

An Archaeological Inventory Survey of a 35.5-acre Parcel Located at Pohoiki Bay

TMK: (3) 1-3-08:034

Pohoiki and Keahialaka *ahupua'a*
Puna District
Island of Hawai'i

FINAL VERSION



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EXECUTIVE SUMMARY

At the request of the County of Hawai‘i and Merrill and Ida Smith, ASM Affiliates, Inc. conducted an Archaeological Inventory Survey of a roughly 35.5 acre parcel (TMK: (3) 1-3-08:034) in Pohoiki and Keahialaka *ahupua‘a*, Puna District, Island of Hawai‘i. The County of Hawai‘i intends to purchase a 26.782 acre portion of the parcel from the current landowners (Merrill and Ida Smith) and subdivide the parcel leaving the Smiths with a 8.785 acre parcel. The Smiths currently live in a renovated nineteenth century concrete structure located in the northwestern portion of the property. The acquisition of the property, its subdivision, and the continued occupancy of the historic structure together require a state Conservation District use permit and a county SMA permit. The current study was prepared as documentation in support of both of these application processes. This study was undertaken in accordance with Hawai‘i Administrative Rules 13§13–275, and was performed in compliance with the Rules Governing Minimal Standards for Archaeological Inventory Surveys and Reports contained in Hawai‘i Administrative Rules 13§13–276.

Fieldwork for the current project was conducted from April 21 through May 5, 2014. As a result of the current fieldwork twenty-seven sites (containing more than seventy features) were recorded within the project area. Five of the sites had been previously recorded and include the Pohoiki Warm Spring (Site 2510), a Historic mill complex (Site 2511), a Precontact to early Historic habitation complex (Site 2515), an agricultural complex (Site 2516), and a section of the old coastal Government Road (Site 2530). The twenty-two sites newly recorded within the project area include two concrete cisterns (Sites 30129 and 30135), a stone-lined pit (Site 30130), a large enclosure thought to be used for Historic agricultural purposes (Site 30131), two concrete foundations (Sites 30132 and 30133), a free-standing, concrete oven and smokestack (Site 30134), a Historic enclosure with an associated concrete privy (Site 30136), the former location of a Historic roadway referred to on old maps as Rycroft’s Road (Site 30137), four core-filled wall segments (Sites 30138, 30140, 30145, and 30146), an L-shaped alignment (Site 30139), a complex consisting of two alignments and an enclosure (Site 30141), an agricultural complex (Site 30142) with an associated enclosure of unknown function (Site 30143), a stepping-stone trail segment (Site 30144), an anchialine pond (Site 30147), a coastal habitation complex (Site 30148), a coastal agricultural complex (Site 30149), and a large area in the central portion of the study parcel where informal agriculture may have been practiced during the Precontact Period (Site 30150).

All of the sites are considered significant under Criterion D for the information they have yielded and can continue to yield with respect to Precontact land use activities and patterns as well as how the study area landscape evolved through Historic times into the present. Two of the sites (SIHP Sites 2516 and 30131) are considered additionally significant under Criterion C as excellent examples of their respective sites types; both agricultural in nature, one of a traditional type dating from the Precontact/Historic Periods and the other a unique example of a site type dating from the late nineteenth/early twentieth century. Two sites (SIHP Sites 30136 and 30137) are considered additionally significant under Criterion B as they are directly associated with Robert Rycroft, a locally significant historic figure. Lastly, there is one site (SIHP Site 2511) that is considered additionally significant under Criterion A for its association with early timber milling and coffee production in the Puna area, Criterion B for its direct association with Robert Rycroft, a locally significant historic figure, and Criterion C as an rare and excellent example of an early industrial concrete structure, perhaps the earliest of its design and size on Hawai‘i Island.

The fourteen sites (SIHP Sites 2510, 2516, 2530, 30140, 30141, 30142, 30143, 30144, 30145, 30146, 30147, 30148, 30149, 30150) on the soon to be created County parcel will be preserved, with one of those sites (SIHP Site 2516) recommended for further investigation (as agreed upon with DLNR-SHPD) through a selective data recovery process to aid in comprehending the specific functional nature of some of its many features and to better understand the its temporal development. The parcel that will be retained by the Smith’s has a predominately late nineteenth/early twentieth century archaeological landscape consisting of thirteen sites (SIHP Sites 2511, 2515, 30129, 30130, 30131, 30132, 30133, 30134, 30135, 30136, 30137, 30138, and 30139), all of which (with the exception of Site 2515) likely somewhat interrelated with respect to Rycroft’s residential, commercial, and industrial use of the land. As this assemblage of sites has been comprehensively documented as a result of the current study, no further historic preservation work is recommended for these sites, except for Site 30131, which is recommended for preservation. The one site on the soon to be created Smith parcel that appears to represent an earlier (Precontact/early Historic) time period is SIHP Site 2515; this site is recommended for preservation.

Going forward, the owners of the eventual 8.785 acre parcel should prepare a preservation plan for SIHP Sites 2525 and 30131 in compliance with HAR 13§13-277; and the County of Hawai‘i should prepare a preservation plan for the fourteen sites on their eventual 26.782 acre parcel in compliance with HAR 13§13-277. This latter plan should contain a data recovery element for SIHP Site 2516. These plans should be submitted to DLNR-SHPD for their review and approval.

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1. INTRODUCTION

At the request of the County of Hawai‘i and Merrill and Ida Smith, ASM Affiliates, Inc. conducted an Archaeological Inventory Survey of a roughly 35.5 acre parcel (TMK: (3) 1-3-08:034) in Pohoiki and Keahialaka *ahupua‘a*, Puna District, Island of Hawai‘i (Figures 1 and 2). The County of Hawai‘i intends to purchase a 26.782 acre portion of the parcel from the current landowners (Merrill and Ida Smith) and subdivide the parcel leaving the Smiths with a 8.785 acre parcel (Figure 3). The Smiths currently live in a renovated nineteenth century concrete structure located in the northwestern portion of the property. The acquisition of the property, its subdivision, and the continued occupancy of the historic structure together require a state Conservation District use permit and a county SMA permit. The current study was prepared as documentation in support of both of these application processes.

This study was undertaken in accordance with Hawai‘i Administrative Rules 13§13–275, and was performed in compliance with the Rules Governing Minimal Standards for Archaeological Inventory Surveys and Reports as contained in Hawai‘i Administrative Rules 13§13–276. Compliance with the above standards is sufficient for meeting the initial historic preservation review process requirements of both the Department of Land and Natural Resources and the County of Hawai‘i Planning Department. This report contains background information outlining the project area’s physical and cultural contexts, a presentation of previous archaeological work in the vicinity of the project area, and current survey expectations based on that previous work. Also presented is an explanation of the project’s methods, detailed descriptions of the archaeological features encountered, interpretation and evaluation of those resources, and treatment recommendations for the documented sites.

PROJECT AREA DESCRIPTION

The current project area consists of a roughly 35.5-acre study parcel (TMK: (3) 1-3-08:034) located within the *ahupua‘a* of Pohoiki and Keahialaka in the District of Puna along the southeastern shore of Hawai‘i Island at Pohoiki Bay (see Figures 1 and 2). Situated *makai* of the Kalapana-Kapoho Road (Route 137) and southwest of the Pāhoa-Pohoiki Road, the study area stretches along the northwestern shore of the Pohoiki Bay for a distance of roughly 600 meters (Figure 4). The four-way intersection of these two roads occurs at the northern corner of the study parcel (Figure 5). The Pāhoa-Pohoiki Road right-of-way forms the 300 meter long northeastern boundary of the parcel and the Kalapana-Kapoho Road right-of-way forms the 650 meter long northwestern boundary. The 280 meter long southwestern boundary is a straight line projected from the recently surveyed and flagged western corner of the study parcel to the coast (see Figure 3). Although not marked in the field, the adjoining property to the southwest of the study parcel has been previously grubbed and graded, making the approximate location of the southwestern boundary easily identifiable, given the obvious change in terrain and vegetation (Figure 6). Two small, privately-owned parcels along the shore of Pohoiki Bay – TMKs: (3) 1-3-08:013 and 086, 0.411 acres and 0.5 acres respectively– are excluded from the overall survey area described above (see Figures 2 and 3). A gated easement to TMK: (3) 1-3-08:013 (the Kuamo‘o property) extends across the current project area from the Kalapana-Kapoho Road (Figure 7). Isaac Kepo‘okalani Hale Beach Park, a popular surfing and recreation area maintained by the County of Hawai‘i, bounds the current project area to the east. The beach park offers picnic, camping, restroom, playground, lifeguard, and parking facilities along with the only boat ramp in the District of Puna (Figure 8), and is frequented by fishermen, boat owners, surfers, swimmers, campers, locals, and tourists alike.

This topographic map depicts the Pahoiki area in Hawaii, showing the Pahoiki Lava Flow, Pualaa, and the Project area highlighted in orange. The map includes contour lines, roads, and various geographical features like craters and forests. The Project area is located near the intersection of the Pahoiki Lava Flow and the Pualaa area, adjacent to the Pahoiki Crater. The map also shows the Pualaa Crater, the Pualaa Crater, and the Pualaa Crater. The map is oriented with North at the top and includes a scale bar and a north arrow.

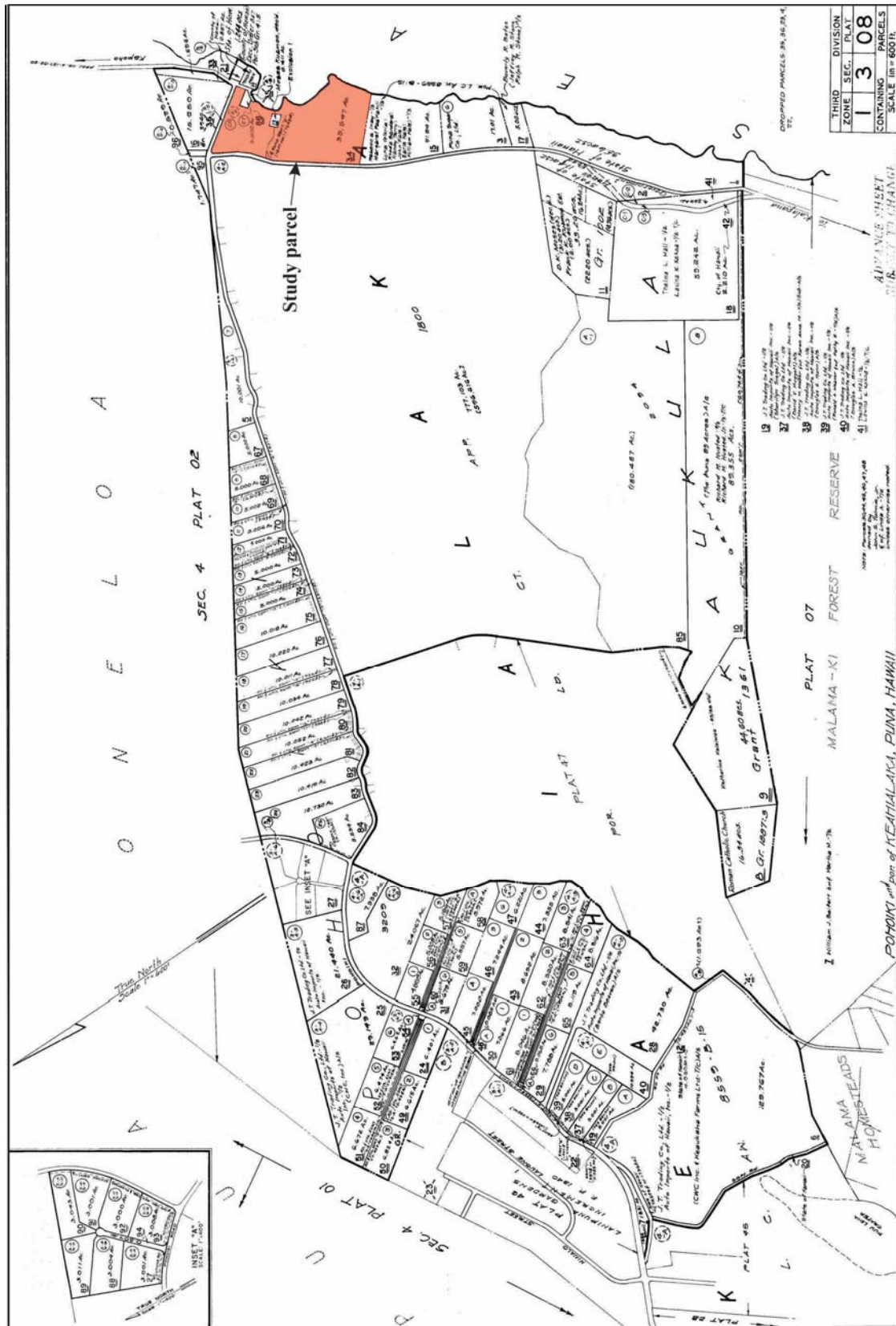


Figure 2. Tax Map Key (TMK): (3) 1-3-08 showing the current study parcel (034).

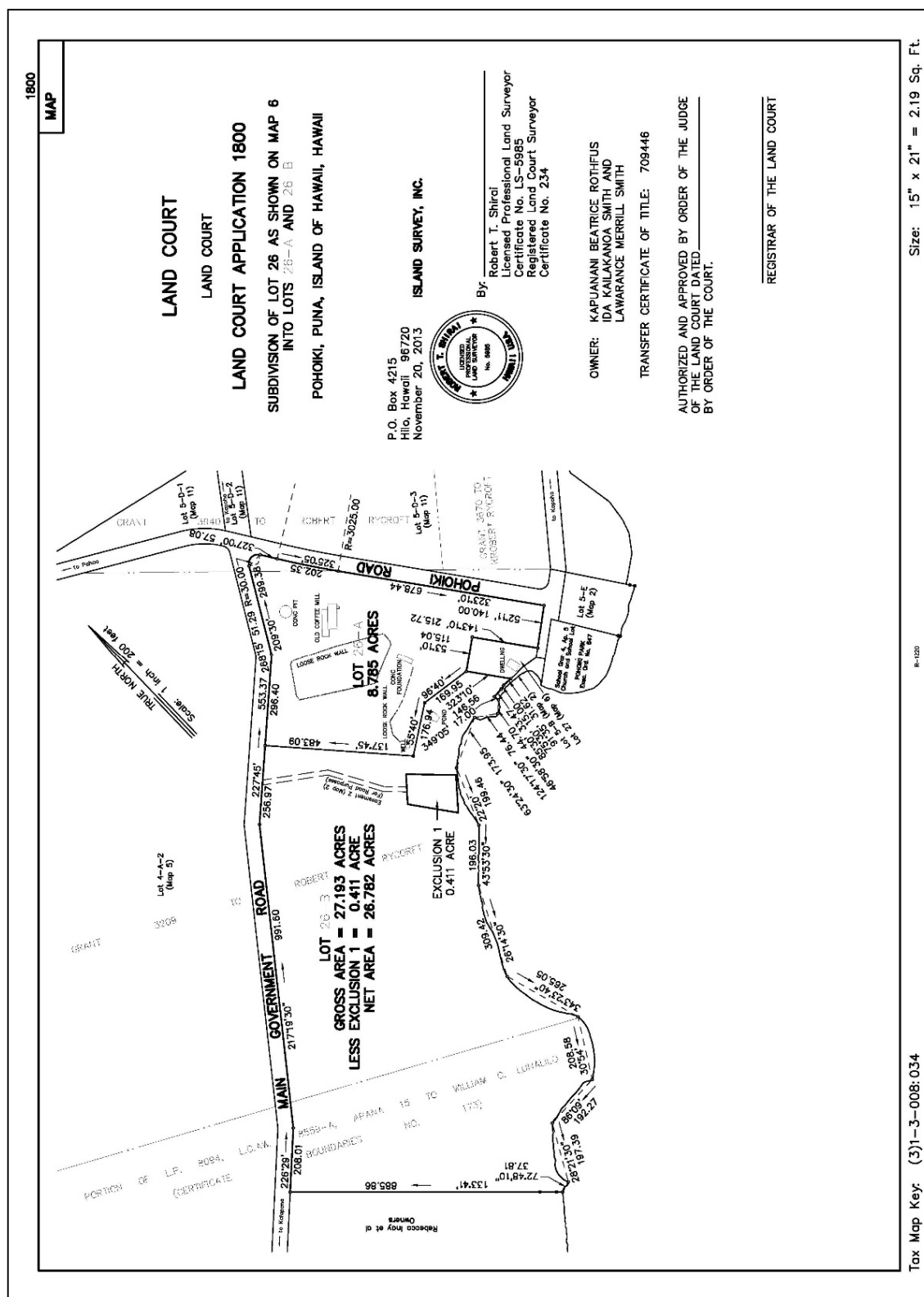


Figure 3. Map showing the proposed subdivision of TMK: (3) 1-3-08:034.



Figure 4. Project area coastline, view to the northeast.



Figure 5. Northern corner of the project area (right) at the four-way intersection of the Kalapana-Kapoho and Pāhoa-Pohoiki Roads, view to the southeast.



Figure 6. Aerial image (from Google Earth) showing the current project area.



Figure 7. Gated easement from the Kalapana-Kapoho Road to the Kuamo‘o property, view to the southeast.



Figure 8. Isaac Kepo‘okalani Hale Beach Park boat ramp, view to the east.

A well-travelled trail (Figure 9) from Isaac Kepo'okalani Hale Beach Park extends southwest along the coast of the project area to Lae O Kahuna, the point at the southern end of Pohoiki Bay (Figure 10). The trail accesses a small warm pond situated at the innermost recess of the bay (Figure 11), and then continues to a rocky inlet near the Pohoiki/Keahialaka boundary where a series of three small tide pools that fill up at high tide are located (Figure 12). While the coast of the Pohoiki Ahupua'a portion of the study area consists primarily of water rounded cobbles overlying bedrock ledges at both ends and in the center that are submerged at high tide, the coast of Keahialaka Ahupua'a, beyond Lae O Kahuna, consists primarily of low bedrock cliffs (Figure 13). The coastal strand at this end of the project area, extending inland for a distance of roughly fifty meters, consists of a series of tidal marshes separated from one another by alternating ridges of bedrock. The marshy areas are mostly dry and muddy at low tide, but fill up with brackish water at high tide (to a depth of fifty centimeters more or less; Figure 14); the water in these tidal marshes at high tide was observed to be teeming with 'ōpae'ula (*Halocaridina rubra*; a species of tiny red shrimp endemic to the Hawaiian Islands) (Figure 15). Approximately one hundred meters southwest of the current project area, the coast of Keahialaka Ahupua'a transitions to water rounded cobbles; the well-preserved *heiau* of Mahinaakaaka (Figure 16) is situated near this transition point adjacent to the seaward edge of two large ponds.

Elevation within the current project area ranges from sea level to 10.6 meters (35 feet) above sea level. The study parcel is made up of three distinct flow episodes from eruptions of Kīlauea Volcano (Wolfe and Morris 1996; Figure 17). The lavas are comprised of mixed *pāhoehoe* and 'a'ā material that is typical of flows from fissure eruptions along the east rift zone of the volcano (Wolfe and Morris 1996). The southwestern portion of the project consists of lava flows (p4y) from eruptions that occurred roughly 200-400 years before present, the central portion, directly inland of Pohoiki Bay, is situated on older lava flows (p3) that occurred roughly 750-1,500 years before present, and the northeastern portion is situated on lava flows (p4o) that occurred roughly 400-750 years before present. The southwestern edge of the older (p3) lava, where it transitions to a younger (p4y) lava, is evident within the study parcel as a southwest-facing slope that extends from the Kalapana-Kapoho Road to the coast near the Kuamo'o property.

Given the relatively young geologic age of the lava substrates, soil development within the project area is limited. The United States Department of Agriculture (USDA) Natural Resources Conservation Service's (NRCS) Web Soil Survey classifies the coastal soils of Pohoiki and Keahialaka *ahupua'a* as Malama extremely cobbly highly decomposed plant material (USDA-NRCS 2014). These strongly acidic soils, which form from decomposed plant material, typically overlay 'a'ā lava flows and are generally no more than three inches thick, but loose cobble material may continue beneath their surface layer to a depth of three to fifty inches before reaching bedrock. The soil usually stays moist throughout the year, as this portion of the Puna coast receives between seventy-five and one hundred inches of rain annually, but may experience periodic drying during months of April to October when the least amount of rain typically falls (USDA-NRCS 2014).

Vegetation cover across the study parcel varies with proximity to the coast. The coastal strand supports a growth of primarily coconut (*Calophyllum inophyllum*) and *kamani* (*Calophyllum inophyllum*) trees, with stands of *milo* (*Thespesia populnea*), *hau* (*Hibiscus tiliaceus*), *naupaka kahakai* (*Scaevola sericea*), and tree heliotrope (*Heliotropium anomalum*) also present. These plant species dominate the coastal margin and are fairly common as far inland as the coastal trail (20 to 50 meters from the coast), but are not found at inland elevations. Beginning at about the coastal trail, *noni* (*Morinda citrifolia*), *philodendron* sp., shoebutton holly (*Ardisia elliptica*), *laua'e* (*Microsorium scolopendria*), and *maile pilau* (*Paederia foetida*) begin to mix with the coconuts and *kamani* trees. A little further inland, the over story of *kamani* dissipates and the vegetation cover transitions to thick stands of *hala* (*Pandanus odoratissimus*) and shoebutton holly interspersed with guava (*Psidium guajava*), *waiwī* (*Psidium cattleianum*), mango (*Mangifera indica*), *cecropia* sp., *alahe'e* (*Canthium odoratum*), *noni*, *ti* (*Cordyline fruticosa*), *Melochia umbellata*, 'ulu (*Artocarpus communis*), *kukui* (*Aleurites moluccana*), *lau'ae*, umbrella trees (*Brassaia actinophylla*), Christmas-berry (*Schinus terebinthifolius*), and gunpowder-trees (*Trema orientalis*), all tangled together with *maile pilau*, *philodendron* sp., hog peanut (*Amphicarpaea bracteata*), and other vines. This vegetation pattern extends inland to the Kalapana-Kapoho Road across most of the project area. A lawn area surrounding the Hoapili-Smith residence at the northeastern end of the study parcel is the only portion of the project area not blanketed by dense vegetation.

Two residential structures are currently occupied on the subject parcel. Both residences are located at the northeastern end of the property and are accessed by a driveway from the Kalapana-Kapoho Road (Figure 18). Each of the structures are Historic concrete buildings that have been converted to dwellings in recent years; the larger, two-story structure (the Hoapili-Smith residence; Figure 19) is a former mill, and the smaller structure (the care-taker residence; Figure 20) is a former pig pen. A grass lawn containing large trees (mangos and monkey pods) ringed by recent rock work extends from the dwellings to the Isaac Kepo'okalani Hale Beach Park parking lot (Figure 21). A wooden house structure, located at the seaward end of the lawn nearer to the coast and the Pohoiki boat ramp, is situated on TMK: (3) 1-3-08:086 (the Hale residence), and is not included in the current study area.



Figure 9. Well-travelled trail near the coast of the current project area, view to the southwest.



Figure 10. Southern point of Pohoiki Bay (Lae O Kahuna; background), view to the south.



Figure 11. Pohoiki warm pond, view to the northwest.



Figure 12. Tide pools near the Pohoiki/Keahialaka boundary at high tide, view to the southeast.



Figure 13. The coast of Keahialaka Ahupua‘a southwest of Lae O Kahuna, view to the southwest.



Figure 14. Tidal marshy area at the coast of Keahialaka Ahupua‘a, view to the southeast.



Figure 15. 'Ōpae'ula in a tidal marsh, overview.



Figure 16. Mahinaakaaka Heiau situated along the coast of Keahialaka Ahupua'a approximately one hundred meters southwest of the current project area, view to the west.

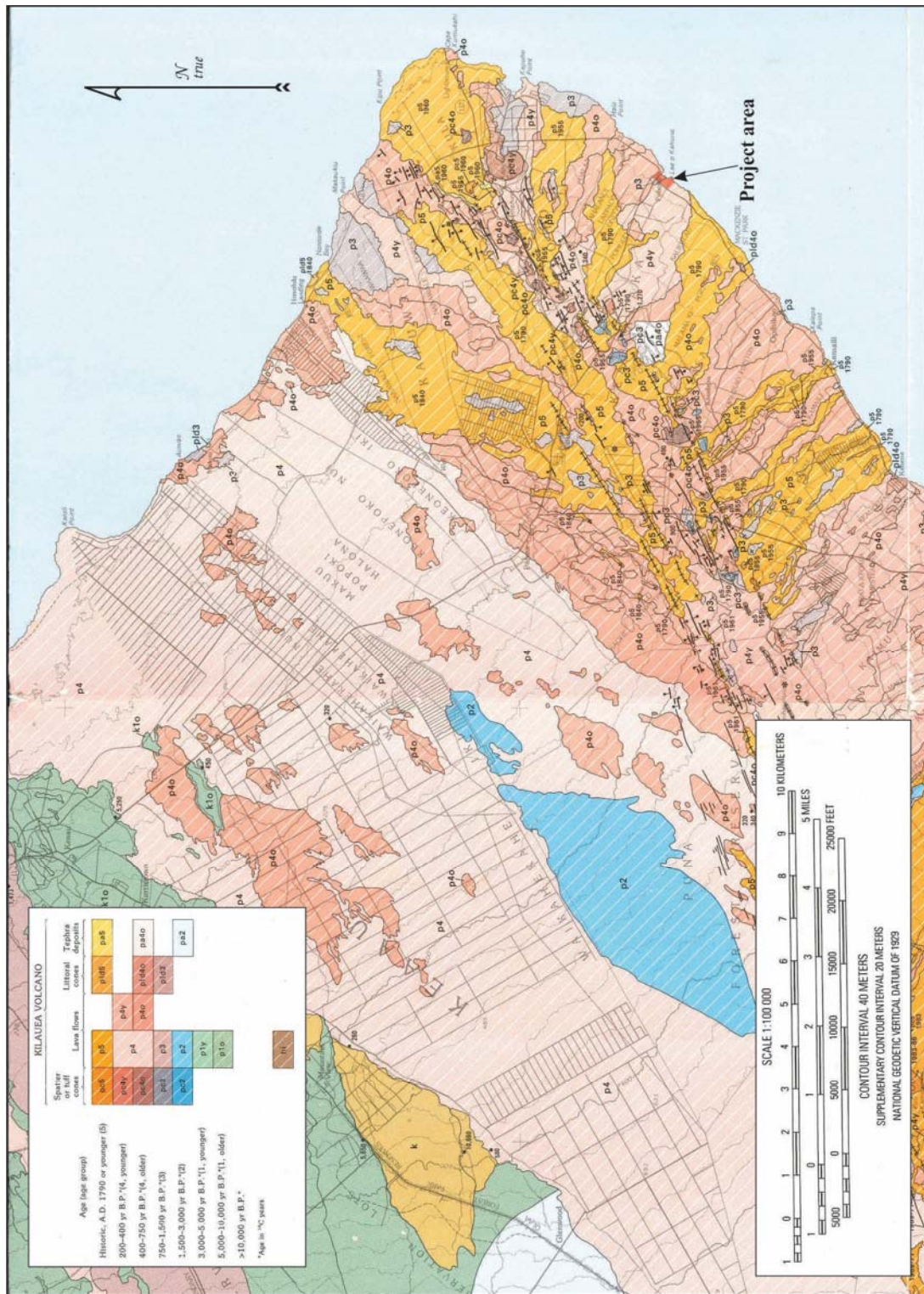


Figure 17. Portion of a *Geologic Map of the Island of Hawaii* (compiled by Wolfe and Morris 1996) showing the age of lava flows within the current project area.



Figure 18. Driveway leading from the Kalapana-Kapoho Road to the Hoapili-Smith's, view to the southwest.



Figure 19. Historic coffee mill converted to the Hoapili-Smith residence, view to the northwest.



Figure 20. Old pig pen converted to the care-taker residence, view to the southwest.



Figure 21. Lawn extending to the Isaac Kepo'okalani Hale Beach Park parking lot, view to the southeast.

2. BACKGROUND

To generate a set of expectations regarding the nature of archaeological resources that might be encountered within the project area, and to establish an environment within which to access the significance of any such resources, a general culture-historical background for the region is presented, the results of previous archaeological studies conducted in the vicinity of the project area are summarized, and oral-historical information pertaining to the specific study area is discussed.

CULTURE-HISTORICAL CONTEXT

The *ahupua'a* of Pohoiki and Keahialaka are two of some fifty traditional land divisions found in the District of Puna on the eastern shores of the Island of Hawai'i (Figure 22). In the book *Native Planters In Old Hawaii*, Handy and Handy (1991) describe Puna as an agriculturally fertile land that has been repeatedly devastated by lava flows. Writing during the 1930s, they relate that:

The land division named Puna—one of the six major chiefdoms of the island of Hawai'i said to have been cut ('*oki*') by the son of the successor of the island's first unifier, Umi-a-Liloa—lies between Hilo to the north and Ka'u to the south, and it projects sharply to the east as a great promontory into the Pacific. Kapoho is the most easterly point at Cape Kumukahi. The uplands of Puna extend back toward the great central heights of Mauna Loa, and in the past its lands have been built, and devastated, and built again by that mountain's fires. In the long intervals, vegetation took hold, beginning with miniscule mosses and lichens, then ferns and hardier shrubs, until the uplands became green and forested and good earth and humus covered much of the lava-strewn terrain, making interior Puna a place of great beauty...

...One of the most interesting things about Puna is that Hawaiians believe, and their traditions imply that this was once Hawaii's richest agricultural region and that it is only in relatively recent time that volcanic eruption has destroyed much of its best land. Unquestionably lava flows in historic times have covered more good gardening land here than in any other district. But the present desolation was largely brought about by the gradual abandonment of their country by Hawaiians after sugar and ranching came in... (Handy and Handy 1991:539-542)

The District of Puna is situated largely on the slopes of Kīlauea Volcano. The east rift zone of the volcano, a broad, low profile ridge (2-4 kilometers wide) formed by countless eruptions originating from numerous vents along its crest, extends through the district from the Kīlauea Caldera to Cape Kumukahi at the eastern tip of the island (a distance of 55 kilometers). The north side of the rift zone, extending to the slopes of Mauna Loa and to the northeastern Puna coast, is covered primarily by lavas that erupted from the summit of Kīlauea about 550-600 years ago. In contrast, nearly the entire crest of the rift zone is covered by lava that is less than 400 years old, and most of the young lava flows that emanate from vents along the crest have spread southward towards the southeastern coast of the district, covering the older lava flows in the process (Wolfe and Morris 1996). The *ahupua'a* of Pohoiki and Keahialaka are situated along the southern margin of the east rift zone, and as such are covered primarily by Holocene lavas composed of Puna Basalt that originated from fissure eruptions less than 750 years ago (see Figure 17); the two most recent lava flows in these two *ahupua'a* occurred in A.D. 1790 and A.D. 1955.

The *ahupua'a* of Keahialaka and Pohoiki include not only the land area they encompass on the southeastern slope of Kīlauea Volcano with its vast agricultural and forest resources, but also extend out to the ocean fisheries fronting them. Thus, the former residents of these *ahupua'a* were once able to procure nearly all that they needed to sustain their families and contribute to the larger community from within the land division. The *ahupua'a* resources in turn helped support the *ali'i* that ruled the District of Puna (Maly 1998). The current project area, located at the coastal margin of the study *ahupua'a*, along the shores of Pohoiki Bay (approximately 10.5 kilometers southwest of Cape Kumukahi), is also situated near, arguably, the best landing (both historically and currently) along the entire southeastern shore of Hawai'i Island.

It is within this general context that the following discussion of the history and culture of the study area is framed. The chronological summary presented below begins with the peopling of the Hawaiian Islands and includes the presentation of a generalized model of Hawaiian Prehistory containing specific legendary references to the study *ahupua'a* and a discussion of the general settlement patterns. The discussion of Prehistory and legendary references is followed by a summary of Historic events in the district that begins with the arrival of foreigners in the islands and then continues with the history of land use in Puna after contact. The summary includes a discussion of the changing life ways and population decline of the early Historic Period, a review of land tenure in the study *ahupua'a* during the

Māhele 'Āina of 1848, and documentation of the transition to modern industries and agriculture during the late nineteenth and twentieth centuries. A synthesis of the Precontact settlement patterns and the Historically documented land use, combined with a review of the findings of previously conducted archeological studies, provides a means for predicting the types of archaeological features that may be encountered within the project area, and a basis for assessing the function, age, and significance of any encountered archaeological sites.

A Generalized Model of Hawaiian Prehistory

The generalized cultural sequence that follows is based on Kirch's (1985) model, but is amended to include recent revisions offered by Kirch (2011). The conventional wisdom has been that first inhabitants of Hawai'i Island arrived by at least A.D. 300 and focused habitation and subsistence activity on the windward side of the island (Burtchard 1995; Kirch 1985; Hommon 1986). However, there is no archaeological evidence for occupation of Hawai'i Island (or perhaps anywhere in Hawai'i) during this initial settlement, or colonization stage of island occupation (A.D. 300 to 600). More recently, Kirch (2011) has convincingly argued that Polynesians may not have arrived to the Hawaiian Islands until at least A.D. 1000, but expanded rapidly thereafter. The implications of this on the currently accepted chronology would alter the timing of the Settlement, Developmental, and Expansion Periods, possibly shifting the Settlement Period to A.D. 1000 to 1100, the Developmental Period to A.D. 1100 to 1350, the Expansion Period to A.D. 1350 to 1650, and the Proto-Historic Period to A.D. 1650-1795.

The initial settlement in Hawai'i is believed to have occurred from the southern Marquesas Islands. This was a period of great exploitation and environmental modification, when early Hawaiian farmers developed new subsistence strategies by adapting their familiar patterns and traditional tools to their new environment (Kirch 1985; Pogue 1978). Their ancient and ingrained philosophy of life tied them to their environment and kept order. Order was further assured by the conical clan principle of genealogical seniority (Kirch 1984). According to Fornander (1969), the Hawaiians brought from their homeland certain universal Polynesian customs: the major gods Kāne, Kū, and Lono; the *kapu* system of law and order; cities of refuge; the '*aumakua* concept; various epiphenomenal beliefs; and the concept of *mana*. Over a period of several centuries areas with the richest natural resources became populated and perhaps even crowded, and the population began expanding to the *kona* (leeward side) and more remote regions of the island (Cordy 2000). In Puna, a few small communities were initially established along sheltered bays with access to fresh water and rich marine resources. The communities shared extended familial relations, and there was an occupational focus on the collection of marine resources.

The Development Period brought about a uniquely Hawaiian culture. The portable artifacts found in archaeological sites of this period reflect not only an evolution of the traditional tools, but some distinctly Hawaiian inventions. The adze (*ko'i*) evolved from the typical Polynesian variations of plano-convex, trapezoidal, and reverse-triangular cross-section to a very standard Hawaiian rectangular quadrangular tanged adze. A few areas in Hawai'i produced quality basalt for adze production. Mauna Kea, on the island of Hawai'i, possessed a well-known adze quarry. The two-piece fishhook and the octopus-lure breadloaf sinker are Hawaiian inventions of this period, as are '*ulu maika* stones and *lei niho palaoa*. The latter was a status item worn by those of high rank, indicating a trend toward greater status differentiation (Kirch 1985). As the environment reached its maximum carrying capacity, the result was social stress, hostility, and war between neighboring groups (Kirch 1985).

The Expansion Period is characterized by the greatest social stratification, major socioeconomic changes, and intensive land modification. Most of the ecologically favorable zones of the windward and coastal regions of all major islands were settled and the more marginal leeward areas were being developed. The greatest population growth occurred during the Expansion Period. It was during the Expansion Period that a second major migration settled in Hawai'i, this time from Tahiti in the Society Islands. According to Kamakau (1976), the *kahuna* Pā'ao settled in the islands during the 13th century. Pā'ao was the keeper of the god Kū'kā'ilimoku, who had fought bitterly with his older brother, the high priest Lonopele. After much tragedy on both sides, Pā'ao was expelled from his homeland by Lonopele. He prepared for a long voyage, and set out across the ocean in search of a new land. On board Pā'ao's canoes were thirty-eight men (*kānaka*), two stewards (*kānaka 'ā'ipu'upu'u*), the chief Pilika'aiea (Pili) and his wife Hina'aukekele, Nāmau'u o Malaia, the sister of Pā'ao, and the prophet Makuaka'ūmana (Kamakau 1992). In 1866, Kamakau told the following story of their arrival in Hawai'i:

Puna on Hawai'i Island was the first land reached by Pā'ao, and here in Puna he built his first *heiau* for his god Aha'ula and named it Aha'ula [Waha'ula]. It was a *luakini*. From Puna, Pā'ao went on to land in Kohala, at Pu'uepa. He built a *heiau* there called Mo'okini, a *luakini*.

2. Background

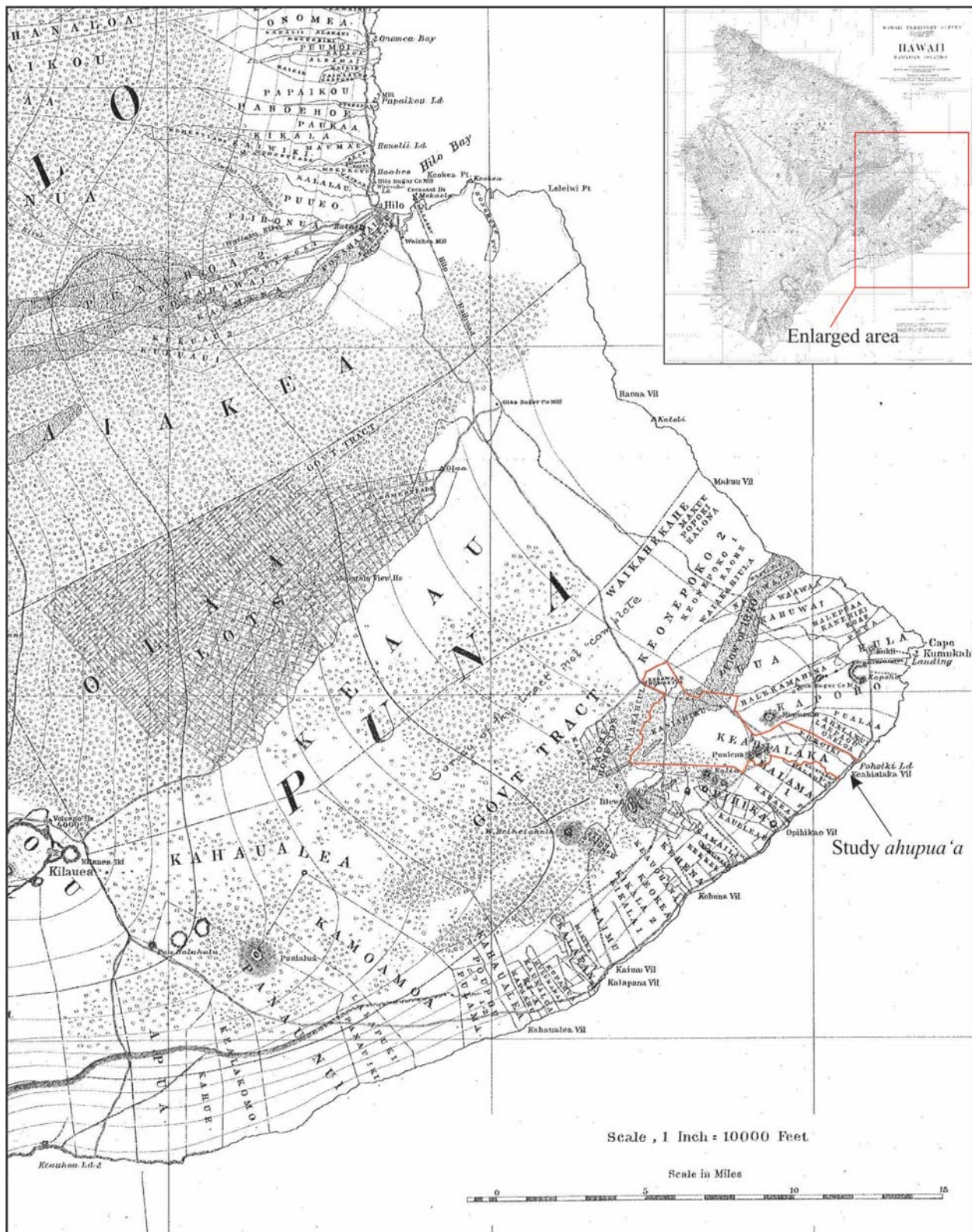


Figure 22. Portion of Hawai'i Registered Map No. 2124 (prepared by John M. Donn in 1901) showing Pohoiki and Keahialaka ahupua'a.

It is thought that Pā‘ao came to Hawai‘i in the time of the *ali‘i* La‘au because Pili ruled as *mo‘i* after La‘au. You will see Pili there in the line of succession, the *mo‘o kū‘auhau*, of Hanala‘anui. It was said that Hawai‘i Island was without a chief, and so a chief was brought from Kahiki; this is according to chiefly genealogies. Hawai‘i Island had been without a chief for a long time, and the chiefs of Hawai‘i were *ali‘i maka‘āinana* or just commoners, *maka‘āinana*, during this time.

... There were seventeen generations during which Hawai‘i Island was without chiefs—some eight hundred years. ... The lack of a high chief was the reason for seeking a chief in Kahiki, and that is perhaps how Pili became the chief of Hawai‘i. He was a chief from Kahiki and became the ancestor of chiefs and people of Hawai‘i Island. (1992:100-102)

According to Kirch’s (1985) model, the concept of the *ahupua‘a* was established sometime during the A.D. 1400s, adding another component to a then well-stratified society. This land unit became the equivalent of a local community, with its own social, economic, and political significance. *Ahupua‘a* were ruled by *ali‘i ‘ai ahupua‘a* or lesser chiefs; who, for the most part, had complete autonomy over this generally economically self-supporting piece of land, which was managed by a *konohiki*. *Ahupua‘a* were usually wedge or pie-shaped, incorporating all of the eco-zones from the mountains to the sea and for several hundred yards beyond the shore, assuring a diverse subsistence resource base (Hommon 1986). This form of district subdividing was integral to Hawaiian life and was the product of strictly adhered to resource management planning. In this system, the land provided fruits and vegetables and some meat for the diet, and the ocean provided a wealth of protein resources (Rechtman and Maly 2003).

Entire *ahupua‘a*, or portions of the land were generally under the jurisdiction of appointed *konohiki*, or lesser chief-landlords, who answered to an *ali‘i-‘ai-ahupua‘a* (chief who controlled the *ahupua‘a* resources). The *ali‘i-‘ai-ahupua‘a* in turn answered to an *ali‘i ‘ai moku* (chief who claimed the abundance of the entire district). Thus, *ahupua‘a* resources supported not only the *maka‘āinana* and *‘ohana* who lived on the land, but also contributed to the support of the royal community of regional and/or island kingdoms. This form of district subdividing was integral to Hawaiian life and was the product of strictly adhered to resources management planning. In this system, the land provided fruits and vegetables and some meat for the diet, and the ocean provided a wealth of protein resources. Also, in communities with long-term royal residents, divisions of labor (with specialists in various occupations on land and in procurement of marine resources) came to be strictly adhered to.

The Precontact population of the Puna District lived in small settlements along the coast where they subsisted on marine resources and agricultural products. The villages of Puna, McEldowney (1979) notes, were similar to those of the Hilo District, and they:

...comprised the same complex of huts, gardens, windbreaking shrubs, and utilized groves, although the form and overall size of each appear to differ. The major differences between this portion of the coast and Hilo occurred in the type of agriculture practiced and structural forms reflecting the uneven nature of the young terrain. Platforms and walls were built to include and abut outcrops, crevices were filled and paved for burials, and the large numbers of loose surface stones were arranged into terraces. To supplement the limited and often spotty deposits of soil, mounds were built of gathered soil, mulch, sorted sizes of stones, and in many circumstances, from burnt brush and surrounding the gardens. Although all major cultigens appear to have been present in these gardens, sweet potatoes, ti (*Cordyline terminalis*), noni (*Morinda citrifolia*), and gourds (*Lagenaria siceraria*) seem to have been more conspicuous. Breadfruit, pandanus, and mountain apple (*Eugenia malaccensis*) were the more significant components of the groves that grew in more disjunct patterns than those in Hilo Bay. (McEldowney 1979:17)

Handy and Handy relate that, “the wet and sometimes marshy pandanus forests from Kapoho through Poho-iki to ‘Opihikao used to be planted with taro in places” (1991:541). The method of planting taro in the low-land forests of Puna is described by Handy and Handy (1991:104) as the “*pahala* method”. This method involved excavating holes in ‘*a‘ā* lava within a *hala* grove, then mulching the holes with weeds and letting the mulch decompose, at which time taro cuttings wrapped in *hala* leaves were planted in them and more *hala* leaves were placed around the cuttings. The dry leaves were later burned to provide the plant with additional nourishment (Handy and Handy 1991).

By the seventeenth century, large areas of Hawai‘i Island (*moku āina* – districts) were controlled by a few powerful *ali‘i ‘ai moku*. There is island-wide evidence to suggest that growing conflicts between independent chiefdoms were resolved through warfare, culminating in a unified political structure at the district level. It has been suggested that the unification of the island resulted in a partial abandonment of portions of leeward Hawai‘i, with people moving to more favorable agricultural areas (Barrera 1971; Schilt and Sinoto 1980). ‘Umi a Līloa, a renowned *ali‘i* of the Pili line, is often credited with uniting the Island of Hawai‘i under one rule (Cordy 1994). Kamakau reports

that, at this time, “Hua-‘a was the chief of Puna, but Puna was seized by ‘Umi and his warrior adopted sons... Hua-‘a was killed by Pi‘i-mai-wa‘a on the battle field of Kuolo in Kea‘au, and Puna became ‘Umi-a-Liloa’s” (1961:17-18). Umi’s reign lasted until around ca. A.D. 1620, and was followed by the rule of his son, Keawenui a ‘Umi, and then his grandson, Lonoikamakahiki (Cordy 1994).

