land South 39 1/2 West 24.48 chains to a coconut tree, then proceeding along this land South 37 West 9.30 chains to a breadfruit tree; then proceeding South 41 1/4 East 32.24 chains to a stone cairn; then North 56 1/2 East 35.29 chains to the government road; then North 37 1/2 East 20.00 chains to the shore; then proceeding along the shore to the place of commencement. There are 171 acres within this lot. (1999:67; Appendix A)

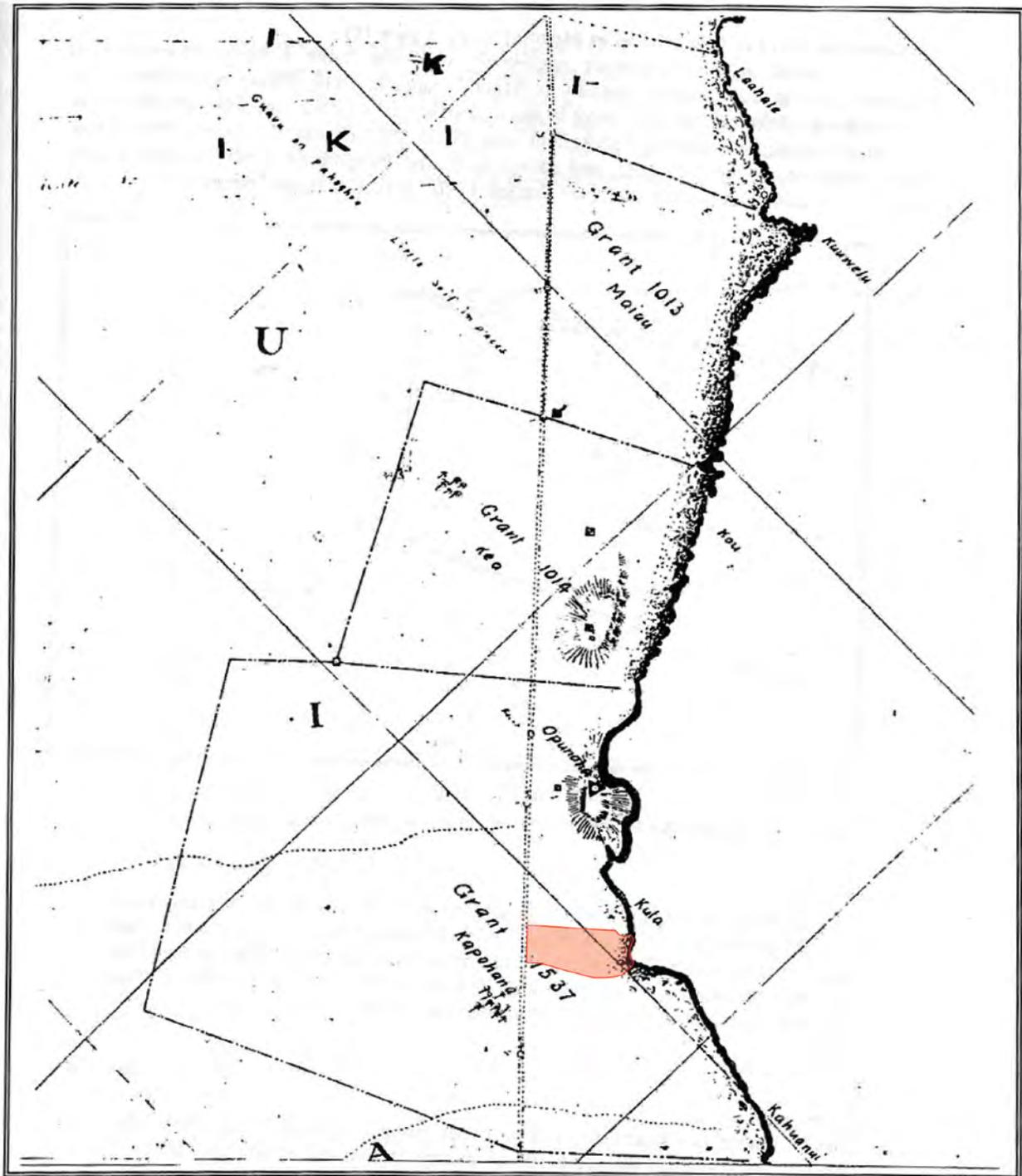


Figure 14. Portion of Register map No. 2258 (prepared by J. H. Morgane in 1903) showing land grant parcels and the historic trail (current project area in red).