Kirch (1985) places the beginning of the Proto-Historic Period during the rule of Lonoikamakahiki. This was a time marked by both political intensification and stress and continual conquest by the reigning *ali‘i*. Wars occurred regularly between intra-island and inter-island polities during this period. It was during this time of warfare that Kamehameha, who would eventually rise to power and unite all the Hawaiian Islands under one rule, was born in the District of North Kohala on the Island of Hawai‘i (Kamakau 1992). There is some controversy about the year of his birth, but Kamakau (1992:66–68) places the birth event sometime between A.D. 1736 and 1758, most likely nearer to the later date.

In A.D. 1754, after many bloody battles, Kalani‘ōpu‘u, the *ali‘i* ‘*ai moku* of Ka‘ū, defeated his main rival Keaweopala in South Kona and declared himself ruler over all of the island of Hawai‘i (Kamakau 1992:78). Kalani‘ōpu‘u was a clever and able chief, and a famous athlete in all games of strength, but according to Kamakau (1992) he possessed one great fault, he loved war and had no regard for others’ land rights. According to Barrère (1959), the chiefs of the Puna District did not figure prominently into the Precontact political strife and turmoil on Hawai‘i Island. Barrère writes:

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)

Legendary References to Pohoiki and Keahialaka Ahupua‘a

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. As the Hawaiian people had no written language until Post-contact times, traditional *mo‘olelo* were passed down orally through the generations. Plentiful are the myths and legends associated with the beautiful *wahi pana* of Puna, which frequently refer to the majestic female fire deity, Pele, or “Pele-honua-mea (Pele of the sacred earth)” (Beckwith 1970). Most closely associated with the powerful, temperamental volcanoes of Hawai‘i, she was perhaps both feared and respected equally by the people of the islands. Nimmo (1990) relates that, “although the actual worship of Pele was most important in the districts of Hawai‘i that experienced active volcanism, the mythology of the goddess was widespread throughout the Hawaiian Islands”, but that, “there is no evidence that Pele was worshipped extensively beyond the volcano area of Hawai‘i, although her mythology was apparently widespread throughout the Hawaiian Islands and members of her family were important in ritual throughout the archipelago” (Nimmo 1990:44).

Pele-honua-mea (Pele of the sacred earth)

Kalakaua (1972) indicates that active worship of Pele was ongoing between the 12th and 19th centuries, and that the abolition of the *kapu* system in the late 19th century had little to no effect on this practice, which remains ongoing. In addition to being revered as a goddess, Pele was also worshipped as an ‘*aumakua* (ancestor god/guardian spirit) by her descendants. According to Nimmo, “most Hawaiians living in the volcano areas of Hawai‘i, the districts of Ka‘ū, Puna, and Kona, at the time of European contact traced their ancestry to Pele” (1990:43).

Pele is frequently and comprehensively referenced in historical and mythological literature, and traditional tales of Pele’s migration to Hawai‘i from Kahiki are many and varied. Beckwith (1970) relates:

According to Kalakaua, Pele's "favorite residence was the vast and ever-seething crater of Kīlauea, beneath whose molten flood, in halls of burning adamant and grottoes of fire, she consumed the offerings of her worshippers and devised destruction to those who long neglected her or failed to respect her prerogatives" (1972:139). Ho'oulumāhie (2006) indicates that on her way to Kīlauea Pele initially carved out a crater called Malama inland of her landing place at Keahialaka. Pele was dissatisfied with this crater, and proceeded to excavate another nearby crater called Pu'ulena, which she was also displeased with. Yet another crater dug by Pele was called Poho-iki, translated as "small depression" (Pukui 1974:187). This crater was also abandoned as she continued her pursuit for a suitable home.

Ke-ahi-a-Laka literally translates as "the fire [made] by Laka (a hula goddess)" (Pukui 1974:100). Keahialaka is referred to by Emerson (1915) as "Ahi-a-Laka," who argues the meaning is purely metaphorical, likening it to "the fires of passion." The actual origin of the name Keahialaka is unknown, but it may be affiliated with Pele's sister Laka, the ancestral goddess of hula.

Emerson (1915:190) presents an excerpt of a *mele* sung by Hi'iaka that describes the District of Puna and mentions the fires of her sister Laka:

*Aia la, lele-iwi o Maka-hana-loa!
Oni ana ka lae Ohi'a,
Ka lae apane, mauka o ka lae Manienie,
Iuka o Ke-ahi-a-Laka:
Oni ana ka lae, a me he kanaka la
Ka leo o ka pohaku i Kilauea.
Ha'i Kilauea, pau kekahi aoao o ka mahu nui,
Mahu-nui-akea.
E li'u mai ana ke ahi a ka pohaku.
No Puna au, no ka hikina a ka la i Hae'eha'e.*

See the cape that's a funeral pyre;
The tongue of ohi'a's grief-smitten.
Beyond, at peace, lies Maniē;
Above rage the fires of Laka.
The cape is passion-moved; how human
The groan of rocks in the fire-pit!
That cauldron of vapor and smoke –
One side-wall has broken away –
That covers the earth and the sky:
Out pours a deluge of rock a-flame.
My home-land is Puna, sworn guard
At the eastern gate of the Sun.

The Heart Stirring Story of Ka-Miki

A traditional *mo'olelo*, "The Heart Stirring Story of Ka-Miki" (*Kaao Hooniua Puuwai no Ka-Miki*), which originally appeared in *Ka Hoku o Hawai'i* (a Hawaiian language newspaper) between 1914 and 1917 tells of the two supernatural brothers, Ka-Miki and Maka'iole, who were skilled 'ōlohe (competitors/fighters) and their travels around Hawai'i Island by way of the ancient trails and paths (*ala loa* and *ala hele*), seeking competition with other 'ōlohe. As described by Maly:

The narratives were primarily recorded for the paper by Hawaiian historians John Wise and J.W.H.I. Kihe (with contributions from Steven Desha Sr.). While Ka-Miki is not an ancient account, the authors set the account in the thirteenth century (by association with the chief Pili, who came to Hawai'i with Pā'ao). They used a mixture of local stories, tales, and family traditions in association with place names to tie together fragments of site specific history that had been handed down over the generations. Thus, while in many cases, the personification of individuals and their associated place names may not be "ancient," the site documentation within the "story of Ka-Miki" is of both cultural and historical value. (1998:17)

A portion of the legend set in Puna, published between October 21 and November 18, 1915 and translated by Maly (1998:17-25), describes many people and places within the district, and mentions a young chief of Puna named Keahialaka. The Maly (1998) translation of the story is summarized below.

During an expedition through the uplands of Puna, Ka-Miki and Maka'iole encountered a man named Pōhakuloa who was intensely working on a large *koa* log. They were headed to Kea'au, but had lost their way. They stopped and asked Pōhakuloa for directions, but he was startled by the unexpected appearance of the brothers, and replied impolitely. Taunts were exchanged between the two parties, which led to a physical altercation. It was at this point, that Pōhakuloa realized that these two men were extraordinarily skilled as well as spiritually protected, and he admitted his defeat. Pōhakuloa wished to prepare a meal and drink of 'awa with his newfound friends, and solicited the help of his brother in law, an 'ōlohe chief named Kapu'euhi. However, Kapu'euhi had plans of his own. He intended to compete with and conquer the brothers, but was defeated by them instead. Kapu'euhi was infuriated by his defeat, and also by Pōhakuloa's refusal to aid in retaliation against Ka-Miki and Maka'iole.

Kapu'euhi invited the brothers back to his house to partake in a meal and a particularly potent type of *'awa*, scheming to get them drunk. Unbeknownst to Ka-Miki and Maka'iole, this was common practice for Kapu'euhi, who often housed weary travelers in his guest house, intoxicated them with *'awa*, then killed them and stole their precious belongings. Kapu'euhi waged a bet with the brothers; if they couldn't drink five cups of the *'awa*, then he would throw them out and they would be at the mercy of the Puna forest. Ka-Miki and Maka'iole agreed, and counteracted his bet with one of their own; if they were able to drink five cups, they would throw Kapu'euhi out of his own house. The brothers prayed and chanted to their ancestral goddess, and were able to consume the entire quantity of *'awa* without getting drunk. As agreed upon, Kapu'euhi was thrown out. Stunned, and angered that he was thwarted once again, Kapu'euhi requested assistance from Kaniahiku (a much feared Puna *'ōlohe* and forest guardian) and her grandson Keahialaka. "At that time, Keahialaka was under the guardianship of Pānau and Kaimū, and he enjoyed the ocean waters from Nānāwale to Kaunaloa, Puna" (*Ka Hoku o Hawai'i* October 28, 1915; translated by Maly 1998:20), which Maly (1998) suggests is symbolic of controlling those regions.

Together, Kapu'euhi and Kaniahiku conspired to lead the brothers deep into the Puna forest, where Kaniahiku would be able to murder them, all the while maintaining the façade that they were taking them to the *'awa* grove of Mauānuikananuha. Once Ka-Miki and Ka'iole were well within the domain of Kaniahiku, she created a dark and murky environment, spreading gloomy mists and an overgrowth of twisted vegetation intended to ensnare the brothers. Ka-Miki and Ka'iole were overcome, and left for dead by Kapu'euhi, who made his way back to safety, led by Kaniahiku's sister. They prayed to their ancestor, Ka-uluhe-nui-hihi-kolo-i-uka for help. All at once, her presence became apparent, and the brothers were able to continue on to the *'awa* grove. Another attempt by Kaniahiku to kill the brothers was made, however, Ka-uluhe's protection over them was too strong, and the endeavor failed.

Ka-Miki and Ka'iole realized that Kapu'euhi had deceived them and had been in affiliation with Kaniahiku. They were angered, and trapped him in the *'awa* grove. In an effort of retaliation, Kaniahiku summoned for her grandson, Keahialaka, and readied herself for a battle. Ka-Miki and Maka'iole reprimanded Kaniahiku for her deceitful actions, which only served to anger her even further. Aggressively, Kaniahiku attacked Ka-Miki with her tripping club and spear, but Ka-Miki was far too elusive for her. He swiftly evaded each attempt at injury made on his behalf. In desperate need of assistance, Kaniahiku beckoned to Keahialaka by playing her nose flute, urging him to hurry to her side. Although Keahialaka was strong and skillful in the arts of *'ōlohe*, he was all too easily overcome by Ka-Miki. His grandmother, in an attempt to free him from Ka-Miki, was also captured.

Kaniahiku was astounded at the dexterity of the brothers. Their skill was incomparable to any other *'ōlohe* she had ever encountered, and even her own skill paled in comparison, for she had never been defeated. All at once she surrendered to Ka-Miki and Maka'iole, who in turn released her and her grandson. Back at Kaniahiku's house, a meal was prepared, the *'awa* of Kali'u was enjoyed, and the gods were honored with offerings. Kaniahiku requested that the brothers take Keahialaka with them as they continued their journey on the *ala loa*, declaring that if they did, they would be welcomed wherever their travels took them in Puna. Ka-Miki and Maka'iole approved of this request, and took Keahialaka on as their companion. Together, the three men journeyed throughout various districts of Hawai'i island, and competed in many *'ōlohe* competitions.

History After Contact

The arrival of Western explorers in Hawai'i signified the end of the Precontact Period, and the beginning of the Historic Period. With the arrival of foreigners, Hawai'i's culture and economy underwent drastic changes. Demographic trends during the late Proto-Historic Period/early Historic Period indicate population reduction in some areas, due to war and disease, yet increase in others, with relatively little change in material culture. At first there was a continued trend toward craft and status specialization, intensification of agriculture, *ali'i* controlled aquaculture, the establishment of upland residential sites, and the enhancement of traditional oral history (Kirch 1985; Kent 1983). The Kū cult, *luakini heiau*, and the *kapu* system were at their peaks, although western influence was already altering the cultural fabric of the Islands (Kirch 1985; Kent 1983). Foreigners very quickly introduced the concept of trade for profit, and by the time Kamehameha I had conquered O'ahu, Maui and Moloka'i, in 1795, Hawai'i saw the beginnings of a market system economy (Kent 1983). Some of the work of the commoners shifted from subsistence agriculture to the production of foods and goods that they could trade with early visitors. Introduced foods often grown for trade with Westerners included yams, coffee, melons, Irish potatoes, Indian corn, beans, figs, oranges, guavas, and grapes (Wilkes 1845). Later, as the Historic Period progressed, Kamehameha I died, the *kapu* system was abolished, Christianity established a firm foothold in the islands, and introduced diseases and global economic forces began to have a devastating impact on traditional life-ways in the Hawaiian Islands. This marked the end of the Proto-Historic Period and the end of an era of uniquely Hawaiian culture.

The Arrival of Captain James Cook and the End of Kalani'ōpu'u's Reign (1778-1782)

British explorer Captain James Cook, in command of the ships *H.M.S. Resolution* and *H.M.S. Discovery*, landed in the Hawaiian Islands on January 18, 1778. The following January 17th [1779], on a return trip to Hawaiian waters, Cook anchored near Ka'awaloa at Kealahou Bay in the South Kona District to resupply his ships. This return trip occurred at the time of the annual *Makahiki* festival, and many of chiefs and commoners were gathered around the bay celebrating. According to John Ledyard, a British marine on board Cook's ship, upward of 15,000 inhabitants were present at the bay, and as many as 3,000 canoes came out to greet the ships (Jarves 1847:59). It has been suggested that Captain Cook was mistaken for the god Lono himself returned, as men would not normally be allowed to paddle out during the *Makahiki* without breaking the *kapu* and forfeiting all of their possessions (Kamakau 1992). On January 26th Kalani'ōpu'u, the reigning chief of Hawai'i Island, visited Cook on board the *H.M.S. Resolution*, where they exchanged gifts. Kamehameha, the future ruler of all of Hawai'i, was present at this meeting (Jarves 1847).

On February 4th, Cook set sail from Kealahou Bay, but a storm off the Kohala coast damaged the mast of the *H.M.S. Resolution*, and both ships were forced to return to Kealahou to make repairs. With Cook's return many of the inhabitants of Kealahou began to doubt that he was actually the physical manifestation of Lono (Kamakau 1992). On February 13th, several natives were discovered stealing nails from the British ships. They were fired upon by the crew, and a chief close to Kalani'ōpu'u named Palea was knocked down, and his canoe taken. That night one of Cook's boats was stolen, and the following morning Cook set ashore at Ka'awaloa with six marines to ask Kalani'ōpu'u for its return. Kalani'ōpu'u, however, denied any knowledge of the theft; Cook decided to hold the chief captive until the boat was returned (Kamakau 1992). When Cook tried to seize Kalani'ōpu'u, however, a scuffle ensued and Cook was killed (along with four of his men and several natives) there on the shores of Ka'awaloa, struck down by a metal dagger. When Captain Cook fell, the British ships fired cannons into the crowd at the shore and several more natives were killed. Kalani'ōpu'u and his retinue retreated inland, bringing the body of Cook with them.

In March of 1779, after Cook's death, Captain King sailed along the Puna shoreline and described the district as a sparsely populated, but verdant and fertile (Maly 1998). Captain King, mentioned that Kalani'ōpu'u had one of his residences there, and he provided the following description of the landscape:

...the SE sides of the districts of Opoona & Kaoo [Puna and Ka'u]. The East part of the former is flat, covered with Coco nut trees, & the land far back is of a Moderate height. As well as we could judge this is a very fine part of the Island, perhaps the best. Terreeoboo [Kalani'ōpu'u] has one of his residences here.

On the SW extremity of Opoona the hills rise abruptly from the Sea side, leaving but a narrow border, & although the sides of the hills have a fine Verdure, yet they do not seem Cultivated, & when we sailed pretty near & along this end of Opoona, we did not observe that it was equally Populous with the Eastern parts; before we reached the East point of the Island, & all along this SE side the snowy mountain calls Roa (or extensive) [Mauna Loa] is very conspicuous. It is flattish at the top or makes what we call Table land... (Beaglehole 1967:606)

After the departure of *H.M.S. Resolution* and *Discovery*, Kalani'ōpu'u moved to Kona, where he surfed and amused himself with the pleasures of dance (Kamakau 1992). While he was living in Kona, famine struck. Kalani'ōpu'u ordered that all the cultivated products of that district be seized, and he then set out on a circuit of the island. Kalani'ōpu'u first went to Hinakahua in Kapa'au, North Kohala where he amused himself with "sports and games such as hula dancing, *kilu* spinning, *maika* rolling, and sliding sticks" (Kamakau 1992:106). During his stay in Kohala, around 1780, Kalani'ōpu'u proclaimed that his son Kiwala'ō would be his successor, and he gave the guardianship of the war god Kūka'ilimoku to Kamehameha (Fornander 1996; Kamakau 1992). It was during his time in Kohala that an uprising, led by a highly esteemed chief of Puna named Imakakoloa, occurred. Upon hearing of the uprising, Kalani'ōpu'u immediately went to Hilo to quell the rebellion.

Though customary at the time, to furnish the king's court with items such as "pigs, fish, taro, fruits and other forms of wealth" (Elkin 1903:26), it is said that Imakakoloa rebelled because he was tired of the incessant and exorbitant demands of Kalani'ōpu'u. As a chief who loved the people of Puna, and was beloved by them in return, Imakakoloa refused Kalani'ōpu'u's demands. He felt that "his own people who cultivated the ground should be provided with the necessities of life, before the numbers of the royal court, who lived in idleness" (Elkin 1903:26). Rather than allow Kalani'ōpu'u access to the toils of the people of Puna, Imakakoloa:

...seized the valuable products of his district, which consisted of hogs, gray tapa cloth ('*eleuli*), tapas made of *mamaki* bark, fine mats made of young pandanus blossoms ('*ahu hinalo*), mats made of young pandanus leaves ('*ahua*), and feathers of the '*o'o* and *mamo* birds of Puna. (Kamakau 1992:106)

This action angered Kalani'ōpu'u, who was insulted by the insubordination. He vowed revenge against Imakakoloa, and devised a plan to kill him. A battle between the two men ensued, and although Imakakoloa was a worthy opponent, his army was no match for Kalani'ōpu'u's superior forces. After the battle, the Puna chief fled and was sheltered in the district by his people for more than a year. Kalani'ōpu'u, sworn to vengeance, ruthlessly stalked the fugitive chief for the duration of his emancipation, and in his rage he ordered that Puna be burned to the ground. Fornander (1969:202) indicates that the district was "literally laid in ashes" as a result of Kalani'ōpu'u's vengeance.

While the rebel Puna chief was sought, Kalani'ōpu'u "went to Ka-u and stayed first at Punalu'u, then at Waiohinu, then at Kama'oa in the southern part of Ka-u, and erected a heiau called Pakini, or Halauwailua, near Kama'oa" (Kamakau 1992:108). Imakakoloa was eventually captured and brought to the *heiau*, where Kiwala'ō was to sacrifice him. "The routine of the sacrifice required that the presiding chief should first offer up the pigs prepared for the occasion, then bananas, fruit, and lastly the captive chief" (Fornander 1996:202). However, before Kiwala'ō could finish the first offerings, Kamehameha, "grasped the body of Imakakolo'a and offered it up to the god, and the freeing of the tabu for the heiau was completed" (Kamakau 1992:109). Upon observing this single act of insubordination, many of the chiefs believed that Kamehameha would eventually rule over all of Hawai'i. After usurping Kiwalao's authority with a sacrificial ritual in Ka'ū, Kamehameha retreated to his home district of Kohala.

The Rule of Kamehameha I (1782-1819)

After Kalani'ōpu'u died in April of 1782, several chiefs were unhappy with Kiwala'ō's division of the island's lands, and civil war broke out. Kiwala'ō, Kalani'ōpu'u's son and appointed heir, was killed at the battle of Moku'ōhai, South Kona in July of 1782. Supporters of Kiwala'ō, including his half-brother Keōua and his uncle Keawemauhili, escaped the battle of Moku'ōhai with their lives and laid claim to the Hilo, Puna, and Ka'ū Districts. According to I'i (1963) nearly ten years of almost continuous warfare followed the death of Kiwala'ō, as Kamehameha endeavored to unite the Island of Hawai'i under one rule and conquer the islands of Maui and O'ahu. Keōua became Kamehameha's main rival on the Island of Hawai'i, and he proved difficult to defeat (Kamakau 1992). Keawemauhili would eventually give his support to Kamehameha, but Keōua never stopped resisting. Around 1790, in an effort to secure his rule, Kamehameha began building the *heiau* of Pu'ukoholā in Kawaihae, which was to be dedicated to the war god Kūka'ilimoku (Fornander 1996).

Westervelt (1916) relates a story of Keōua, Keawemauhili, and Kamehameha that begins after the battle of Moku'ōhai, but tells of another battle in ca. 1790 when Kamehameha routed Keōua at Waimea and Hāmākua and then sent men to attack Ka'ū. As Keōua attempted to return to his home district a portion of his army was killed by an eruption of Kīlauea Volcano. Westervelt writes:

... Kiwalao's half-brother Keoua escaped to his district Ka-u, on the southwestern side of the island. His uncle Keawe-mau-hili escaped to his district Hilo on the southeastern side.

For some years the three factions practically let each other alone, although there was desultory fighting. Then the high chief of Hilo accepted Kamehameha as his king and sent his sons to aid Kamehameha in conquering the island Maui.

Keoua was angry with his uncle Keawe-mau-hili. He attacked Hilo, killed his uncle and ravaged Kamehameha's lands along the northeastern side of the island.

Kamehameha quickly returned from Maui and made an immediate attack on his enemy, who had taken possession of a fertile highland plain called Waimea. From this method of forcing unexpected battle came the Hawaiian saying, "The spear seeks Waimea like the wind."

Keoua was defeated and driven through forests along the eastern side of Mauna Kea (The white mountain) to Hilo. Then Kamehameha sent warriors around the western side of the island to attack Keoua's home district. Meanwhile, after a sea fight in which he defeated the chiefs of the islands Maui and Oahu, he set his people to building a great temple chiefly for his war-god Ka-ili. This was the last noted temple built on all the islands.

Keoua heard of the attack on his home, therefore he gave the fish-ponds and fertile lands of Hilo to some of his chiefs and hastened to cross the island with his army by way of a path near the volcano Kīlauea. He divided his warriors into three parties, taking charge of the first in person. They passed the crater at a time of great volcanic activity. A native writer, probably Kamakau, in the native newspaper *Kuokoa*, 1867, describes the destruction of the central part of this army by an awful explosion from Kīlauea. (Westervelt 1916:140-141)

The untimely eruption of Kīlauea, as Keōua's army attempted to return to Ka'ū to stop Kamehameha's warriors from ravaging their home district, cost him about 400 fighting men along with an untold number of women and children (Fornander 1996). Kamehameha's prophets said that this eruption was the favor of the gods who rejoiced at his building of Pu'ukohola Heiau. According to Westervelt, "The people said it was proof that Pele had taken Kamehameha under her special protection and would always watch over his interests and make him the chief ruler" (1916:146).

Unable to defeat Keōua in battle, Kamehameha resorted to trickery. When Pu'ukoholā Heiau was completed in the summer of 1791, Kamehameha sent his two counselors, Keaweakeulu and Kamanawa, to Keōua to offer peace. Keōua was enticed to the dedication of the Pu'ukoholā Heiau by this ruse, and when he arrived at Kawaihae, he and his party were sacrificed to complete the dedication (Kamakau 1992). The assassination of Keōua gave Kamehameha undisputed control of Hawai'i Island by 1792 (Greene 1993).

By 1796, with the aid of foreign weapons and advisors, Kamehameha conquered all of the island kingdoms except Kaua'i. In 1810, when Kaumuali'i of Kauai gave his allegiance to Kamehameha, the Hawaiian Islands were unified under a single leader (Kuykendall and Day 1976). Kamehameha would go on to rule the islands for another nine years. He and his high chiefs participated in foreign trade, but continued to enforce the rigid *kapu* system.

Early Written Accounts of Puna (1820-1847)

Following the death of Kamehameha I in 1819, the Hawaiian religious and political systems began 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 1969; I'i 1963; Kamakau 1992). 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 2004). Walking southwest to northeast along the southeastern shore of the District of Puna with his missionary companions Asa Thurston and Artemas Bishop, Ellis' 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.

When we passed through Punau [Pānau], Leapuki [Laeapuki], and Kamomoa [Kamoamo], the country began to wear a more agreeable aspect. Groves of coca-nuts ornamented the projecting points of land, clumps of kou-trees appeared in various directions, and the habitations of the natives were also thickly scattered over the coast. (Ellis 2004:263-264)

Continuing their journey northeastward along the Puna coast, Ellis' party arrived at the village of Keahialaka where they found the chief Kinao sick in bed at his residence. Ellis writes:

Near five p.m. we reached Keahialaka, the residence of Kinao, chief or governor of Puna. We found him lying on a couch of sickness, and felt anxious to administer to his comfort, yet did not like at so early an hour to halt altogether for the night. I therefore remained with the sick chief, while Messrs. Thurston and Bishop went on to a village at the east point, about two miles distant. When they reached Pualaa, the above mentioned village, they were kindly welcomed by the headman... The chief furnished the travelers with a hospitable supper and comfortable lodgings. (Ellis 2004:279-280)

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. A Mission church and school were eventually established at Pohoiki on a lot at the coast, along the eastern shore of Pohoiki Bay (Maly 1998). 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 were 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).

In 1841, the United States Exploring Expedition under the direction of Commander Charles Wilkes, toured the Hawaii Island and travelled through the Puna District (Figure 23). Wilkes, travelling towards Kapoho at the eastern tip of the island, provides the following description of his tour of Puna:

...Almost all of the hills or craters of any note have some tradition connected with them; but I found that the natives were now generally unwilling to narrate these tales, calling them "foolishness."

After leaving the pahoihoi [sic] plain, we passed along the line of cone-craters towards Point Kapoho, the Southeast part of the island.

Of these cone-craters we made out altogether, large and small, fifteen, trending about east-northeast. The names of the seven last are Pupukai, Poholuakahoweale [Pu'u-hōlua-o-Kahawali], Punomakalua, Kapoho, Puukea, Puuku, and Keala. On some of these the natives pointed out where there had formerly been slides, an amusement or game somewhat similar to the sport of boys riding down hill on sleds. These they termed kolua [sic – *holua*].

This game does not appear to be practiced now, and I suppose that the chiefs consider themselves above such boyish amusements. The manner in which an old native described the velocity with which they passed down these slides was, by suddenly blowing a puff; according to him, these amusements were periodical, and the slides were usually filled with dried grass.

As we approached the sea-shore, the soil improved very much, and was under good cultivation, in taro, sweet-potatoes, sugar cane, and a great variety of fruit and vegetables. At about four o'clock, we arrived at the house of our guide, Kekahunanui, who was the "head man." I was amused to find that none of the natives knew him by this name, and were obliged to ask him, before they could give it to Dr. Judd...

...The view from the guide's house was quite pretty, the eye passing over well-cultivated fields to the ocean, whose roar could be distinctly heard... [Wilkes 1845: Vol. 4:186]

During the night, one of the heaviest rains I had experienced in the island, fell; but the morning was bright and clear,—every thing seemed to be rejoicing around, particularly the singing-birds, for the variety and sweetness of whose notes Hawaii is distinguished. (Wilkes 1845, Vol. IV:188)

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 3,000-4,000 inhabitants (Maly 1998). Entering Puna from Hilo, and traveling to Kea'au along the coast, Lyman offered the following observations of the Puna District:

...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. (Lyman ms. Book III:3 in Maly 1998:35)

2. Background

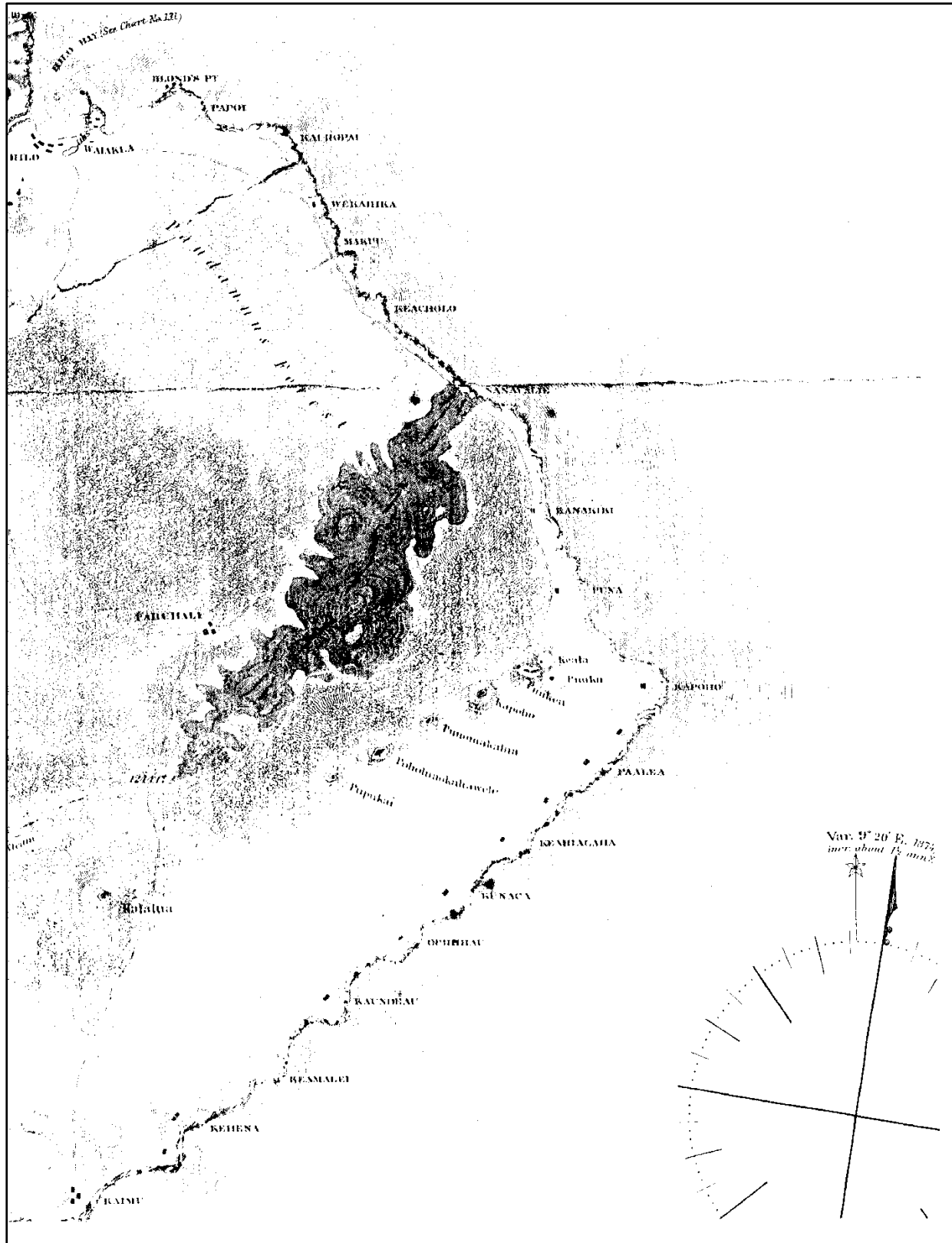


Figure 23. Portion of Hawai'i Registered Map No. 424 prepared by Wilkes in 1841.

After a long day of travel, Coan and Lyman stopped for the night at Pohoiki. Lyman, who described the village and landscape favorably, noted that the population was aging, with only a few children present (in 1848, fifty-two students were enrolled at the Pohoiki school; Maly 1998). He also mentions the Pohoiki church. Lyman's 1846 description of Pohoiki is as follows:

Our stopping place for the night was Pohoiki, about 7 miles from Koae and nearly the same distance S.W. from the Eastern point of the island. The natives brought us the Ki or Ti root baked – it was very sweet & juicy. There are fine groves of cocoanut and the situation of the hamlet on an inlet of the sea is very pleasant...

Friday July 10th. At low water a small spring of warm water issues from the beach – the temperature I found to be 90°.

Mr. Coan began his meeting in the church at 8. There being much preliminary business I did not go in till 9. There were several infants baptized, and I noticed a greater proportion of old people than I had observed before. About 200 people were present – mostly seated on the ground, as is usually the case except in the larger and more central churches... (Lyman ms. Book III:7 in Maly 1998:35)

Written accounts left by early visitors to the Island of Hawai'i offer insight into what life may have been like for the earliest residents of Puna. However, by the time Ellis visited Puna, less than fifty years after the arrival of the first Europeans, the population of Hawai'i was already beginning to decline. By 1850, the population of Hawai'i Island had dropped to 25,846 individuals (Schmitt 1973:8). Maly (1998) summarizes the reasons for the rapid decline of native populations thusly:

Overall, historic records document the significant effect that western settlement practices had on Hawaiians throughout the islands. Drawing people from isolated native communities into selected village parishes and Hawaiian ports-of-call, had a dramatic, and perhaps unforeseen impact on native residency patterns, health, and social and political affairs. In single epidemics hundreds, and even thousands of Hawaiians died in short periods of time. (1998:36)

Legacy of the Great Māhele (1848-1873)

By the middle of the nineteenth century the ever-growing population of Westerners in the Hawaiian Islands forced socioeconomic and demographic changes that promoted the establishment of a Euro-American style of land ownership, 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* 'Āina of 1848, all lands were placed in one of three categories: Crown Lands (for the occupant of the throne), Government Lands, and Konohiki Lands. Both Pohoiki and Keahialaka *ahupua'a* were claimed as Crown Land by William Charles Lunalilo, the future King of Hawai'i. Keahialaka Ahupua'a (5,562 acres) was awarded to Lunalilo as LCAw. 8559-B:15, but Pohoiki Ahupua'a (652 acres) was commuted to the Government in lieu of fees on other awards.

All lands awarded during the *Māhele* were subject to the rights of the native tenants therein. Native tenants of the lands that were divided up among the Crown, *Konohiki*, and Government could claim, and acquire title to, *kuleana* parcels that they actively lived on or farmed. The Board of Commissioners oversaw the program and administered the *kuleana* as Land Commission Awards (LCAw.). In Puna, however, very few claims for *kuleana* were submitted. Maly (1998:37) notes that, with the exception of the islands of Kaho'olawe and Ni'ihau, no other land division of comparable size, had fewer claims for *kuleana* from native tenants than the district of Puna. No *kuleana* were claimed in Keahialaka Ahupua'a, but two claims were made for *kuleana* in Pohoiki Ahupua'a, one by Nalima (LCAw. 2557) and another by J. B. Kane (LCAw. 8748), neither of which was awarded. Although the specific locations of these two claims is not known, the claim documentation indicates that both were house lots located at the coast of Pohoiki Ahupua'a, and therefore situated within the current project area. Documents describing each of the claims are reproduced below.

2. Background

Nalima's claim for LCAw. 2557, recorded at Kailua, Hawai'i on December 29, 1847 (Native Register, Volume 3, page 554), reads as follows:

Greetings to the Land Commissioners: I hereby state to you my claim for a house lot in the land of Pohoiki in Puna. The length is 25 fathoms and the width is 20 fathoms. That is my little claim at this place. There is no one else there, only myself. The names of the true witnesses at this place are below:

1. Kaiwiliilii, 2. Kanakanui, 3. Pehe, 4. Puali, 5. Waakeleaulani.

NALIMA

Information regarding J. B. Kane's claim for LCAw. 8748 was found in both the Native Testimony and the Foreign Testimony. The Native Testimony (Volume 4, page 438) reads:

No. 8748 Kane

Kanakaole sworn He has seen in the ili land of keawa, in Pohoiki ahupuaa of Puna Hawai'i a house lot.

Mauka	islw [?] land
East	Nalima's lot
Makai	Ocean
Kau	Kawaiuelawela land

Enclose 1 house for Kane, Interest from Kanakaole in 1841. Kane now lives there, no objections from Kanakaole.

The Foreign Testimony (Volume 5, page 15), presented by Kanakaole for Kane's claim, reads:

8748	J. B. Kane	Kanakaole sworn, deposed that the claim of J. B. Kane was situated in the
	See to this -	District of Puna (Hawai'i) in the Ahupuaa Pohoiki on the Ili Keaiiwa that
		is consists of an house lot and was bounded on the West by Konohiki on
		the North by Konalima's fence, on the East by Sand Beach on the South
		by Waiwela, it is enclosed by a stone wall and has 1 dwelling house
		belonging to him, he holds this lot from Kanakaole since the year 1841 and
		I shall never dispute his claim. [??] Kanakaole the Konohiki

The above documentation provides insights into the land use and residency within the current project area during the 1840s. From these claims we learn that Kanakaole was the *konohiki* of Pohoiki, that Keawa (Keaiiwa) and Waiwela are two 'ili lands of the *ahupua'a*, and that in addition to Nalima and J. B. Kane, Kaiwiliilii, Kanakanui, Pehe, Puali, Waakeleaulani, and Kawaiuelawela were also either residing at Pohoiki or on a nearby land. Nalima's claim is not specific about the location or the number of houses it contained, but Kane's claim for one house enclosed by a stone wall indicates that Nalima's lot bounded his to the north/east, was enclosed by a fence ("[Ko]nalima's fence"), and that both lots were situated near the "sand beach" at the coast in Pohoiki.

In conjunction with the *Māhele 'Āina* of 1848, the King had authorized the issuance of Royal Patent Grants to applicants for tracts of land, larger than those generally available through the Land Commission. The process for applications was clarified by the "Enabling Act," which was ratified on August 6, 1850. The Act resolved that portions of the Government Lands established during the *Māhele* should be set aside and sold as grants. The stated goal of this program was to enable native tenants, many of whom were not awarded *kuleana* parcels during the *Māhele*, to purchase lands of their own. Despite the stated goal of the grant program, in reality, many of the Government Lands were eventually sold to foreigners.

In 1855 and 1856 two roughly ten acre grant parcels located near the coast in the Government Land of Pohoiki (Grant No. 1895 to Mohala and Grant No. 1940 to Mauae) were sold to individuals with Hawaiian surnames. Although the specific locations of these two grants properties are not known (both grants were absorbed into a larger grant for the entire *ahupua'a* of Pohoiki in 1879, and they do not show up on any maps of the later Historic Period), descriptions of their boundaries contained in the grant deeds indicate that they were situated adjacent to one another at the coast of Pohoiki Ahupua'a (Mauae's grant is described as situated at Pohoiki and Kanani), and therefore located at least partially within the current project area. Using the boundary information provided in the grants' deeds, a diagram showing the property boundaries, the corner markers, and the relationship of the grant parcels to one another and the coast was prepared (Figure 24). Translations of the boundary descriptions for Grant No. 1894 and Grant No. 1940 are presented below.

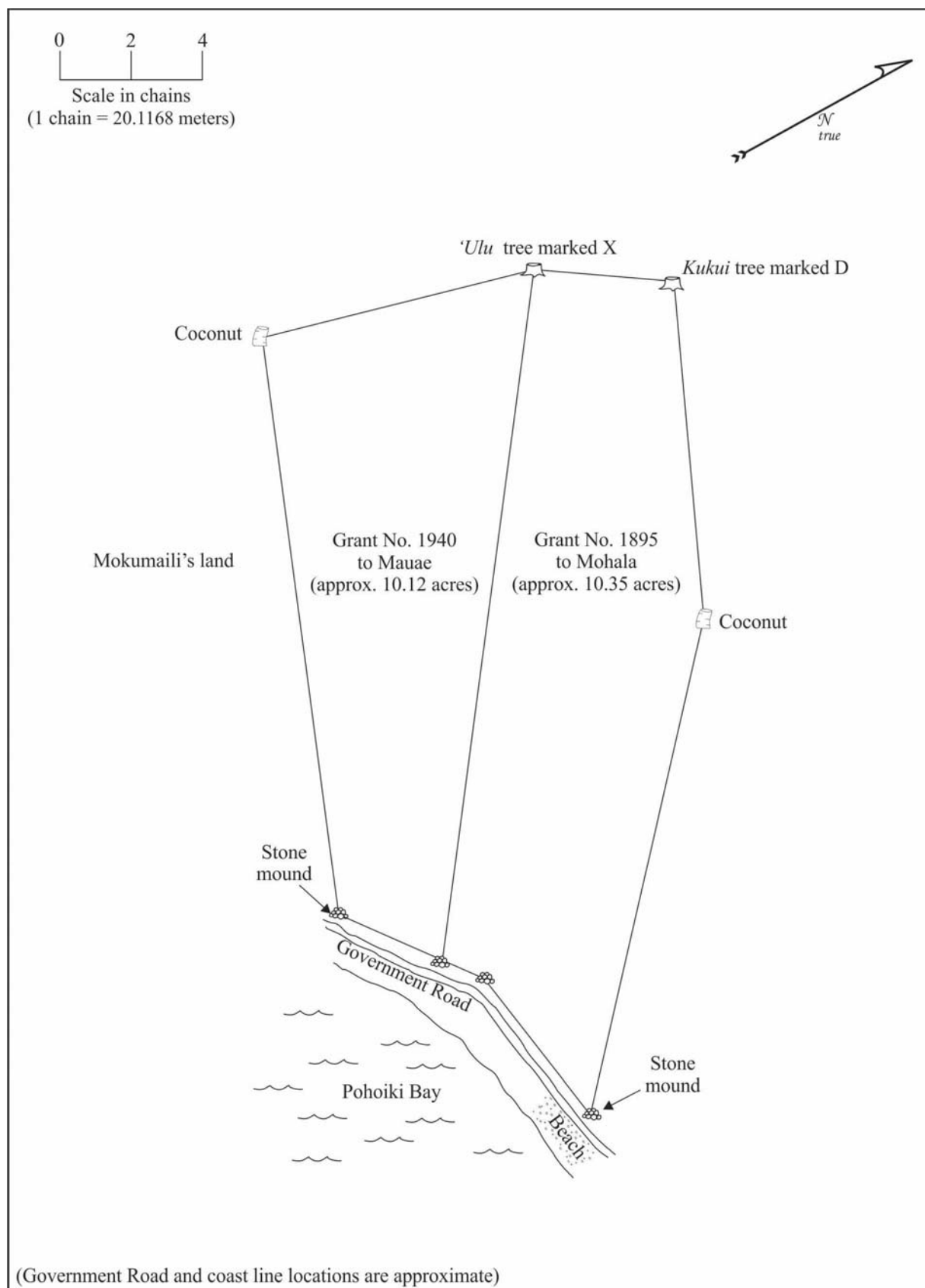


Figure 24. Diagram of Grant No. 1895 to Mohala and Grant No. 1940 to Mauae located in Pohoiki Ahupua'a.

2. Background

The boundary of Mohala's land (Grant No. 1895; see Figure 24) is described as "commencing at a stone mound, adjoining the beach at the eastern corner of this [land] and heading upland along the Government's [land]:

North 51°	West 14.38 chains to the trunk of a coconut, thence on
North 67 1/2 °	West 9.57 chains to the trunk of a kukui marked D at the the northern corner of this land, thence on
South 23°	West 39.7 chains to the trunk of an ulu tree marked X at the northern corner of Manae's [Mauae's] land, thence that is the boundary of the land
South 53°	East 19.70 chains to the stone mound adjoining the Government road, thence adjacent to the road
North 48 1/2 °	East 12.2 chains to a stone mound, thence along the Government [road]
North 75 1/2 °	East 4.62 chains up to the point that the survey began."

(Grant Book, Vol. 10, pages 195-196)

Mauae's land (Grant No. 1940; see Figure 24) is described as a "certain piece of land situated at Pohoiki and Kanani, Puna", that is located between Mohala's land and Mokumaili's land, with boundaries, "commencing at the southern corner adjoining the stone mound at the southeastern corner of Mokumaili's land, adjoining the Government Road, and heading along the boundaries of Mokumaili's.

North 69°	West 16.53 chains to the coconut tree on the northern corner of Mokumaili's land thence the Government's
North 15°	East 8.22 chains to the ulu tree marked X adjoining on the southwestern corner of Mohala's [Mohala's] land, thence, the boundary of the land.
South 53°	East 19.70 chains up to the Government road, thence along the road
South 52°	West 3.20 chains up to the point that the survey began."

(Grant Book, Vol. 10, pages 285-286)

Although it is not clear what became of these two grant lands, or why they were not retained by the original owners, it is possible that they, or their family, like many of the residents of Puna simply moved away and stopped paying taxes. During the mid-1800s, out-migration from Puna was well underway, and native populations along the coast of the district at the traditional village areas, were waning (Maly 1998). By 1865, attendance at the Pohoiki School had dropped to thirty-seven students (Maly 1998). The school and church site were briefly described in the Public Instruction School Reports for 1865:

Pohoiki, a stone concern standing on original ground, including a church site. Reading, writing, and geography were good, but arithmetic was not so good. 37 scholars. There is an ancient school lot at Aahalanui, not far off, which should be occupied as working grounds for the children, or else exchanged for a nice site *mauka* of the road near the present school house...(Archives Series 262 Hawai'i Folder – 1865 in Maly 1998:48)

In 1868 a volcanic eruption emanating from Mauna Loa volcano shook Hawai'i Island, bringing with it lava flows, earthquakes and a *tsunami* that transformed the landscape the southern part of island forever, and further contributed to the depopulation of the District of Puna. Coan (1882) recorded that on April 2:

...a terrific shock rent the ground, sending consternation through all Hilo, Puna, and Kau. In some places fissures of great length, breadth, and depth were opened... Stone houses were rent and ruined, and stone walls sent flying in every direction...the sea rose twenty feet along the southern shore of the island, and in Kau 108 houses were destroyed and forty-six people drowned...Many houses were also destroyed in Puna, but no lives were lost. During this awful hour the coast of Puna and Kau, for the distance of seventy-five miles subsided seven feet on average, submerging a line of small villages all along the shore. One of my rough stone meeting houses in Puna [Kapoho-Koa'e], where we once had a congregation of 500 to 1,000 was swept away with the influx of the sea, and its walls are now under water... (Coan 1882:314-316)

In a letter to J. D. Dana dated September 1, 1868, regarding the subsidence of the coast in the vicinity of the current project area, Coan wrote:

...At Keahialaka, about seven miles southwest of Kapoho, where there has been a small pool of brackish water, passed by a causeway of stones, the water now stands, at high tide, three to four feet deep, and spreads out amongst the cocoa-nut groves where water was never seen before...(in Stillman and Dana 1869:89)

Boundary Commission Hearings for Keahialaka and Pohoiki Ahupua‘a (1873-1876)

The Commission of Boundaries (Boundary Commission) was established in the Kingdom of Hawai‘i in 1862 to legally set the boundaries of all the *ahupua‘a* that had been awarded as a part of the *Māhele*. By 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. On April 26, 1873 C. R. Bishop, acting on behalf of the King (Lunalilo), wrote to R. A. Lyman, Commissioner of Boundaries, to apply for settlement of His Majesty’s lands in Hilo and Puna, including the *ahupua‘a* of Keahialaka, described as “bounded on the North by Kapoho belonging to C. Kanaina, and Pohoiki, belonging to the Government, on the South by Malawa and Kaukulau, belonging to the Government and makai by the sea” (Boundary Commission Volume A, No. 1, pg. 176). On April 2, 1873, after due notice of the hearing, the Boundary Commissioner, R. A. Lyman, met with the interested parties (G.W. Akao for Honorable C. R. Bishop, W. P. Ragsdale for Crown Commission and estate of M. Kekuanaoa and others, Kealia Hookano Naeole for Hawaiian Government) at the court house in Hilo to settle the boundaries of Keahialaka Ahupua‘a.

Three witnesses (Owiholu, Kamilo, and Kaapaawahine), all born at Keahialaka, presented testimony regarding the boundaries of the *ahupua‘a* at this hearing (Boundary Commission Volume A, No. 1, pages 177-179). The testimony specific to the informant’s history on the land and the boundary between Pohoiki and Keahialaka is presented below:

Owiholu, kane, sworn, I was born at Keahialaka at the time of Ku o ka wai oka Lae [digging of the water hole at Kalae, in ca. 1815], in Puna, Hawaii. Have always lived on said land and Pualaa. Am a kamaaina of the former. My father, Nohinohinu, showed me boundaries. It was at a time of famine, and we went into nahelehele to collect food, and it was then he showed them to me so as to keep me from trespassing on other lands, for if we were caught on other lands the people of that land took our food away from us....

...Thence makai to place called Punanaio where houses used to be and a cultivating ground was at the mauka side of it. Here Kapoho leaves Keahialaka and Pohoike [sic – Pohoiki] joins and bounds it to the shore, ending at the pali on the Kau side of Pohoike landing, the beach and the cave belonging to Pohoike and said land belongs to King Lunalilo. I did not see Keahialaka survey. The land has ancient fishing rights.

...Kamilo, kane, sworn, I was born at Keahialaka, at time of Aikapu [perhaps the breaking of the ‘*ai kapu*, or eating restriction in 1820; Maly 1998]. Am a kamaaina of said land and know the boundaries. My parents, now dead, showed them to me, and their parents showed them, as we lived on Keahialaka we could not go onto other lands, for if we did the people belonging to them would take our things away from us...

...thence the land of Pohoiki bounds Keahialaka to the sea. Tall ohia trees and kipuka pili on old cultivating ground are at Punanamaio; thence along Pohoiki to grove of ohia trees. Kaumaumahooho on Keahialaka; thence makai to lae Hala called Kukuikuki, the middle of grove; thence makai to Government road to Keahupuaa the pali; cracks & on the brow of the pali; thence to sea shore, to point called Paukaha on the Puna side of Lae aka Huna on Puna side of Pohoiki harbor. The land had ancient fishing rights extending out to sea.

...Kaapaawahine, kane, sworn, I was born during the reign of Kamehameha I at the time of the making of unuke laau, at Keahialaka, Puna, Hawaii; Know the boundaries of said place. My father, Kapolani, now dead, pointed them out to me. Keahialaka is on the Kau side of Pohoikea on the pahoehe...

...thence makai to Punananaio where Pohoike joins Keahialaka and bounds it to the sea.

Thence makai to place called Kaahupuaa, an ahua, near the road; Keahialaka is on top of the ahua and Pohoike on the Hilo side of it. A point on the Hilo side of Pohoike awa named Kahuna is the boundary between these two lands.... (Boundary Commission, Volume A, No. 1, pages 177-179)

Following the testimony of these three men the case was adjourned to Kapoho, Puna where testimony from two additional witnesses (Pilopilo and Piena) was heard on July 16th 1873. Piena, who was born at Keahialaka and resided there in 1873, testified that:

...I was born at Keahialaka, Puna, Hawaii at the time the Russians came to Kauai [ca. 1815], and have lived there most of my life. Am kamaaina of the lands and know some of the boundaries near where I live.

Kahina is the boundary at shore between Keahialaka and Pohoike; this place is a rocky point; thence to a lai ulu lauhala kukui kukii; thence mauka in ohia woods to a small pali called Pokole; Keahialaka on the brow and Pohoiki at the base; it is not very high; an ahua aa wale no.

Thence to lae aa he aa poho. Kaumaumahoohoo in a grove of ohia called Mokuola; thence the boundary runs mauka to old kauhale Kalanihale; thence along the old road to lua wai Kamahuwai; thence to Ohiahuli, a grove of ohia trees; thence to Punanaio, a lae ohia and pili &c. where Kapoho and Keahialaka join, cutting off Pohoiki; thence the boundary between Kapoho and Keahialaka runs mauka to pali ahua Pakai. I have never been there or had this boundary pointed out to me; have only been told about it. I have been on the old road to Makuu, and was told Papalanahi was the boundary between these two lands; the aa being on Kapoho and the pahoeohoe on Keahialaka. I have heard that Kananianu is on Kapoho and the pahoeohoe is Keahialaka. The trees on Kapoho mauka of the old road to Malama; Laupapai is the boundary where Waikahiula cuts these lands off. Ohiakihili is covered up with the lava flow. (Boundary Commission, Volume A, No. 1, page 181)

Interestingly, Thrum's *Hawaiian Almanac and Annual for 1897* (Thrum 1896:118-124) contains an account of the oldest resident in Hawai'i, Kepoolele Apau, said to have been born at Keahialaka, Puna in ca. 1775 to a father by the name of Piena (perhaps an older relative of the Piena who served as a witness for the Boundary Commission in 1876). Thrum's article relates that:

Her [Kepoolele's] father's name was Kapa, afterward Piena. Kapa was called after the mother-of-pearl Fish-hook of Kaleiopuu (otherwise Kalaniopuu). Kapa was born during a fishing expedition of the King of that name, Kapa's father being a head fisherman of Puna at the time and thus the name to commemorate that visit of the King. Her mother's name was Kanealoha. They were fisherfolks.

During childhood she lived mostly in Puna, with occasional visits to Hilo, and more rarely to Kau. She distinctly remembers seeing Kamehameha during the attempt to sink the well at Kalae. Also remembered Keoua's last visit to Puna to raise recruits to go to war with Kamehameha, just before he was induced to go and meet the latter at Kawaihae, where he was treacherously put to death and offered in sacrifice for the dedication of the Heiau at Puukohola. The incident of Keoua's visit was fixed on her mind by the extra efforts made by her father to find unusual hiding places, in which to stow away his family, so they would not be discovered by the King's messengers, and thus be compelled to betray his own. All the well known caves and usual places of resort being useless for that purpose. (Thrum 1896:121)

No ruling on the boundaries of Keahialaka was made following the 1873 hearing at Kapoho. The Commissioner of Boundaries, R. A. Lyman, found that the survey of the land prepared by J. H. Sleeper in 1859, which showed Keahialaka containing 1,277 acres more or less (in actuality the *ahupua'a* contains 5,652 acres), was incorrect. He returned the survey to the applicant, Charles R. Bishop, Agent for his Majesty, William C. Lunalilo, and ordered that a new survey of the land be performed. Lyman later explains that, "Mr. J.H. Sleeper was almost a stranger on the Islands, when he made these surveys, and understood very little, if any of the language, or the ancient method of dividing lands, and although his surveys may have been perfectly correct as to area contained in notes of survey, I found that the notes of survey did not agree with notes of survey given in the Royal Patents of adjoining lands, or the evidence of the kamaaina, and in some cases large tracts of land had been left out of surveys, either from Mr. Sleeper, being unable to understand what his kamaaina told him, or the reluctance of the kamaaina to going into the woods, and over difficult aa, where they were old and feeble, and land was considered to be of little value" (Boundary Commission, Hawaii, Volume D, No. 5, page 171). The case was adjourned until further notice, not to resume again until 1885.

On February 29, 1876, hearings were held regarding the boundaries of the *ahupua'a* of Pohoiki neighboring Keahialaka to the northeast. Kaluahine, a resident of Pohoiki at that time who was born in Keahialaka, served as the primary witness for the Boundary Commission (Maly 1998). His testimony, regarding the seaward boundaries of the *ahupua'a*, is as follows:

Kaluahine, Kane, sworn, I was born at Keahialaka, Puna, Hawaii, at time of the death of Kamehameha I [May 1819]. I now live on Pohoiki. I have always lived on these two lands, and am a kamaaina of these lands. I know part of the boundaries of Pohoiki. There are old ahupohaku [stone

cairns] on the boundary. Kaulana an old kamaaina of these lands pointed out part of the boundaries to me. He is dead now. The land of Keahialaka bounds Pohoiki on the Kau side. The boundary between them at the shore is at a point called Kahuna...

...thence to place called Paakoi, where Keahialaka and Kapoho cut this land off. This place is mauka of place called Punanaio. Thence the boundary between this land and Kapoho runs makai along old trail. Pohoiki ends at Oiaina Pakoi [the trailside resting place, Pakoi]; and the boundary runs makai along trail along land of Laepaoo, until come to pahoe hoe at the mauka corner of land of Oneloa, Pohoiki being on Aa, and Oneloa on Hilo side of Aa. Thence boundary runs makai to place called Kupakia. Thence makai, both lands being on Aa to ahu at place called Paliuli. Thence makai into uluhala [pandanus grove] called Kaena to an old pile of stones. Thence makai to Govt. road on Hilo side of church. Thence makai along land on Oneloa, sold and patented to Makaimoku, to place called Palipoko. Bounded makai by sea, ancient fishing rights extending out to sea. (Boundary Commission, Volume B, pages 408-409)

Robert Rycroft at Pohoiki (1877-1899)

On June 13, 1877 Robert Rycroft, an Englishman, obtained a lease for land in Pohoiki from R. Oliver (Maly 1998). According to Bureau of Conveyances documents contained in Maly (1998:48-59), the land included the store of the grantor, out buildings, fixtures and appurtenances, twenty acres of pastureland, cultivated and uncultivated *awa*, and one half interest in the *Awa* License at Hilo:

Bill of Sale – R. Oliver, having obtained a lease on an area of about 2 ½ acres of land in Pohoiki, grants said lease to R. Rycroft. The parcel included the store of the grantor, as well as out buildings, fixtures and appurtenances (stock and trade in the store valued at \$1896.24). Also included in the Bill of Sale were: About 20 acres of pasture land in Pohoiki; All, *awa* belonging to the grantor, cultivated and uncultivated in the Detract [sic] of Puna; guaranteed to be of an amount not less than “five thousand walus;” Also one half interest in the *Awa* License at Hilo... (Bureau of Conveyances Lib. 51:80-81 from Maly 1998:55-56)

Rycroft, who was born in Leeds, England in 1843, emigrated to the United States in 1860 at the age of sixteen, where he served for sixteen months in the 2nd U. S. Cavalry fighting in the Civil War (Shigeura and Bullock 1983). After his discharge, he went first to San Francisco, and then travelled to Honolulu. The March 9, 1900 edition of the *The Pacific Commercial Advertiser* contains the following account of Rycroft’s early years in the Hawaiian Islands and his business in the Puna District:

Mr. Robert Rycroft [Figure 25]...came to Hawai‘i in the bark Comet, Capt. Smith, Steward Charlie Long, which upon that trip brought the news of the second election of President Lincoln, in the fall of 1864. He first went to work in the Honolulu Iron Works and afterwards went into the plumbing business [Figure 26], which was his profession. He was also proprietor of the Fountain restaurant and Temperance saloon on Fort street in an old one story frame building then standing on the present site of Thrum’s book store. Mr. Rycroft was at this time also proprietor of the old Honolulu Ice Works, at the Cummins’ place in Nuuanu valley, which he afterwards sold to the late S. G. Wilder.

Mr. Rycroft then went to Australia, where he erected an ice machine at Brisbane, which was the first ammonia machine there using a pump to compress the gas. After remaining there about two years he returned to Honolulu and soon after removed to the Island of Hawaii in 1877. There he went into the *awa* shipping business. The trade in *awa* at that time was so large that many tons were handled each year, much of it going to foreign ports, mostly to the United States, for medical purposes.

About the year 1884 Mr. Rycroft went into the cattle business, having purchased the Pohoiki and Keahialaka tracts in Puna, Hawai‘i, containing about nine thousand acres. He also erected a large saw mill at Pohoiki and furnished the Government with all of the hard wood used in the public works. He also furnished the wood supply of Honolulu for several years by the Allen & Robinson line of schooners. The ties of the O. R. & L. Co. came from this mill. Soon after things were running smoothly Mr. Rycroft again branched out and was one of the first, if not the very first, who went into the systematic cultivation of coffee, upon a large scale. When he sold out in 1899 he had in lower Puna sixty-five acres and in Olaa 170 acres of bearing coffee. This venture, however, did not prove as profitable as most of Mr. Rycroft’s enterprises. Messrs. H. Hackfeld and Co. purchased his Olaa property of 200 acres and the Puna Sugar Co. lately secured his holdings in lower Puna. (*The Pacific Commercial Advertiser*, Honolulu, March 9, 1900:page 5)



Figure 25. Drawing of R. Rycroft from *The Pacific Commercial Advertiser*, Honolulu, March 9, 1900 (page 5).

**ROBERT RYCROFT,
PLUMBER!**

 **BEGS TO INFORM THE PUBLIC**
of Honolulu that he has established himself in the
above business on

King Street, next door to City Market.

Where he will be found ready to attend on all customers in
his line.

N. B.—He begs to call attention to his Superior and Cheap

 **BATH TUBS!**
LINED WITH ZINC.

Charges reasonable and work done promptly and satisfactorily.
508-

Figure 26. "Robert Rycroft, Plumber!" advertisement appearing in the *Pacific Commercial Advertiser* on February 17, 1866.

Around the time of Rycroft's arrival at Pohoiki, an 1877 report prepared by the missionary H. R. Hitchcock for the Board of Education found that "the schools of Opihikao and Pohoiki are in the hands of inexperienced teachers and have rather retrograded" (Archives Series 262 Hawai'i Report 1877 in Maly 1998:48). The report goes on to describe the scourge of free-roaming animals in Puna at that time and their effects on the students of the district:

...Puna is a district overrun by goats and hogs, which regard not stone walls, and patiently wait until the crops begin to be valuable, then appropriate them largely to their own use. This has a depressing effect upon the little workers, who add cubits to the height of the walls, until it becomes a matter of peril to the inspector to climb over them in order to enter the school house... (Maly 1998:48)

On September Sept. 12, 1878 the surveyor J. S. Emerson wrote to C.J. Lyons of Government Survey Division from R. Rycroft's at Pohoiki, stating that:

...We arrived here all right Friday evening, Sept. 6, and have been very kindly provided for. Saturday, Monday & Tuesday morning I went with Mr. Rycroft & a kamaaina around Pohoiki fixing the corners of the land. Since then have proceeded with the regular survey. As the place is densely covered with trees and brush so as to shut out the view, I can but guess roughly at the area. It is probably over 350 acres, most of it very rough aa, some pasturage, and considerable fine Ohia lehua timber, with a good supply of cocoanut trees. The only landing between Hilo & Keauhou [Ka'ū] is in the little bay makai of this land. The whole country here is fearfully rough on shoe leather. Scarce any soil. Cocoanuts, potatoes, breadfruit & awa do well. The best awa in the country.

The timber would be valuable if it were accessible. Mr. Rycroft thinks the land is worth \$300. The native judge says it is worth 50 cents an acre... (Hawaii State Archives, HGS DAGS 6, Box 10 in Maly 1998:65)

In 1879, for the sum of \$460, Rycroft purchased the entire *ahupua'a* of Pohoiki containing roughly 652 acres as Grant No. 3209 (Figure 27). No mention of the two earlier grants sold to Mohala (Grant No. 1895) and Mauae (Grant No. 1940) in Pohoiki was found in Rycroft's Royal Patent deed, nor do these earlier grants show up on any Historic maps from the late nineteenth century, indicating that both of the ten acre parcels were likely included in the purchase of Grant No. 3209. The school/church lot at the coast in Pohoiki was excluded from Rycroft's purchase, and on May 5, 1881 Rycroft deeded a 0.411-acre portion of Grant 3209 located near the coast to the Minister of the Interior (Registry of Conveyances, Liber 69, page 485) for the Pohoiki Courthouse and Jail.

A notice in the October 9, 1880 edition of the *Pacific Commercial Advertiser*, Honolulu, indicates that Rycroft's retail license at Pohoiki was due to expire at the end of that month. The license is likely the same one that came with the store purchased from R. Oliver at Pohoiki in 1877. Although information regarding Rycroft's renewal of the license was found, an 1882 advertisement for "Puna Awa" in the in the *Pacific Commercial Advertiser*, indicates that he was still selling *awa* from Pohoiki two years later (Figure 28).

In 1882 many of the lands awarded to William C. Lunalilo as part of LCAw. 8559-B, including the *ahupua'a* of Kea'au, Kahanalea, and Keahialaka in the District of Puna, were sold at action by his estate (Lunalilo had died in 1874 after serving one year and one month as Hawai'i's reigning monarch). An advertisement in the December 24, 1881 edition of the *Daily Honolulu Press* (page 6) lists Keahialaka Ahupua'a as containing 1,276 acres more or less, with the *makai* portion being grazing land and coconut trees near the sea, and the upper part timber. Rycroft, who had possession of Keahialaka lands by ca. 1884, had purchased them at this auction (according to his own testimony during a 1896 Boundary Commission hearing; see below).

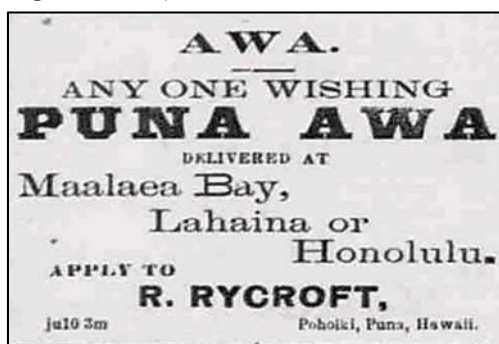


Figure 28. August 19, 1882 advertisement in the in the *Pacific Commercial Advertiser* for Rycroft's "Puna Awa".

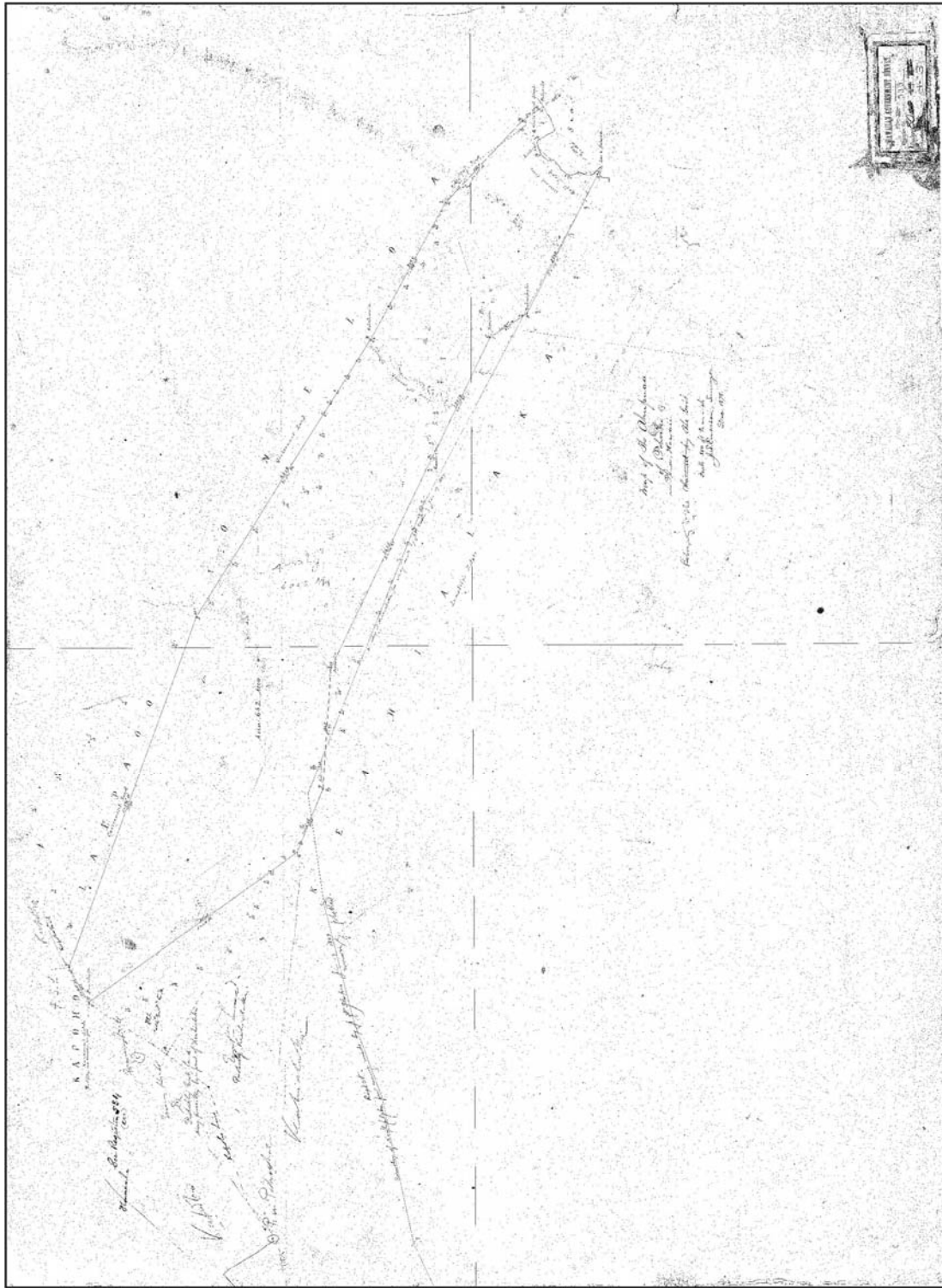


Figure 27. Map of the ahupua'a of Pohoiki, Puna, Hawai'i (Hawai'i Registered Map No. 333) prepared by J. S. Emerson (December 1878).

In 1882, Rycroft petitioned for, and was granted, a year-to-year rental for the remaining unoccupied lands of Oneloa, Laepā'o, 'Ahalanui, Malama, and Kaukulau, District of Puna. However, J. E. Elderts of the Kapoho Ranch disputed Rycroft's right to use the land. In a series of letters dated January to July 1884, Elderts discusses the Kapoho Ranch claims to the land and his dislike of Rycroft's tactics in taking the land. On April 26, 1884 Elderts wrote to Chas. Gulick, Minister the Interior, complaining that:

... You say that under date of May 9th 1882, Mr. Rycroft became Tenant at will, from or by your consent, of the unoccupied, or rather, remaining unoccupied portions of Oneloa, Laepaoho, Ahalanui, Malama and Kaukulau in Puna.

Now, Mr. Rycroft knew that I had been, and was occupying, and paying the rent year after year for the whole of the lands of Oneloa, Laepaoho, and Ahalanui. For when he first came to Pohoiki to live, the natives wished to make him trouble for allowing his stock to run on the above three lands, but as I saw him soon after that, I told him that I had all the Government Lands between him and me rented [the lands from Oneloa to Kapoho], and that I was willing for him to let his stock run without any charge to him for it...

Mr. Rycroft claims the whole of the lands of Oneloa, Laepaoho, and Ahalanui, and says that he has a written lease of them, but that he could not show it to me, as it is in Mr. M.P. Robinson's safe in Honolulu. And further, he has ordered my men off those lands when they were sent by be after Breadfruit and Cocoa-nuts, and taken all to himself for his own use... (letter dated April 26, 1884; Maly 1998:51)

On July 28, 1884 Elderts wrote to C. J. Lyons, Government Surveyor, stating his intention to relinquish his lease on the lands of Oneloa, Laepā'o, 'Ahalanui, but urging that Lyons help Kapukini, the constable and jailer for the district, obtain a lease within those lands. According to Maly (1998) Kapukini (John Kapukini) was a native of Maui, who moved to Puna sometime in ca. 1884 (Kapukini was the great grandfather of John Hale who Maly interviewed on June 12, 1998, and whose family still resides at Pohoiki; see summary of oral interviews section of this report). Elderts' letter reads as follows:

...Now, I cannot get a lease from the Govt. to show that I am entitled to the land and what Cocoa-nuts, breadfruit, &c grows on it, to them, and as I cannot get them without being in trouble and hot water all the time the aforementioned R. Rycroft, and as I prefer to live in peace with my neighbors, I now hereby notify you that I give up and relinquish all my rights to the aforesaid lands.

And in doing so, I would ask that you will use your influence to obtain a lease of them for a native named Kapukini (K.) who is now living on the land, and who is a of our jail in the district, and a good man to have the lease, and I think if it is possible to obtain a lease of said lands the he, Kapukini is entitled to, and should have the first chance to lease them.

Any information I can give you in addition to what I have already written, I shall be pleased to impart, and any communication you may wish to sent to the said Kapukini, through me, I will see that he gets it... (letter dated July 28, 1884; Maly 1998:51)

In 1884 Rycroft began building a wharf at Pohoiki Bay, but it was swept away before completion, and not rebuilt until 1887. Upon completion of the wharf, to allow for public use of the landing on his private property, the Territory of Hawai'i paid Rycroft a portion of the cost of building it (Maly 1998:52). The completion of the Pohoiki wharf is the subject of an August 17, 1887 letter from J. A. Hassinger, Chief Clerk, to C. N. Arnold, Esq., R.S. in Chief Hilo:

...the landing at Pohoiki Puna – which was built or being built in December 1884, by Mr. Rycroft and for which he was to receive \$350...and which wharf was swept away before completion. Mr. Rycroft now reports the wharf rebuilt... Mr. Rycroft also giving a written agreement that the landing which is on his private property shall be allowed free for the use of the public as a consideration for this assistance... (Aug. 17, 1887 letter, Int. Dept. Book 30:206 in Maly 1998:52-53)

By the mid-1880s, in addition to the wharf, Rycroft had built a house, saw-mill other out-buildings, and two roads on his Pohoiki property near the landing. The June 20, 1885 edition of the *Daily Honolulu Press* (page 3) contains an article entitled "PUNA: It's Present Condition – Its Prospects – Its Possibilities", in which the author (R.S.S.) describes Rycroft's lands at Pohoiki and his improvements to them in detail:

...Nine miles north-east of Kalapana – a long, hot, thirsty nine miles – is Pohoiki, one of the most interesting spots on the Hawaiian Islands. It is there that Mr. and Mrs. Robert Rycroft live – not as feudal lord and lady, but, far better, as a modern knight of labor and his efficient helpmeet. Sooner

and I were never more glad to be welcomed than on the broiling noon of Sunday, April 12th, and our welcome could not possibly have been more pleasant.

Pohoiki is a place of many possibilities. As a point for firewood shipment it had no equal on Hawai'i; and, as far as I know, no equal on the islands. Pohoiki Bay is a cup-like cove, that might be made, by a little blasting and a little break-water building, a safe landing, in all ordinary weathers, for any of the inter-island steamers or schooners. With such harbor improvement Pohoiki would be the best landing between Kealahou and Hilo; and the amount of firewood that it could furnish Honolulu or the plantations would be practically unlimited.

Mr. Rycroft's dwelling house, saw-mill and other buildings, are on the outer edge of what seems from the shore to be an impenetrable and interminable thicket of Pandanus. But a miniature clearing has been made around the buildings, and back from that clearing run two roads, broad enough for four wagons to be driven abreast, level enough for the bed of a railway and (one of them) level enough for the trundle path of a baby carriage.

Mr. Rycroft takes much pardonable pride in these roads. They have been built altogether over an old aa flow, the seaward edge of which is a Pandanus grove, and the inland portion a thick forest of ohia, breadfruit, kopiko, nehe, kolea, holei, olomea, naio, aaka and other native trees, a few fruiting ohias and some fig, coffee and papala trees grown wild or planted among them. On the north side of Pohoiki Bay is a beautiful grove of kamani trees – of which one tree grows in the yard of ex-Marshall Parke on Kukui Street – and the cocoanut trees in the vicinity may be counted by the thousands. The bird's-nest fern grows around the Pandanus trees luxuriantly, and in the places bean-bearing vines climb in matted masses almost to the exclusion of both air and sunlight.

Robert Rycroft is an Englishman who looks, talks, thinks and acts like an American – like a “new Englishman,” as Sir Charles Dilke has it. Strange as it may seem, Pohoiki is one of the most American looking places on the islands. Pluck, energy, talent, taste and mechanical ingenuity are observable at every turn. The smooth roads have been made by a traction engine moving over a roughly laid road-bed. This same traction engine draws the landing all the firewood shipped. Two miles of smooth road have been built already, and several rough wood roads cut out. The ease and inexpensiveness with which these roads are built (entirely over aa flows so far) can scarcely be created without ocular demonstration. There are few such good roads on the island.

Mr. Rycroft believes that a carriage road – a railway even – may be constructed from Pohoiki to the Volcano House more advantageously than from another point. The actual distance is less than 24 miles, and the route is so direct that a road may be built there, including turns, of less than 27 miles in length, and with so gradual a rise as to be almost a “trotting grade” all the way.

It is worth noting that in the 2 miles of completed road at Pohoiki, running straight towards the hills, there is only 212 feet rise.

Mr. Rycroft so firmly believes in the practicability of making such a road that he is willing to undertake a contract to complete, and keep in order for two years, a road of the character above described, at least 18 feet wide, for \$2,000 a mile. Of course, it is for legislators to determine whether the country can afford to make such an investment as the Kilauea-Pohoiki road would be. The value of a direct carriage way – less than 30 miles long, and most of it through a wooded and beautiful region – would be great. But it is not for newspaper writers to decide. In my opinion the road would be worth the building for the above-stated reasons alone. But there are other and better reasons. Back of Pohoiki is much open country, on which Portuguese and other settlers might be located. I cannot do better than print a letter written by Mr. Rycroft on this topic during last February and printed in the Advertiser:

“I have seen several references made in the newspapers lately relative to the settlement of Portuguese immigrants who have finished their contracts. Of course, it is of vital importance to the country, as we all know, to offer inducements to these people to settle as small farmers among us.

“Now, in the district of Puna, there are thousands of acres of good land lying unoccupied which could be obtained for a reasonable price. Though a rough volcanic country, there are numerous kipukas, or openings of good, deep soil, surrounded by aa, thickly studded with timber. There is one within three miles of the boat-landing of Pohoiki, at an elevation of 1,000 feet, containing 500 acres in one patch, and several smaller ones close at hand. Of the largest one part is owned by natives, part by the government, and part by myself. It is good land for growing Irish or sweet potatoes,

bananas, oranges, taro, corn, pia, awa, or in fact anything that will grow on the islands, and could be cut to advantage into small farms or homesteads.

“There is a good wagon-road already halfway from the landing to this place, and the balance could be made easily.

“Surrounding these ‘openings’ is a natural formation (viz., rich soil and aa for the cultivation of coffee, olives, the grape vine, or figs (the drying of which last-named article would make a good business).

“If the Portuguese are inclined to settle on the islands, a small colony could be started in this place without much difficulty. Frequent rains ensure plenty of water.

“This is only one place; but it is the nearest to a road and landing that is available. To my personal knowledge, there is enough good land in Puna lying idle to settle every Portuguese family in the kingdom.”

I visited the large kipuka of which Mr. Rycroft writes. In part of it was growing the most luxuriant tangle of ti plants and climbing ferns I have ever seen. On the sides of one or two gullies, where heavy rains had made temporary streams, I noted a reddish-brown soil fully two feet deep, oranges, mangoes, rose apples, coffee, awa and upland taro were growing in places. I am told by Mr. C. N. Arnold that there is much similar country among the hills towards Hilo. Others tell a like story. I hope Mr. Canavarro and those interested in keeping the Portuguese in the country will visit Puna and look into its possibilities.

Pohoiki is said to be a remarkably calm landing place. Mr. Rycroft says that during the past seven years vessels attempting to land have been prevented by rough weather only twice.

In addition to his firewood cutting, Mr. Rycroft does a little timber sawing. He is able to get out ties, posts or planking for vessels. Ohia and kamani are his best timber woods. He has a small mulay saw-mill begun in 1882, employing a side-cutting saw, made by Chandler & Taylor, Indianapolis, Indiana, driven by a 10 horse-power engine, made by the Honolulu Iron Works [Figure 29].

What astonished me more than anything else at Pohoiki was the apparent fertility of the old aa flow, in which so many trees, self-planted and transplanted, were growing thriftily. The mystery was solved by Mr. Rycroft, who removed a few of the bare upper rocks and showed me a thin but evidently rich layer of black aluvium beneath the surface rocks. “The leaves and grasses fall, wither, decay and are washed down by the rains below the surface rocks, making a rick, warm yet moist soil, needing no cultivation after planting.” From what I have seen of the fruit trees growing in Puna, I should say that many a ton of tropical fruit might be grown there at a profit if steam communication with northern ports offered.

Near Pohoiki, on or not far from the proposed road to the volcano, I saw two extinct craters, bowl-shaped and completely in-grown with ohias and other trees. I have no dimensions of them, and shall not attempt to “guess”; but the ride to see them is well worth taking by any one who chances to pass Pohoiki.

At Pohoiki I saw why the laziness and the average Puna native are pretty nearly synonymous. ‘Twill take a deal of leaven to leaven that lazy lump.

On my way to Hilo I spent a night with Captain Eldart and had a bath in his justly noted warm spring. Captain Eldart’s stock ranges include some 20,000 acres, two-thirds of it lava, partially timbered. Of all there is about 6,000 acres of good grazing land.

Near Captain Eldart’s I saw the famous “sculptured tablet” of Professor Woods. If there be anything Spanish or foreign about it, I am much mistaken.

Sooner and I made the 23 miles to Hilo in just 11 hours greatly to the disgust of my young friend Harry Rycroft, who lent his kind companionship to what would have been otherwise a dreary ride – despite the beauty that made much of it delightful.

R. S. S.

Honolulu, May 20, 1885

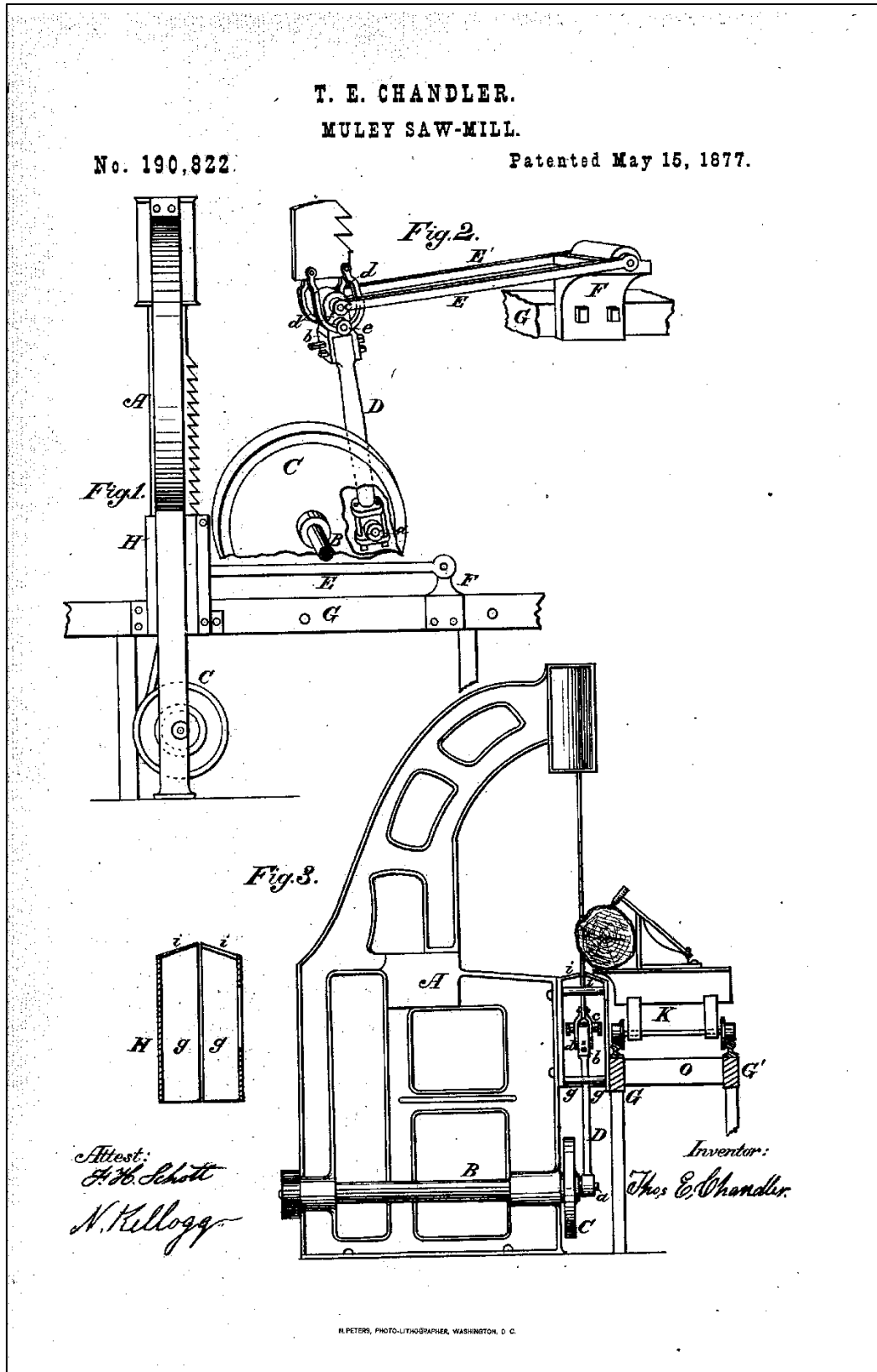


Figure 29. Diagram of a Chandler & Taylor muley-saw mill (Patent No. 190,822, dated May 15, 1877).

On June 6th 1885, the Boundary Commission once again convened, at the Courthouse in Pohoiki, in attempt to finally settle the boundaries of Keahialaka Ahupua'a which was now owned by Rycroft (Boundary Commission, Volume B No. 5, pages 39-40). Present at the meeting were R. Rycroft, J. E. Elderts, J. M. Kauwila, E. Kekoa, I. M. Naeole, and others. Two witnesses presented testimony at the court house that day Piena (incorrectly spelled Piiana and Piiena in the testimony), a resident of Keahialaka, who presented testimony at Kopoho during the 1873 hearing (see above), and I. W. Kumahoa. The boundary investigation appears to have concentrated on the southern boundary of the *ahupua'a*, as the boundary between Pohoiki and Keahialaka (both owned by Rycroft) had already been settled. The testimony of Piena and Kumahoa is as follows:

Piiana [Piena], kane, sworn (The evidence taken A.D. 1873 is read to witness, who confirms it, and repeated it over), I do not know much about the boundary on the South side of the land. I have not been on the Kaimu and Hilo road. When young I used to go up from here to the volcano, with my parents for sandalwood. Keahialaka joins Waiakahiula at the mauka end. I forget the name of the place. Puulena is on Keahialaka, and Malama is below the hill, and the boundary runs up to Kauaea. I have heard the boundary described, but do not know certainly; I have not been there. Kaukulau joins Keahialaka at the sea shore. It is a government land, at a place called Loli, up along Kaukulau to a place called "Pohoiki," along the pahoe-hoe to "Holua," a pali, and on to "Kalehuapae," and oioina "Kakapuhi," then along Malama to "Pahee" on Keahialaka, the road being the boundary, to ohia woods called "Pukakoolau," and on to Puulena. The old boundary makai was marked by a stone wall, partly broken down now. The land of Kaanehe ma joins Keahialaka. On the way up to the Volcano is pahoe-hoe where we travel, and aa also.

I. W. Kumahoa, sworn, When I was a boy I went with my parents, Nuhi, my father, who was a kamaaina here, for canoe sticks and trimmings. I was born and brought up on Kapoho, or Kaniahiku, What Piiena [Piena] has said about the lower boundaries of Keahialaka, are correct. "Pakoi" is on Kapoho, and on the South side of that place is Keahialaka, and the boundary runs [page 40] along the edge of the pahoe-hoe which belongs to Keahialaka, and the trees to Kapoho, to "Kilohana" at the road from Kaimu to Hilo, there the land Kauaea cuts off Keahialaka. I asked my father what land the woods to the South of that belonged, and he said to Keahialaka; it is called "Kamimi," and at the oioina on Kaimu road is the mauka corner of the land on the South side. I do not remember the name of the oioina, but I think I could point it out, if it is not covered by the lava of 1840. I have not been there since then.

At the sea shore, "Loli" is the boundary between Keahialaka and Kaukulau, a rocky point in the sea. The boundary runs up to the Kapai Grant which joins Keahialaka, and along Grants to Kaanehe ma, Naholo ma & Hamakau; then along in the woods to the land of Makua, and along Makua's land; thence along the Kanono land to the pali. On top of the pali is Keahialaka, and below is Malama, towards Kau, and from there on I do not know until we come to "Kamimi." I think I could point out all these places, but what are covered by the lava flow of 1840.

There is plenty of timber on the upper part of Keahialaka, and aa poho. "Kahuwai" is a hill below Puulena. Kapoho and Kaniahiku join Keahialaka at the mauka boundary to Kauaea. The Konohiki part of Kapoho joins it above "Puuoahana," which is in Kapoho. Kanamano is the boundary outside of that. Kapoho Konohiki and Kamahiku run up together to the Kaimu road, the konohiki part joining Keahialaka. Waiakahiula does not join Keahialaka. (Boundary Commission, Volume B No. 5, pages 39-40)

No decision regarding the boundaries of Keahialaka were made at the Pohoiki Courthouse that day, but a new survey of the land had not yet been completed, and was ordered once again. Following this meeting, Boundary Commission hearings for Keahialaka did not commence again in earnest until 1896.

It appears that by 1886-1887 the Pohoiki School was no longer standing. According to the Reverend William Kama'u, "in the year 1887 I became a regularly installed pastor of the United churches of Kalapana and Opihikao and it was my regular duty to go on Sunday to Pohoiki for six years. . . I do not remember any school house or any teaching there" (Hawai'i State Archives, Public Instruction, Folder 261.: Nov. 19, 1907 in Maly 1998:77).

By November 30, 1886 Rycroft was advertising his "Mulay Saw Mill and a 10-H.P. Engine & Boiler made by Honolulu Iron Works" (see Figure 29) for sale in the *Hawaiian Gazette* newspaper (page 5). The one side cutting Chandler & Taylor saw, along with the engine and boiler, was advertised as being nearly new and able to cut "a log 4 feet in diameter by 22 feet long." In the advertisement, Rycroft invites any interested parties to Pohoiki to see the sale items in operation. Despite advertising his mulay-saw mill for sale, Rycroft continued to manufacture wood products

2. Background

at his Pohoiki property as indicated by an advertisement in the February 24, 1891 edition of *The Hawaiian Gazette*, Honolulu (page 10) that reads:

FOR SALE
At POHOIKI SAW MILL,
Puna, Hawai'i, about 2,500 Ohia R. R. Ties
4x6, five and six feet long. These are the very
things to put on curves on plantation railroads,
as the spikes do not loosen in this timber. Can
be sold cheap. R. RYCROFT
Pohoiki, Puna, Hawai'i.

An April 20, 1891 article in the *Daily Pacific Commercial Advertiser* describes Rycroft's burgeoning coffee plantation and indicates his intentions to build a new coffee/saw mill on the Pohoiki property:

Mr. Rober [sic] Rycroft has quite an extensive coffee plantation in Puna district in Hawai'i. He has 8,500 trees planted on land at Naeo, and about 3,000 at Makaola. The soil where these trees are growing is decomposed or disintegrated a-a, which is quite rich and doubtless will produce a good coffee plantation in a few years. Besides the coffee, Mr. Rycroft has a number of lime, fig, mango and pear trees all growing as finely as the same kinds of trees in any other part of the Island.

The owner of the plantation intends constructing a new mill of concrete, 80x30 ft., and two stories high. The mill will be for the double purpose of preparing the coffee for market and for the manufacture of lumber into railway ties, etc. Some of the machinery, especially the saws, are from the firm of Messrs. Chandler & Taylor of Indianapolis, Indiana. The lumber mill will have an engine of seventy-five horse power, with a capacity of making 250 ties a day. A few more such enterprises in Puna will open up that district with a considerable increase in the products of the Islands. (*Daily Pacific Commercial Advertiser*, Honolulu, April 20, 1891, page 3)

Rycroft himself describes the labor of planting his coffee orchard in a letter published in the November, 1891 edition of *The Planters' Monthly*. In that letter Rycroft reveals that he has also recently planted 400 cocoa trees and that he is interested in planting nutmeg. The letter, written on October 3, 1891, reads as follows:

Pohoiki, October 3rd, 1891.

Mr. C. Koelling, Dear Sir: – I have received yours of the 19th ultimo, and have noted contents. I do not know that my observations on the subject will be worth much to you as my actual experience in Coffee Culture is very limited, but such as it is you are welcome to it. It is only seven months since I planted my first trees, though I have been very much interested in coffee for many years, and have given the subject much thought.