### 3. Culture-Historical Context

Register Map No. 2258 shows a single house within the boundaries of Grant No. 1537 (see Figure 14). The house is located near the coast (to the northeast of the current study area) next to what appears to be a small hill and survey station labeled Opunaha. The small bay located directly *makai* of the current study area is labeled Kula. The map also shows the old Government Road alignment, a trail that runs *mauka* from the edge of the Government Road to the west of the current project area, and another trail that runs inland from the coast to the east of the current project area. A grove of coconuts is depicted south of the current project area. Ewart and Luscomb (1974) include, in their report, notes of a July 4, 1956 interview conducted by Mrs. Violet Hansen with Mrs. Mary Ann Kamahale (age 70), who was described as being of a Hawaiian family that were the only residents of Maku‘u at that time (living on Grant No. 1013; see Figure 14). Mrs. Kamahale related that Opunaha was a canoe landing spot, and that Kula was a *ko‘a* (a fishing ground) where *āholehole* were caught (Ewart and Luscomb 1974:50).

During the latter part of the nineteenth century and into the twentieth century land use within the District of Puna began to change. The native agricultural system was largely abandoned as the population declined (Yent and Ota 1982), and ranching, sugar cane, coffee, and lumber became the dominant industries. The Kea‘au Ranch began grazing cattle on nearby lands as early as the 1850s (Maly 1999:42), and the Olaa and Puna Sugar Companies operated in Puna from 1900 until the 1980s (Dorrance and Morgan 2000). Beginning in 1900, railroad tracks for hauling the unprocessed cane and passenger travel were laid by the Hawai‘i Railway Company from the sugarcane fields in lower Puna to the mills in Pahoa and Kea‘au, and then continuing on to Hilo (Clark et al. 2001). The railroad ceased operations in 1946. When operating, the railroad passed through Maku‘u, Holana, and Pōpōkī *ahupua‘a mauka* of the current project area, where the Maku‘u Station house was located.

According to the neighbor living on the adjoining residential parcel to the southeast (Parcel 029) of the study parcel, a former owner of TMK: (3) 1-5-10:028 poured the two concrete slabs currently extant on the property, but passed away before building a house. At one point the entire parcel was mowed lawn. A 2012 aerial photograph shows the roof of the structure that was recently removed from the slab near the northwestern boundary of the study parcel and a mowed area surrounding it (Figure 15). Rosendahl (1989) indicated that the study parcel had been cleared with a bulldozer prior to the late 1980s. Aerial photographs from 1954 and 1977 (Figures 16 and 17) show that the current project area was covered with low vegetation during the middle to late twentieth century (rather than *hala* forest) and was likely used as pasture land.



Figure 15. 2012 aerial photograph showing the current study parcel (outlined in red).



Figure 16. 1954 aerial photograph showing the current study parcel outlined in red.