I first commenced by planting 3½ acres with wild young coffee plants taken from shade and planted out in the open, and found just as Mr. Miller says in his late report that about two thirds of the plants proved too delicate to stand the exposure and died. What survived are fine young trees now, two feet high, strong and thrifty; so much for wild young plants from shade.

My next venture was a thirty acre piece which I planted with 30,000 stumps from about the size of a lead pencil to an inch in diameter cut off about four inches above the root, and when the plant was well rooted (that is with plenty of fine roots, as some roots resemble a carrot in appearance and these I found to be useless,) I had no difficulty with them. They started in about six weeks and threw out fine shoots, anywhere from three to twenty. The finest of course I kept, and the rest were rubbed off. At the time I planted the stumps, I made some nursery beds right out in the sun—no shade at all, with the idea of filling up misses with these young nursery plants. My seed was not prepared for planting, it was too old, but what did come up are fine. I have just planted them out filling up vacancies and they never seem to realize that they have been moved at all. Still I am rather in favor of stumps for several reasons, if they can be had—my choice of size would be about 3/8 of an inch in diameter.

In the first place one has a crop in eighteen months or two years sooner than nursery plants, which is an item for people starting in with limited means; again the tree grows more compact and the primaries start closer to the ground. My six months old shoots are sturdy and thrifty looking, two feet high with six and seven pairs of primaries; and thirdly, they make a stiffer tree and will stand the wind better in an exposed place.

So far, I am very well satisfied with the appearance of these thirty acres of coffee. I have seen no better anywhere and I have seen it in many places on nearly every Island of the group. You must understand I plant out in the open-no shade at all, and I am of the opinion that is the proper way to plant in Puna, any how, as we have sufficient rain-fall to keep the roots always moist.

I have also put in a small nursery of cocoa about 400 plants (all the seed I could get). This I also planted in the sun not knowing any thing about it. Since then I saw an article in the PLANTERS' MONTHLY about "cocoa," and it says it should be planted in the shade and in transplanting I shall follow the advice given in that article. At the same time, my cocoa plants look very fine, and when properly planted I think they will do well here and intend putting in more as soon as I can get the seed.

I wish some one who knows would write an article on nutmeg culture, what are its requirements and how propagated. I have already written to the Botanical Gardens, Kingston, Jamaica, in regard to nutmegs.

I hope this will reach you in time to be of some service to you in getting up your paper and shall be happy to do anything in my power to further the interests of coffee in this country. I may say that I know of a good many persons who are anxious to plant coffee in Puna and will do so as soon as the government divides its lands up for sale, and puts a good road through the district, the survey of which is already made.

I remain, yours truly,

R. RYCROFT.

(*The Planters' Monthly* Vol. X, Nov. 1891:pages 503-504)

The August 27, 1892 edition of the *Daily Pacific Commercial Advertiser*, Honolulu contains an article entitled "Hawai'i's Wonderland: A Hundred Miles in the Saddle Through Puna", in which the author (unknown) visits with the Rycrofts and describes the Pohoiki property as follows:

...we emerged on the coast road and soon found ourselves at Rycroft's. Here a warm welcome, a nice bath, hot dinner and comfort-able beds awaited us both, but Mr. Loebenstein's zeal in the Government service would not permit him to wait, and he pushed on several miles further. The hospitality of Mr. and Mrs. Rycroft is of the good, old fashioned sort, and puts the guest thoroughly at his ease. Early in the dawn we drove afield on a visit to the coffee plantation, which was reached over a stretch of road as fine as any in the Kingdom. This is probably the only carriage road in Puna, except that to the Volcano. Mr. Rycroft has over thirty acres in coffee, which is all doing finely. None of the trees are more than seventeen months old, but some have already attained a height of about four feet, and a number have berries on them. The trees are set out on a gently sloping hillside, which is thoroughly cleared. They are planted in the open, Mr. Rycroft not being a believer in the shade theory. There is some blight, which is promptly suppressed as soon as it appears, and some of the trees were being sprayed at the time of our visit. The formula for this spraying has already been published in the *Advertiser* and *Planter's Monthly*. It is cheap and efficacious. Mr. Rycroft also has 1700 young cocoa plants waiting to be set out, besides large numbers of limes, oranges, citrons, etc., and thousands upon thousands of young coffee trees in his nursery, all planted in the open.

The return makai was effected on the smooth road at a two-forty gait. Arrived, Mr. Rycroft's large saw mill was inspected; erected under his own personal supervision by ordinary day labor. The business of making rail-road ties is dull just now, but it will probably pick up again. A fine boat, 30 by 7 feet 6 inches beam, built by Mr. Rycroft and Mr. Lynch was also inspected, after which we were very ready for a hot breakfast and a delicious, smoking cup of Puna coffee.

This spot, situated directly on the shore, was so delightful, and the trade wind sweeping in from the sea was so cool, that one was almost ready to believe Mr. Rycroft's assertion that the people never die in Puna, but merely dry up and blow away! (*Daily Pacific Commercial Advertiser*, August 27, 1892, page 6)

By 1893, Rycroft was regularly advertising in *The Hawaiian Star* newspaper, Honolulu, the sale of coffee seed from his cultivated trees at Pohoiki. Rycroft's advertisements state that the seeds are "put through the proper process of preparation, viz: Picked when fully ripe, put through the water test for unsound berries, hand pulped and dried in the shade in quantities to suit", and that every seed is "guaranteed to produce a strong health tree, with proper management."

2. Background

During the early to mid-1890s Rycroft, who was elected as a State Representative from the Puna District in 1894, acquired two additional tracts of land in Oneloa Ahupua‘a adjoining the coastal portion of his Pohoiki property to the northeast. On November 16, 1893 Rycroft purchased at auction Grant No. 3670 containing 4.12 acres located near the coast adjacent to his earlier grant parcel in Pohoiki (Figure 30). On July 3, 1895 he received Grant No. 3940 encompassing 14.78 acres neighboring his Pohoiki grant and bounding his 1893 Oneloa grant purchase on two sides (Figure 31). The maps prepared for these two grant purchases show the infrastructure already extant on Rycroft’s Grant No. 3209 in Pohoiki.

The 1893 map prepared for Grant No. 3670 (see Figure 30) depicts Rycroft’s house (four separate structures) enclosed by a stone wall, a “Saw Mill” with an adjacent “Engine Shed” located northwest of the house enclosure, and “Rycroft’s New Factory” located inland of those structures. Between the house and the saw mill are four additional structures and a large stone wall enclosure that are unlabeled. The Government Road is shown extending along the coast in front of Rycroft’s house part way into Pohoiki Ahupua‘a. The Pohoiki Church and a boat house are situated *makai* of the road near the wharf, and the Pohoiki Court House and another building are situated within a stone wall enclosure near the southwestern termination of the road.

The 1895 map prepared for Grant No. 3940 (see Figure 31) shows a similar arrangement of structures as the 1893 map, but on this map a road labeled “Rycroft’s Road” is shown extending inland from the Government Road between Rycroft’s house and the saw mill, and the structures in this area are labeled “Store”, “Carp. [carpenter’s] shop”, “Laborers’ House” (labeled “Engine Shed” on the 1893 map), and “Barn”. A structure shown near the carpenter’s shop on the 1893 map is no longer present on the 1895 map, but a new structure labeled “Lynch” (possibly the name of the owner) is shown near the Pohoiki/Oneloa boundary. The structure enclosed by the same stone wall as the court house on both maps is labeled “Jail” on the 1895 map.

Hawai‘i Registered Map No. 1777 (prepared by A. B. Lobenstein in 1895) shows a similar arrangement of structures near Pohoiki Bay as the above discussed maps, but also provides more detail of the inland portion of Pohoiki Ahupua‘a (Figure 32). On that map, Rycroft’s Road, labeled “Road Over Aa Fields (Timber Cut)”, is shown extending inland along the northeastern boundary of the *ahupua‘a* to a stone wall enclosed “Fruit Orchard & Pasture” (Hawai‘i Registered Map No. 1778 prepared by A. B. Lobenstein in 1895 lists this enclosed area as “Rycroft’s Orchard”; Figure 33). Beyond the orchard the road shifts to the middle of Grant No. 3209 and continues inland past a “Camp” and a “Water Tank” (near a split in the road), and extends to an area labeled “Rycroft’s Coffee Patch”. The coffee patch is located near the inland extent of Pohoiki Ahupua‘a at “Puu Nanaio” along the Pohoiki/Keahialaka boundary mostly within Keahialaka Ahupua‘a. A “Laborer’s Camp”, accessed by the split in the road, is shown to the south of the coffee patch within Keahialaka Ahupua‘a.

Hawai‘i Registered Map No. 1885, also prepared by A. B. Lobenstein in 1895, shows a similar arrangement of structures near Pohoiki Bay, but on that map the Government Road continues to the southwest along the coast of Pohoiki Ahupua‘a all the way across Keahialaka Ahupua‘a (Figure 34). Within Keahialaka Ahupua‘a, near the southwestern boundary of the current project area, a series of stone wall enclosures containing at least three structures are depicted at an area labeled “Kamokuna” (at the northeast end) and “Alili” (at the southwest end). At the seaward side of the enclosures are two ponds, and *makai* of the Government Road is “Heiau Kuula” (this *heiau* was recorded by Stokes in 1906 as Mahinaakaaka Heiau). The area to the south of “Alili” is labeled “Cocoanut Grove” (it is not clear from the map if the name of the coconut grove is Alili or not).

Hawai‘i Registered Map No. 1778 (see Figure 33) provides a more detailed depiction of this area, and labels two of the structures within the stone wall enclosed areas as (houses?) belonging to “Kamahoa” and “Piena”. Piena, whose house structure and enclosed area is nearest the current project area, served as witness at the Boundary Commission hearings for Keahialaka Ahupua‘a at Kapoho in 1873, and again at Pohoiki in 1885 (see above). On Hawai‘i Registered Map No. 1778, the area of enclosures near the southwestern boundary of the current project area is labeled “Alili Kamokuna Cocoanut Grove”, suggesting that Alili and Kamokuna both are the names of coconut groves. Inland of the enclosures “Kapia Waterhole” is shown along the Kukulau/Keahialaka *ahupua‘a*. A trail labeled “Coney’s Trail to Keahialaka Beach” extends inland from the waterhole through Kukulau Ahupua‘a, where it meets within an inland trail between Kehena and Kapoho that passes *mauka* of “Rycroft’s Coffee” patch. Near the coffee patch the trail is labeled “to Lyman’s and Rycroft’s” with an arrow pointing east. A line labeled “Brunner’s Road Location” is shown extending inland (to the northwest) from the “Laborer’s Camp” at the end of “Rycroft’s Road” near the coffee patch.

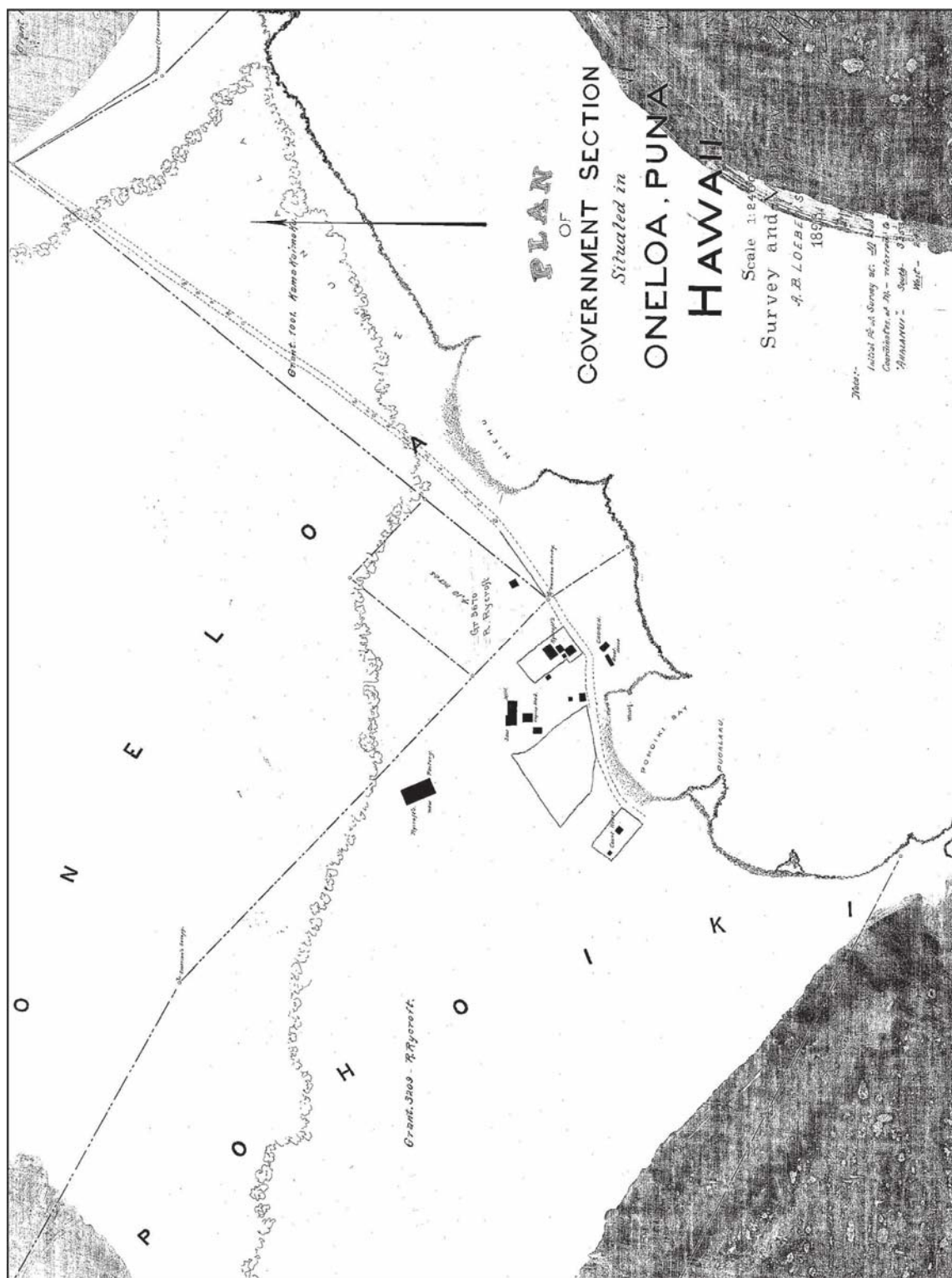


Figure 30. Hawai'i Registered Map No. 1698 prepared by A. B. Lobenstein in 1893.

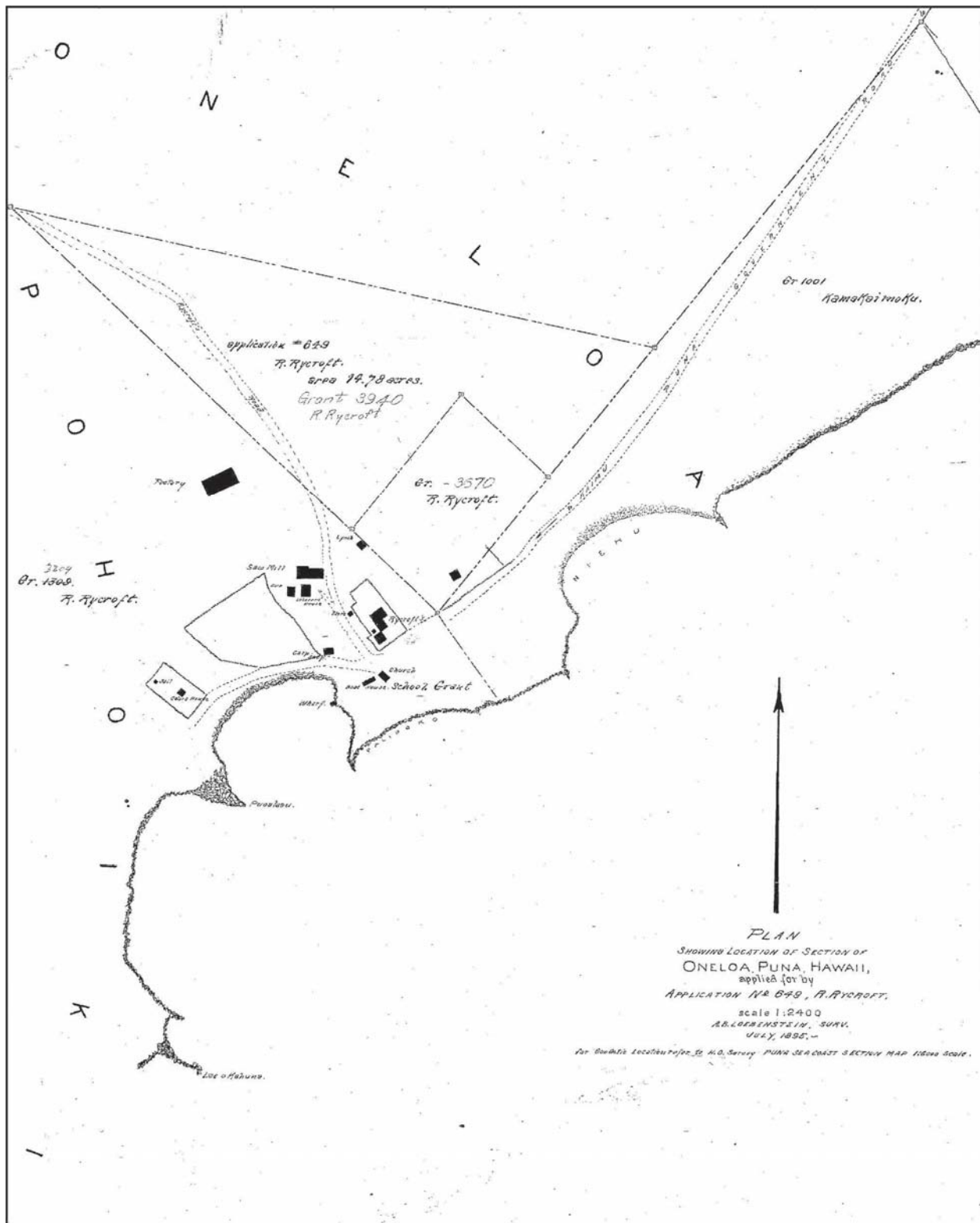


Figure 31. Hawai'i Registered Map No. 1856 prepared by A. B. Lobenstein in July, 1895.

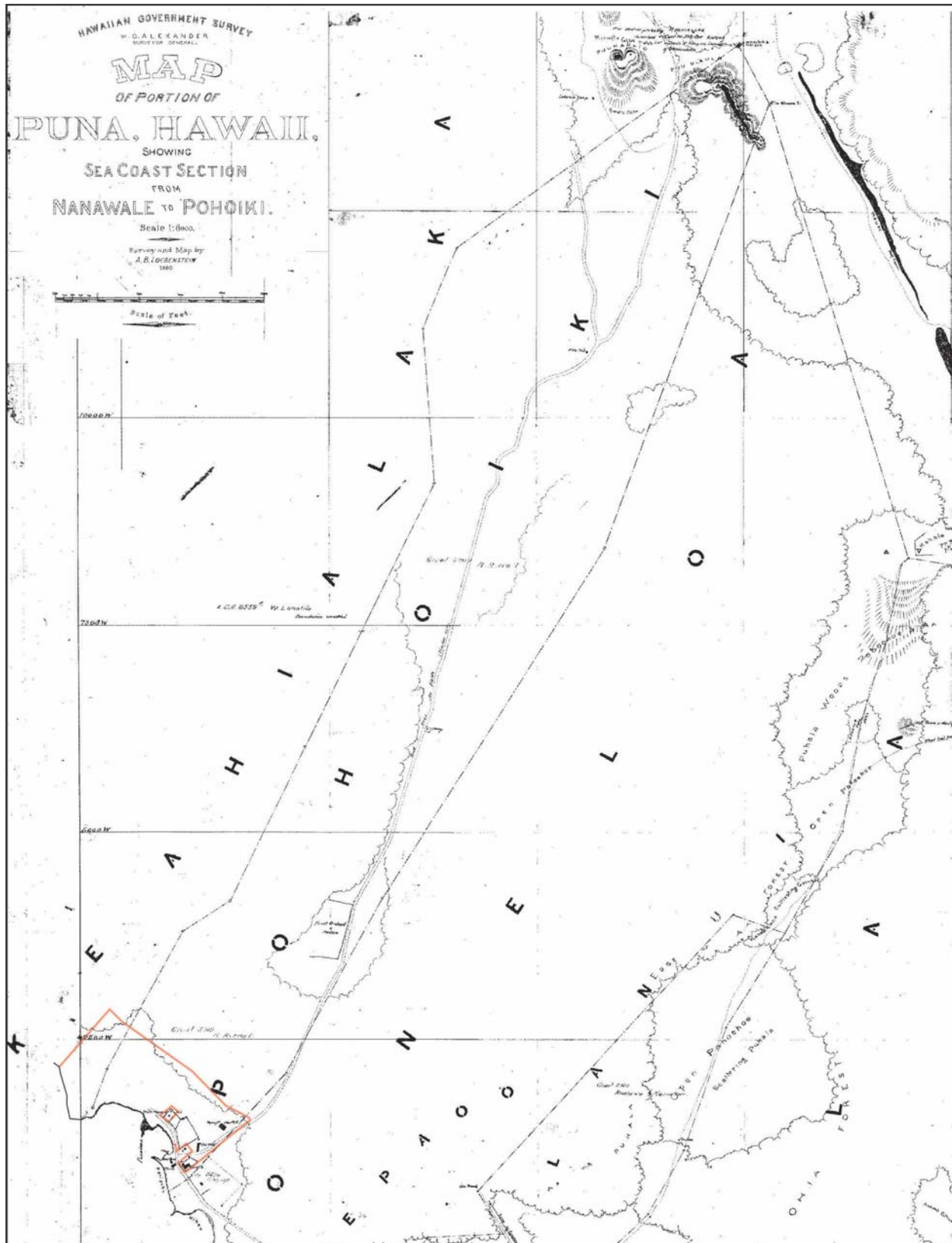


Figure 32. Portion of Hawai'i Registered Map No. 1777 (prepared by A. B. Lobenstein in 1895) showing the current project area (outlined in red).

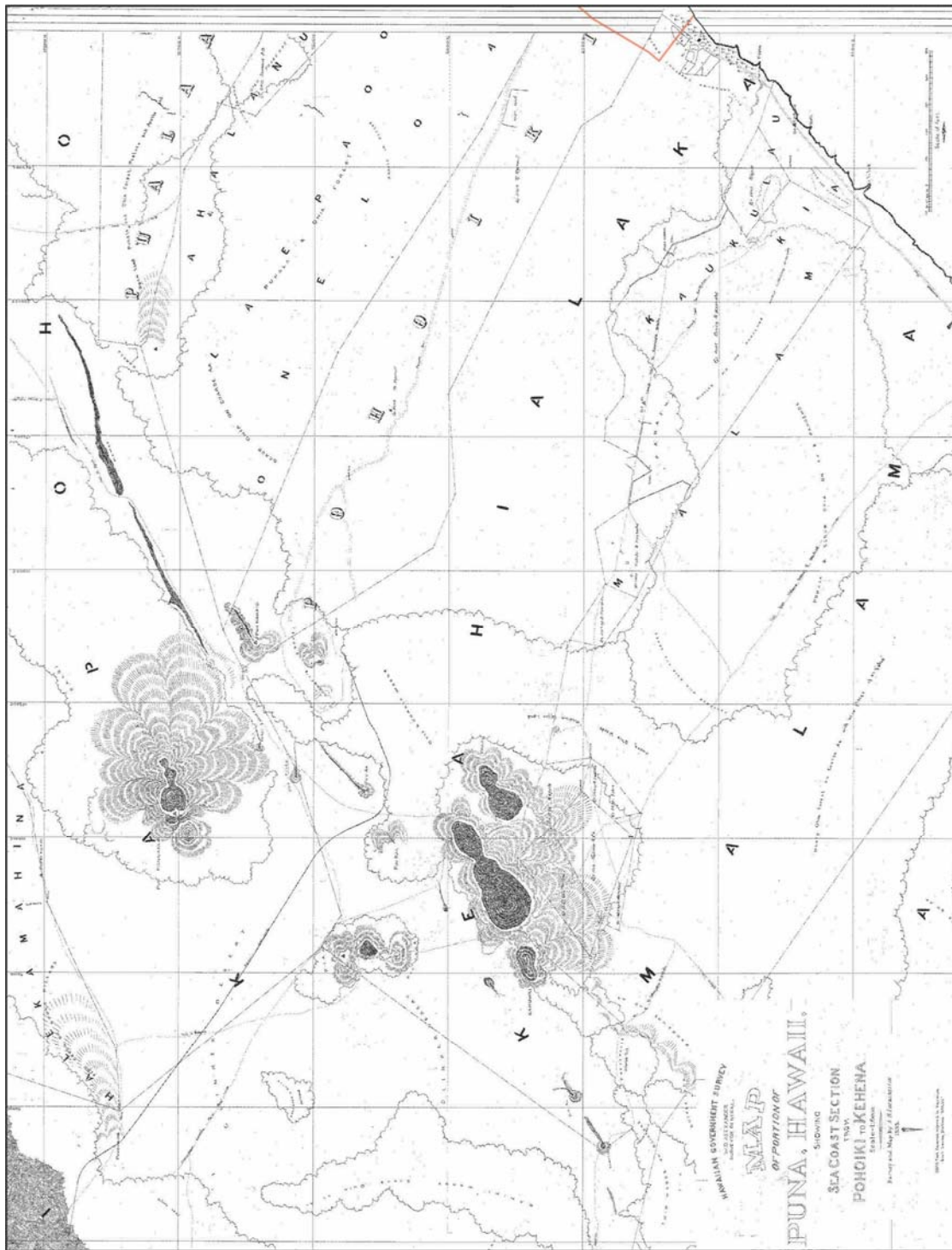


Figure 33. Portion of Hawai'i Registered Map No. 1778 (prepared by A. B. Lobenstein in 1895) showing the current project area (outlined in red).

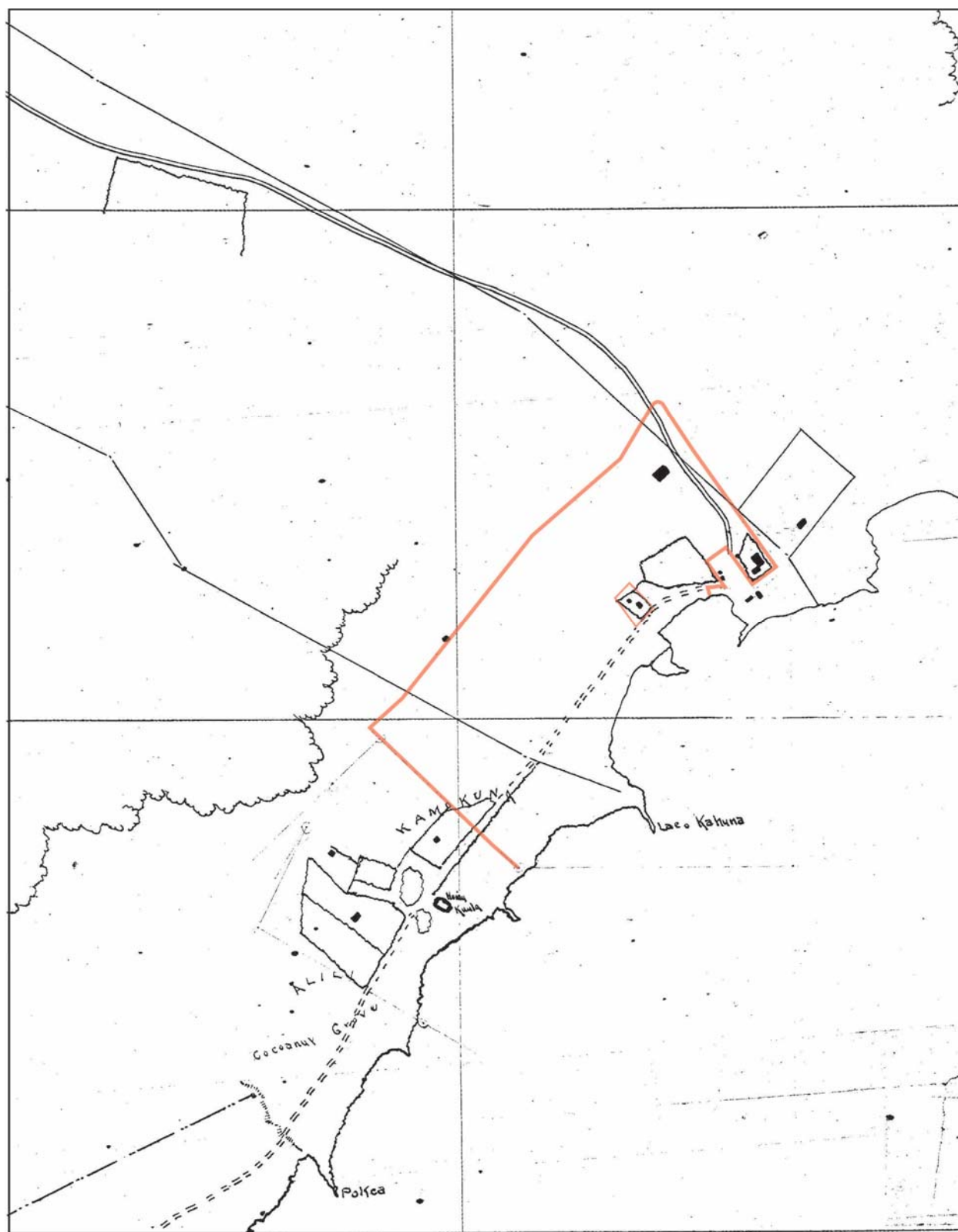


Figure 34. Portion of Hawai‘i Registered Map No. 1885 (prepared by A. B. Lobenstein in 1895) showing the current project area (outlined in red).

Keahialaka Boundary Commission Hearings of 1896

On December 14-19, 1896, at the request of Robert Rycroft, the Commission of Boundaries for 3rd and 4th Judicial Circuits met at the Hilo Court House to settle the boundaries of Keahialaka Ahupua'a once and for all (Boundary Commission, Volume D, No. 5, pages 99-204). Present at the meeting were R. Rycroft and his attorneys G. K. Wilder and F. S. Lyman, J. F. Brown, Government Commissioner & Land Agent Hawaiian Islands, A. B. Loebenstein, Government Land Surveyor, attorney Mr. W. S. Wise on part of Republic of Hawaii, and also Captain J. E. Elderts. Two questions were immediately raised at the hearing, (1) whether the boundaries could be settled under old applications, or whether new applications had to be filed, and (2) whether the Commissioner of Boundaries, R. A. Lyman, was eligible to settle Boundaries of Keahialaka, as he owned the adjoining land of Kapoho, and also rented the land of Kauaea. R. A. Lyman determined that under Section 11 of act 14 of the laws of 1894 the hearing could continue, and that, as the boundaries of Kapoho and Kauaea had already been settled and could not be altered in any way by the Commissioner of Boundaries, he was not disqualified to sit in judgment in the case.

Rycroft claimed that the boundaries of Keahialaka should be determined as follows:

Commencing at the sea shore and following the Patents on Kaukulau and Malama up to the last pc [piece] of land Patented near Ka Puulena, thence follow the mauka line of said Patent and on in a direct line to the angle in the boundary of Kauaea, thence follow the boundary of Kauaea as Certified to the mauka end of said land at or near Puupalai on the old Kaimu trail, thence along the boundary of Waiakahiula as certified, to a point called "Kaniau," thence along the boundary of Kaniahiku, and Ili of Kapoho to, including "Omao," and "Kanamau: to a point called "Papalauwai," thence along Kaniahiku to the mauka corner of Kapoho (konohiki) near Kiapo, thence along Kapoho as certified to the head of Pohoiki, thence along Pohoiki Grant to the sea shore. (Boundary Commission, Volume D, No. 5, page 115)

The Government, after Lobenstein had surveyed the boundaries of Keahialaka in 1891, 1895, and 1896 and determined that the *ahupua'a* was much larger than the 1,276 acres described in the metes and bounds of the survey of J.H. Sleeper in 1859 (actually containing 5,562 acres), claimed that Keahialaka only extended inland to a certain point, and that all land beyond that was known as the *ahupua'a* of Kaniahiku, which belonged to the Government. The Government disputed Rycroft's title this land and claimed Kaniahiku as:

...Beginning at a hill called Kilohana near a place known as Pohakuhele, and running Southwesterly to intersection with boundary of Kauaea as settled by Certificate #88. Thence along said boundary to junction of said Kauaea with the Government land of Kaohe at a point called Puupalai; thence along said Kaohe to its junction with the land of Waiakahiula, Certificate # 158, Apana 2; Thence along said Waiakahiula to its junction with the Government land of Nanawale; thence along said Nanawale to its intersection with the land of Puua, Certificate 156; thence along said Puua to its junction with the land of Kapoho, Certificate #124; thence along said Kapoho to its junction with Keahialaka, and along said Keahialaka to the point of beginning. (Boundary Commission, Volume D, No. 5, page 137)

In terms of Rycroft's title, R. A. Lyman, the commissioner of Boundaries, citing Section 7, Act 14, laws of 1894, states that "[t]he Boundary Commission does not settle the Title to lands, but is to settle Boundaries of lands, so that persons claiming lands, that have been awarded or patented by name only, can take out patents with lands described by Metes and Bounds, in the name of the person holding the original Land Commission (Award) or Royal Patent by name only, and the Minister of Interior is directed by law to issue no Patent from and after the passage of this Act, in confirmation of an Award by name, made by the Commissioner to Quiet Land Titles, without the boundaries being defined in such patent, according to the decision of a Commissioner of Boundaries, or the Supreme Court on appeal." (Boundary Commission, Volume D, No. 5, page 112). He goes on to relate that "unfortunately, the Press [?] Letter book, that would show copy of letter written when maps &c were returned [after the Keahialaka hearings in 1873] was probably lost with the Commission original field notes of testimony and other papers, when the Schooner Caroline Mills owned by W.H. Reed was wrecked at Honokaa, Hamakua in 1878" (Boundary Commission, Volume D, No. 5, page 114), and he disputes the Government claim that Rycroft or the Lunalilo estate knew that the *ahupua'a* was much larger than described in the deed. Lyman notes that:

The Trustees under Will of William C. Lunalilo, who sold the Ahupuaa of Keahialaka, were not kamaaina to the District of Puna, Hawaii, and probably knew noth[ing] about what had been done about the settling of boundaries of the land, or that survey had been returned for correction, and sold by metes and bounds of the rejected Sleeper survey, 1276 acres more or less "Being the premises that were awarded to the said William C. Lunalilo by Land Commission Award 8559b, Apana 15."

I regret that a copy of the original Award is not here, but from my knowledge of these Awards, it is an Award by name only, of the whole Ahupuaa of Keahialaka. The index of Land Commission Awards reads "Ahupuaa Keahialaka." (Boundary Commission, Volume D, No. 5, page 112)

All parties agreed at the hearing that the seaward and southern boundaries of the *ahupua'a* were not in question (having already been established by patented grants), only the *mauka* northeastern section, the area described as Kaniahiku. Robert Rycroft, who himself did not know the extent of Keahialaka when he purchased the *ahupua'a*, testified that:

I bought land about 14 years ago. I was living in Puna then. Think I had lived there 5 or 6 years then. I had probably not inquired much about boundaries before this purchase or the extent of land, as I did not intend before this, purchasing land. I purchased right to dig awa on Waiakahiula & other lands in Puna. My men found a large patch of awa near the old mauka trail to Kainiu from Hilo. I was advised to hire an old kamaaina, Waialii to cut trail for my horses to travel on. It had not been cut out for over 20 years...

...I went around by shore road, and up about to where Cr[?] Coffee land is, and went in a mile or so. Knowing I had traveled in a circle, I asked how far is Keahialaka from here. Waiali replied it is right here. The boundary is close to us. We were then on Kaimu trail, know place. There is a row of large guava trees, & other indications of where there used to be homes. Presume Elderts knows place. Waialii is man who told me this, and I think is the man who pointed out boundaries to F.S. Lyman. Do not know of two men in Puna of that name. I think this took place 17 or 18 years ago. I made inquiries as I thought of buying land, and knew nothing of any survey for years after buying it. I went to Pilopilo & Paahana, men who I think gave evidence formerly. I mean Pilopilo's brother was the second man, not certain of his name. I also asked Nihoa, a woman & good kamaaina, and Kaaikaula, her husband -- all dead now. Also Piena who is very feeble.

Note: Piena was kamaaina, who gave evidence in 1873 & in 1885, as to boundaries of Keahialaka.

My talk with Waialii was long before this. He did not live near me & I think left Puna shortly after my talk with him. Kamaaina all told me Keahialaka ran clear up to Waiakahiula. That is all I asked, did not ask how wide it was. I did not talk native perfectly. All the people I talked with at Keahialaka were born there to the best of my knowledge, excepting Kaaikaula, who was born at Kailua, North Kona. I have never seen deed of my land. It is in M.P. Robinson's safe in Honolulu, Oahu. First time I heard land was described by metes and bounds was some years after I bought it. Curtis J. Lyons told me when I was in Government survey office. Mr. Lyons said the survey was not correct, that most of those surveys had been thrown out, and new surveys made...

[Rycroft cross-examined]...Bought land about 14 years ago. I was with Waiahlii when he cleared out old Kaimu trail from Pahoa. In wood not on Pahoeohoe. We were cutting trail from Pahoeohoe on Hilo side of woods, through woods of Waiakahiula. I said how far is Keahialaka from here. The man said boundary is right here, pointing into woods. Was not showed boundaries then. Have been in that locality within a month, Naholowaa, Pakaka, Pookapu, H. Louisson and another young man, name unknown to me, went with me. We went to upper Certified Boundary of Kauaea. This second time going there, went on Bruner's trail, and head of Keahialaka was pointed out to me. We, the two young men ahead, then kamaaina just ahead of me. We were on Bruner's trail, came to a very large ohia tree on aa & soil mixed up. Naholowaa & Pakaka were ahead & had just gone down a little rise, when they wheeled around and said down here is Omao on Keahialaka, and boundary runs up here mauka to & joins Waiakahiula. This was first time I had seen that boundary. First I knew about survey by metes & bounds was from Mr. Lyons. It was 4 or 5 years after I purchased land & and he said survey was incorrect, that it should run more across Malama flats, but it had been sold and could not be altered. Had some kind of idea how much land I was buying. Bought at Public Auction, after being duly advertised.

My friends purchased it for me in my name. I do not remember reading advertisement, subsequently I heard land had been surveyed. Mr. Robinson, as my agent, bought land for me. Probably he wrote me he had bought it. Do not remember what I paid for land. Am not aware that Mr. Robinson informed me as to extent of land. Only heard from outside natives. Have alway[s] exercised my rights under this deed as to ownership of this land in respect to taxation purposes. I mentioned Pilopilo, Paahana, Pilopilo's brother, Piena and others, as having told me boundaries, but not understanding native well, did not understand everything said.

I was present at Hearing before F.S. Lyman In re Boundaries of Keahialaka. Had owned land some time then, and got my information years before. Do not remember asking officers of Government Survey department at any time after first talk with Mr. Lyons in Government survey office, about boundaries & survey of Keahialaka, but may have done so.

I asked Mr. F.S. Lyman several years ago to survey it. As he did not have time to survey it then, I asked Mr. Loebastien to survey it about time I went into planting coffee, but did not have money to spare to survey it. I think I have talked twice with Mr. Lyons about survey of Sleeper's and second time we talked, Mr. Lyons said Mr. Sleeper's survey was proper & right, though he had told me before that it was wrong. (Boundary Commission, Volume D, No. 5, pages 131-133)

New *kama'āina* testimony concerning the boundaries of Keahialaka was presented in support of Rycroft's claim by Pakaka (L. P. Pau), Kapukini Kaialilii, and Naholowaa Kaiapahea at the 1896 hearing. This testimony provides insights about the use and resources of *mauka* areas of Puna, and residency at the study *ahupua'a* during the mid-1800s. Pakaka, who lived at Keahialaka with his father in 1841-1842, testified:

Pakaka, kane, sworn says, my name is L.P. Pau; live at Waiakahiula, Puna, Hawaii, and am a kamaaina of Waiakahiula & Keahialaka, and part of Kauaea, I formerly lived on makai part of Keahialaka, and now at Waiakahiula. I was born at Nanawale, and lived at Keahialaka in years 1841 & 1842. I know part of the boundaries. Pau, my father, showed them to me. Pau lived at Keahialaka above the coconut grove on the mauka side of the Government road at the sea shore, right mauka of water pond by the road, below the Ahua. I lived with Pau there. When I was about grown (nui), I went to live up mauka at Waiakahiula and Nanawale, and was in habit of going into woods after yams and other food, and so found out about boundaries of Keahialaka. We went after banana, yams and aweo (kalo) at Omao and Laupapai. I know the mauka boundaries of Keahialaka. It is bounded by Laupapai, a portion of land of Kauaea. At Laupapai there is a ridge of Aa...

The boundary of Keahialaka runs mauka side of Kahulipala; this place Kahulipala being on Kaniahiku. From mauka side of Kahulipala boundary of Keahialaka runs makai toward Puna on to lava flow of 1840 or Nanawale flow to Ohia woods Puna side of lava flow, through the woods to Pahoehe Puna side of woods, where the old Kauhale called Kanamanu used to be. It was on Keahialaka, boundary running on makai side (northern) of it to a place oioina called Puuo haoua, an old resting place on old trail from Malama.

From this place boundary of Keahialaka runs makai on Pahoehe to Kipapalauahi, Kapoho being makai side and Keahialaka mauka of Puuohaoua, old trail being the boundary. Papalauahi is a large old lava field, and old road is boundary for some distance, then boundary leaves road and runs makai toward hill of Honuaua, Keahialaka being on Puna side, and Kapoho on Hilo side. Kiapu hill is on Keahialaka, boundary being on Pahoehe below Kiapu. I have not lived at Kanamanu, but lived at Puupalai, a puu on Pahoehe for three years, and used to go to Kanamanu.

Puupalai is a small puu makai of the road on pahoehe. I have heard Puupalai is on Kauaea; it is makai of old mauka trail from Hilo to Kaimu, and is where I heard land of Kauaea ends, and turns makai. I have been to place called Omao to get food, Aweo (kalo) as there was no kalo growing on our land, and wild kalo was growing at Omao. Omao is on Keahialaka. In times of famine we were in habit of going to Omao to get kalo, and my Father told me, when I asked him, what land it was on, that this place is Keahialaka. Used to go there with my father and older brother. We had no right to go there, but went secretly. Used to have fights over stealing on the lands below. The Aweo (kalo)[,] yams, banana and pia all grew at Omao. These things also grew at Nanawale, but no Aweo (kalo) on Nanawale. A little mamake grew at Omao, but most of Mamake grew over near Kanamanu. The people living on Nanawale were afraid to go after mamake, as they had been driven away before from Keahialaka. I do not know much about the mamake, as I got what I wanted around our own place. I have never pointed out the boundaries of Keahialaka to any surveyor. I pointed out the boundaries of Keahialaka to Mr. Rycroft when he came after me. I pointed out from Omao on Keahialaka out to Pahoehe on road to Puuiki, the trail from Dr. Williams clearing at Pahoa to Puuiki...

...I am not a kamaaina of land of Kauaea. Do not know points on boundary between Kauaea & Keahialaka. Puupalai is an old kauhale, outside of woods. A puu on old pahoehe, a small hill or knoll. I lived mauka of this hill for three years, at an old village. The houses stood on pahoehe. It is pahoehe palahalaha, and makai of it were woods & aa. And the houses used to be in this poha

or opening. The pahoe-hoe was a fit place to put up houses to live in. Old kamaaina told me that Kauaea joined Waiakahiula at Puupalai. Know nothing about land of Kehena. Do not know place called Oahumawae. It is way in toward middle of Waiakahiula, but toward Kauaea it is near the Pahoe-hoe, and a long way from Pahoe-hoe on the Hilo side of woods...

...Do not know place called Kamimi. Do not know place called Puuone. My father told me the boundaries of Keahialaka. I was 16 years old then. Hill Kiapu is on Keahialaka. I have been after awa all over land of Waiakahiula. I was born in 1828. My father & mother said I was born the year Naihe, the chief died. I was born at Nanawale and lived there until place was destroyed by lava flow (1840). Then I lived at Waawaa with my father & Mother. I stated I lived makai on Keahialaka a year. I lived at Nanawale, and went to Keahialaka with my father to live when I was 14 years old. Moved to Waawaa after Nanawale was destroyed, and lived there 14 years. Lived at Waawaa two years and then went to Keahialaka, as my Father's family belonged there, and Father was a Hoa aina of Keahialaka. We went & lived with the family of my Father at a place above water pond that is mauka of government road in the Cocoanut trees at shore. (Note: near where Nuhi now lives) We lived on Nanawale, at a spot in middle of land between Aa. It was all covered by lava flow of 1840. I lived at Waiakahiula with my sister. She took me there to live with her. I was nui then. Do not know how old. Went to live at Waawaa after lava flow of 1840, and after that went & stayed some months with my sister; then went back to Waawaa, then to Keahialaka, then back to Waawaa; then mauka to Puupalai, place said to be on Kauaea, and after death of my sister, I went back to Waawaa, where my Father & Mother had remained. I was living on Waawaa when we used to go mauka & steal the kalo at Omao. This was not when we first went to live at Waawaa but afterwards. Went with my father, got yams first, & then kalo. This was first time I went up with my Father after yams & kalo. I had been after yams before, but this was the first time I went after Aweo (kalo). First time I went after yams I asked my Father what land we were on, and he said this place is Nanawale, and Waiakahiula is over there. I did not ask him then about other places. Father told me so I would know where the different [sic] lands were, and he said he told me so I would become a kamaaina. Told me boundaries of Waawaa, Nanawale & other lands. My Father did not go with me & point out the other boundaries I have told about to day but told me the names of points of boundaries & described them to me, & some years after I went and saw these different places. When I was living at Puupalai the kamaaina also told me names of places. I was told trail went [page 119] to Puuiki. I have not been to Puuiki. No one went & pointed out to me where Kapoho joins Keahialaka. My father told me about land boundaries when I went to Kiapu for food; a man said there is the boundary of Kapoho, and I remembered what my Father had told me before. I did not keep asking about where the boundaries were, but when I heard where boundaries were, I remembered what my Father had told me. Know place called Kaniau, it is on Waiakahiula. Omao is on Keahialaka. (Boundary Commission, Volume D, No. 5, pages 116-118)

Kapukini Kaialilii, who was born at Keahialaka, testified that:

...I live at Malama in Puna, Hawaii. I was born on Keahialaka at place called Pawai. It is about a mile from shore, on road that runs from water pond at shore to Malama. I was grown up (large) Nui, when I left there in 1852. Went away on a vessel, and was away from 1852, and landed at Hilo May 9, 1877, and May 11th, 1877, at time of Tidal wave, was at Waiakea, and then returned to Puna, and have been there ever since. I can not say exactly when I was born, as my parents were naaupo. They said I was quite large the time of collecting taxes at Kawaihae, and the Kuiwai ma Ka Lae (in Kau) (about 1816). I know boundaries of Keahialaka, but not on this side; the mauka side toward Hilo. My parents did not go and show me the boundaries. I know the boundaries on the further or Kau side...

...Kapahulu is a place where the Keahialaka people used to cultivate food, and get bamboos for their houses. I know a place makai of this, that was pointed out to me, where people from Kauaea used to come (up from Kauaea to) called Pohakuhele, a Kupua stone. I have not seen it, but only heard of the Pohaku kupua.

...From Pahulu boundary runs mauka to where lava flow comes out at place called "Ohiakihele," an oioina, a sharp knoll, a resting place on Keahialaka on lava flow, where the lava flow of Nanawale comes out of ground (1840 flow). This is as far as my parents pointed out boundaries to me. From this point on I can not give exact boundaries, but have been in habit of going with my parents, collecting kalo, banana &c. for food...

...I have been to place called Omao with my father & Grandfather. Have lived at place called Kanamanu. Keahialaka people used to live there. Used to be a village there, none now.

I lived there during 1841, & 1842, at the time all the people in that region went up there to get mamake to make kapa cloth. We went on the pahoe-hoe adjoining lava flow of Nanawale (flow of 1840). Kanamanu belonged to land of Keahialaka where we got mamake.

I went to Omao with my father, when I wished to, for taro, yams, & banana for food. It was before 1840. Omao belonged to Keahialaka. No one objected to any of the residents of Keahialaka going there. Two hundred or more people of Keahialaka were living at Kanamanu, and used to go to Omao to get food.

I know the Kahu aina who lived on Keahialaka in 1841.

The Hakuaina was a woman, named Maluae, a Kaukau alii (a Chiefess). She was in charge of Keahialaka, of the whole Ahupuaa. I know boundaries on Kapoho side of Keahialaka. Commencing at Kiapu hill, where Kapoho and Keahialaka run side and side to a single cocoanut tree at Pahoi, and then mauka to Papalauahi a pahoe-hoe field about a mile broad, from there to Kuihala.

There is (an oioina) a resting place, a knoll in middle of pahoe-hoe. From Papalauahi boundary runs mauka to KaMakana; Name of place where used to go after Mamake, and if outsiders came after mamake there, Keahialaka people would take mamake away from them.

...There was a road or trail on sharp ridge there, that runs down to where La & Kipi live, and one branch trail runs down to Kepuhi. Kanamanu is half a mile or so toward Kau of Kamakana. From Kamakana boundary runs on to Omao. Omao is a belt of forest. I do not know where boundary runs to there, so I have already stated, that I do not know boundaries on mauka side. My father told me Omao belonged to Keahialaka.

I was about fourteen years old when they were collecting Pauu at Kawaihae (taxes). My Father's name was Kaiilili, he is dead. I was in Puna in 1885. I am a kamaaina of boundary of Kapoho near Kanamanu. Paakoi is below Honuaua hill on south or Kau side. Hill Kiapu is mauka of Paakoi. I know where Kawaimaka is planting kalo on Malama, not Kanono's land, but mauka of it, on side of Kahuwai hill. Know a man named Pake Kuaiholani. He has collected rent from me and others for cultivating on Government lands...

...I do not know boundaries of Omao, but my father told me that where we were getting yams, kalo &c. was Omao. This was in 1845 & 1846. Where we went for food was not a place on Volcano road called Omao. I know place called Kuihala, it is toward Hilo of place called Wahinepilau. The old houses, used to [page 126] be below Wahinepilau. Kuihala is a good way makai from Nanawale lava flow, in the woods on Kahu [Kau?] side of lava flow. Kanamanu is on the pahoe-hoe. I have never been to place called Puupalai. I am a kamaaina where I said I knew boundaries of Kapoho. Half of Paakoi is on Kapoho & half on Keahialaka. It is said that part of Puuhauoa belongs to Kapoho & part to Keahialaka. There is an old road there, one branch goes to Kapuhi & Makahanaloa. Mean old road that goes to Kapuhi where the old kamaaina lived, where cocoanut trees are growing and not the road Captain Elderts made to Kapuhi.

I do not know where Kipi & La lived. I know where Kaluahine lived at Kapuhi. He died at Waikiki, Oahu. Kaluahine lived at Kapuhi, and at Kaniahiku. Kapuhi is down below & Kaniahiku a mile or so above. I do not know Hilo boundary of Kaniahiku. I have only heard Kaniahiku is Kuponu of Kapoho. There is a piece of Kaniahiku at sea shore, another piece in Lyman's cane. Kaluahine had a house at Kaniahiku, and another at Kapuhi; I do not know how far Kaniahiku extends above Kaluahine's house. Know Kahuuluna's land on Kaniahiku. Kaluahine lived on that land. I went to his place sometimes. My guess is, that it is a mile or more, from where Kaluahine lived on Kahuuluna's land to place called Omao. There are rocks, pahoe-hoe & aa between Omao & where Kaluahine lived. I do not know what land owned the pahoe-hoe between Kaluahine's & Omao. I know the other side. Kaniahiku is a aina lele of Kapoho, and that is reason I cannot tell what land owns the rocks between these points Kaluahine's & Omao...

The lower end of lava flow of 1840 is on Nanawale, and mauka end on Keahialaka. The last I went to Kapahulu was when I went to Kaliu with Loebenstien. Last time before that was in 1861. Whenever I go to these places whenever I go to Kaniahiku. In 1861 I went to Kanamanu and slept there one night, got Pulu and took it to Maui. I was living at Maui then. Can see Kamakana whenever

I go to Kaniahiku. Saw it other day, as I came along road to Hilo. Went around in Kamakana with my makua in 1861 to get Pulu. I was at Omao last Sunday as came in to Hilo. I came along road to road from Kamaili, and came along to mark X at Dr. Williams place. I came along first to Laa's place and left folks there & came along alone to Kaukapehu, saw folks at Naholowaa's, went in, and drank coffee as I was on my way to Hilo for this case. The last time I went to Omao before last Sunday was in 1851. I went to Maui in 1852. It is said to be Kaniahiku where La & Kipi are living. Last Sunday I went up from La's place on Bruner's road to junction with road from Kamaili. Road is not through middle of Omao, but junction is outside of woods. The Boundary of Keahialaka on Kapoho side where it strikes Omao is at the Kuono, is where you look up mauka, and the ohia trees look high up on the Hilo side of lava flow of 1840. A woman used to be Konohiki. She was konohiki of the whole Ahupuaa of Keahialaka. I stated before, I went to Maui with my older sister in 1852. I did not say I went to sea. I came back to Hilo May 9th 1877 and May 11th was washed out by Tidal wave at Waiakea 1877. I lived in two places while I was away on Maui from 1852 and in 1864 went to Honolulu to put my daughter in School. (Boundary Commission, Volume D, No. 5, pages 120-128)

Naholowaa Kaiapahea, testified that:

Naholowaa Kaiapahea, kane, sworn, A voluntary statement. I have asked Mr. Loebastien and Mr. Rycroft for money, but did not get any from them. I do not know boundaries of Kapoho or Keahialaka. I live at Waiakahiula, and now on my own land at Pahoa. Nanawale mauka, Pahoa joins Waiakahiula. I was born at Nanawale at shore, same land called Pahoa at mauka end. Am a kamaaina of Waiakahiula & know the boundaries. Have heard of place called Omao, and seen it as a stranger. I saw it as a stranger in 1841 when I went there and heard with my ears. I went to get mamake with my parents to make kapa with. Went to Omao from Waiakahiula. Got the mamake and returned to Waiakahiula. Went there several times, can not say how many. That is the ike malahini, and lohe pepeiao I stated before. I did not hear from kamaaina of Keahialaka and Kapoho, but heard as a stranger with my ears, and saw as a stranger. I went to Kaniahiku for mamake, and heard Omao belonged to Keahialaka. I was taxed by Konohiki of Kapoho for getting Mamake on Kaniahiku, and I heard that part of Omao where they got kalo, yams & banana joining Kauaea belonged to Keahialaka...

...I did hear that Keahialaka people went to the portion of Omao adjoining Kauaea to get kalo, yams & banana.

...Konohiki of Kapoho taxed me for going after mamake there. Afterwards Konohiki of Keahialaka people for going for mamake on Keahialaka portion of Omao adjoining Kauaea. I did not go there myself, but heard this from folks who went there. This was the common report at the time. Do not know who started it. Kauaea is mauka, and Omao on the makai side of it. Omao is on Hilo side of lava flow of 1840...

...I heard with my ears that Keahialaka was land on Hilo side of lava flow of 1840 taking in Omao. I heard Keahialaka people alway[s] came across lava flow to Omao for kalo, banana, Yams, &c. I know Keahialaka people did not stop our getting kalo &c. on the part of Omao I lived on, but claimed kalo & other things on mauka portion of Omao. I can not tell just where I lived, or name [page 130] of place near beach on Nanaweale. I was formerly a witness before R.A. Lyman, both on Kapoho & Waiakahiula (in 1876). I did testify before Lyman at the hearing for Boundaries of Kapoho, that Omao was on land of Kapoho, 1873...(Boundary Commission, Volume D, No. 5, pages 128-129)

One additional witness, Samuel Mookini Kipi, testified for the Government that:

...I used to live at Kapoho & was born there, am 54 years old. Am a kamaaina of Kapoho. My father showed me the boundaries. My father's name was Hoapili, a kamaaina of Kapoho & he died at Kauaea. I now live at Kaniahiku, a part of Kapoho. It is a lele ku or Ili ku of Kapoho. Do not remember how long I have lived there. It is written in Land Book. I think it is 12 years more or less. Have lived there ever since I bought land there. It was called Kaniahiku then. Know place called Kamakana. It is Government land, a portion of Kaniahiku. A Lae Ohia (point of woods). Know place called Puulaula, it is on Kaniahiku. Am a kamaaina of land on Hilo of lava flow of 1840. My land on Kaniahiku I know. Know Omao, it is quarter or half a mile from my place, across lava flow of 1840, and belongs to Government land of Kaniahiku. It is a large land.

My father showed me boundaries of Kapoho, and so I know Omao is a part of Kaniahiku. I have dry awa and yams &c at Omao. I knew it was Government land, a portion of Kapoho and tenants [sic] had a right to go there. After Kekino went to Legislature, he told us it was a Government land, and we have lived there ever since. I heard before from my father, Hoapili it was a government land. (Note: Hoapili was a witness as to boundaries of Kapoho in 1873; See Liber A, page 294.)

Hoanoili was the Konohiki over whole of Kapoho. Keahialaka people used to go to Omao after kalo, yams &c as Hoanoili, "he ae wale ia lakou e ku aku ia mau mea." Keahialaka people went there to Omao with the consent of Hoanoili, Konohiki of Kapoho.

It appears as though I was born since lava flow of 1840. I am kamaaina of boundaries of Kapoho, those that my father knew. The boundaries of Kapoho that he did not know, I do not know. Boundaries from sea shore up to Omao I know & boundary along Kula, Puua, up to Nanawale and Kahuwai, and along Waiakahiula, up to where the lava flow of 1840 came up out of ground, and I do not know about boundaries above there, as they have not been showed to me. Know boundary of Keahialaka, where Kapoho joins it, and up to, and at Kanamanu. I do not know boundaries of Keahialaka in other places. Know Kiapu & Puuone ai on Keahialaka. Have been told that from Kiapu to Kanamanu belongs to Keahialaka. My father, Hoapili and Hoanoili told me so.

Puuone is above Kiapu, and old road or trail runs up to Kanamanu, where Kapukini used to live, and on up to Puulaula and on to Omao. Kapukini used to go to Omao. Kamakana is makai of Puulaula, a red hill on Kaniahiku. Boundary is beyond (or on Kau side) Puulaula at a belt of woods. Puulaula is outside of woods on flow of 1840, on high land about a mile above my place. I do not know boundary of Keahialaka along there, as it is all aa. Kamakana is Government land, a forrest of Ohia with evil. It is pahoehoe outside of forrest. Kanamanu is on Keahialaka. Used to be houses there, as I have heard. I do not know how far Kaniahiku joins Keahialaka running mauka. (Boundary Commission, Volume D, No. 5, pages 149-150)

R. A. Lyman, Commissioner of Boundaries, in summarizing the case prior to his decision on March 31, 1897 at the Hilo court house provides additional information about Keahialaka and its former owner, Lunalilo. In discussing the reasons for his ultimate determination, Lyman states:

The "kamaaina" evidence as to whether Kaniahiku or Keahialaka bound lands of Waiakahiula and Kauaia and any other government land, has never been decided conclusively, and passed on by any Commissioner of Boundaries, and holding the opinion of the Supreme Court, set forth in re Boundaries of the Ahupuaa of Paakea, 5th Hawaiian Reports, pages 154, 155 & 156 as the law in such cases; it becomes a question of fact as to what are the ancient boundaries of Keahialaka, above or mauka of the makai portion, settled by Grant of Pohoiki on one side, and Grants on opposite side of Keahialaka, from shore up to mauka end of Grant No. 1535, and what lands join Waiakahiula Certified boundary.

It is not my place to decide the title to land, or whether land outside of the Sleeper Survey not being claimed by the Lunalilo Estate, "the lands that might possibly be a part of Keahialaka, would revert to the Government" or not...

...Lunalilo was the highest chief on the Islands after death of his Mother, as I will show a little further on, and so (claiming Keahialaka) he was of a much higher rank than (M.) Kekauonohi, the owner of Waiakahiula, and V. Kamamalu, owner of Kauaia; and I decide that the tract now in dispute is to have its boundaries proved.

It is true that C. Kanaina, owner of Kapoho was the Father of W.C. Lunalilo, the owner of Keahialaka, but Lunalilo took his rank, as did all the Chiefs, from the Mother, and not from the Father, and I find in 6th Hawaiian Reports, estate of Her Royal Highness Kekauluohi deceased, page 172, "It is proved that Her Highness died 7th of June 1845," and at bottom of page 174 and top of page 175, in report of same case, "The fact, however, that the King was the reader, as testified to by one witness, would repel the possibility of a motive for a fake reading of it to the testator (herself the highest chief then living) and it having an important bearing as a state document." So that Lunalilo, after his Mother's death, was the Highest Chief on the Islands, and if we look at the other lands in District of Puna owned by him, we find that both the Ahupuaa of Keaau and Kahanalea were lands extending from the shore up almost to the crater of Kilauea, and were considered in Ancient times, as the most valuable of the Puna lands. Lunalilo inherited all his lands from his Mother, among them the land of Keahialaka, and when Land Commission was established, they

were awarded to him. Land of Kapoho was awarded to his Father, Charles Kanaina, and if I am not mistaken, is the only land on Island of Hawaii that was awarded to him. Charles Kanaina was of a much inferior rank to his son, Lunalilo, and as long as Lunalilo lived, Kanaina never allowed his son's rights to be interfered with, by any rights of his own. I know from C. Kanaina himself, that he claimed that the land of Keahialaka extended several miles further, than the Sleeper survey carried it, and have alway[s] regretted, that I did not take his evidence in Honolulu, during the year 1873, in refrence to Boundaries of Keahialaka, and a good many other lands, owned by his son and other parties, as I found that Kanaina had a remarkable knowledge of localities, and extent of his son's lands.

I can not agree to the theory set forth by the respondents in their Brief, "the inference remains that the Laws and customs which in case of adjoining Ahupuaa under diffrent owners would have held and trespass, the one to the other enjoined, were in this instance to lapse," or that "It is furthermore probable, and the presumption is given force by the subsequent isolation of Kaniahiku so called, that it was an Okana, a no man's land similar to the Kamoku of Hamakua," That owing to the trend of the Puna coast line on both sides of the East point, with Ahupuaa extending back recktangularly [sic] from the sea coast, would naturally bring about an irregular shaped remnant in the interior similar to those in the North Kohala District and the upper Keauhou lands of Kona."

I commenced traveling around Island of Hawaii in 1866, and in 1871 commenced setting boundaries of lands on Hawaii, and from the middle of 1866, until I resigned as Commissioner of Boundaries in November 1878, I frequently went around Hawaii, and onto the three mountains, and during all that time had more or less to do with looking after lands belonging to the Kings and Chiefs, advising the diffrent konohiki, and settling their disputes, and Tract called Kamoku in Hamakua, was the only place on whole Island of Hawaii, that I found, that appeared to have fallen to Government as a sort of No man's land. And I found kamaaina ready to give evidence, as to land boundaries all through North Kohala hills, the Kona Mountains, and the old bird catchers too feeble to go into the woods, were ready to dispute with the younger men about boundaries, and Kehena awarded to Lunalilo cut off the North Kohala lands from east side of North point of Hawaii, until, having commenced on the sea coast some distance South of Mahukona, south side of North point of Hawaii, until land of Kehena reached brow of the great pali of Honokane Valley. My experience is, that in olden times every portion of the land on Island of Hawaii, was included in some division of land, and name of land and the boundaries were known to the kamaaina living there or in neighborhood, but as the people ceased to go to collect sandalwood, to catch birds for food, the uwau, and Oo, & mamo and other birds for lei hulu for the high chiefs, and for various other reasons, among them, the decrease in population, that the knowledge of boundaries, names of localities &c has been gradually passing away, especially in places where the traveling is difficult, and now no doubt, knowledge of localities is so limited among the young men of North Kohala, and upper Keauhou lands, that irregular shaped remnants are found now, where formerly none existed.

We must remember that in olden times the Will of the Alii was law, and the people had to go wherever the Alii told them too, and that for over forty years the makaainana (or common people) have been at liberty to go where they wished, independent of the will of the Alii.

...The land outside of Sleeper survey that is now in dispute, was formerly claimed by Kanaina as being the property of Lunalilo, and his own land and the konohiki of each land guarded the rights of each land, as strictly as though they belonged to diffrent families, and not to Father and son. But owing to the worthless character of the greater portion of the lava or open land, and the flow of 1840, having run across several lands, cutting off the mauka woods from the makai (lower) lands. I found in 1866 to 1873 that a good many of the oldest men living at that period in Puna, had not been to the mauka portions of Kahuwai, Puua, Kapoho, and all the other lands that had been cut into by flow of 1840, since lands were cut off, and that a good many of the old trails had been abandoned, and overgrown, and the oldest kamaaina said they were too feeble to ever go there again, and lands only covered with bushes in 1849, are at the present time in many instances overgrown with quite large trees.

The question before the Commissioner being one of fact, as to boundaries of Keahialaka, above the intersection of of [sic] Grant 3209 line of Pohoiki, and Sleeper survey line of Keahialaka near place called Punanaio, and the mauka corner of Grant #1535 on Malama, and a portion of the evidence taken before boundary Commissions at diffrent times, having been referred to by both Petitioner

and Respondent, I think it proper to set forth the testimony, some what at large, as the basis for my comments on it, and the judgement I arrive at... (Boundary Commission, Volume D, No. 5, pages 175-178)

After considering all of the *kama'āina* testimony presented for the boundaries of Keahialaka in 1873, 1885, and 1896, just prior to rendering his decision in the case, Lyman also states:

...I am satisfied now, as I was in 1873, that the land of Keahialaka, extended from sea shore to old road from Kaimu to Hilo, and that most of the old kamaaina show that it did, and that it was cut off on that road by land of Waiakahiula.

In former years, there were a large number of people living at the sea shore on land of Keahialaka, and they had to have a large tract of forrest land, where they went to procure food in times of famine. People of land of Waiakahiula had their tract of forrest land in the Pahuhale or Pahoa woods above the pahoe-hoe land, and it extended to the ridge of old aa, that was the boundary between good land on Pahoa side of woods, and the good land on Puna side of this aa ridge, and from my knowledge of way ancient land boundaries ran, or from any testimony obtained by me in 1873, and 1876, I never had the least idea, that Waiakahiula extended through Pahuhale woods, on across lava flow of 1840, and then turned down over the old pahoe-hoe fields, and extended two or three miles towards sea shore at Pohoiki and Malama, after running inland for several miles from North side of Lava flow of 1840. Most of the kamaaina first examined claimed that Keahialaka was cut off by Waiakahiula at Kilohana, and the kamaaina mostly claimed that Kilohana was on Kaimu trail, and mauka of Kapahulu. (Boundary Commission, Volume D, No. 5, pages 199-200)

After carefully examining all the evidence and exhibits presented in the case, Lyman decide in favor of Rycroft. He determined that the *ahupua'a* of Keahialaka, District of Puna, Island of Hawaii, did indeed contain 5,652 acres and the boundaries of the area were as follows:

Beginning at a large pile of rocks by a hala tree marked A, near shore at East corner of this land, from wich [sic] the extremity of the cape called Lae o Kahuna bears 64° West true, distant 140 feet, and the spire of the Pohoiki church bears North 34° 9' East true distant 1175 feet; the magnetic declination at this point being 9° 10' East, Thence running along Boundary of Pohoiki as described in (Grant) Royal Patent #3209, to an ohia lehua tree marked H and pile of stones, just mauka of Puuulaula [also Puulaula] at head of Pohoiki on boundary of Kapoho. Most of witnesses make Kapoho bound Keahialaka from this point to Kiapu, and I decide that from Ohia marked H at Puuulaula, boundary runs along land of Kapoho, as given in Certificate of Boundary #124 to ohia tree marked KK at foot of earth hill at Kiapu, thence boundary runs along land of Kaniahiku passing opposite to Papalauahi and Puuohaua, and to the right of Puuone and Kanamanu as you go mauka, and through woods on Puna side of lava flow of 1840, across lava flow to woods Hilo side of lava flow, and to Kukui tree marked X at place called Kaniau on boundary of Kaniahiku and Waiakahiula; thence along boundary of Waiakahiula, Certificate of Boundaries #158, apana 2, to head of Waiakahiula to Ohia tree marked K at place called Puupahoe-hoe on old mauka Kaimu road, thence to mauka corner of Kauaea at Puupalai, thence a distance of 281.00 chains to angle on boundary of Kauaea and Malama, Certificate of Boundaries #88; Thence along land of Malama to top of Kahuwai hills, and along top of right bank of crater on Kahuwai hill and to the right of Puulena crater to North mauka corner of Grant (Royal Patent) #1535 Kanono; thence along boundary as given in notes of survey in Grants (Royal Patents) on Malama, Ki and Kaukulau, running straight from one Grant to another Grant, where there is any portion of the Government land adjoining Keahialaka, that has not been sold and Patented, and on to makai corner of the makai piece of land Patented on Kaukulau, and from there to the sea shore, on the South side of old landing place called Pookea or Pookea.

Thence along sea coast to place of commencement. Correct Notes of survey and map to be made and filed, and good marks erected [sic] on Boundaries, previous to Certificate of Boundaries being issued. (Boundary Commission, Volume D, No. 5, pages 202-203)

In 1899, not long after the boundaries of Keahialaka Ahupua'a were ultimately settled, Rycroft sold his land interests in the Puna District to the newly formed Puna Sugar Co. The March 9, 1900 edition of *The Pacific Commercial Advertiser* contains the following account of Rycroft's sale and subsequent move to Honolulu:

...Last year upon the formation of the Puna Sugar Co. an offer was made Mr. Rycroft for his 9,000 acres of land in lower Puna and he determined to sell out and remove to Honolulu. He has such

confidence in Puna, however, that he has taken a large block of stock in the new company in preference to cash, which was offered to him. Mr. Rycroft is a firm believer in the great destiny in store for Puna and Olaa plantations, which, he says, are the banner plantations of the big island. He is sure that if they put a 500-ton mill in at Olaa, in from six to eight years hence it will be running the year around at its full capacity. There is land enough at Olaa to do this and they can plant there higher than in any other part of the island, as it is warmer at the same altitude.

The Puna plantation has some young cane planted in Paoa which is as fine cane as can be produced anywhere, not even barring Ewa or Oahu plantations, says Mr. Rycroft, and the Puna people will have in the near future 5,000 acres of just such cane.

Mr. and Mrs. Rycroft have a family of six children; three boys and three girls. The eldest is Harry and the youngest is Gladys, the latter now going to school in Honolulu. Harry Rycroft is the head luna at the Puna plantation; the second son, Mark, is also a luna on that plantation. Walter, the third son, is attending school at Punahou. Miss Sopha Rycroft is principal of the English school at Opihikao, Hawai'i, and Alice, the second daughter, will attend school at Punahou.

Since coming to Honolulu Mr. Rycroft has purchased six lots in the old base ball ground, where he is now erecting a fine residence, which will be completed as rapidly as the work can be done. Mr. Rycroft will go into business in Honolulu and will become a permanent resident. He has not as yet thoroughly settled upon his future plans, but will make his debut in business circles in the near future. (*The Pacific Commercial Advertiser*, March 9, 1900, Honolulu, page 5)

Around 1899, after the coffee boom had died down in Puna and just prior to his return to Honolulu, Robert Rycroft, and his son Walter, converted the coffee mill at Pohoiki to the commercial production of guava. Shigeura and Bullock (1983) credit these men with first commercial production of guava in the Hawaiian Islands. Citing first had accounts of guava production occurring at the mill, they surmise that Walter S. Rycroft (1885?-1968) remained in Pohoiki after his father returned to Honolulu to look after the guava business. Robert Rycroft died in 1909 in Honolulu, after founding the Fountain Soda Works Co. there upon his return. Shigeura and Bullock (1983) suggest that guava production at the Pohoiki mill may have lasted until ca. 1910, after Rycroft's death. They write:

Luther K. Makekau of Puna, Hawaii, born July 13, 1890, remembers these men working in the production of guava jam and jelly in the "coffee mill" when he was about 15 years old, suggesting a production date of about 1905. Jack Chong Lee, born in 1900 at Kalapana, Hawaii, to a native Hawaiian and her Chinese husband, also remembers seeing guava jam and jelly being made at Pohoiki, Hawaii, when he accompanied his father from Pahoa to Pohoiki on fishing excursions. Marguerite Ooka, formerly of Kapoho, on her visits to Pohoiki in about 1925, remembers her father, James B. Campbell, pointing to the spot in the abandoned mill where the copper kettle used in the guava operations stood.

Robert Rycroft came to Pohoiki in 1877. After a period in cattle, awa roots, railroad ties, and making "ohia paving blocks" (*Metrosideros* sp., an indigenous tree) for the Honolulu market, he constructed the coffee mill in 1891 to process the coffee then being planted in Puna. However, for some unknown reason, the coffee boom ended in 1899, leaving the mill basically without a product to process. Then, probably, the Rycrofts had to find an alternate crop to process in the new coffee mill.

C. Arthur Lyman of the R. A. Lyman Estate in Puna has a lease agreement between R. A. Lyman and J. I. Kerschberg, documented and signed on January 19, 1904, and filed with the Bureau of Conveyances of the territorial government, permitting Kerschberg to pick guava on the Estate lands at Kapoho, Kula, and Puna for a period of 10 years.

Presumably, then, the Rycroft guava business in Puna was started about 1900 to use the coffee mill, and possibly was abandoned after 1910. (1983:3-4)

Pohoiki and Keahialaka Ahupua'a during the Twentieth Century

As predicted by Rycroft during his years at Pohoiki, by 1900 Puna was on the verge of major economic growth. During the early 1900s the burgeoning Puna Sugar Co. (incorporated by the founders of the 'Ōla'a Sugar Co.) had uprooted many of the coffee trees in the district and established cane fields all over lower Puna from Kapoho to Pāhoa. Hindering the growth of the sugar industry in Puna was the wide dispersal of suitable agricultural lands, and the lack of a reliable transportation system, which made it expensive to collect and transport the cane from the scattered fields to the mill. To alleviate this problem, when the Hilo Railroad Company (granted a 50 year charter on April 8, 1899),

2. Background

proposed to lay four miles of track from Kapoho to Pāhoa, the Puna Sugar Co. paid for half the cost (Clark et al. 2001). With the construction of the railroad new economic opportunities opened up in the District of Puna, and the small landing at Pohoiki became a backwater of the large harbor facility at Hilo. By 1905 the harvests of the Puna Sugar Co. were being ground at the 'Ōla'a Mill, and the Puna Sugar Co. was operating as a division of the 'Ōla'a Sugar Co. (Dorrance and Morgan 2000).

Another growing industry on the island of Hawai'i during the early 1900s was the lumber industry; an industry first realized in the Puna District by Rycroft. In 1907 the Hawaiian Mahogany Lumber Company signed a five-year contract with the Atchison, Topeka, and Santa Fe Railroads for the delivery of 90,000,000 board feet of 'ōhi'a railroad ties from the vast forest reserves of Puna (Clark et al. 2001). Subsequently, in 1908 the Hawaiian Mahogany Lumber Company erected a lumber mill at Pāhoa. Lorin A. Thurston, president of the Hawaiian Mahogany Company, was on Hawaii Island in August of 1908 dealing with the increasing business interests of the company when a reporter interviewed him for the *Hilo Tribune*. In an article, dated September 1, 1908, Mr. Thurston states, "Puna is now becoming one of the liveliest places in the Territory, especially in the vicinity of Pāhoa, where the new tie mill has been erected. Several 'sky scrapers' of two stories in height have gone up there, the mill itself is the largest tie mill in the world and about 700 men are engaged there in the work of logging and milling." Puna District was rapidly transformed from a place where people looked at timber as a nuisance to be burned or given away into a thriving participant in the timber industry. In 1908 prices for Hawaiian forest lumber ranged in value from \$25-\$100 per acre (Clark et al. 2001).

In a three part article entitled "Sawmilling in Hawaii" published in the 1908 edition of *The Wood-Worker* (Vol. XXVII, Nos. 8, 9, and 10), Harry C. Haner visits the Pāhoa lumber mill and travels with some of the workers to Pohoiki. Haner describes the village and even includes some photographs from that year, writing:

Another diversion we have is the Sunday "luau" (loo-ow), or native feast. We go down to "Po-ho-i-ki," a little village "makai" from Pāhoa, our mill site, and take our dinner with us. The natives around are very hospitable, and after a bath in the surf [Figure 35] we have our lunch. Our fare is augmented by the contributions of the natives, who bring fresh "poi," the native food, and "o-pee-hee," a sort of single-shell oyster, and a small fish that looks like the American "sheep-head," but is eaten raw. It might sound queer to talk of eating raw fish, but these taste all right after you get used to them, and they are a great luxury here. Down at the cove, where we go for surf bathing, there is an old Oregon fir or sugar pine log, one of the derelicts of a raft broken up some years ago. It is white with age, but sound as a 16-to-1 dollar, and is one of the many hundreds stranded on these shores. Its companion was torn to pieces by a storm before landing up on the volcanic rock on which this log rests. This log is 5-ft. diameter by 30-ft. long.

Right back of this log, but hidden by the guava trees showing in the photo [Figure 36], is the old courthouse now but a relic of what was once kingly days. This court, about 16x24, once represented the dignity of a king, even if he was but a semi-savage opera-bouffe one, and while it is nothing but a small ordinary room, it holds within it memories of days that were of "royalty." That is all passing, for with the recent death of Prince David, at San Francisco, passed the last claimant to the throne. Queen Liliuokalani (Lil-li-wo-ke-lan-e) still survives, and her occasional visits here are made much of by those who still cling to the old traditions... (*The Wood-Worker*, Vol. XXVII, No. 8, October 1908:26-27)

While the *ahupua'a* of Pohoiki and Keahialaka were part of the Puna Sugar Co.'s land holdings, and were partially planted in sugarcane during the first half of the twentieth century, the current project area was not. A photograph from the archives at the Lyman Museum shows the coast of Pohoiki Bay in 1911 (Figure 37). Visible in the photograph are several wood framed structures clustered near the landing (probably Rycroft's house and related out buildings), and what appears to be a thatched structure enclosed by a rock wall located in a grove of coconuts to the southwest (to the left in the photograph). According to oral information from John Hale (b. 1919–d. 2004), contained in Maly (1998), after Robert Rycroft left Pohoiki his grandmother, Mele (Mary) Kapukini Hale moved into his old house. Mele Kapukini Hale (b. 1860- d. 1927) was the daughter of John Kapukini, the former constable and jailer at Pohoiki who lived in Oneloa Ahupua'a on a property that was absorbed into Rycroft's Grant No. 3670. A photograph from the archives at the Lyman Museum shows the Rycroft house standing at Pohoiki Bay in 1916 (Figure 38). In 1928, after his grandmother passed away, John Hale's father, Issac Hale (b. 1884-d. 1940) tore down the Rycroft's old house to build a new house. After John Hale's mother, Hannah Kawaiaea Hale (b. 1890) died in 1929, his father never finished the new house (Devereaux 1998). John Hale's brother, Isaac Kepo'okalani Hale (b. 1928) was the first native Hawaiian killed in the Korean War (in 1951), and the Isaac Kepo'okalani Hale Beach Park (adjacent to the current project area) is named in his honor.



Figure 35. 1908 photograph in *The Wood-Worker* (Vol. XXVII, No. 10:47) with the caption, "At Pohoiki in December."

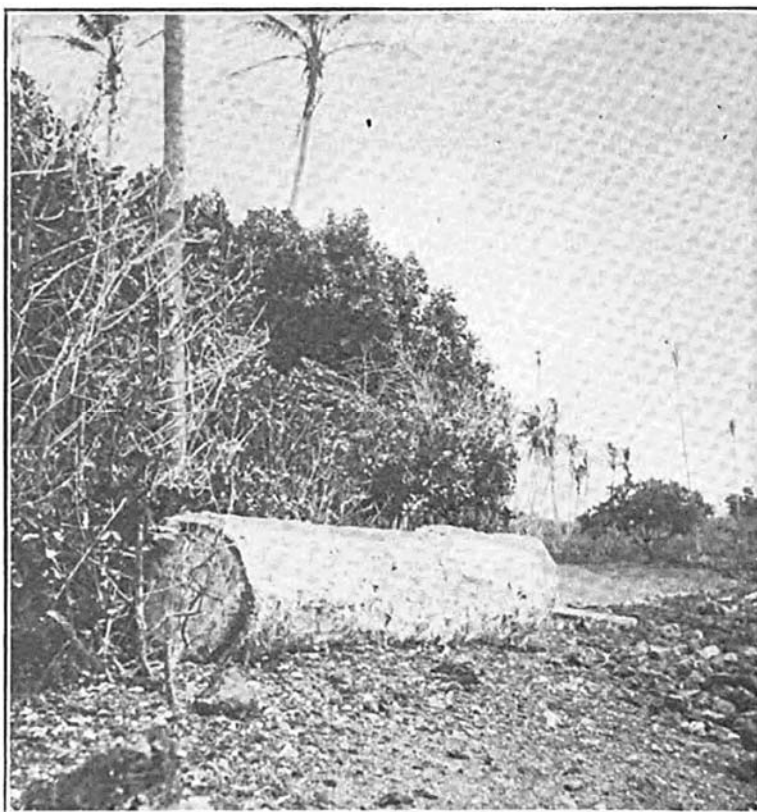


Figure 36. 1908 photograph in *The Wood-Worker* (Vol. XXVII, No. 8:27) with the caption, "Derelict Log From Oregon—Pohoiki, Hawaii."



Figure 37. Beach and village at Pohoiki, Puna in 1911 (Lyman Museum Archives print P 1911.1.39).



Figure 38. Pohoiki Village, Puna, 1916 (Lyman Museum Archives photographic negative P *P191).

The 1924 U.S.G.S. Kalapana quadrangle (surveyed in 1922) shows two structures at Pohoiki Bay in the vicinity of the old Rycroft house, and a third structure at the former location of the Pohoiki Courthouse (Figure 39). The map also shows the inland route of the railroad through Pohoiki and Keahialaka Ahupua‘a and that by 1922 the current alignment of the Kalapana-Kapoho Road (Route 137) had been built across the study *ahupua‘a*. A portion of the Old Government Road is still shown on this map as a dashed-line extending along the coast from Pohoiki Bay to Mahinaakaaka Heiau.

On October 9, 1941 the 0.411-acre lot that formerly housed the Pohoiki Courthouse and Jail was deeded to Moses Kuamo‘o by the Territory of Hawai‘i. A map prepared by Chas. L. Murray on April 24, 1939 (C.S.F. 9011-9012; Figure 40) shows the location of the lot with a single dwelling it and a road leading to it, as well as the eastern corner of the current project area with the “Government Trail” extending through it, and the adjacent Pohoiki School Lot.

By the mid-1950s the Puna Sugar Co., which had officially merged with the ‘Ōla‘a Sugar Co. (under the name ‘Ōla‘a Sugar Co.) in 1936 and was now operated by Amfac Inc., had ceased operations in the lower Puna District. In 1955 a volcanic eruption covered thousands of acres of land near Kapoho, and removed any possibility of harvesting cane again from the former Puna Sugar Co.’s lands (Dorrance and Morgan 2000). Soon after this eruption, the Puna Sugar Co. (the ‘Ōla‘a Sugar Co. name was changed to the Puna Sugar Co. in 1960) subdivided the Pohoiki and Keahialaka lands (Land Court Application 1800) and eventually sold them. The current study parcel was created in ca. 1960 as a result of that subdivision (Lot 5-A). Map 2 filed with Land Court App. 1800 on June 29, 1960 (Figure 41) shows some of the infrastructure (including rock walls and buildings) present within the current study parcel at that time, including a house, a shed and stone walls on the Kuamo‘o property, a house on the Hale property, and a house, a shack, two stone walls and the old coffee mill within the current project area.

In a 1998 interview, John Hale, who had briefly lived in the old coffee mill prior to 1950 and later in the house on the Hale property, describes the lands near the mill as being, *“all nice...Lemon tree, any kind. I think in the ‘30s still nice. The whole place was nice. But only me, one, I cannot keep the place. I go Honolulu holoholo but I no come back long time. Nobody watch”* (Devereaux 1998:57). When asked about Rycroft’s coffee mill, he replies, *“Coffee mill running till in the fifties. Nobody, local Hawaiians culture, no touch something no belong to you...Nobody touch. Then, 1950, people coming Hawai‘i, eh, take this, take that, take the roof. And over here, timber, big kind across, the mill you know. Nice mill. They take everything, lumber. They get a cross piece, over here, thick one. They take all that”* (Devereaux et al. 1998:50). Photographs in the archives of the Lyman Museum show the “Old Coffee Mill” as it looked in 1959 (Figures 42 and 43).

On November 29, 1975 a 7.2 magnitude earthquake, the largest to strike Hawaii since 1868, occurred in the Puna District. Much of the south coast of Hawaii Island slid horizontally towards the ocean and subsided. The epicenter was located in the ocean a few miles off the Puna coast at Kamoamo, and the maximum horizontal displacement, at Keauhou Landing, was about 26 feet (displacements decreased to the east and west of this area). Subsidence of the coast was also greatest at Keauhou Landing, amounting to about 11.5 feet, but the amount of subsidence rapidly decreased to the west (at Punalu‘u, Ka‘ū the shoreline actually uplifted about 4 inches). To the east, the measured subsidence was about 9.8 feet at Halape, 3.6 feet at Kamoamo, 2.6 feet at Kaimu, 1.3 feet at Pohoiki, and 0.8 feet at Kapoho (http://hvo.wr.usgs.gov/volcanowatch/archive/1995/95_11_24.html). The summit of Kilauea also subsided about 3.9 feet and moved towards the ocean about the same amount. The earthquake caused a moderate-sized tsunami with a maximum height of 20 feet that killed two campers at Halape in the Volcano National Park, and injures twenty-eight others.

In 1979, a protective breakwater was added to the Pohoiki Boat Ramp (built by the U.S. Army Corps of Engineers in 1963) within the County’s Isaac Kepo‘okalani Hale Beach Park. This is the only launching facility located in the Puna District, and it is heavily utilized by boat traffic. Ida and Merrill Hoapili-Smith, purchased the Pohoiki property that is the subject of the current study in 1998. They have lived on and cared for the land since that time, and have maintained Rycroft’s old coffee mill as a residence for the duration of their tenure. The 0.5 acre parcel containing the Hale residence (TMK: (3) 1-3-08:086) was subdivided from the Hoapili-Smith parcel shortly after they purchased it. In recent years the County Park facilities at Isaac Kepo‘okalani Hale Beach Park have been greatly improved. Today, the *makai* lands of the current study parcel, once traversed by an ancient foot-path and the Old Government Road between the Villages of Pohoiki and Keahialaka, and lived on by generations of Hawaiian residents, are largely overgrown, but not entirely deserted. County park goers still frequent the coastal (Government) trail, as they visit the Pohoiki Warm Pond and access the popular Pohoiki surf breaks. The memory of Robert Rycroft also remains in the form of the concrete structures that attest to his industry, and to the vast changes that have occurred in Hawaiian Islands over the last two centuries.

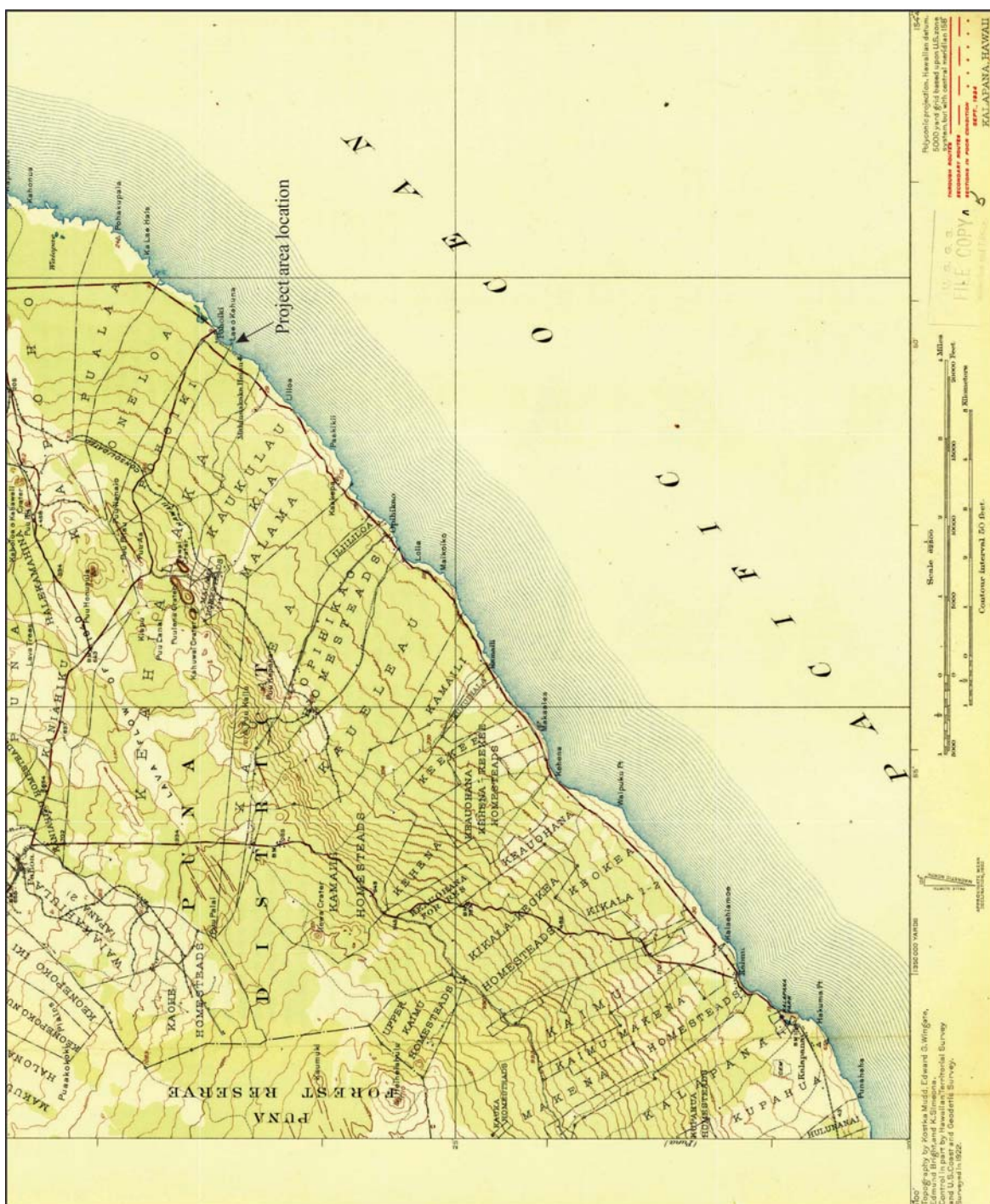
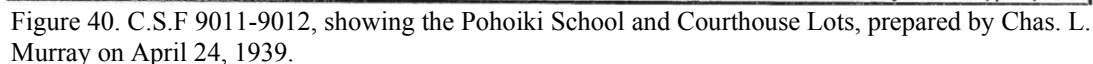


Figure 39. Portion of the 1924 U.S.G.S. Kalapana quadrangle showing the location of the current project area.