### 3. Culture-Historical Context

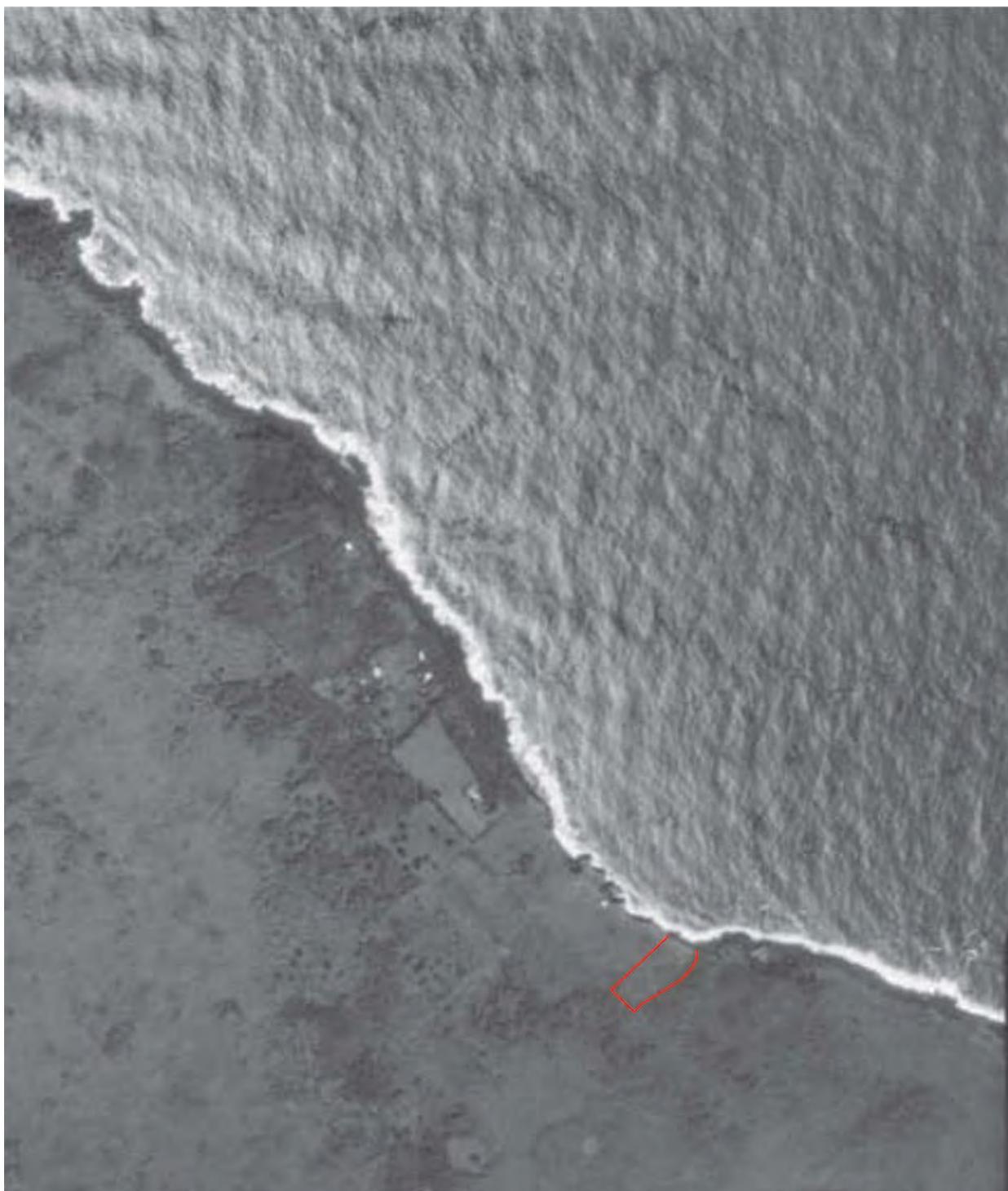


Figure 17. 1977 aerial photograph showing the current study parcel outlined in red.

## 4. DESCRIPTION OF SIHP SITE 18418 FEATURE A

Site 18418 Feature A is a trail remnant located in the *makai* portion of the study parcel that parallels the coast (see Figure 13). This trail was first recorded by Charvet-Pond and Rosendahl (1993) on Parcel 029, which is adjacent to the current study parcel. On Parcel 029 they identified an elevated trail alignment that “paralleled the coastline and extended across the property onto the neighboring parcels on both sides” (Charvet-Pond and Rosendahl 1993:15). They describe the feature as “a linear mound of variable construction” (ibid.). Charvet-Pond and Rosendahl further describe that:

The elevated trail varies in construction materials, styles and techniques. In some sections the primary building material is subangular basalt cobbles, while in other segments area largely waterworn cobbles. On one eastern segment, two parallel alignments of flat waterworn basalt boulders have been placed on the surface at about one meter intervals near the edges, these appear to be steppingstones. There are occasional small rounded basalt pebbles (*'ili 'ili*) between them, suggesting that the interstices between the steppingstones were at one time rock-filled. The trail is moderately elevated, and is generally lower (0.3 m) on the *mauka* side and higher (0.6 m) on the *makai* side; in width it ranges from one to two meters. (Charvet-Pond and Rosendahl 1993:A-1)

They go on to suggest that “this feature is very similar to inferred prehistoric coastal-trail segments in the vicinity described by Hudson (1932) and Ewart and Luscomb (1974)” (Charvet-Pond and Rosendahl 1993:15).

Within the current study parcel, a slightly elevated earthen alignment with placed water-worn boulders and cobbles was recorded approximately 20 meters *mauka* of the sea cliffs; at roughly the same distance inland that Site 18418 Feature A was recorded on the adjacent parcel. This alignment was interpreted to be a segment of this same trail. Within the current project area the trail alignment is traceable for only a 10 meter distance in the southeast portion of the parcel (see Figure 13), the remainder either having previously bulldozed away or covered and obscured by soil and vegetation. The trail remnant within the study parcel was first visually identified as a humped area covered with a dense growth of grasses and vines. The vegetation was then removed exposing a 10 meter long section of the elevated trail (Figure 18). This feature consists of an approximately 1.8 meters wide level surface with 60 centimeter sloped margins (Figure 19). On its upslope edge, the trail rises 12 centimeters above the surrounding ground surface and on its downslope edge it is 32 centimeters above the surrounding ground surface. Several water-worn basalt boulders and cobbles have been placed along the edge of the level surface (Figure 20) while others have been embedded within the surface (Figure 21); the former rocks seem to define the trail alignment and the latter appear to have been used as steppingstone. A large *pāhoehoe* slab sits on the slope adjacent to the trail’s *mauka* edge (Figure 22), likely indicating the extent of former bulldozing in this area. Although only a short segment of the trail was identified during the archaeological inventory survey, its former course across the current study parcel was projected (see Figure 13).