2. Background

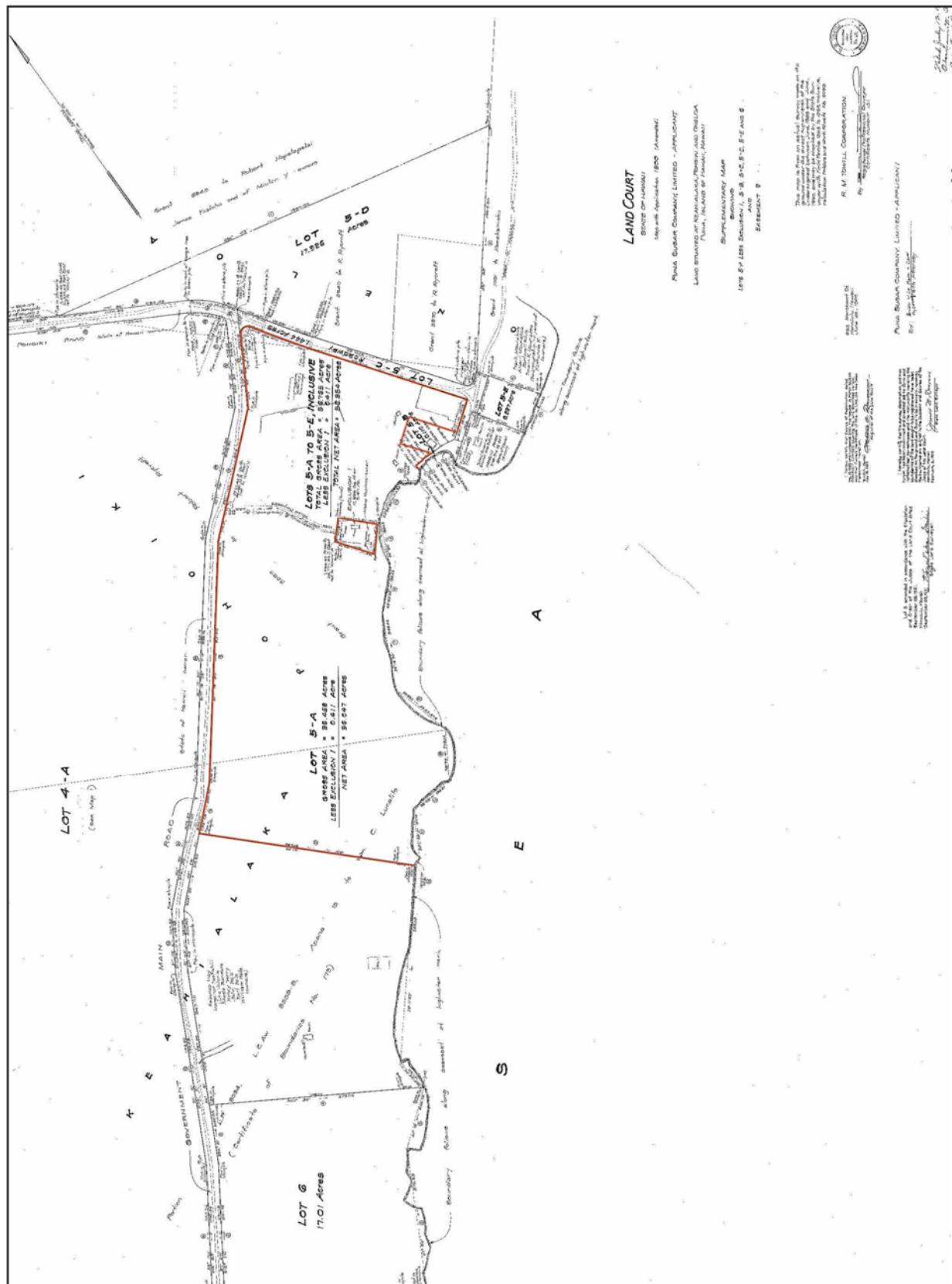


Figure 41. Portion of Map 2 filed with Land Court App. 1800 on June 29, 1960 showing the current project area (outlined in red).



Figure 42. Coffee mill near Isaac Hale Park (Puna), 1959, with steps, two doorways and two windows (Lyman Museum Archives print P 74.2.9).



Figure 43. Coffee mill near Isaac Hale Park (Puna) as it looked in 1959. Smokestack showing (Lyman Museum Archives print P 74.2.7).

PREVIOUS ARCHAEOLOGICAL STUDIES

Only a few previous archaeological studies have been conducted in the vicinity of the current project area (Table 1). The findings of each of the studies listed in Table 1 is summarized below and the previous project area locations, relative to the boundaries of the current study parcel are depicted in Figure 44.

Table 1. Previous archaeological studies conducted in the vicinity of the current project area.

<i>Author/Date</i>	<i>Type of Study</i>	<i>Ahupua'a</i>
Thrum 1905	Mahinaakaaka Heiau	Keahialaka
Stokes 1906	Mahinaakaaka Heiau	Keahialaka
Hudson 1932	Archaeological Survey	Various
Loo and Bonk 1970	Historical Site Evaluation	Pohoiki
SIHP 1970s	Site Inventory	Various
Bevacqua and Dye 1972	Reconnaissance Survey	Various
Cordy 1977	Reconnaissance Survey	Pohoiki
Kennedy et al. 1990, 1991	Inventory Survey	‘Ahalanui, Oneloa, and Laepāo‘o
Fager and Rosendahl 1991	Inventory Survey	‘Ahalanui, Oneloa, and Laepāo‘o
Dunn et al. 1995	Inventory Survey	‘Ahalanui, Oneloa, and Laepāo‘o
Hunt 1996	Inventory Survey	Keahialaka
Devereaux et al. 1998	Inventory Survey	Pohoiki, Oneloa, and ‘Ahalanui
Elmore et al. 2003	Assessment Survey	Keahialaka
Clark and Rechtman 2005	Assessment Survey	Oneloa

The earliest archaeological studies in the district of Puna concentrated primarily on coastal areas containing petroglyphs, known *heiau*, and village sites. *Thrum's Hawaiian Annual and Almanac for 1905* mentions the *heiau* of Mahinaakaaka (see Figure 44), located at “Keahialaka, near Pohoiki” (to the southwest of the current project area), and describes it as:

A platform *heiau* 41x75 ft. built up six ft. high on sea side of the road, standing practically east and west. Its north wall shows double construction for about half its height nearly the whole length, and the eastern end rounded out some ten or more feet, not quite the height of the main structure, but whether a feature for its ceremonies or a protection from the sea, could not be determined. Its walls and floor in a much disturbed condition. (Thrum 1905:39)

In 1906, John F. G. Stokes of the B. P. Bishop Museum conducted a survey of *heiau* on the Island of Hawai‘i (Stokes and Dye 1991), during which time he visited the *heiau* of Mahinaakaaka in Keahialaka (see Figure 44). According to Stokes, local information indicated that Mahinaakaaka Heiau was dedicated to Kamehameha’s god, Kā‘ili, and that it was used for human sacrifice. Stokes prepared a plan view of the structure and described the site in detail, writing:

Heiau of Mahinaakaaka, land of Keahialaka, Puna. Located between the road and the sea, 90 feet from the latter. The concrete base of Pohoiki wharf bears 226°30’, 2032 feet.

An unusually high-platformed *heiau*, with retaining walls at a slope of 5:11 horizontal to vertical [66°]. The platform is built on an old sea-boulder beach, which has been gradually moving seawards. The present beach line is just below the southeast end of the platform, where the boulders have been piled high by the waves. Inside this natural rampart, the ground drops again so that the base of the *heiau* is 6 feet above the sea level. At the western corner of the platform there was originally a pond, now divided into two parts by a road built through it. The surface of the road is about 3.5 feet lower than the base of the platform so that viewed from the road, the platform seems very high.

The platform itself is built of the rounded, waterworn stones (‘*alā*’) so plentiful in the vicinity. The use of such rounded stones will probably account for the wide slope of the retaining walls and the consequent “truncated pyramidal form” of the platform. It would not have been practicable to build a vertical retaining wall with stones of this shape. I believe that this is the site that Fornander had in mind [when referring to an example of the truncated pyramidal temple form], not Kumakaula [1969, 2:6].

The upper surface of this platform had been disturbed. There was suggestion of a smaller platform at the southwest end which the natives called the *lele*... (Stokes and Dye 1991:149-151)

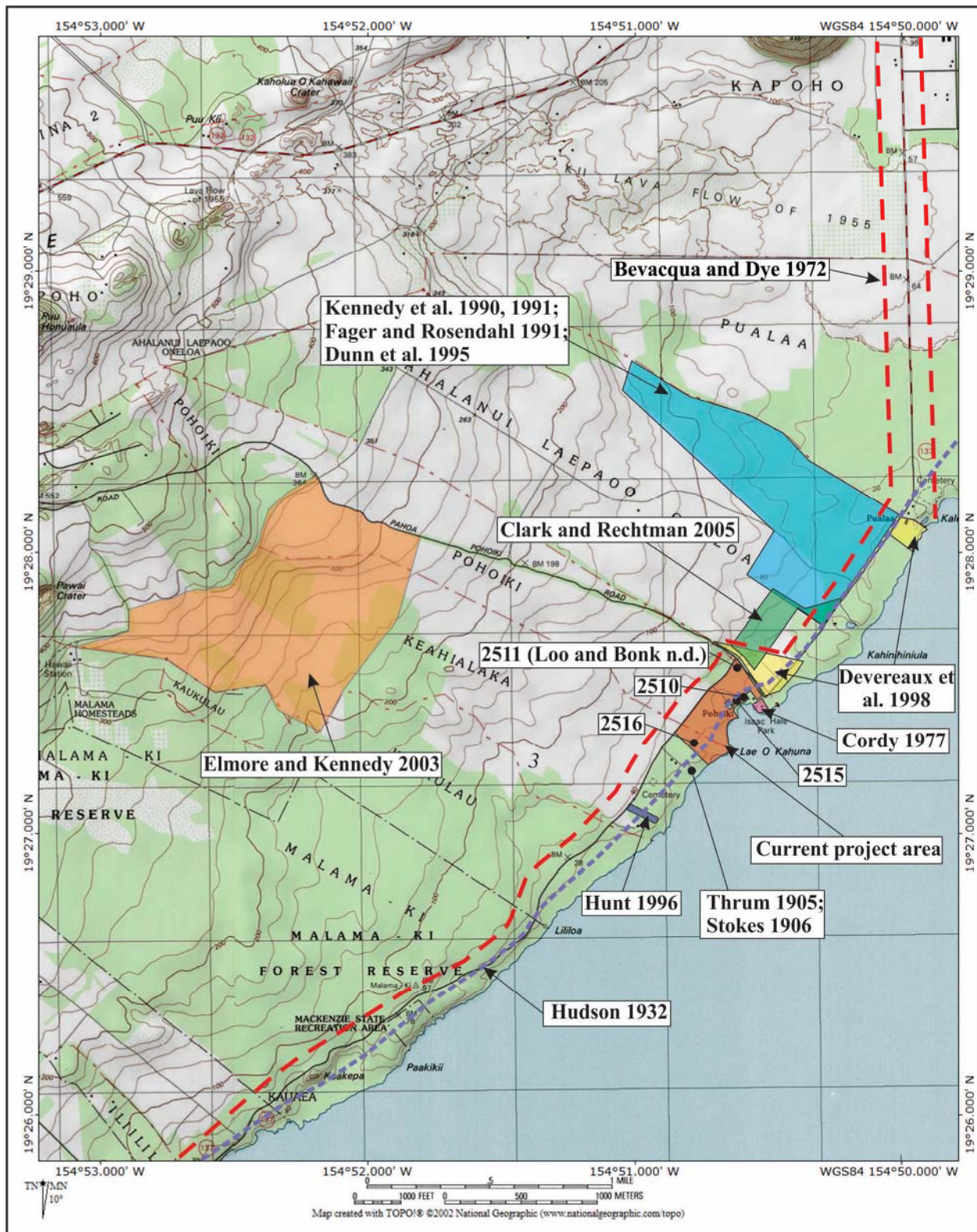


Figure 44. Previous archaeological studies conducted in the vicinity of the current project area.

2. Background

In 1932 Alfred Hudson prepared an inventory of the archaeological sites of East Hawai'i Island, between Waipio Valley and the Ka'u District, for the B. P. Bishop Museum. Hudson (1932) recorded a wide range of archaeological features within the Puna District including *heiau*, burials, caves, habitations, trails, and agricultural features, but noted that it was difficult to obtain information about sites in Puna because "most of them are located along the coast...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...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). The route of the survey took Hudson through the coastal portions of Pohoiki and Keahialaka *ahupua'a* (see Figure 44), where he travelled from northeast to southwest through the current project area. While stopped at the Pohoiki boat landing, Hudson asked informants about a *heiau* mentioned by Thrum and described evidence of former extensive occupancy along the coast. Further to the southwest he records two sites (Sites 147 and 148), that based on his descriptions are likely situated within the current project area. Hudson's brief description of the area and the two specific sites is as follows:

...Thrum (65-c, p. 39) mentions a *heiau* named Oolo at Pohoiki with the notation: "Said to have been an important *heiau*. Now entirely destroyed." None of my informants in the neighbourhood could give any information about it.

Around the boat landing at Pohoiki and for some distance up and down the coast are evidences of former extensive occupancy. The lines of old walls can be followed although the stones have been removed and there are traces of former platforms and paving on the beach.

Site 147. Platforms. On the coast a few hundred yards south of Pohoiki are two platforms, one of them terraced, on which modern houses have been built.

Site 148. Platforms. On the north side of the point, Lae o Kahuna, a quarter of a mile south of Pohoiki, are two roughly constructed platforms, one rising above the other. The upper of the two is built on top of a jutting ledge which has been paved and faced with beach boulders. At the foot of the ledge is the second, lower platform. The effect of a massive terrace is thus secured with a minimum amount of construction. (Hudson 1932:365-366)

It wasn't until the 1970s, following the passage of the National Environmental Policy Act (NEPA) and several executive orders that legally required government and private concerns to consider the impact of development on cultural resources, that archaeological studies in Puna, and Hawai'i as a whole, became more common. In 1970 Virginia Loo and William Bonk, from the University of Hawai'i at Hilo, prepared a historical site study and evaluation for the County of Hawai'i Department of Planning in which they provide recommendations for the treatment of the Old Coffee Mill at Pohoiki (see Figure 44). Loo and Bonk write:

This very large two story structure is located along an old jeep trail between Isaac Hale Park and the coastal road. It is in excellent condition, of post-historic origin and is a unique architectural piece. The concrete walls are approximately two feet thick. There are no windows on the first or ground floor of the building.

We would like to place this site in Category one and suggest that it be incorporated into a "living historic museum", similar to, or part of, the conceptual plan proposed to the Hilo College by Bonk (1970). If this old mill were turned over to the University for reconstruction, refurbishing, and operation, with all of the necessary interpretive displays and information, not only would it serve to preserve the structure and give an interesting bit of "old Hawai'i" to the visitors of the area, but it could be used for very effective educational ends. To reconstruct, prepare and present the site to the public, would require of students a great deal more than listening to lectures and going through textbooks. The history of the site, its function with respect to the prevalent socio-economic development of an operating culture at a specific time in the past, and the necessary personal involvement through research techniques acquired while delving into that past, would all contribute to the cross-cultural enrichment process that we in Hawai'i tend to delineate as part of our life style. (n.d.:Pages 60-61)

By 1970 rapid social and economic developments of contemporary society in Hawai'i were threatening to destroy the historic and cultural heritage of the islands. Spurred on by the passage of the National Historic Preservation Act in 1966, which called on states to delegate a State Historic Preservation Officer (SHPO) who would be responsible for overseeing the National Register program in their State, the Hawai'i State Parks Division of the Department of Land and Natural Resources began a Statewide Inventory of Historic Places (SIHP). As part of the Hawai'i Island

portion of the survey the State Parks' archaeologists began documenting the Historic resources of the Puna District during the early 1970s. Records on file at DLNR-SHPD indicate that four sites (Sites 2510, 2511, 2515, and 2516) were documented within the current project area during the Statewide Inventory of Historic Places (see Figure 44). Unfortunately, the records for only two of the sites (Sites 2510 and 2515) were found in the files at SHPD.

The four sites listed above, which include, in Pohoiki Ahupua'a (Figure 45a), the Pohoiki Warm Spring (Site 2510), Rycroft's Old Coffee Mill (Site 2511) and a complex of habitation features (Site 2515), and, in Keahialaka Ahupua'a (Figure 45b), a complex of agricultural features (Site 2516), are described in an archaeological reconnaissance survey of the proposed Kapoho-Kalapana Road corridor prepared by the B. P. Bishop Museum (Bevacqua and Dye 1972) for the County of Hawai'i Department of Public Works in 1972 (see Figure 44). Bevacqua and Dye briefly describe these sites as follows:

Site 2510 – POHOIKI WARM SPRING

This small spring of lukewarm water is located behind the pebble beach at Pohoiki Bay. This spring is situated in the bottom of a lava sink, where it forms a 6-by-8 meter pool.

The Pohoiki Warm Spring is not a conventional archaeological or historical site, but the spring and pool do possess sufficient aesthetic qualities to warrant their preservation as an area of natural beauty.

Site 2511 – OLD COFFEE MILL Category I

The old coffee mill, located near Pohoiki junction, is a large, two-story structure with concrete walls 0.6 meter thick, built between 1880 and 1885 by R. Rycroft (Dorothy Barrère, personal communication). The mill is in excellent condition and is a unique architectural structure.

William Bonk of the University of Hawai'i, Hilo Campus, has suggested (Loo and Bonk, n.d.:60) that the coffee mill be converted into a "living museum." His suggested program would provide an opportunity for university students to participate in the reconstruction and operation of a coffee mill and museum that would offer a tangible illustration of a portion of Hawai'i's history.

On the basis of its unique historical and architectural value, and also its potential as a museum, it is recommended that Bonk's plans for restoration of this site be followed...

Site 2515 – COMPLEX Category III

This complex measures 50 by 25 meters and consists of a rectangular enclosure, a stone-lined well, a wall, and a platform. All of the features are well-constructed, in good condition, and appear to be of recent origin and utilization.

Site 2516 – COMPLEX Category II

This massive complex of walls, small enclosures, and mounds covers an area 100 by 50 meters. The walls are very substantial, averaging 1.5 meters wide and 1 meter high. At the NW end of the site are numerous small enclosures, 2 by 3 meters, possibly used as small garden plots. (Bevacqua and Dye 1972:14-15)

Each site recorded by Bevacqua and Dye (1972), based on a thorough visual examination of its surface characteristics and the consideration of its relationship to proximate sites, was placed in one of four categories (Category I, II, III, or IV) determined by the specific recommendations for the future treatment of the site. Category I sites, like the old coffee mill (Site 2511), were those considered of interest to the archaeologist and layman alike, and were recommended for stabilization and reconstruction so that they could be made accessible to the public. Category II sites, like Site 2516, were those considered of interest primarily to the archaeologist, were recommended for protection until they could be thoroughly investigated, and assigned to one of the other three categories with appropriate treatment protocols. Category III sites, like Site 2515, were those sites no cultural deposit or recent origins that were considered of little interest to the archaeologist, and therefore recommended for no further work. Category IV sites were burials. Some sites, like the Pohoiki Warm Spring (Site 2510), were not assigned to a category, as they were not considered conventional archaeological sites, but natural features of the landscape utilized by the resident population. In 1973 Hawai'i Register of Historic Places Historic Site Information and Review Forms for the "Pohoiki Mill Ruins" were completed, and the site was assigned a new SIHP site designation 7386 (the records for Site 7386 were relocated in the architecture files at SHPD; Appendix A), and are discussed in further detail in the findings section of this report.

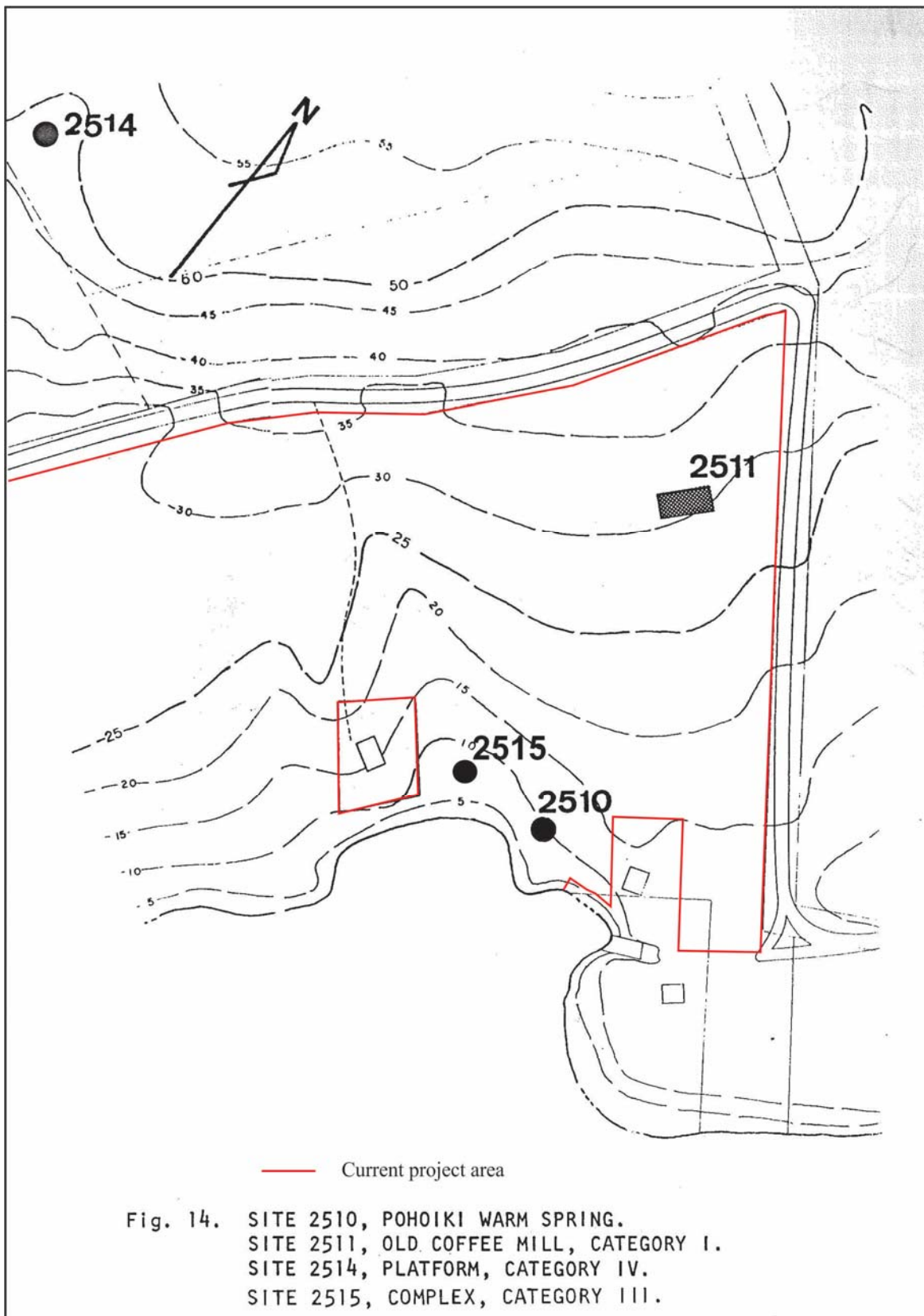


Figure 45a. Location of Sites 2510, 2511, and 2515 previously recorded within the current project area (adapted from Bevacqua and Dye 1972:31).

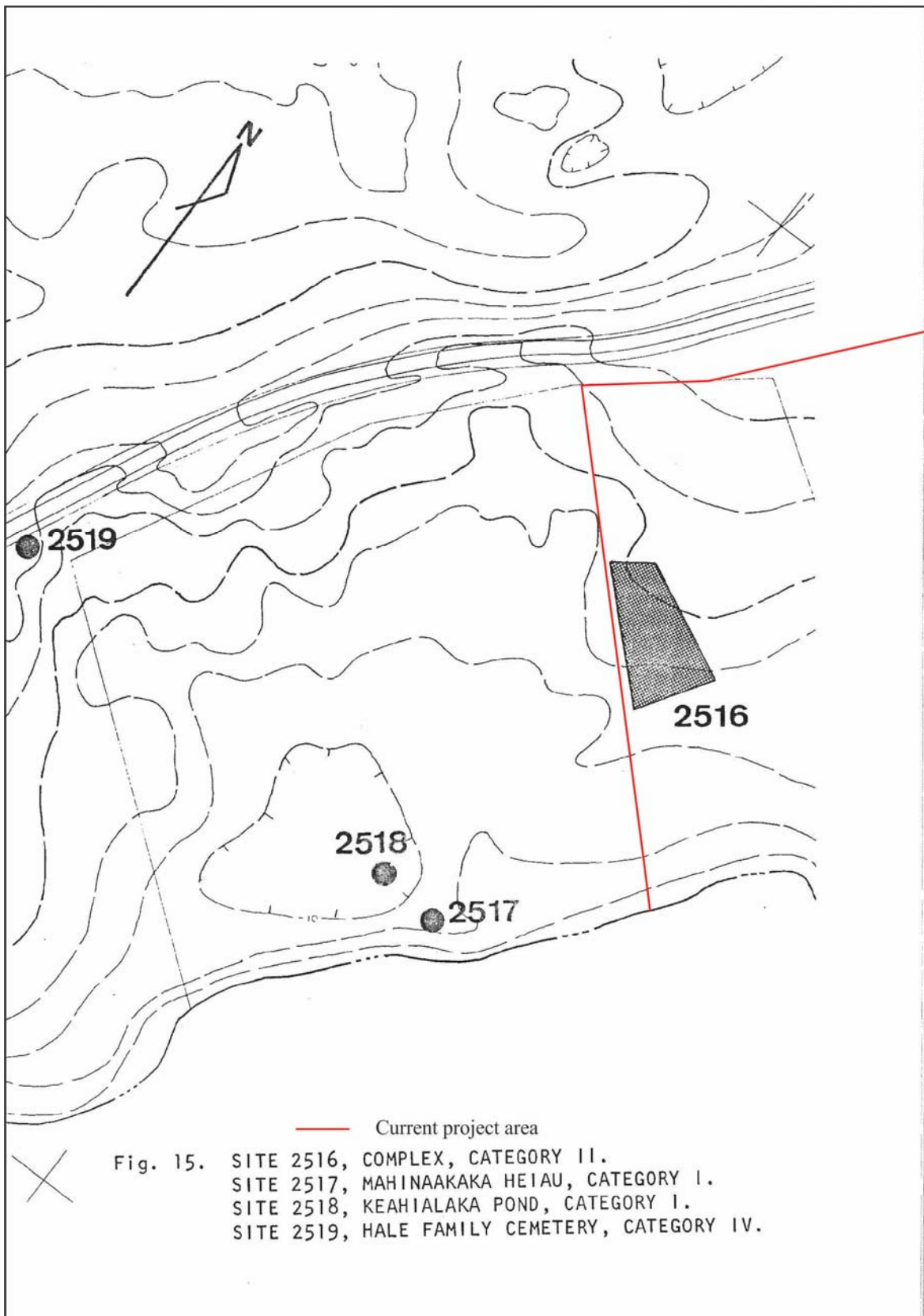


Figure 45b. Location of Site 2516 previously recorded within the current project area (adapted from Bevacqua and Dye 1972:32).

2. Background

Cordy (1977) conducted an archaeological reconnaissance in Pohoiki Ahupua'a as part of the 1978 Pohoiki Bay Navigation Improvements (the addition of a breakwater to the boat ramp at Isaac Hale Beach Park; see Figure 44). No structures or subsurface remains were located by Cordy, but he did identify two metal poles (embedded in concrete) emerging from the edge of the bay adjacent to the boat ramp that John Hale, who lived in the house on the Hale property at the time, identified as a former mooring for "long boats and canoes" (1977:2). Cordy also visited the previously recorded sites on the Pohoiki property (Sites 2510, 2511, and 2515), and indicated that the former mill structure (Site 2511) was "surrounded by feral coffee and overgrown with local vegetation" (1977:1). According to Cordy (1977:1), by the time of his study Sites 2510 and 2515 had been placed on the Hawai'i State Register of Historic places, but were considered of reserve value, the lowest of three evaluation categories.

In 1989-1990 Archaeological Consultants of Hawai'i, Inc. (ACH) conducted an archaeological inventory survey of roughly 200 acres within 'Ahalanui, Oneloa, and Laepā'o ahupua'a (TMK: (3) 1-4-02:013) for a proposed golf course development (Kennedy et al. 1990, 1991; see Figure 44). The ACH survey included 100% pedestrian coverage of the entire project area, test excavations at selected sites and features, and preparation of significance evaluations and treatment recommendations. The report on the findings of the project was originally submitted to DLNR-SHPD in 1990 (Kennedy et al. 1990), and then revised and submitted again in 1991 (Kennedy et al. 1991). However, DLNR-SHPD was unable to concur with ACH findings, and the property owner switched archaeological consultants to PHRI prior to ACH preparing a DLNR-SHPD acceptable final report. In 1991, Paul H. Rosendahl, Inc. (PHRI) took over work on the 200-acre golf course project and conducted some additional inventory survey work (Fager and Rosendahl 1991). The additional work conducted by PHRI included some limited survey and excavation, but consisted primarily of using ACH's data to prepare final, detailed site significance evaluations and treatment recommendations (Dunn et al. 1995).

As a result of the work conducted by these two archaeological firms (Dunn et al. 1995; Fager and Rosendahl 1991; Kennedy et al. 1990, 1991), forty-seven sites (including twenty-one single feature sites and twenty-six site complexes) encompassing 1,000 distinct features were recorded on TMK: (3) 1-4-02:013. PHRI identified twelve formal feature types on the subject parcel including alignment, cave, C-shape, enclosure, hearth, indeterminate agriculture, modified outcrop, mound, platform, terrace, trail, and wall. Functional categories assigned to these feature types included agriculture, habitation, ancillary habitation, temporary habitation, boundary wall, burial, animal husbandry, and transportation. A total of 138 test units were excavated at eighty-seven different features within thirty-two of the sites. Six of the single feature sites were found to contain human skeletal remains. One of the complexes (Site 12157) included 611 agricultural features that spanned the entire project area (Kennedy et al. 1991). Dates obtained through radiocarbon age determination, suggested an initial occupation of the project area by A.D. 1250, an intensification of use around A.D. 1400-1700, and decline throughout the Historic Period.

Hunt (1996) conducted an archaeological inventory survey of a 4.56 acre area (portion of TMK: (3) 1-3-08:003) located near the coast of Keahialaka Ahupua'a to the southwest of the current project area (see Figure 44). Hunt did not identify any archaeological sites within the survey area, which had been completely disturbed by prior bulldozing, but noted that "outside the project area, there were numerous stone mounds and pits—features likely to be associated with ancient Hawaiian agriculture" (1996:9). He also noted the presence of archaeological sites *makai* of the study area at the coast, including the trails, an enclosure, and Mahinaakaaka Heiau. As part of the study Hunt (1996) interviewed Mr. Billy Hale (the brother of John Hale) who recalled that the property had been bulldozed thirty years prior in an effort to take mature coconut trees for landscaping at the Mauna Kea Beach Resort in South Kohala.

In 1998, Cultural Surveys Hawaii (CSH) conducted an archaeological inventory survey of two Hawai'i County Parks located to the northeast of the current project area within Pohoiki, Oneloa, and 'Ahalanui *ahupua'a* (Devereaux et al. 1998; see Figure 44). The survey areas included a 5.95 acre area for the improvement of Ahalanui Park (TMKs: (3) 1-4-02:005, 006, and 061), and a five acre area for the expansion of the Isaac Hale Beach Park (TMKs: (3) 1-3-08:013, 016, and 1-4-02:008) situated on the opposite side of the Pāhoa-Pohoiki Road from the current project area. As a result of the study one site, a well (Site 21352), was recorded at Ahalanui Park, and a habitation complex (Site 2507) previously recorded by Bevacqua and Dye (1972) was recorded at Isaac Hale Beach Park. Devereux et al. (1998) interpreted Site 2507, consisting of two enclosures situated along the inland edge of the Kalapana-Kapoho Road in Oneloa Ahupua'a, as a mid-1800s habitation complex associated with Grant No. 1001 to Kamakuakane. Both sites were recommended for preservation.

Elmore et al. (2003) conducted an archaeological assessment of 412.5 acre parcel (TMK: (3) 1-3-08:004 por.) located *mauka* of the current project area in Keahialaka at an elevation of roughly 300 feet above sea level (see Figure 44). The study area had been extensively disturbed by bulldozing prior to the study, and as a result no archaeological sites were identified.

Clark and Rechtman (2005) prepared an archaeological assessment survey for the proposed realignment of a portion of the Kapoho-Kalapana Road (Route 137) located to the northeast of the current project area in Oneloa Ahupua'a (TMKs: (3) 1-4-02:013, 009 and 1-3-08:016). The survey area (see Figure 44) included portions of three areas examined during prior archaeological studies (Bevacqua and Dye 1972; Dunn et al. 1995; and Devereaux et al. 1998). No new sites were identified by Clark and Rechtman (2005), but three previously identified features of Site 12157, a large agricultural complex (Dunn et al. 1995; Kennedy et al. 1990; Kennedy et al. 1991), were relocated. Following the Clark and Rechtman (2005) study the Kalapana-Kapoho Road was realigned to its current configuration.

SUMMARY OF ORAL-HISTORICAL INFORMATION

Several of the archaeological/cultural studies previously conducted in the vicinity of the current project area contain interviews with *kama'āina* knowledgeable of the Pohoiki/Keahialaka area (interviewees include John Hale, Gabriel Kealoha, C. Arthur Lyman, and Billy Hale). Interviews (or summaries of interviews) with John Hale (b.1919-d. 2004), a *kama'āina* of Pohoiki, appear in four previous studies (Cordy 1977, Devereaux et al. 1998; Maly 1998, 2003). The Maly (2003) interview was conducted in 1998 with another member of Hale's 'ohana, Gabriel Kealoha; The Maly (2003) report also contains an interview with another knowledgeable individual, Kapoho-born C. Arthur Lyman, conducted in 1997. Hale's brother, Billy Hale, a resident of Keahialaka, was interviewed by Terry Hunt in 1996. The important traditional cultural and historical information contained in these interviews, and specific references to the current project area, are summarized below. Additionally, informal consultations with several elder members of the Hale family (Earl, Roy, Loha, Nani, Tia, Audrey, and Hanna), all Veloria family members by birth and all children of John Hale's sister Luka, and Annie Kuakai of the Kuamo'o family were conducted as part of the current study. The oral-historical information provided by these individuals is also summarized below.

Mr. John Hale, son of Isaac Hale and Hanna Kawaiaea, was born in 1919. A *kama'āina* of Pohoiki, Hale was raised by his *kūpuna*, who were dynamic, hard-working *mahi'ai* and *lawai'a*, cultivators of Pohoiki's natural resources. In 1998, Kepā Maly (2003) conducted an interview with Hale, who explains that during his childhood, his was the only family residing in the *makai* portion of Pohoiki Ahupua'a.

Hale's grandmother, Mele Kapukini-Hale, lived in the Rycroft house until her death in 1928 (Maly 1998). According to information gathered by Maly (1998) from A. B. Loebenstein's Field Survey book, Mele's father John Kapukini (constable and jailer) had a grant parcel that "was not patented" but "absorbed into R. Rycroft's Grant No. 3670" instead (53). After the death of Mele, Hale's father tore down the Rycroft house. He was in the process of building another house, but gave up after the death of his wife (Devereaux 1998).

The house Hale was born in is labeled on late 19th century maps as "Carpenter's shop," and Maly (2003) surmises that it may have been a place where coffins were made. Mr. Hale explains that in the old days, the bodies of the dead were brought to his house, and that the house was like a church (Maly 2003). Hale describes his family house (still present adjacent to the current project area) as being 150 years old at the time of his interview with Douglas Borthwick in 1998, elaborating, "when I was young the house was old already" (Devereaux et al. 1998). Hale tells Maly (2003) that his *kūpuna* are buried in the Keahialaka cemetery. When asked about the presence of other burials in the area, Hale states:

Over here, no more. Over here. No more burial grounds, this place...No more. They just clean 'em all up. Local guys, everybody, they go look for that Hawaiian god you know. Oh boy, Japan market like that...Hawaiian tiki, eh. When the Hawaiian come Christian, they put all that stuff someplace, they hide that Hawaiian god, eh. They no can find. Hard, eh. (Maly 2003:51)

Rycroft's coffee land was described by Hale as being about thirteen thousand acres, extending *mauka* for about six or seven miles (Devereaux 1998:50). According to Hale, wild coffee grew in Puna, but Rycroft actively planted it on his land until papaya farming overtook the land (Devereaux 1998). Hale remembers the old days:

What papaya?...Before all fruit trees. The Hawaiians, they replant. Ulu trees. That's a different culture. I come from the other culture. So this culture I no like. I stay in my own corner now. I look, my eyes sore. Lucky I wen plant this. Otherwise I get no place to look. Today guys only take and they cut trees, the good trees, you know (Devereaux 1998:48)

Hale lived in Rycroft's coffee mill, he describes it as being "all nice. Lemon tree, any kind. I think in the '30s still nice. The whole place was nice. But only me, one, I cannot keep the place. I go Honolulu holoholo but I no come back long time. Nobody watch" (Devereaux 1998:57). He recalls:

Coffee mill running till in the fifties. Nobody, local Hawaiians culture, no touch something no belong to you...Nobody touch. Then, 1950, people coming Hawai'i, eh, take this, take that, take the

roof. And over here, timber, big kind across, the mill you know. Nice mill. They take everything, lumber. They get a cross piece, over here, thick one. They take all that. (Devereaux et al. 1998)

The significance of the ocean and its resources is apparent in the interview with Hale, who articulates the importance of caring for the sea. His respect and knowledge of traditional *lawai‘a* practices stems from his *kūpuna*, who were canoe makers (*kālai wa‘a*). Hale mentions to Maly (2003) that traditional Hawaiian practice was to share the fish they caught with others, thereby ensuring bountiful harvest on their next fishing trip. ‘*Ōpelu* was a popular fish to catch in the Puna district, and Hale reveals that “*mamua* [before], everybody use ‘*ōpae* in Puna” (Maly 2003:93). The live ‘*ōpae* were typically collected from anchialine ponds. Hale specifically recalls copious amounts of the small red shrimp in the pond by his brother’s place near Lae-o-kahuna in Keahialaka, and also in Wai‘ōpae, which was the primary gathering pond (Maly 2003).

Kapoho-born C. Arthur Lyman (also interviewed by Maly 2003) corroborates this statement, explaining that ‘*ōpae* ‘*ula* (small red shrimp) was the only type of bait used in Puna to catch ‘*ōpelu*, “that way, the Puna people didn’t need to be careful about how they prepared the ‘*ōpelu*. Because the ‘*ōpae* was a fresh, live bait, and a delicacy as well, they could even eat the *ōpū* [stomach]” (Maly 2003:77).

Gabriel Kealoha, also interviewed in Maly (2003), remembers that Kapoho had plenty of ‘*ōpae* as well. According to Hale, the ‘*ōpae* were placed inside a round net filled with *limu* (seaweed), which was then dropped into the water. The ‘*ōpae* would swim inside, and the net would be pulled up, but not removed from the water until the ‘*ōpelu* followed them into the net (Maly 2003). Lyman elaborates, “if you dig a hole and hit water anywhere along the shore between Kapoho to Pohoiki, when you come back to the hole the next day, you’ll find the ‘*ōpae* ‘*ula*. They were very plentiful” (Maly 2003:78).

Both Hale and Kealoha tell of the fishing *ko‘a* (dedicated fishing grounds) of the area, explaining that they were mostly only for fellow family members. Staying within the boundaries of the *ko‘a* was instinctually understood by others. As described by Hale, “Yeah, we no go somebody else place *maha‘oi* [be nosy or bold]. You stay in your own section. Me, I don’t them, I don’t take their ‘*ōpihi* or stuff, they stay in their own corner. We don’t do that” (Maly 2003:87). They speak of their *kūpuna* caring for the fishing grounds, ensuring the survival of the ‘*ōpelu* by making sure they were fed. Hale also mentions that other fish such as *ulaula koa‘e*, *ehu*, *paka*, ‘*ōpakapaka*, *kalikali*, and ‘*ukiki* were also caught in the area by either casting or bottom fishing (Maly 2003).

When the ocean ceased to be calm, and harvesting from the sea was too treacherous, Hale says his *kūpuna* would *mahi‘ai* (farm) instead, cultivating crops such as *kalo*, *mai‘a*, and ‘*uala* (Maly 2003:84). Gabriel Kealoha was also interviewed by Maly (2003), alongside Hale. Born in Kaimū in 1928, Kealoha is maternally tied to the Kapukini ‘*ohana*, and spent much time in Pohoiki in his life. Like Hale, Kealoha is considerably knowledgeable in the ways of his *kūpuna*. He recalls gathering green *lau hala* (pandanus) leaves in Pohoiki when he was a child, and in doing so, recollects that ‘*awa* grew abundantly in the uplands of Pohoiki, especially on a piece of land granted to Napalapai.

Hale was the sole resident at Pohoiki until the mid-1950s, when a Scottish immigrant by the name of Gilbert Hay bought 40 acres of unoccupied land (Devereaux et al. 1998). According to Hale, Hay came to Hawai‘i when he was a teenager, and became the manager of the Kea‘au/Ola‘a Sugar Company. He was well-versed in the old Hawaiian style, according to Hale, and responsible for planting numerous coconut trees at Ahalanui (current location of Ahalanui Park) because he understood the concept of replenishing resources for the future generations. Hale helped Hay plant the coconut trees on his property, and declared, “that old man wen spend big money, you know, clear the land, but cinder. Cost money, you know, cinder, one load. Take how many days. Put cinder. And the bulldozer...payloader, big bucks spend. And now somebody like cut the tree and what?” (Devereaux 1998:60). Although Hay could have made three hundred dollars per coconut tree, he refused to sell out, “he leave the place nice” says Hale. Billy Hale (John Hale’s brother) was interviewed by Hunt in 1996. According to Hunt (1996), Billy Hale lived in Keahialaka and was the caretaker of Mahinaakaaka Heiau. He emphasized that although Stokes referenced the *heiau* as “Mahinaakaaka,” the proper name was actually “Mahinakaka” (Hunt 1996:9). During the interview, Billy Hale also revealed that approximately 30 or so years prior (in ca. 1965), coconut trees had been bulldozed from Keahialaka near the *heiau*, and transported to the new Mauna Kea Beach Hotel for landscaping purposes (Hunt 1996).

In 1977, Hale was the only remaining resident in Pohoiki (Cordy 1977). During an interview with Cordy, Hale mentions that the whaling era occurred during the time of his grandfather, and he points out two metal poles located near the boat ramp (75 feet from his house), which he explains were utilized to “secure longboats and canoes during the whaling era” (Cordy 1977:3).

As part of the current study, on May 23, 2014, Mrs. Annie Kuakai (b. 1944), the niece of Moses Kuamo‘o who purchased the Pohoiki Courthouse parcel in 1941, was interviewed over the phone. Mrs. Kuakai, who grew up in Malama and spent much of her childhood at the Pohoiki property, recalled that her Dad, a policeman, and her uncle,

a merchant marine, had purchased the property together for the sum of \$200. There were three buildings on the property at that time, but the wood from one was used to build a kitchen and bedroom in the former courthouse structure, which had been open on the inside. There used to be a canoe landing in front of the Kuamo‘o property, and fishing was the only activity practiced in the water at that time, no one swam there. As a child she recalled going to the shore early in the morning and helping her father fish from the canoe before going to school. The canoes would be hauled up onto the land when not in use. The Old Government Road used to pass in front (*makai*) of the Kuamo‘o property, and she used to travel along it to Malamakī, where a trail went *mauka* to her family’s land in Malama. The Old Government Road in front of the property (along with a portion of the Kuamo‘o parcel) was submerged as a result of coastal subsidence caused by the 1975 Kalapana earthquake. Mrs. Kuakai is concerned about losing more land to the ocean, and she expressed her desire to build a sea wall in front of the parcel to stop the coastal erosion.

Nearby the Kuamo‘o property, Mrs. Kuakai recalled that there were formerly two additional ponds in the vicinity of the Pohoiki Warm Spring; one has been filled in with beach cobbles, and another is now covered over and used as a well by the Smiths. While she recalled that several families lived on the *makai* lands nearby the study *ahupua‘a* when she was a child, she did not recall any agricultural activities occurring there during her time (she thought that some taro and bananas had previously been grown near her family’s property in Pohoiki), and said that all the families had gardens in the more *mauka* regions of the *ahupua‘a*. The old Pohoiki Courthouse building accidentally burned down in ca. 1958-1959. Following the destruction of the original building a new structure was erected on the property that also burned down, followed by a third structure that was destroyed by fire in ca. 2000. The family did not rebuild after the third fire.

In recent years trespassing on the property has become an issue. A gate was added to the driveway to prevent people from coming on the property and cutting down trees; in one incident, the seaward portion of the wall surrounding the old courthouse was removed by individuals who drove their truck in from Isaac Hale Beach Park to cut *milo* logs. Mrs. Kuakai still collects *lauhala* from the study property and helps to teach Kamehameha Schools children to fish in the ocean waters fronting it. Her younger relatives are frequent visitors to the parcel.

At a family gathering at the Hale home at Pohoiki Bay on May 26, 2014 several members of the current older generation of the Hale family participated in an informal talk-story about their personal experiences in the Pohoiki area and specifically within the current study property. Seven siblings (Earl Veloria age 75, Roy Veloria age 71, Loha Mulec age 77, Nani Rothfus age 69, Cynthia Kekuawela age 65, Audrey Correa age 63, and Hanna Pau age 62) all child of Luka Hale the daughter of Issac Hale and Hanna Kawaiaaea, were present. All spent good portions of their youth at the Pohoiki house and collectively provided the following information. In the days before the current breakwater and pier and boat ramp area, “Uncle John” was the considered the local “*hapaiwa‘a*” (canoe carrier or launcher). He, and at times along with the help of his nephews, (Earl and Roy) would participate in the launching of fishing canoes and skiffs at the bay. The Hale’s would also assist when boats got stranded or wrecked on the rocky reef and shoreline areas as far away as Kumukahi. In return, a portion of every catch was provided to the family. This practice seems to have traditional roots, but ended when the boat ramp was built and local assistance and expertise was no longer needed. In more distant times (from at least during their great grandparents generation and likely earlier) the Hale family had a relationship with a family living in the *mauka* area of Honomu where *koa* trees were acquired for canoe building. The trees were cut and shaped in Honomu and then transported down the river to the sea, and then to Pohoiki where the canoes were finished. There used to be several Hale family canoes in the area; none are currently extant. The few anchialine ponds within the current study area contained ‘*ōpae* that were used as fishing bait, most for *opelu*. It was explained that the owner of the pond would get fish in return for allowing the fisherman to collect the ‘*ōpae*.

It was explained that the concrete mill building was mostly abandoned during 1940 and 50s with an occasional squatter family staying there. The Hale family agricultural area was located more *mauka*, but pigs were raised in the abandoned cistern that is attached to a set of older pig pens (see Site 30133 in the Findings Section of the current study), which were not in use although they were intact with small arched doorways. None of the family members knew the specific functions of any of the other extant features in the vicinity of the mill buildings. Earl related that he was in the beach house when the 1975 earthquake hit and it must have spawned a localized *tsunami*, as he woke within a house completely surround by seawater. He recalled that when the sea receded to normal the many dogs of the area were chasing the numerous flopping fish that had been stranded on land. He also related that the shoreline has been receding *makai* of their house, with more than twenty feet having eroded into the ocean during his lifetime; and that there used to be a sandy beach within Pohoiki Bay, but the current breakwater seems to inhibit its formation.

3. PROJECT AREA EXPECTATIONS

The following discussion of the archaeological expectations for the current study parcel is based on the review of historical documentary resources, legendary references, previous archaeological studies, oral-historical information, and *ahupua'a* settlement patterns presented above. The project area, situated within the *ahupua'a* of Pohoiki and Keahialaka, is located at Pohoiki Bay, one of the best canoe landings along the entire Puna coast. This area would have likely been populated fairly early during the initial settlement of Hawai'i Island, and development of the lands would have progressed somewhat rapidly thereafter. Radiocarbon dates obtained by Dunn et al. (1995) suggest that initial occupation may have occurred by about A.D. 1250, with intensification of use around A.D. 1400-1700. The relatively young age of the lava flows that make up the Keahialaka (southwestern) portion of the project area (ca. 200-400 years before present), where the majestic female fire deity, Pele, is said to have first landed on the Island of Hawai'i, may suggest that the area was initially settled and then covered by lava flows, only to be resettled again later.

During the Precontact Period population centers developed at the coast within both Pohoiki (at Pohoiki Bay) and Keahialaka (to the southwest of the current project area). The initial occupational focus at these settlements would have been on the collection of marine resources, but as the populations expanded, agricultural exploitation of suitable lands within the *ahupua'a* would have increased. Handy and Handy (1991) suggest that the *hala* forests along the coast of this area would have been planted using the *pahala* method, which involved planting in excavated pits within 'a'ā lavas. Archaeological evidence of the initial occupation of these lands is not likely to be found within the current project area given the amount of coastal subsidence historically documented in the area (from earthquakes in 1868 and 1975) and the intensity of later Historic Period use that occurred. Archaeological evidence of the Expansion Period and Proto-Historic Period, when population, land use, and agricultural modification reached their maximum, could be found in the form of agricultural features (pits and mounds), habitation structures (platforms and enclosures), and trails extending either *mauka/makai* between resource areas, or along the coast between population centers. Hudson, who noted evidence of former extensive occupancy along the coast near the boat landing at Pohoiki in 1932, mentions lines of old walls (with stones removed) and traces of former platforms and paving on the beach. Two sets of platforms described by Hudson (1932:366) along the shore to the southwest of the boat landing (Sites 147 and 148) may still be present within the current project area.

Kuleana claims, grant documents, and Boundary Commission testimony (a legacy of the Great *Māhele* of 1848) indicate that a sizable Hawaiian community still resided along the shore of both Pohoiki and Keahialaka *ahupua'a* during the middle to late 1800s. In Pohoiki *Ahupua'a*, *kuleana* and grant documents from the mid-1800s, describe coastal house lots belonging to native residents that were enclosed by stone walls. The Statewide Inventory of Historic Places (SIHP) feature description form for Site 2515 (previously recorded within the current project area nearby the Pohoiki Warm Spring; Site 2510) describe it as a complex of habitation features perhaps representing the remains of a former *kuleana*. Boundary descriptions of Keahialaka *Ahupua'a* provided by knowledgeable *kama'āina* (many of whom were born and lived within the study *ahupua'a*) name a number of individuals who resided at the shore of that *ahupua'a* during the middle to late 1800s, and provide vivid descriptions of the use of resources within the entire land unit. Maps of the late 1800s show that, while the coastal lands of Pohoiki largely fell under the influence of an Englishman named Robert Rycroft (by ca. 1877) and were developed for modern industry, Keahialaka remained a native village surrounded by groves of coconuts.

Maps dating to 1893 and 1895 show a complex of stone wall enclosures and houses at Keahialaka (near the southwestern boundary of the current project area) that are marked with the names of the remaining native residents. An agricultural complex (Site 2516), described by Bevacqua and Dye (1972) near the southwestern boundary of the current project area, could be a remnant of this era of settlement at Keahialaka, and is likely still present within the study parcel. A road (the Old Government Road) is shown stretching along the coast in front of the native houses, travelling both southwest and northeast to Pohoiki where, in contrast to Keahialaka, the same maps show (within and nearby the current project area) several stone wall enclosures and as many as fourteen structures that are marked with labels reading Rycroft's [house], saw mill, engine shed, Rycroft's new factory, store, carpenter's shop, laborers' house, Lynch's house, barn, shed, boat house, church, courthouse, and jail. It is expected that portions of the Old Government Road between Keahialaka and Pohoiki will still be present within the current project area (Mrs. Annie Kuakai indicated that the section of road in front of the Kuamo'o property was submerged by coastal subsidence in 1975), and another road, labeled Rycroft's Road on old maps, may also be present at Pohoiki, along with perhaps some of the walls and buildings shown in the area. The concrete mill/factory built by Rycroft (Site 2511/7386) is known to still exist on the property, as is a concrete "pig pen" (both structures have been converted to modern dwellings); the carpenter's shop (now the Hale residence) is still standing on an adjacent property, but the Pohoiki courthouse and jail (formerly on the Kuamo'o property) are known to have been destroyed.

4. FIELDWORK

Fieldwork for the current project was conducted from April 21 through May 5, 2014, by Ashton K. Dircks Ah Sam, B.A., Owen F. Moore, M.A., Genevieve L. Glennon, B.A., J. David Nelson, B.A., and Matthew R. Clark, B.A., along with and under the supervision of Robert B. Rechtman, Ph.D.

METHODS

Fieldwork included a visual inspection of the surface of the entire project area, and detailed site recordation. Within the survey area fieldworkers walked east/west transects, beginning at the southwestern end of the parcel. Transects were spaced at fifteen meter intervals and crossed the property diagonally from the Kapoho-Kalapana Road to the coastline. The entire study area was accessible, although, save the residential lawn area at the northeastern end, the land was covered by dense vegetation that hindered ground surface visibility with both live plants and a layer of decaying organic matter. During the pedestrian transects GPS point locations were recorded for all of the identified archaeological features.

Following the initial survey, the study area boundaries, all encountered archaeological features, and any significant landforms or ground disturbances were plotted on a scaled map of the project area using a Garmin HCx handheld GPS device (set to the UTM NAD 83 datum). Temporary site numbers were assigned to the encountered archaeological features in sequential order as they were recorded (T-1, T-2, T-3, etc.). Isolated or stand-alone features were assigned their own temporary site numbers, as were groups of features that appeared interrelated based on proximity, form, and presumed age. The features of multi-component temporary sites were assigned alphabetical feature designations (A, B, C, etc.), and sites with more than twenty-four features were assigned numerical feature designations (1, 2, 3, etc.). Each temporary site and feature identified within the project area was marked with a metal site tag containing the temporary site number, the date the site was recorded, and the recorder's initials. Site records (descriptions and plan views) of previously recorded sites were on hand to aid in their relocation and record updating. After being cleared of vegetation the temporary sites and features were mapped in detail (using a measuring tape and compass), photographed (both with and without a meter stick and north arrow for scale and orientation), and described using standardized site record forms. No subsurface testing was conducted during the current study.

FINDINGS

As a result of the current fieldwork twenty-seven sites (containing more than seventy features) were recorded within the project area (Figure 46 and Table 2). Five of the sites had been previously recorded by Bevacqua and Dye (1972), and during the Statewide Inventory of Historic Places (Bevacqua 1972). The previously recorded sites include the Pohoiki Warm Spring (Site 2510), a Historic mill complex (Site 2511), a Precontact to early Historic habitation complex (Site 2515), an agricultural complex (Site 2516), and a section of the old coastal Government Road (Site 2530). The twenty-two sites newly recorded within the project area include two concrete cisterns (Sites 30129 and 30135), a stone-lined pit (Site 30130), a large enclosure thought to be used for Historic agricultural purposes (Site 30131), two concrete foundations (Sites 30132 and 30133), a free-standing, concrete oven and smokestack (Site 30134), a Historic enclosure with an associated concrete privy (Site 30136), the former location of a Historic roadway referred to on old maps as Rycroft's Road (Site 30137), four core-filled wall segments (Sites 30138, 30140, 30145, and 30146), an L-shaped alignment (Site 30139), a complex consisting of two alignments and an enclosure (Site 30141), an agricultural complex (Site 30142) with an associated enclosure of unknown function (Site 30143), a stepping-stone trail segment (Site 30144), an anchialine pond (Site 30147), a coastal habitation complex (Site 30148), a coastal agricultural complex (Site 30149), and a large area in the central portion of the study parcel where informal agriculture may have been practiced during the Precontact Period (Site 30150). Twenty-one of the sites are situated in Pohoiki Ahupua'a, four of the sites are situated in Keahialaka Ahupua'a, and two sites extend into both *ahupua'a*. Of the sites situated in Pohoiki Ahupua'a, eleven (Sites 2511, and 30129-30138) are Historic constructions associated with Robert Rycroft's tenure on the land (c. 1877-1900) that are located near the lawn area at the northeast end of the study parcel, inland of the boat ramp at Pohoiki Bay. Each of the sites recorded within the project area is described in detail below. The locations of all of the recorded sites, relative to one another, the study parcel and *ahupua'a* boundaries, are shown on Figure 46; and Figure 47 shows in greater detail the locations of the sites likely associated with the mill complex.

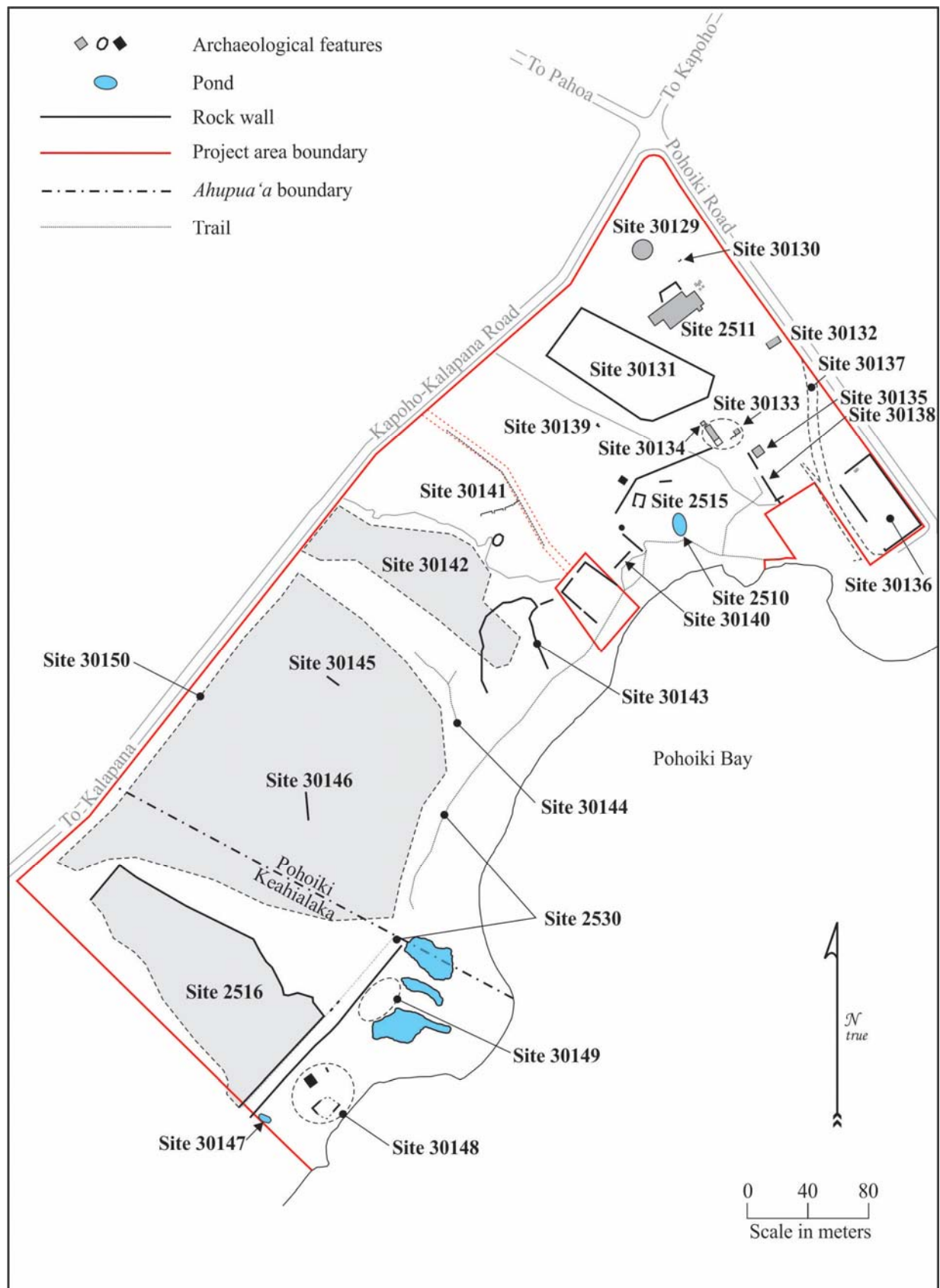


Figure 46. Site location map.

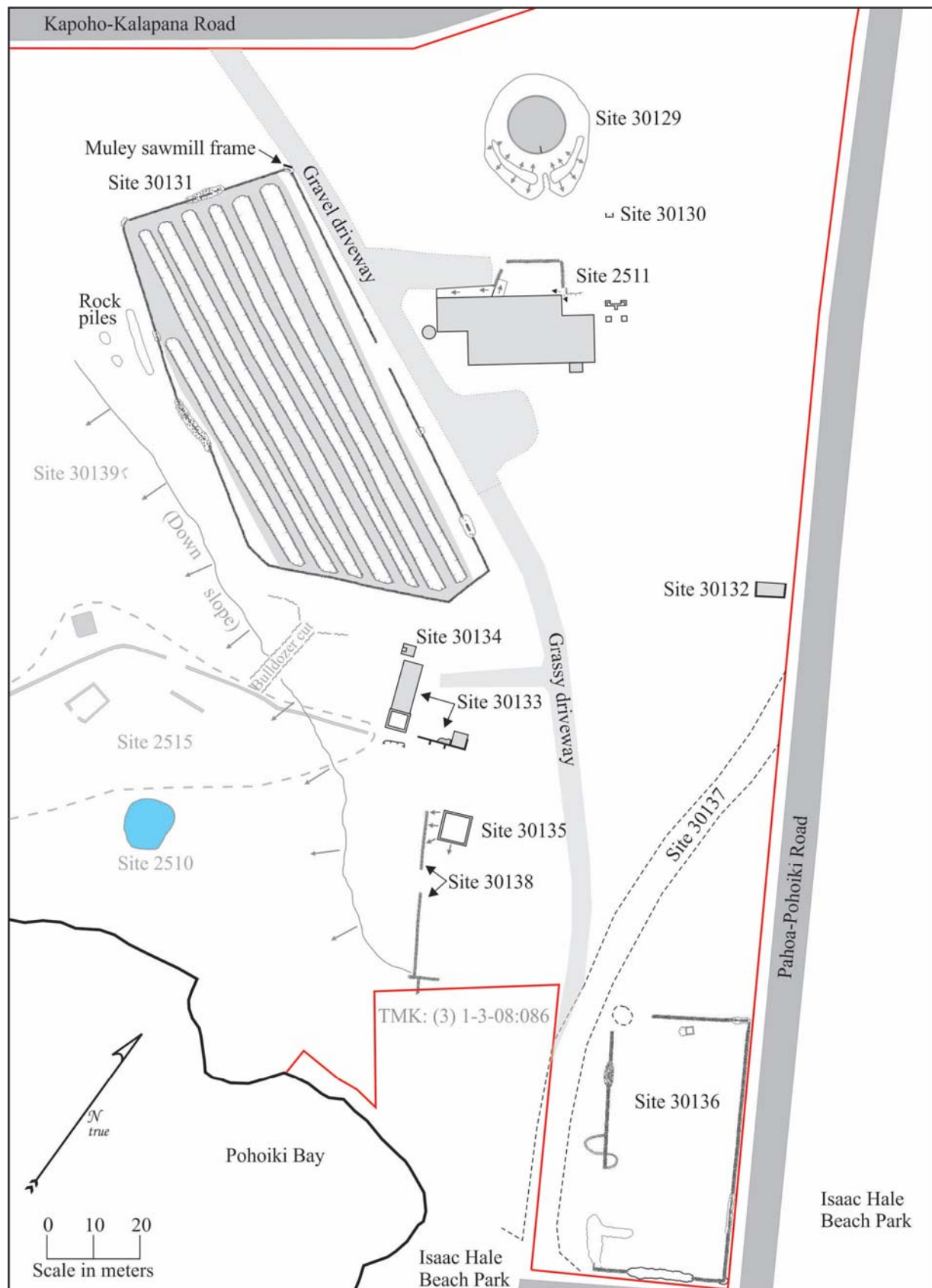


Figure 47. Detail of mill area.

Table 2. Archaeological sites recorded during the current inventory survey.

SIHP Site #*	Formal Type	Functional Type	Age	# of features	Ahupua'a
2510	Hot pond	Natural resource	-	-	Pohoiki
2511	Concrete structure	Industrial building	Historic	1	Pohoiki
2515	Complex	Habitation	Precontact/Historic	6	Pohoiki
2516	Complex	Agriculture	Precontact/Historic	-	Keahialaka
2530	Road bed/trail	Government Road	Historic	-	Pohoiki/Keahialaka
30129	Concrete cistern	Water storage	Historic	1	Pohoiki
30130	Rectangular-shaped pit	Unknown	Historic	1	Pohoiki
30131	Enclosure	Possible agriculture	Historic	1	Pohoiki
30132	Concrete slab	Foundation	Historic	1	Pohoiki
30133	Concrete structure	Pig pen	Historic	2	Pohoiki
30134	Concrete structure	Oven/Smokestack	Historic	1	Pohoiki
30135	Concrete cistern	Water storage	Historic	1	Pohoiki
30136	Enclosed complex	Historic residence	Historic	2	Pohoiki
30137	Road bed	Rycroft's Road	Historic	-	Pohoiki
30138	Wall	Unknown	Historic	1	Pohoiki
30139	L-shaped alignment	Possible agriculture	Historic/Modern	1	Pohoiki
30140	Core-filled wall	Boundary	Historic	1	Pohoiki
30141	Complex	Landscape	Historic/Modern	3	Pohoiki
30142	Complex	Agriculture	Precontact/Historic	25	Pohoiki
30143	Enclosure	Unknown	Historic	1	Pohoiki
30144	Water-worn cobbles	Trail	Precontact/Historic	1	Pohoiki
30145	Wall	Unknown	Historic	1	Pohoiki
30146	Wall	Unknown	Modern/Historic	1	Pohoiki
30147	Pond	Natural resource	-	-	Keahialaka
30148	Complex	Habitation	Precontact/Historic	3	Keahialaka
30149	Complex	Agriculture	Precontact/Historic	9	Keahialaka
30150	'A'a	Informal planting	Precontact	-	Pohoiki/Keahialaka

*SIHP site numbers are preceded by the state, island, and U.S.G.S. quad prefix 50-10-46.

SIHP Site 2510

Site 2510 is a brackish-water hot spring located in the eastern portion of the project area, just *mauka* of the Pohoiki coastal trail (see Figure 46). The spring is surrounded by bedrock and is situated inland of the deepest inlet of Pohoiki Bay (Figure 47). It is surrounded by a growth of coconut, *kamani*, *milo*, monkey pod, and vines (Figure 49). The site was originally recorded by Bevacqua and Dye (1972), and re-recorded during the current inventory survey. As a result of the earlier survey state inventory site records were completed in which the pond was described thusly:

This spring lies about 50 m back of the bay at Pohoiki. It is a depression about 2-3 m below ground level and the water area is circular, measuring about 5 m in diameter by 1 m deep.

Small red shrimp are present, but at a lower density than usually noted in inland pools that are not heated. The water temperature is estimated to be 85°F (by sticking hand in water and counting hairs on left wrist divided by freckles on right thumb). Water is lightly brackish.

Some rock facings are present, both below water and above. The below water facings might actually be steps.

Significance

It would seem very likely this warm spring was associated with the upper social class, and perhaps has legends associated. It is a beautiful pool in a lush setting, and if for no other reason, should be preserved for this reason. (Bevacqua 1972)

The pond is in almost identical condition as it was recorded in 1972. The original location description indicated that the pond was situated fifty meters inland from the bay, however it is now only twenty meters from the shoreline. Perhaps this difference is due to the subsidence that occurred after the 1975 earthquake. The pond area measures 7 meters long by 5 meters wide, and has an average water depth of 1 meter. At current, the pond has a retaining wall along its west edge, measuring 7 meters long by 50 centimeters tall. This retaining wall is constructed of stacked large

cobbles and boulders (Figure 50). The below water stacking mentioned in the 1972 description was not observed. Oral information provided by Earl Veloria indicates that this pond may have been enhanced by excavation and the observed rock work during the early twentieth century. The pond currently receives almost constant visitation and use.



Figure 48. SIHP Site 2510 showing surrounding bedrock, view to the east.

SIHP Site 2511

Site 2511, located in the northeastern portion of the current study area (see Figures 46 and 47) was originally recorded by Bevacqua and Dye (1972), and later, in December of 1973 was assigned a new site number (7386) when a Hawai'i Register of Historic Places site form (Appendix A) was completed. The original site number (2511) is being used in the current study as no formal action was taken to place this site on the Hawai'i Register of Historic Places. Site 2511 is a poured in place two story concrete building that is known to have been constructed by Robert Rycroft sometime during the 1890s as a multipurpose industrial mill building. The precise date of construction can be focused in on through a review of published articles. Rycroft first moved to the Pohoiki area in 1877 and within five years had begun a saw milling business. As reported in an article in the *Daily Honolulu Press* dated June 20, 1885:

In addition to his firewood cutting, Mr. Rycroft does a little timber sawing. He is able to get out ties, posts or planking for vessels. Ohia and kamani are his best timber woods. He has a small mulay saw-mill begun in 1882, employing a side-cutting saw, made by Chandler & Taylor, Indianapolis, Indiana, driven by a 10 horse-power engine, made by the Honolulu Iron Works.

In an article published in *Pacific Commercial Advertiser* dated April 20, 1891, Rycroft had not yet constructed the Site 2511 mill building:

The owner of the plantation intends constructing a new mill of concrete, 80x30 ft., and two stories high. The mill will be for the double purpose of preparing the coffee for market and for the manufacture of lumber into railway ties, etc. Some of the machinery, especially the saws, are from the firm of Messrs. Chandler & Taylor of Indianapolis, Indiana. The lumber mill will have an engine of seventy-five horse power, with a capacity of making 250 ties a day



Figure 49. SIHP Site 2510 showing surrounding vegetation, view to the northwest.



Figure 50. SIHP Site 2510 stacking along the pond's west edge, view to the west.

The construction of the Site 2511 mill building was perhaps underway by 1892, as indicated by a comment in an article published in the August 27, 1892 edition of the *Pacific Commercial Advertiser*, where an unknown author recounting a visit to Rycroft's coffee plantation states, "The return makai was effected on the smooth road at a two-forty gait. Arrived, Mr. Rycroft's large saw mill was inspected; erected under his own personal supervision by ordinary day labor."

As noted in an article in the *Evening Bulletin* dated June 7, 1893, by this date Rycroft had his coffee plantation well underway and a map prepared by Lobenstein that same year (see Figure 30) shows a large building labeled "Rycroft's new factory," presumably the Site 2511 mill building:

His Lordship [Bishop Gulstan], after bidding farewell to them, was on his way to the other churches of Puna, where he was invited to share the hospitality of a lady and gentleman widely known for their genuine kindheartedness, Mr. and Mrs. Rycroft, of Pohoiki. They know how to make the weary traveler feel at home. After spending a day with them and visiting the Rycroft Coffee Plantation, which is in a very fine condition, the Bishop proceeded on his way to Opihikao and Kapaahu, confirmed 23 Christians, and then left for Kau.

In the historical background section of the 1973 Hawai'i Register of Historic Places site form it is accurately noted that the "new mill" [labeled factory] building is shown on an 1895 map prepared by Lobenstein (see Figure 31), and that "[a]n informant [unnamed] also stated that the roof of the mill was shipped to Pohoiki in 1895."

It is the position of the current study that the Site 2511 mill building was built between the years 1893-1895, perhaps taking a couple years to complete, making it one of the oldest buildings of its type on Hawai'i Island; and that it functioned in association with several commercial pursuits including coffee, timber, and perhaps guava (see pages 35-61 of the Background section above). The overall condition of this site is assessed as poor while its integrity is considered fair.

Below is a description of the mill building (descriptive nomenclature used is that presented in the DLNR-SHPD Terminology for Architectural Resource Surveys; Table 3) focused on the remaining original elements and the remaining immediately associated exterior elements. The floor plan and section view drawings prepared as part of the 1973 Hawai'i Register of Historic Places site form (Figure 51) show a more complete version of the structure than is currently extant, and the earlier description includes the now absent original wooden elements of the second floor and support posts and the roof truss system along with the corrugated iron roofing (see Appendix A). As part of the current study, a new ground floor plan (Figure 52) and elevations (Figures 53, 54, and 55) were prepared capturing the gross construction elements as the interior details and topping elements are no longer present. Existing conditions with respect to the post 1995 renovations were not included on the plans and elevations.

Table 3. SIHP Site 2511 Mill Building attributes.

Foundation	Cladding	Framing	Roof style	Roof materials	Window type	Function	Style	Forms	Condition	Integrity
None	Concrete	Concrete	Gable	Corrugated iron (missing)	Double hung (missing)	Industrial: general	Other	Rectangular block	Poor	Fair

The mill building is a poured in place two story rectangular concrete structure (Figure 56) with an attached concrete retained earthen second floor terrace on the western and southern sides. The building has an overall dimension of 32 feet wide x 82 feet 6 inches long; the terrace extends 25 feet 6 inches beyond the southern wall and 16 feet out from the western wall (Figure 57). The terrace surface was more recently covered with concrete, screened in, and roofed (Figure 58) as it has been incorporated into the residential living space of the upper story. Along the eastern side of the building toward its northern end is a concrete smokestack (Figure 59) with a vent connection through the building's exterior wall with a circular opening (Figure 60) in the area adjacent to the remains of a cast iron fire-tube boiler housed in a concrete enclosure (Figure 61); the type of boiler presented a risk of explosion, thus the concrete enclosure may have been a safety feature. There is also a small hole through the wall and an exterior mounted pulley (Figure 62) that was used to operate an exterior air flow vent while inside the building. The building is quite utilitarian in design; the base of the smokestack and the stack tower itself are the only construction elements that exhibit decorative finishes. Both outer corners of the base (Figure 63) and all edges of the stack are chamfered with Lark's Tongue terminations (Figure 64). The top of the stack is currently missing its circular concrete cap element (compare Figure 51 with Figure 64).

4. Fieldwork

There appears to be no foundation for the building although the 18 inch thick concrete walls of the lower level extend below the ground surface at least to a depth (14 inches) of the sunken pit area in the buildings northeastern corner, if not deeper. The floor of the building is smooth concrete throughout the southern 2/3 of the building with a 4 foot by 8 foot rough concrete rectangular patch along the western wall (Figure 65); there is a constructed 2 foot wide chute in the wall above and to the south of this rough patch that formerly led to the upper floor terrace (see Figure 52). Toward the center of the paved floor is a shallow drainage swale in the concrete the feeds an underground drain located near the doorway in the building's southern wall (see Figure 52). In the northern third of the building, the floor is compacted dirt and cinder. It is in this portion of the building that the former machinery was mounted. There are three raised (30 inches above the ground surface) concrete block foundations (Figure 66) with embedded surface bolts and brackets. The steam engine and or saw milling equipment were likely mounted on top of these concrete structures.

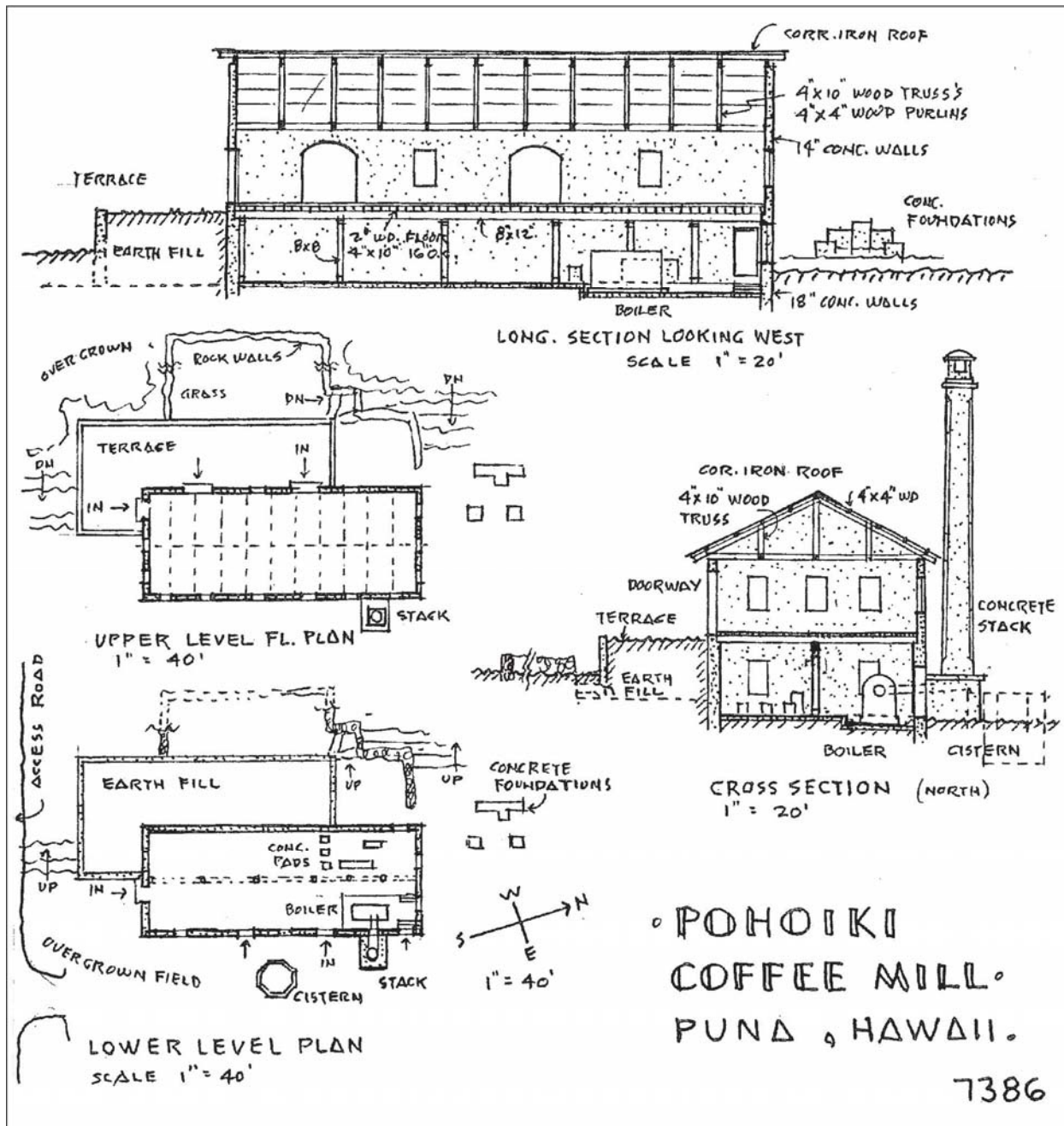


Figure 51. Drawings from the 1973 Hawai'i Register of Historic Places site forms.

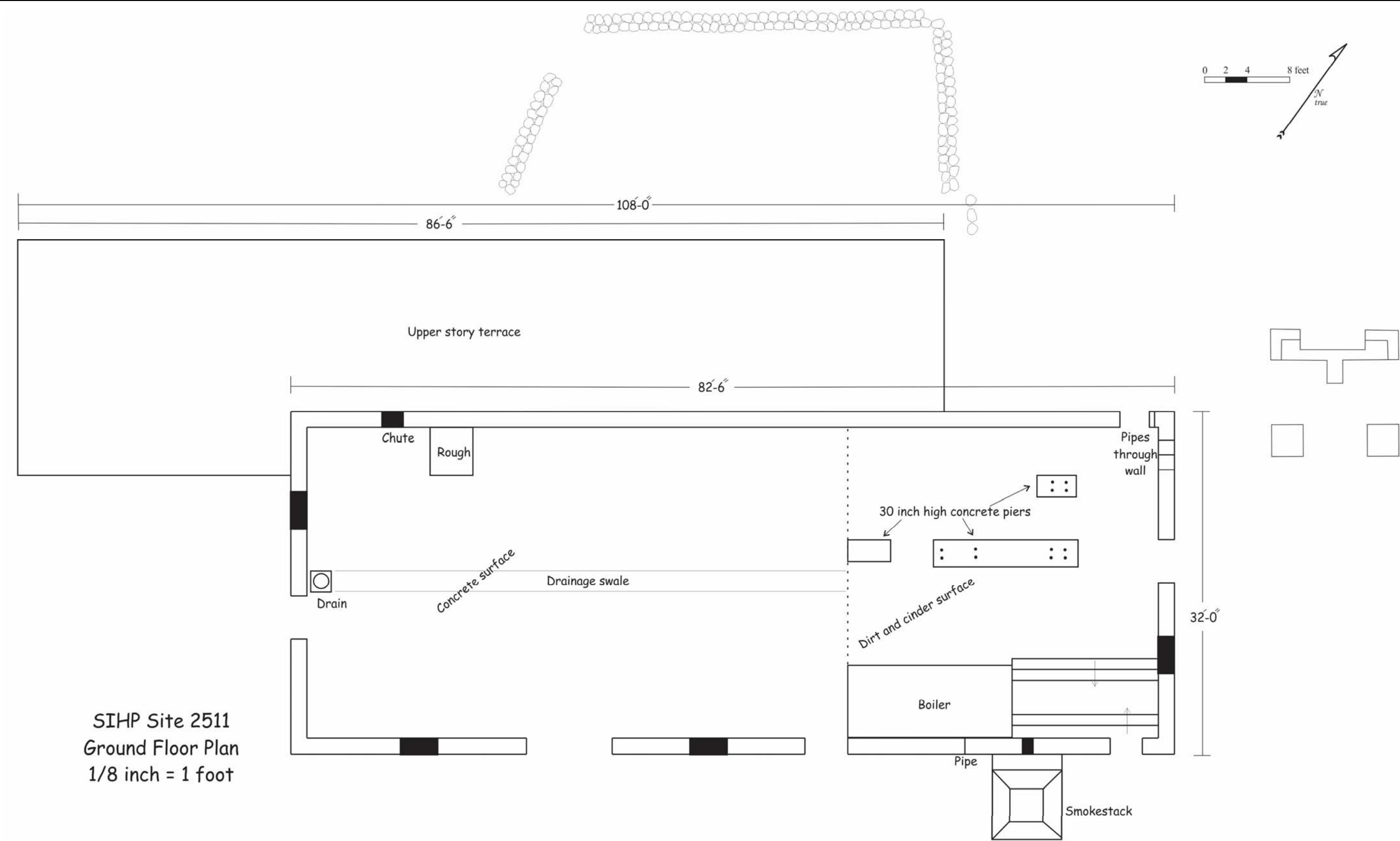


Figure 52. SIHP Site 2511 floor plan

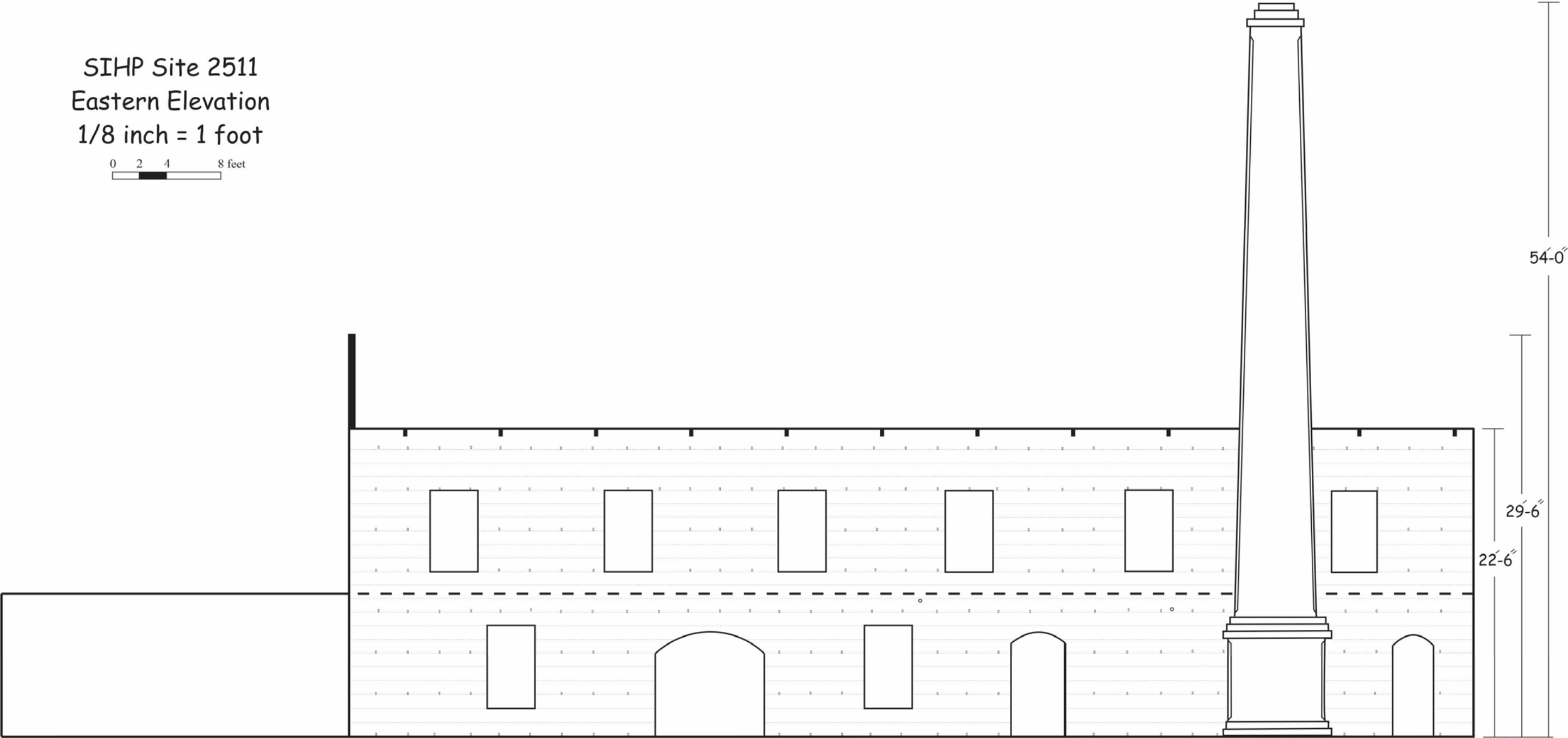


Figure 53. SIHP Site 2511 eastern elevation.

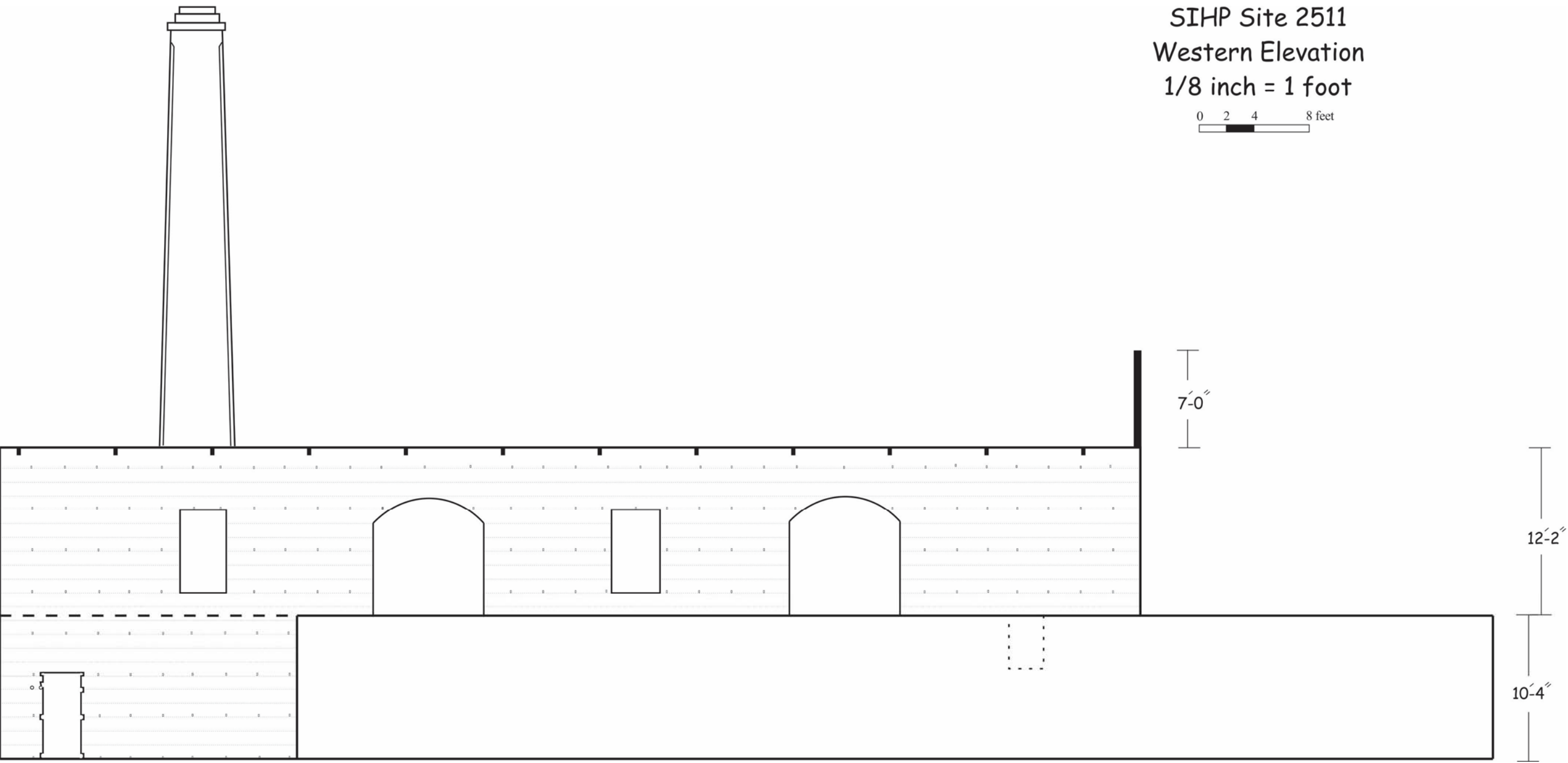


Figure 54. SIHP Site 2511 western elevation.