Given the physical characteristics of this site (elevated with water-worn steppingstones) it appears to have been originally built and used during Precontact times, and may have seen continued local use into the early Historic Period during which time most distance travelers used the Government/Beach Road (Maly 1999) that is situated along the *mauka* side of the current study parcel.

4. Description of SIHP Site 18418 Feature A



Figure 18. SIHP Site 18418 Feature A, showing the elevated nature of the trail alignment, view to the southeast.

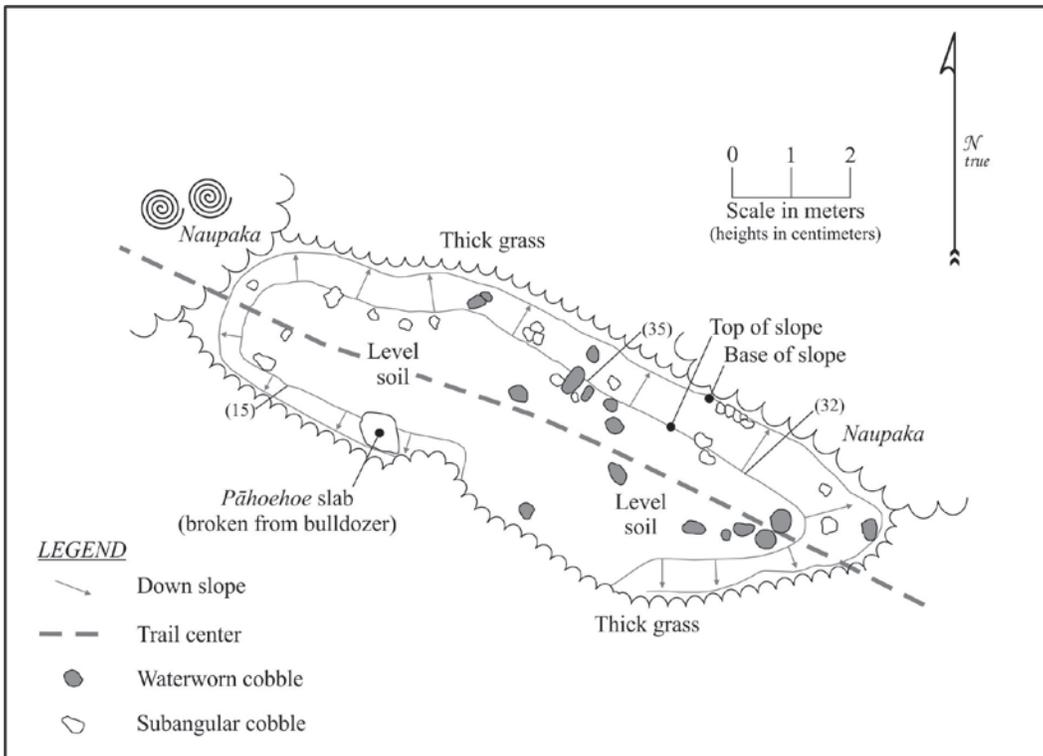


Figure 19. SIHP Site 18418 Feature A plan view.



Figure 20. SIHP Site 18418 Feature A water-worn boulders and cobbles along edge of trail, view to the northwest.



Figure 21. SIHP Site 18418 Feature A, showing embedded steppingstones in trail surface, view to the northwest.



Figure 22. SIHP Site 18418, large *pāhoehoe* slab on the slope adjacent to the trail's *makai* edge, view to the west.

## 5. CULTURAL CONSIDERATIONS

As indicated in HAR 13§13-277-3(4), if a site was evaluated as significant under Criterion E, then consultation should occur with respect to its treatment. As part of the regulatory compliance associated with the proposed development of a single-family dwelling on the subject parcel, a cultural impact assessment (Rechtman and Kepa'a 2014) was conducted, which included a summary of prior consultations (Ewart and Luscomb 1974; Rechtman 2009; Terry 2000) with several individuals (Mary Ann Kamahale; Ms. Puanani Mukai; Mr. Frank Kamahale; Richard Ha; and Melani Dominguez) along with the results of project specific consultation with representatives from the Maku'u Farmers Association. Based on sentiments expressed in the earlier consultation, along with the *mana* 'o shared in the recent specific consultation, Rechtman and Kepa'a (2014:30) concluded that:

To mitigate any potential impacts to SIHP Site 18418 Feature A within the current study parcel, a preservation plan will be prepared and submitted to DLNR-SHPD for approval. Protection measures described in the plan will be implemented prior to the commencement of any development activities. Execution of mitigation measures specified in that plan along with adherence to the shoreline building setbacks will help to ensure that no cultural practices and beliefs or associated cultural resources will be adversely affected by the proposed development of a single-family residence on TMK: (3) 1-5-10:028.

In addition, SHPD asked us to contact the *Na Ala Hele* program of the Department of Land and Natural Resources-Division of Forestry and Wildlife with respect to their potential interest in the trail alignment. Numerous phone messages were left for Clement Chang in the Hilo *Na Ala Hele* program office and a copy of a map and the proposed treatment for Feature A of Site 18418 was emailed to him for comment. At the time of this writing no comments have been received.

## 6. THE DEVELOPMENT PLAN

The landowner plans to develop the property as a single-family residence, which will include the construction of a 3,371 square foot 4 bedroom/3 bath post and pier house with attached garage, a 15 foot wide 375 feet long compacted gravel driveway leading from the Government Road to the residence, a 10,000 gallon capacity water catchment tank, and a subsurface 1,000 gallon septic system to be placed on the *mauka* side of the house (Figure 23). The residence will be set back approximately 110 feet from the coastal cliff placing it roughly 60 feet *mauka* of SIHP Site 18418. Landscaping of the lot will be minimal, confined to maintenance of the existing grassy open area surrounding the house and any necessary clearing associated with the driveway and utility service. Vegetation along the cliff-line would be left intact, as well as will various trees and shrubs around the perimeter of the parcel in order to preserve as much of the current natural habitat as possible.

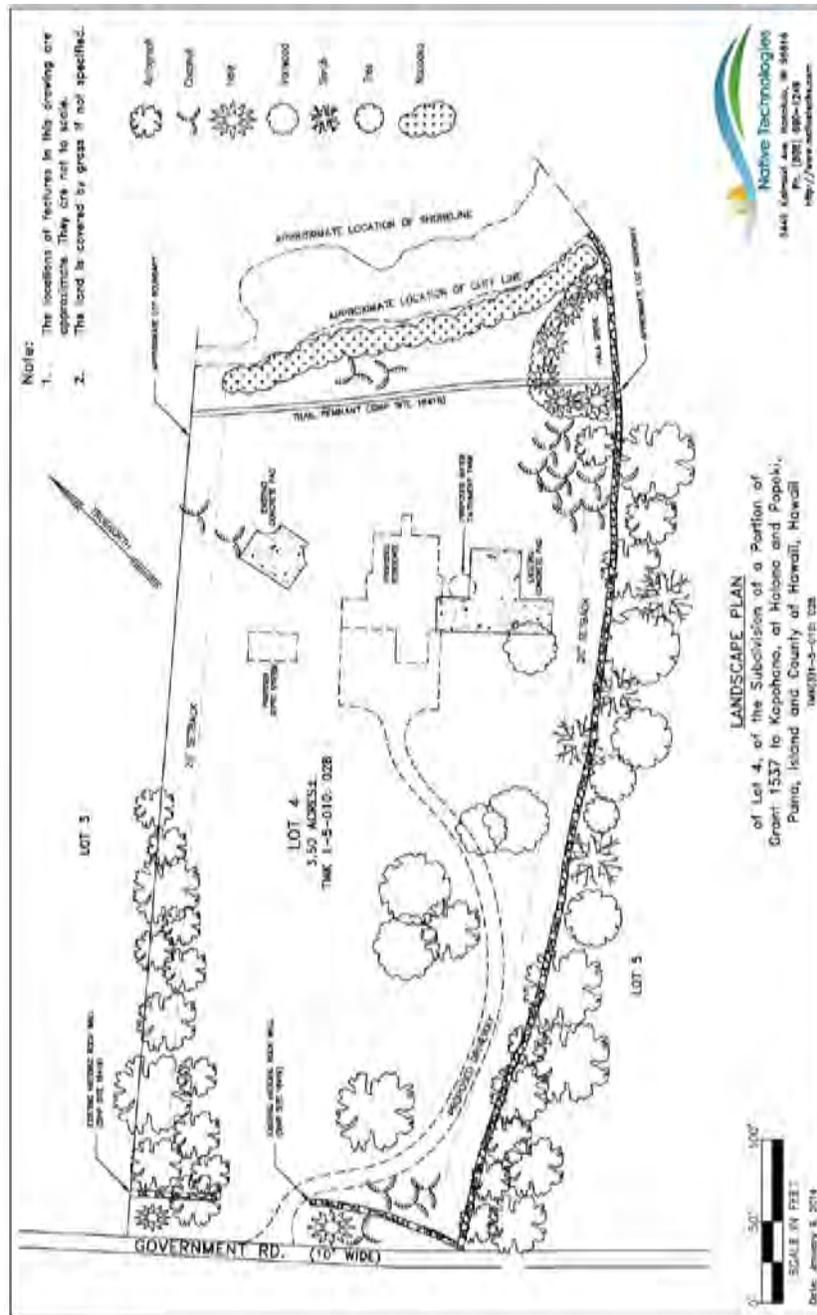


Figure 23. Proposed development plan.

## 7. PROPOSED TREATMENT OF SIHP SITE 18418

Preservation in place through avoidance and protection (conservation) is the treatment proposed for Site 18418 Feature A. Although no specific rehabilitation or maintenance activities are proposed, invasive vegetation may be periodically removed by hand from the coastal portion of the parcel including the area of the projected trail alignment. The site will not be identified by signage, and will be left in its current existing condition. A legal document describing the location of the site within the subject parcel along with this preservation plan will be recorded with the Bureau of Conveyances. The specific permanent and interim preservation measures are described below.

### PERMANENT PRESERVATION MEASURES

For the long-term preservation of Site 18418 Feature A, a preservation easement will be established on the property that will include the projected trail alignment and a buffer zone of 20 feet on either side of the projected alignment (Figure 24). No development activity will be permitted to occur within this preservation easement; however nothing in this preservation plan is intended to curtail pedestrian access along the trail within the easement nor limit the landowner's access across the easement for the continued use of the shoreline area.

### INTERIM PROTECTION MEASURES AND IMPLEMENTATION OF THE PRESERVATION PLAN

Prior to the commencement of any development activities on the subject parcel, an awareness briefing will be presented to all members of the construction team informing them of the location and protected status of the preservation easement. Orange construction fencing will be installed along the *mauka* edge of the feature's permanent preservation buffer; placement of which will be verified in writing with DLNR-SHPD. This protective fence will stay in place until construction activities have been completed, at which time the fencing will be removed and the permanent preservation measures as outlined above will be implemented by the landowners.

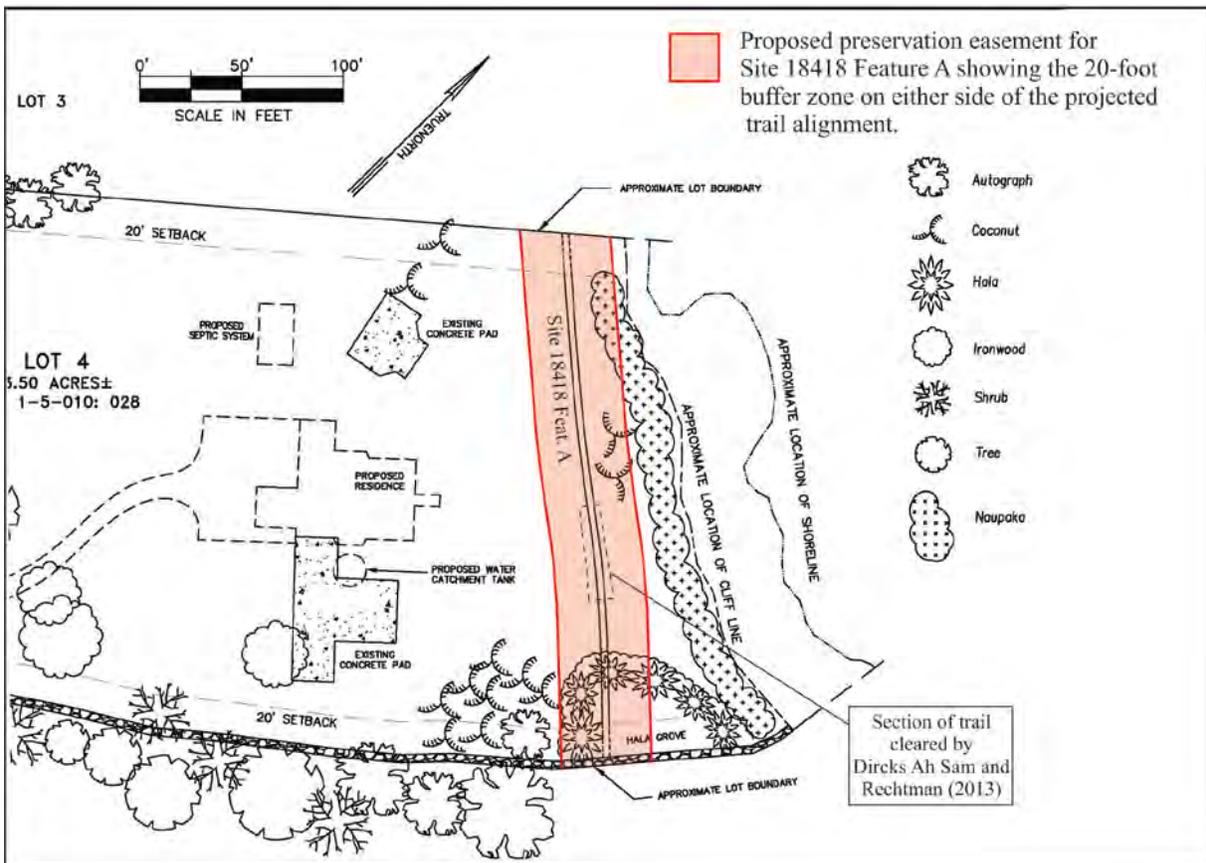


Figure 24. Preservation easement for SIHP Site 18418 Feature A.

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## **APPENDIX A – Grant No. 1537 to Kapohana(o)**

### **Original**

No. 1537, Kapohano, Halona & Popoki Ahupuaa, District of Puna, Island of Hawaii, Vol. 8, pps. 237-238 [LG Reel 3, 00580-00581.tif]

Helu 1537  
Palapala Sila Nui

Ma keia palapala sila nui ke hoike nei o Kamehameha III, ke Alii nui a ke Akua i kona lokomaikai i hoonoho ai maluna o ko Hawaii Pae Aina, i na kanaka a pau, i keia la, nona iho; a no kona mau hope alii, ua haawi lilo loa aku oia ma ko ano alodio ia Kapohano i kona wahi kanaka i manao pono ia ia i kela apana aina a pau e waiho la, ma Halona a me Popoki, Puna ma ka Mokupuni o Hawaii, a penei hoi ka waiho ana o na Mokuna,

E hoomaka ana keia ma kahakai ma ke kihi Akau o keia e pili ana me ka aina o Kea, a e holo ana ma ia aina  
Hema 39 1/2° Komohana 24.48 Kaulahao a hiki ma kahi kumu niu, alaila  
Hema 37° Komohana 9.40 Kaulahao a hiki ma kahi kumu ulu, alaila  
Hema 41 1/2° Hikina 32.24 Kaulahao a hiki ma kahi ahupohaku, alaila  
Akau 56 1/2° Hikina 35.20 Kaulahao a hiki ma ke alanui Aupuni, alaila  
Akau 37 1/2° Hikina 20.00 Kaulahao a hiki ma kahakai alaila ma kahakai a hiki ma kahi i hoomaka'i.

[page 238]

A maloko o ia Apana 171.00 eka a oi iki aku, emi iki mai paha.  
Eia ke kumu o ka lilo ana; ua haawi mai oia iloko o ka waihona waiwai o ke Aupuni i na dala he \$52.75. Aka, ua koe i ke Aupuni na mine minerale a me na mine metala a pau.

No Kapohano, ua aina la i haawiia, nona mau loa aku no, ma ke ano alodio, a me kona mau hooilina, a me kona waihona, ua pili nae ka auhau a ka Poe Ahaolelo e kau like ai ma na aina alodio a pau i kela manawa i keia manawa.

A i mea e ikeai i ua kau i ko'u inoa, a me ka sila nui o ko Hawaii Pae Aina ma Honolulu i keia la 20 o Ianuali, 1855.

Inoa}  
Kamehameha IV  
V.K. Kaahumanu  
Keoni Ana

[Land Patent Grant No. 1537, Kapohano, Halona & Popoki Ahupuaa, District of Puna, Island of Hawaii, 171 Acres, 1855]

**Translation**

No. 1537, Kapohano, Hālonā & Pōpoki Ahupua‘a, District of Puna, Island of Hawai‘i, Vol. 8, pps. 237-238</B>  
 [LG Reel 3, 00580-00581.tif]

Number 1537  
 Great Seal Document

In this Great Seal Document, Kamehameha III, the High Chief of God whose blessings are upon the Hawaiian Island Chain, is showing to all people today, for himself and for his lesser chiefs, that he has given an Alodial title to Kapohano his settlement that he rightly thinks to leave in the land section’s entirety, in Hālonā and Pōpoki, Puna on the island of Hawai‘i, and this is how the boundaries are being put down,

It is starting at the shore at the North extremity adjoining the land of Kea, and it is proceeding along this land  
 South 39 ½ degrees West 24.48 chains to a coconut tree, then  
 South 37 degrees West 9.40 chains to a breadfruit tree, then  
 South 41 ½ degrees East 32.24 chains to a rock mound, then  
 North 56 ½ degrees East 35.20 chains to the government road, then  
 North 37 ½ degrees East 20.00 chains to the shore and along the shore to the place of commencement.

[page 238]

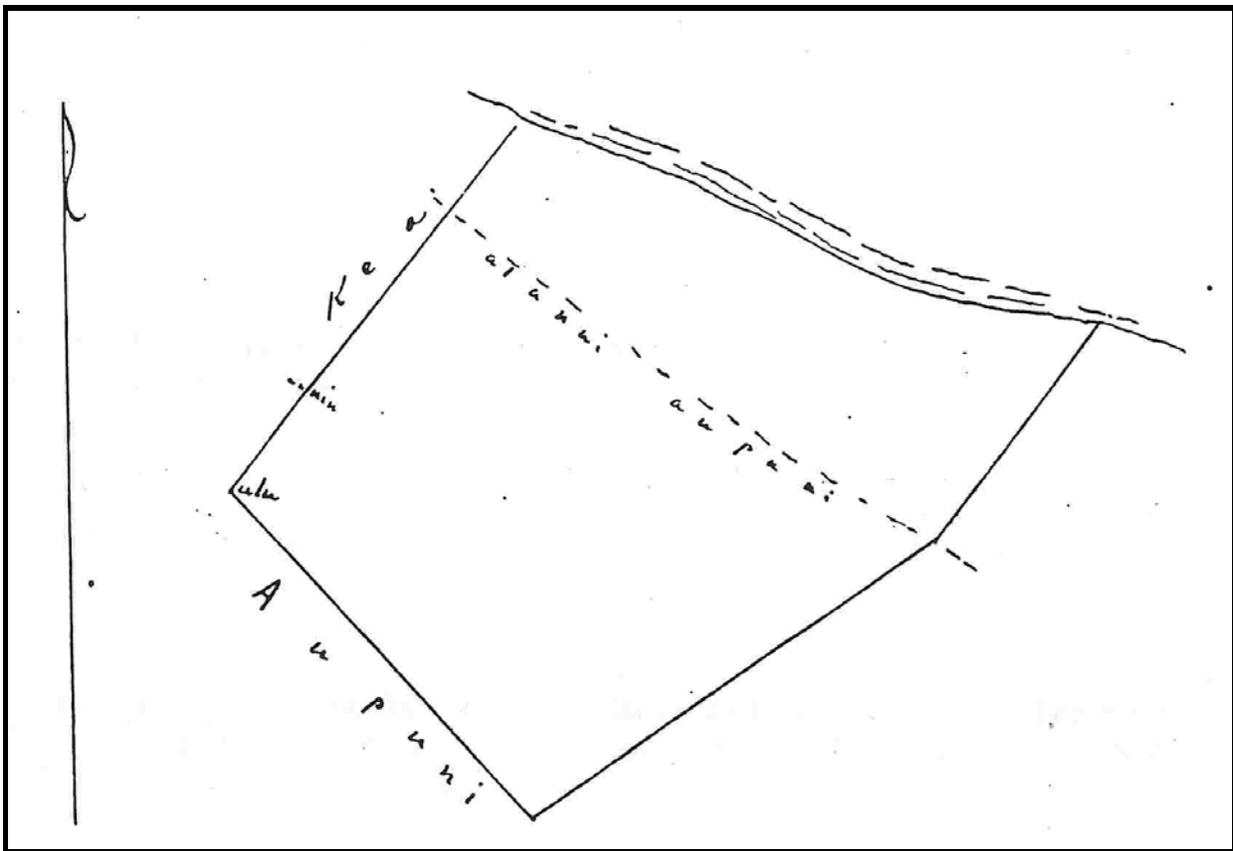
This land parcel contains 171.00 acres, give or take.  
 This is the source of its accruement; he gave \$52.75 to the Government Treasury, but, in addition, the Government received all the mineral and metal mines.

This land was given to Kapohano, his forever, as an alodium, and to his recipients as well as his savings, and taxes were placed on all Alodial titles by those of the Legislature from that time until now.

And for reasons of presentation I have placed my name as well as the seal of the Hawaiian Island Chain in Honolulu on this day, the 20<sup>th</sup> of January, 1855.

Name}  
 Kamehameha IV  
 V.K. Ka‘ahumanu  
 Keoni Ana

[Land Patent Grant No. 1537, Kapohano, Hālonā & Pōpoki Ahupua‘a, District of Puna, Island of Hawai‘i, 171 Acres, 1855]



MAP OF GRANT NO. 1537