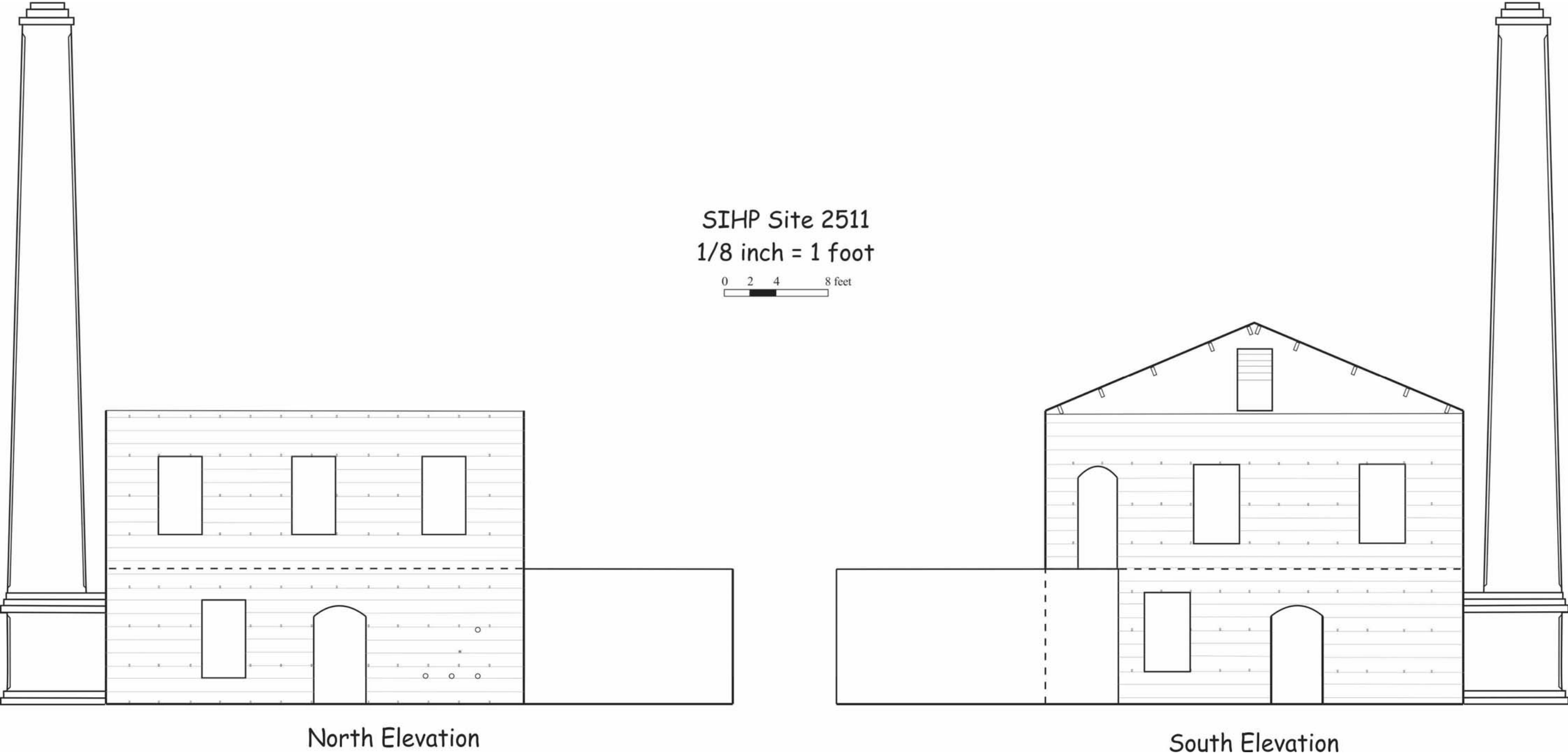


Figure 55. SIHP Site 2511 northern and southern elevations.



Figure 56. SIHP Site 2511 two story cement mill building, view to the north.



Figure 57. SIHP Site 2511 northern end of exterior terrace.



Figure 58. SIHP Site 2511 exterior terrace area as it looks today, enclosed and roofed.



Figure 59. SIHP Site 2511 exterior concrete smokestack, view to the north.



Figure 60. SIHP Site 2511 circular vent hole leading from inside the mill building to the exterior smokestack.



Figure 61. SIHP Site 2511 remaining portion of fire-tube boiler inside mill building.



Figure 62. SIHP Site 2511 pulley with cable hole above on eastern exterior wall at smokestack.



Figure 63. SIHP Site 2511 smokestack base showing chamfer detail.



Figure 64. SIHP Site 2511 smokestack tower showing chamfer detail and missing cap.



Figures 65. SIHP Site 2511 rough rectangular floor area.



Figure 66. SIHP Site 2511 raised concrete block machinery support in northern third of the mill building.

The walls of the building are 18 inches thick on the ground story, and at 10 feet 6 inches height transition to 14 inches thick on the upper story. The construction of the walls appears to have been executed in 3 foot height section with 12 inch wide wooden forms held with 1 x 2 wooden ties. The forms have left horizontal markings and the ties have left voids in the concrete walls spaced roughly 27 inches on center in rows 3 feet apart (Figure 67). The original wooden ties remain in a few locations (Figure 68).

The structure was originally built with 12 inch thick concrete end gables, but only the southern one remains (Figure 69). This gable has a rise of 7 feet over a 16 foot run giving a roof pitch approximating 5 in 12. In the upper central portion of the concrete gable is a 2 x 5 foot window opening with portions of the original wooden frame and louvers still in place (Figure 70). At the top of the gable there is evidence in the form of rectangular voids (Figure 71) that 4 inch dimensional lumber was part of the roof support system; which matches the 1973 description of the site (see Appendix A). Currently, the original roof and roof framing elements are completely missing.

Except for the portion of the louver window in the gable, none of the original windows remain. There are however four window openings on the ground floor and thirteen window openings on the upper story. The window openings are fairly uniform measuring 6 feet tall and between 41 and 43 inches wide (Figure 72). The windows were likely originally wooden framed double hung with a channel in the concrete frame (Figure 73) for the counter weight.

Similar to the windows, the original doors are all missing, but there are a few remnants of wooden door jambs still in place in door openings on the ground floor (Figure 74). The wood jambs that remain are 2 x 14 lumber attached to the door opening with bolts (Figure 75). The door openings vary in size, but except for one, are all arched in design. In the northern wall on the ground floor there is one 4 foot wide by 7 foot 6 inch doorway (see Figure 72); in the southern wall there is one 4 foot wide by 7 foot 6 inch doorway (Figure 76) on the ground floor and one 3 foot wide by 8 foot 4 in tall doorway on the upper floor (Figure 77); in the eastern wall there are three doorways, all 7 feet 6 inches tall, the southernmost is 8 feet wide the middle is 4 feet wide and the northernmost is 3 feet wide (see Figure 53); and in the western wall there are two equal size (8 feet wide by 8 feet 4 inches tall) doorways on the upper story (see Figure 58), and one unique doorway on the ground floor near the corner of the build that is rectangular measuring 33 inches wide by 6 feet tall (Figure 78). This last doorway appears to have functioned in association with the machinery that was located in side this corner of the building; there are cutouts in the jamb area for dimensional lumber and there are two 2 ½ inch metal pipes extending through the wall (see Figure 78) adjacent to this doorway.



Figure 67. SIHP Site 2511 wooden tie voids and form marks on exterior wall surface.



Figure 68. SIHP Site 2511 fragment of wooden tie still present in wall.



Figure 69. SIHP Site 2511 concrete gable at southern end of mill building, view from inside.

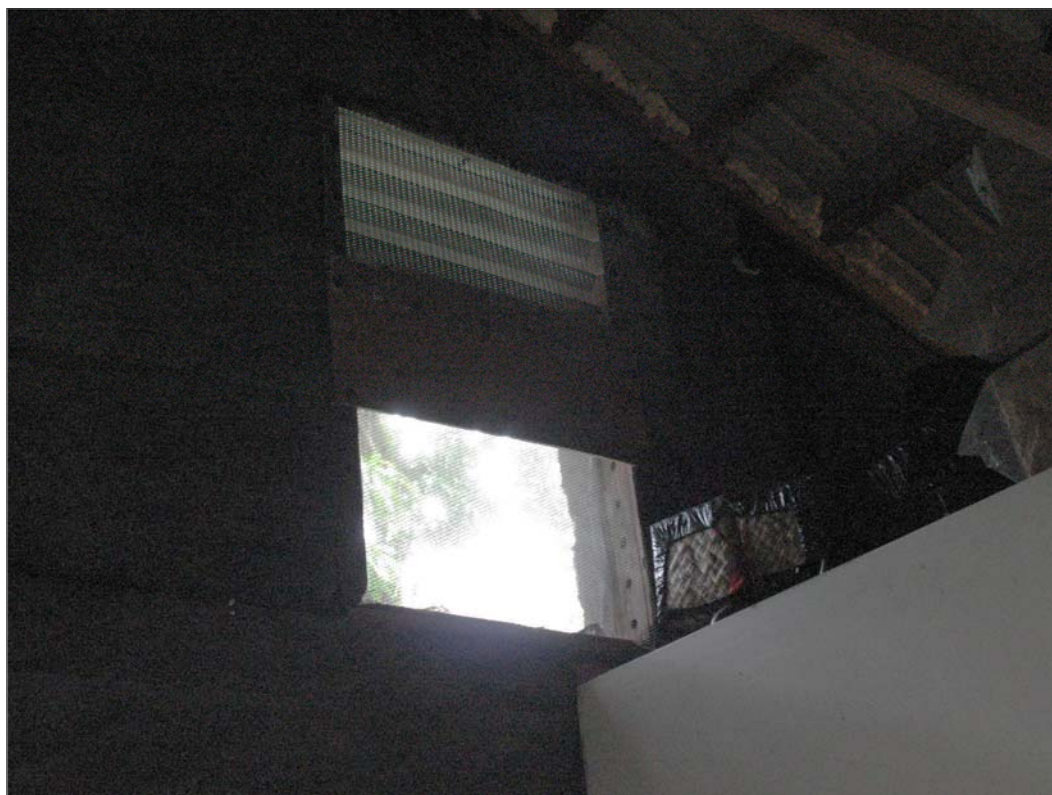


Figure 70. SIHP Site 2511 partially intact louver window in concrete gable.



Figure 71. SIHP Site 2511 4 x dimensional lumber voids spaced along top of concrete gable.



Figure 72. SIHP Site 2511 doorway and four window in northern wall of mill building.



Figure 73. SIHP Site 2511 window opening detail in mill building.



Figure 74. SIHP Site 2511 wooden jamb still present in doorway on ground floor of eastern wall of mill building.



Figure 75. SIHP Site 2511 attached jamb within doorway on ground floor of mill building.



Figure 76. SIHP Site 2511 doorway on ground floor in southern wall of mill building, looking outward.



Figure 77. SIHP Site 2511 doorway from terrace to building on second floor in southern wall.



Figure 78. SIHP Site 2511 unique doorway along western wall of mill building at northwestern corner.

Situated roughly 9 feet to the north of the northern exterior face of the mill building is a concrete foundation structure occupying a roughly 12 foot by 12 foot area (see Figure 52). This foundation structure consists of four square corner piers spaced 6 feet apart (Figure 79). Each of the piers measure 3 feet by 3 feet. Two of the piers along the *mauka* edge are connected by a 12 inch thick, poured in place concrete wall (Figure 80), perhaps providing shear support. In the central portion of the wall is a rectangular-shaped concrete construction measuring 18 inches by 25 inches that protrudes southeast toward the level area fronting the two *makai* piers. The *mauka* piers (connected by the concrete wall) appear to have been formed and the concrete poured in place during two separate occasions. The piers generally stand 31 inches tall, except along the northwest edge of the *mauka* piers where wall heights vary from 13 to 22 inches tall due to erosion of an adjacent slope and the accumulation of soil and cobble that has partially buried the piers on that side. A single clear-glass medicine bottle (Figure 81) was located near the base of the wall. The embossed marks on the base of the bottle indicate that the bottle was manufactured by the “Owens-Illinois Glass Co.,” the “7” preceded by a “dot” is either the plant code (for Alton, Illinois) or a date code indicating a 1937 manufacture date (Figure 82) (<http://www.glassbottlemarks.com/owens-illinois-glass-company-bottle-container-marks/>). Modern plastic and metal debris was observed scattered on the ground surface surrounding this feature. Based on its form and location relative to the mill building, this feature appears to have once supported a water tank (perhaps wooden) that was connected by pipes that went through the exterior wall of the mill building (see Figure 55) and attached to machinery inside the building that was also mounted on concrete block piers; machinery that is no longer present.

Extending in a northwesterly direction off the western side of the middle part of the exterior terrace (see Figure 52) is a rock wall enclosure (Figure 83). After a roughly 6 foot gap the wall extends roughly 20 feet to the north, then turns to the northeast for 42 ½ feet, at which point it angles to the southeast for 26 feet back towards the northwestern corner of the terrace; creating a somewhat trapezoidal enclosed space of roughly 1,380 square feet. With an average height of 3 feet and an average width of 30 inches, this core-filled wall is constructed with small to large cobbles stacked seven to ten courses high. There is a 3 foot wide opening in the northeast corner of the enclosure where the terrace structure ends, which provided access to a formerly enclosed space shown on the map (see Figure 51) that accompanies the 1973 Hawai‘i Register of Historic Places site form. Along the southwestern end of the wall is a recently constructed, 6 foot wide by 20 foot long ramp. The ramp is composed of red cinder and descends to the north into the enclosure from the wheelchair access ramp that is currently used to access the new upper floor of the mill building. As noted, this rock wall enclosure is documented in the 1973 Hawai‘i Register of Historic Places site form (see Appendix A), where it describes additional extensions to the north that are no longer present. Generally speaking though, this wall feature is in much the same condition as when it was recorded in 1973.



Figure 79. SIHP Site 2511 exterior concrete pier foundation, view to the northwest.



Figure 80. SIHP Site 2511, exterior pier foundation showing shear wall connected *mauka* piers, view to the southeast.



Figure 81. Medicine bottle found near SIHP Site 2511 exterior concrete pier foundation.



Figure 82. Base of medicine bottle showing an “OWENS” makers mark.



Figure 83. SIHP Site 2511 western side of rock wall enclosure, view to the east.

SIHP Site 2515

Site 2515 is a complex of features that includes a wall (Feature A), an enclosure (Feature B), a platform (Feature C), two wall segments (Features D and F), and a stone-lined well (Feature E). The site is located just inland from the coast and Site 2510 in the eastern portion of the project area (see Figure 46). The overall site area measures 80 meters (east/west) by 65 meters (north/south) (Figure 84). Vegetation within the complex is dense and consists of *hala*, coconut, *kamani*, *noni*, strawberry guava, shoebuttan holly, *Philodendron* sp., and other vines.

Site 2515 was originally recorded by Bevacqua and Dye (1972), and re-recorded during the current inventory survey. As a result of the earlier survey, state inventory site records were completed in which the site was described thusly:

This complex of surrounding wall, (possibly kuleana) enclosure, paved areas and platform are located between the jeep road to the coffee mill, and the road to the Pohoiki residences. The area, some 50 m x 25 m is under canopy of coconut, hala, kamani and guava trees.

The enclosure, in poor condition, is approximately 4 m x 6 m in width and length and has walls ranging from 1 1/4 m high to ground level (due to crumbling) and 1 m wide. The walls are possibly of core-fill construction. The enclosure is situated makai of the long wall which runs some 50 meters nearly parallel to the coast. This wall is approximately .25 to .50 meters in width and is 1 - 1 1/2 m high.

The platform is to the northwest (mauka) of the enclosure and the wall. It measures approximately 3 m x 4 m in length and width and is .75 m high; rectangular of stacked lava rocks. The top of the platform is 'ili'ili paved. It is fairly well made and in good to fair condition.

In the southwestern corner of the complex area is a 15 foot deep square well which has been stone lined. It is approximately 3 meters wide. A bench or ledge is located on the northern end of the well, approximately 1 1/2 m below the ground level.

No midden was noted in or around the site.

Significance:

It is possible that this discrete complex functioned as an individual residence. However, it requires further research to ascertain this, and the relationship of this complex to other sites in the area. We are, therefore, recommending reserve status for the complex. (Bevacqua 1972)

The features mentioned in the above description include the enclosure wall (Feature A), the enclosure (Feature B), the platform (Feature C), and the well (Feature E). The current inventory survey relocated those features (except for the paved areas in the vicinity of the platform, which are likely covered by dense vegetation), and added two additional wall segments (Features D and F) to the site complex. Each of the features of Site 2515 are described in detail below.

Feature A

Feature A is a core-filled wall that extends along the northern side of Site 2515 (see Figure 84). From the western end, the wall runs northeast for 28 meters, then angles to the east/northeast and continues for an additional 68 meters to its terminus near the southwest corner of Site 30133. The wall varies in height from 0.8 to 1.1 meters, and varies in width from 0.5 meters to 0.8 meters (Figure 85). The wall is in relatively good condition, but a few collapsed sections were observed. The wall's core-filled construction consists of medium to large 'a'ā cobbles, small boulders, and a few water-worn cobbles stacked on the sides, with small to medium cobbles used to fill the center. A 1.6 meter long gap in the wall, located twelve meters east of its angle change, may have been a former constructed break. A 1.5 inch diameter DriscoPlex® water pipe line that originates from the well (Feature E) runs along the east side of the wall to the northwest. Based on a review of Historic Period maps of the Pohoiki area, this wall likely represents the northwestern side of a large enclosure that is missing its northeast and southeastern sides, but has an intact portion of its southwestern side, which has been designated Feature F. The wall, based on its relative location, overall size and shape, seems to be the remnants of a large enclosure shown on Historic maps from 1893 and 1895 (see Figures 30-32) to the northeast of the Pohoiki Courthouse and Jail. The *makai* and northeastern walls of the enclosure, which are no longer present at the site, are evident in a photograph of Pohoiki village dated 1911 (see Figure 37).

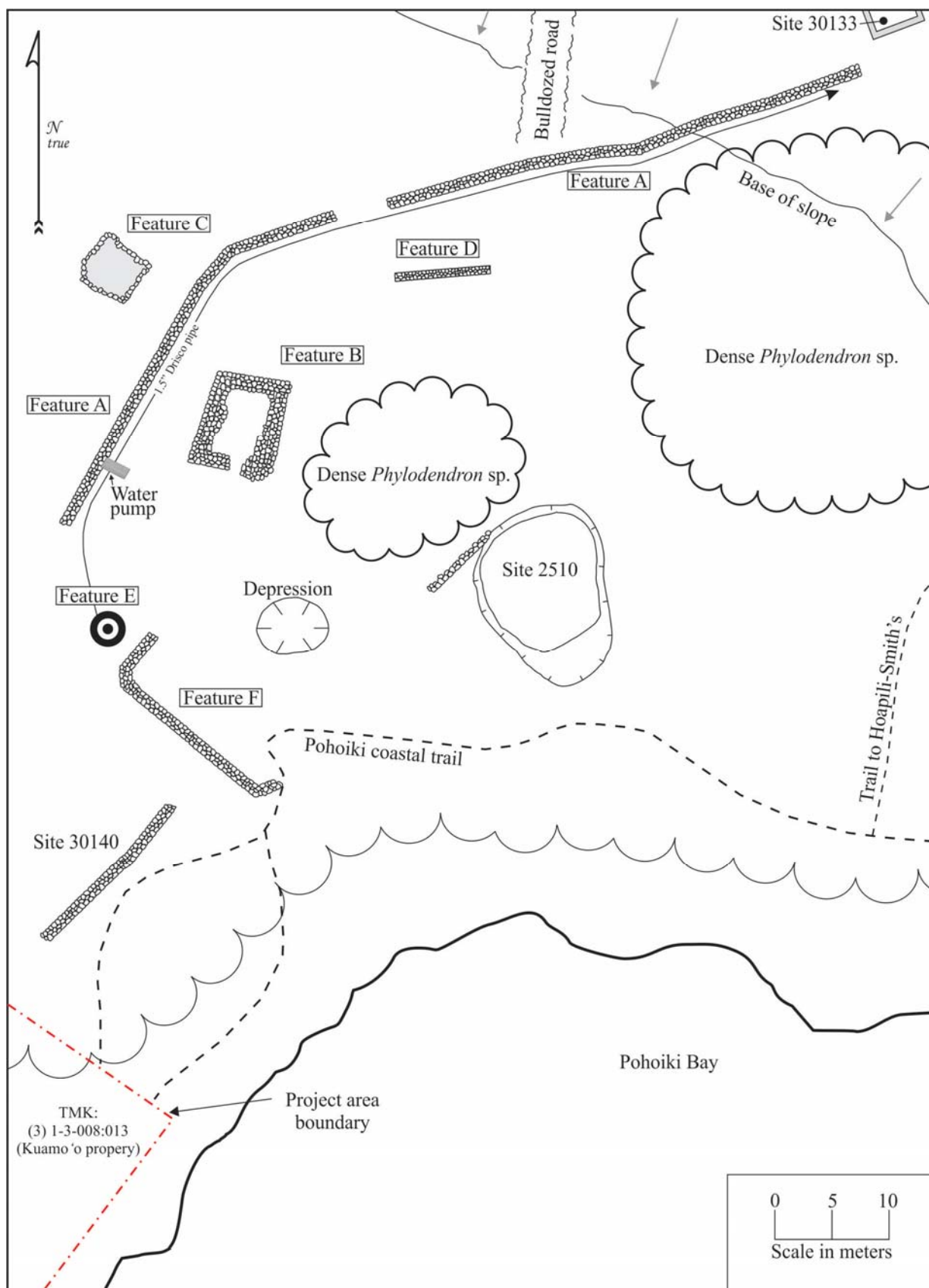


Figure 84. SIHP Site 2515 plan view.



Figure 85. SIHP Site 2515 Feature A, core-filled wall, view to the northeast.

Feature B

Feature B is a rectangular enclosure located in the northwestern portion of Site 2515 (see Figure 84). The enclosure is situated 3.4 meters west of the Feature A, and 11.5 meters south of Feature C in a low, relatively level area where the vegetation transitions from wooded forest to coconut grove (Figure 86). The enclosure measures 7.7 meters (northeast/southwest) by 6.1 meters (northwest/southeast), and its average wall width measures 1 meter. The core-filled walls of the enclosure are relatively intact on the exterior sides where they stand up to 1.2 meters tall (Figure 87), but the interior sides have collapsed and consist of jumbled cobbles that slope in toward the middle (Figure 88). In the eastern corner, the wall of the enclosure is completely collapsed, and in the heavily impacted southwestern portion of the enclosure is a 1 meter gap in the center of the southwestern wall that appears to be the only entryway. The feature was constructed with mostly small to large ‘a‘ā cobbles, and a few large water-worn cobbles were observed in the intact wall segments and among the jumbled cobbles on the interior. The interior floor of the enclosure is relatively level, but uneven and covered with jumbled cobbles and *Philodendron* sp. vines.

Feature C

Feature C is a rectangular platform located in the northwestern portion of Site 2515, 3.4 meters northwest of Feature A (see Figures 84 and 86). The platform measures 5.2 meters (northwest/southeast) by 4.5 meters (northeast/southwest). It is constructed on terrain that slopes gently to the southeast, but has a relatively level upper surface. The edges consist of stacked medium to large cobbles and small boulders. The northwestern edge of the platform, at the top of the sloped surface, has an average height of 40 centimeters; the taller southeastern edge has an average height of 85 centimeters (Figure 89). The stacked edges are mostly intact, but have areas of collapse in the western, northern, and eastern corners, and in the central portions of the southwestern and southeastern sides (Figure 90). The upper surface of the platform consists of level ‘ili‘ili pavement that also includes small ‘a‘ā cobbles, mixed with roots and accumulated decomposed organic soil (Figure 91). A linear bedrock outcrop that stands 65 centimeters tall along its southern edge extends *makai* from the southeastern edge of the platform.

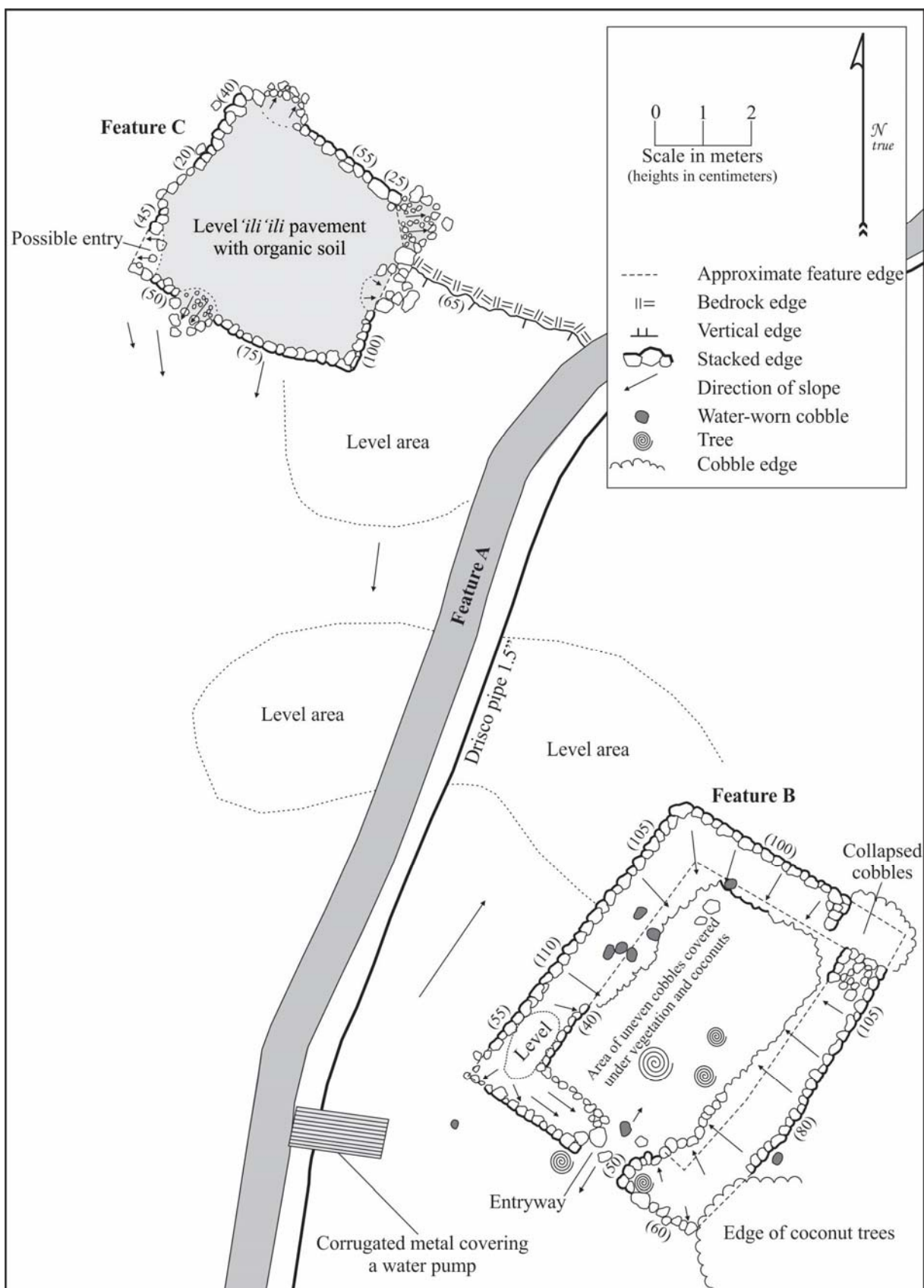


Figure 86. Site 2515 Features B and C plan view.



Figure 87. SIHP Site 2515 Feature B, enclosure, view to the south.



Figure 88. SIHP Site 2515 Feature B, sloped interior walls, view to the west.



Figure 89. SIHP Site 2515 Feature C, *makai* end of platform, view to the northwest.



Figure 90. SIHP Site 2515 Feature C, northeast side of platform, view to the south.



Figure 91. SIHP Site 2515 Feature C, paved surface, view to the northwest.

Feature D

Feature D is a wall segment located in the northern portion of Site 2515, seven meters south of the approximate center of Feature A (see Figure 84). The wall measures 7.5 meters long (east/west), has an average height of 0.6 meters, and has an average width of 0.6 meters. The wall segment is constructed with stacked small to large ‘a ‘ā cobbles (Figure 92). Extending north of the wall’s eastern end is a 5 meter long pile of jumbled cobbles that may represent a former continuation of the wall. Modern rubbish was observed around the feature, but no other cultural material.

Feature E

Feature E is a well located in the western portion of Site 2515 between features A and F (see Figure 84). The well is situated on a relatively level, slightly elevated ground surface, but is covered with sheets of corrugated metal, wood, and branches (Figure 93). The northwest and northeast edges at the *mauka* end are lined with a single course of small cobbles holding down the corrugated metal. At the north corner, adjacent to the aligned cobbles on the *mauka* side, is a poured in place concrete block that measures 35 centimeters by 40 centimeters by 7 centimeters thick. In the center of the block is an impressed 4 inch by 4 inch square that was likely formed by a vertical wooden post once situated on top of the block (Figure 94). A 1.5 inch diameter DriscoPlex® water pipe line enters the well adjacent to the west edge of the rectangular concrete block and follows the *makai* edge of Feature A towards the Hoapili-Smith residence. A “Keep Out” sign facing the coastal trail (Site 2530) at the *makai* side of Feature E warns people to avoid the area, and not to walk on the materials covering the well. The interior of the well, described by Bevacqua (1972) as square, stone lined, approximately 3 meters wide, and 15 feet deep, was not inspected during the current fieldwork. After consulting with DLNR-SHPD Hawai‘i Island Archaeologist, Sean Naleimaile, it was decided to keep the corrugated metal sheeting and other materials covering it in place since the well appeared to be currently in use and had been previously described by Bevacqua (1972).

Feature F

Feature F is a wall segment located in the southwestern portion of Site 2515, thirteen meters south of the western end of Feature A, and 3.6 meters south of Feature E (see Figure 84). The wall segment measures 12.5 meters long (northwest/southeast), has a maximum height of 1.1 meters tall, and an average width of 0.7 meters (Figure 95). The wall has core-filled construction consisting of medium to large ‘a ‘ā cobbles stacked on the sides, and small cobbles used to fill the center. Two collapsed areas were observed within the segment. Based on a review of Historic Period maps of Pohoiki, this wall segment, along with Feature A, were likely the southwestern and northwestern walls of a large enclosure that is currently missing its southeast and northeastern walls.



Figure 92. SIHP Site 2515 Feature D, wall segment, view to the northeast.



Figure 93. SIHP Site 2515 Feature E, well covered with corrugated metal, view to the southwest.



Figure 94. SIHP Site 2515 Feature E, concrete block adjacent to well, overview.



Figure 95. SIHP Site 2515 Feature F, wall segment, view to the east.

Site 2515, based on the formal attributes of the features it contains, is likely a late Precontact to early Historic Period habitation complex, and may be, as suggested by Bevacqua (1972), the remnants of a former *kuleana*. Two *kuleana* were claimed at the coast of Pohoiki Ahupua‘a during the *Māhele* of 1848, one by Nalima (LCAw. 2557) and another by J. B. Kane (LCAw. 8748), neither of which was awarded (see pages 29-30 of the Culture-Historical Contexts section of this report). Features B and C could represent the foundations of house structures that once belonged to either of these individuals. Alternatively, two grant parcels (Grant No. 1895 to Mohala and Grant No. 1940 to Mauae) were also purchased in the general vicinity of these *kuleana* claims in 1855 and 1856, respectively, and some the features of Site 2515 may have been built, or repurposed by the later grantees (see pages 30-32 and Figure 24 of the Culture-Historical Contexts section of this report). The Feature A and F walls, based on their relative locations, combined size and shape, seem to be the remnants of a large enclosure shown on Historic maps to the northeast of the Pohoiki Courthouse and Jail (see Figures 30-32). The *makai* and northeastern walls of the enclosure, which are no longer present at the site, are evident in a photograph of Pohoiki village dated 1911 (see Figure 37). That same photograph seems to show a thatched roof structure within the enclosure situated in a grove of coconut trees. Hudson, who visited the study parcel in 1932, noted platforms (Site 147) in this general area, on which “modern houses” had been built.

SIHP Site 2516

Site 2516 is an extensive complex of agricultural features located at the southwestern end of the current project area (see Figure 46). The complex, which measures 30 to 90 meters wide and extends 165 to 170 meters inland from the old Government Road along the southwestern boundary of the study area, is bounded on three sides by a core-filled wall and to the southwest by a bulldozing on the adjacent property (TMK: (3) 1-3-08:034). Site 2516 was previously described by Bevacqua and Dye as “a massive complex of walls, small enclosures, and mounds” with “numerous small enclosures, 2 by 3 meters, possibly used as small garden plots” (1972:15). The site was assigned to Category II and was recommended for protection until it could be thoroughly investigated, and assigned to one of the other three categories with appropriate treatment protocols. A map of the overall site area contained in Bevacqua and Dye (1972:32) shows that the complex boundaries in 1972 were the same as recorded during the current study (see Figure 45b), indicating that the bulldozing on the adjacent property had already occurred by that time. State inventory site records filled out by Bevacqua (1972) for Site 2516 could not be located in the files at DLNR-SHPD offices in Hilo or Kapolei.

An investigation of the Site 2516 complex during the current fieldwork indicates that an extensive network of agricultural features, even larger than described by Bevacqua and Dye (1972), is indeed present within this portion of the project area. The features nearly completely modify the landscape within the area delimited by the stone wall and the bulldozing (roughly 9,600 square meters or approximately 2.3 acres), but are covered by dense vegetation and are difficult to quantify without first hand clearing the vegetation cover from the entire site area. Therefore, after a site visit and consultation with DLNR-SHPD Hawai‘i Island Archaeologist, Sean Naleimaile, it was decided that the best strategy for recording Site 2516 during the current inventory survey was to define the site boundaries and generally describe the types and distribution of features within the agricultural complex, in order to assess the significance of the site and provide a recommendations for a further course of study, which will include, but not be limited to, (1) the removal of vegetation, (2) detailed feature/site mapping and description, and (3) subsurface testing at selected locations (see the Significance Evaluation and Treatment Recommendations for Site 2516 presented at the end of this report).

During the current fieldwork the wall surrounding Site 2516 on three sides was cleared of vegetation and mapped using a tape and compass. The entire site area between the wall and the bulldozing on the adjacent parcel was walked with fieldworkers spaced at five meter intervals, a map showing the general distribution of the features within the complex was prepared (Figure 96), and selected areas were cleared of vegetation for representative photographs. It is believed (based on surface observations), as no other obvious functional feature types were noted, that the entire Site 2516 complex was utilized during the Precontact to early Historic Period for agricultural purposes. The agricultural modifications at Site 2516 seem to differ by location within the enclosed area, both in a *mauka/makai* direction, and by terrain and proximity to a central spine of *pāhoehoe* lava that extends through the site from the old Government Road to the *mauka* wall of the complex. The discussion of Site 2516 presented below begins with a description of the enclosing wall and examines the agricultural features in three zones (*mauka* zone, central zone, and *makai* zone) corresponding to feature types, vegetation, and terrain, beginning with the *mauka* zone and continuing to the *makai* zone.

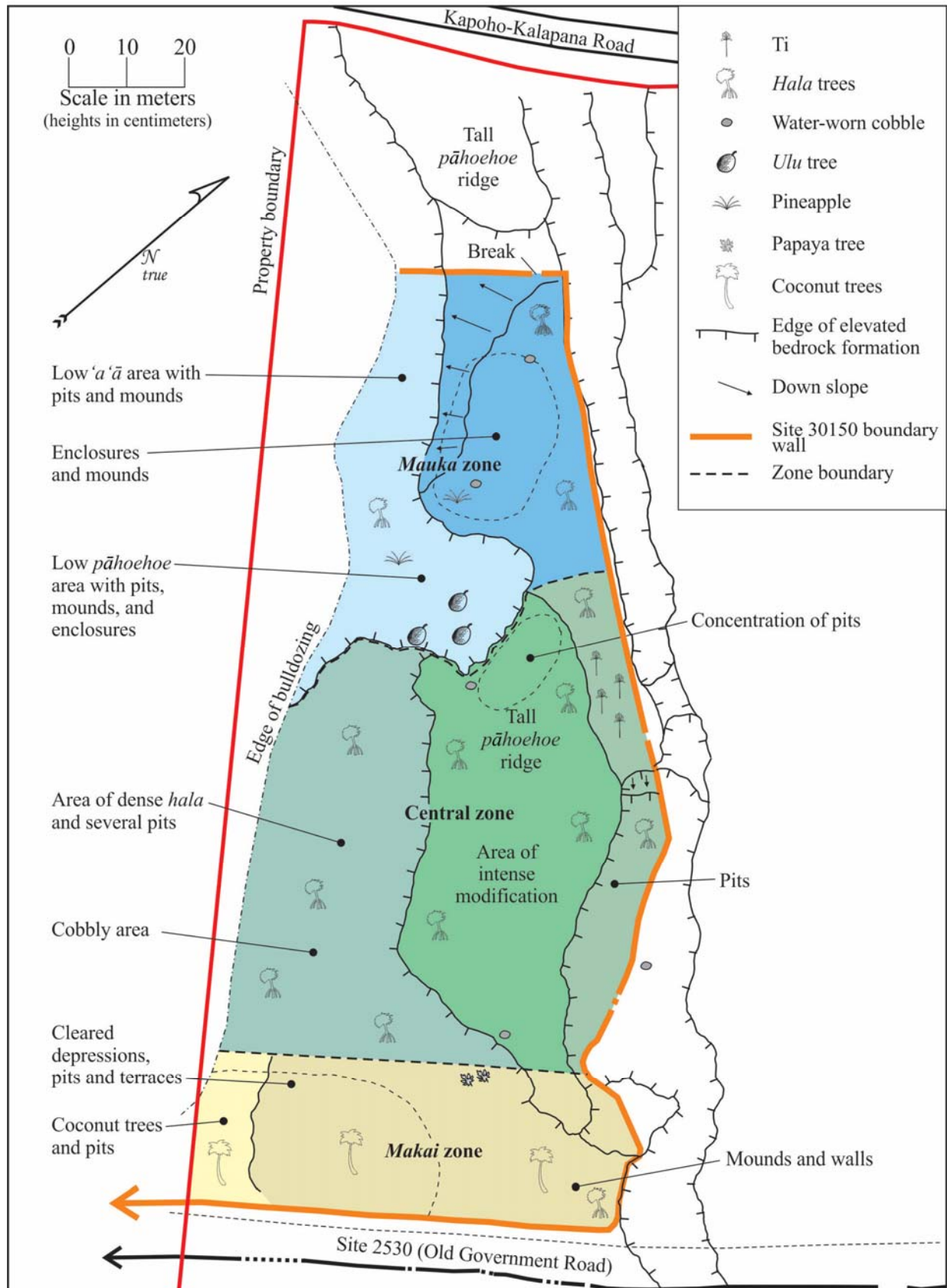


Figure 96. SIHP Site 2516 plan view.

Site 2516 enclosing wall

A core-filled wall surrounds Site 2516 on three sides (see Figure 96). The wall is mostly intact and neatly constructed of small to large *pāhoehoe* and ‘a‘ā cobbles, with a few water-worn cobbles also included. At intact sections the wall averages one meter wide and stands 1-1.5 meter tall. Beginning at the current study area’s southwest boundary the wall runs straight in a northeast direction along the *mauka* edge of the old Government Road (Site 2530) for 85 meters. This section of the wall is low-lying with heights lower than the remaining wall edges (Figure 97). At its northeast end the wall turns northwest along the upper (southwest) edge of a natural drainage channel (Figure 98) that separates the ‘a‘ā flow (to the northeast of the wall) and the *pāhoehoe* flow (to the southwest of the wall). From the eastern corner at the old Government Road, the wall meanders inland (northwest) along the top edge of the *pāhoehoe* flow for roughly 25 meters (Figure 99), to a point where drops into the drainage channel and then continues within the channel for 50 meters back to the *pāhoehoe* flow (Figure 100). The wall then turns further northwest and continues in a straight line along the upper edge of the *pāhoehoe* flow for an additional 100 meters to the northern corner of the enclosed area. This section the wall is fairly straight and mostly intact, but covered in sections by dense *hala* growth. From the north corner the wall turns ninety degrees (Figure 101) and continues in a southwesterly direction for roughly 30 meters to its termination at the bulldozing along the southwestern property boundary.

There are two breaks in the enclosing wall that may have allowed for access to Site 2516; one is located in the northeastern wall span where the wall ascends from the drainage channel onto the *pāhoehoe* flow, roughly 85 meters from the eastern corner (Figure 102), and the other is located in the northwestern wall span roughly ten meters southwest of the northern corner of the enclosed area (Figure 103). Both breaks are rough, and may have been caused by collapse rather than intentionally created by the builders of the enclosing wall. The gaps in the wall should be examined in greater detail during the next phase of study at Site 2516 in an effort to understand movement into and out of the enclosed are, and the association of this complex with other nearby sites.



Figure 97. SIHP Site 2516, wall segment along the *mauka* edge of the old Government Road (Site 2530), view to the northwest.

The agricultural features enclosed by the core-filled wall at Site 2516 occur in three zones – *mauka* zone, central zone, and *makai* zone – that are each described individually below.



Figure 98. SIHP Site 2516, eastern corner of the enclosing wall, view to the northwest.



Figure 99. SIHP Site 2516, wall section along the top edge of the *pāhoehoe* flow, view to the east.



Figure 100. SIHP Site 2516, wall section at the base of the natural drainage channel, view to the southeast.



Figure 101. SIHP Site 2516, northern corner of the enclosing wall, view to the north.



Figure 102. SIHP Site 2516, break in the northeastern span of the enclosing wall, view to the northeast.



Figure 103. SIHP Site 2516, break in the northwestern span of the enclosing wall, view to the northwest.

Site 2516 mauka zone

The *mauka* zone of Site 2516 agricultural complex occupies the *mauka* most 75 meters of the enclosed area (see Figure 96). Vegetation growing in this area consists primarily of *hala*, *noni*, *alahe'e*, shoebutton holly, umbrella trees, *maile pilau*, *lau'ae*, and guava (Figure 104). The northeast side of this zone is situated on a raised *pāhoehoe* ridge that slopes down to disaggregated *pāhoehoe* and 'a'ā near the southwestern boundary of the study parcel. The features of the *mauka* zone terminate at bulldozing associated with land clearing on the adjacent property to the southwest. The upper area of the *mauka* zone (*makai* of the north corner of the enclosing wall, situated within a roughly 30 meter by 20 meter area on the southwestern slope of the *pāhoehoe* ridge) contains numerous enclosed areas with associated cobble mounds. Both the enclosures and mounds are neatly constructed with nicely stacked edges in some areas standing up to 60 centimeters tall (Figure 105). The enclosures, which range from two to five meters across, are generally square or rectangular, and are terraced into the slope. They are interpreted as planting areas as they generally contain more soil than adjacent bedrock surfaces, and appear designed to retain soil or mulch. In one spot a small enclosure has been built in the north corner of a larger enclosure. Pineapples (*Ananas comosus*) are currently growing on the walls of the smaller enclosure, and nearby it within the larger enclosure (Figure 106). The mounds are relatively small, and are thought to be clearing piles, as they seem to correspond to bedrock outcroppings located within or nearby the enclosed areas (Figure 107). Two water-worn cobbles were observed in this area; one next to a mound, and another on an unmodified ground surface near an enclosure (Figure 108).

To the southwest of the *pāhoehoe* ridge in the *mauka* zone of Site 2516 is a low-lying area that measures roughly 65 meters by 30 meters (see Figure 96). Within this area the fairly flat ground surface gradually transitions from 'a'ā to disaggregated *pāhoehoe* (from *mauka* to *makai*). The 'a'ā (*mauka*) portion of this area, which contains a dense growth of *hala*, appears to contain numerous low mounds and pits that were excavated into the natural ground surface. These features are difficult to discern, however, and even harder to quantify, because of the rough, informal construction technique employed, the crumbly 'a'ā material used, and the obscuring *hala* roots. It is possible that this was an area planted using the *pahala* method described by Handy and Handy (1991), where pits in the 'a'ā were first mulched, then planted and covered with *hala* leaves. At the *makai* end of the low-lying area, where the surface material transitions to an 'a'ā like disaggregated *pāhoehoe*, seven more-formal appearing mounds are present within a roughly 30 meter by 20 meter area surrounded on three sides by a *pāhoehoe* ridge. These mounds vary in size, but are fairly neatly constructed (Figure 109). The ground surface surrounding them within the low-lying basin is mostly level, and naturally retains soil. The mounds in this area are surrounded by taller vegetation (mostly *hala*, guava, octopus trees, and *noni*) with less ground cover (mostly *lau'ae*), and several large 'ulu (breadfruit) trees are also present. At the southwestern end of the low-lying area, adjacent to the bulldozing on the adjacent property, is a linear construction that appears to be an enclosure remnant, partially destroyed by the bulldozer (Figure 110). Pineapples are also growing next to this feature. The *pāhoehoe* ridge surrounding the low-lying area of the *mauka* zone has been modified in some areas (especially at its *makai* end) with piled to loosely stacked cobbles (Figure 111). Given the presence of mounds, the clearing of cobbles to the *pāhoehoe* edges, and the low-lying terrain that naturally retains soil and moisture, it is likely that this area was used for planting, and may have also been the location of a grove of 'ulu trees.

Site 2516 central zone

The central zone of agricultural features at Site 2516 occupies a roughly 90 meter by 70 meter area between the *mauka* and *makai* zones that extends from the northeastern enclosing wall to the bulldozing on the adjacent property to the southwest where the features terminate (see Figure 96). Agricultural features in the central zone are constructed in three general settings; (1) on a central ridge of *pāhoehoe* bedrock, (2) within a narrow drainage channel between (northeast of) the bedrock ridge and the enclosing wall, and (3) to the southwest of the central ridge in an area of disaggregated *pāhoehoe* and 'a'ā. Vegetation in this zone, like the *mauka* zone, is thick and includes primarily *hala*, guava, vines, *alahe'e*, ti, *laua'e*, *noni*, and octopus trees. The central spine of *pāhoehoe* bedrock in the central zone contains a bewildering array of stoutly constructed features. Modification in this area begins at the southeastern corner of the *mauka* zone basin where a series of pits have been constructed in the bedrock slope rising above the modified edge of the low-lying area. Roughly ten such pits occur within a roughly 20 meter by 10 meter area on the western facing slope aspect at this location within an area of fairly dense *hala* growth (Figure 112). The pits each measure 1 to 3 meters across by approximately 50 centimeters deep (Figure 113). They were constructed by removing cobbles from selected areas in the bedrock slope, and then piling them along the exterior edges of each pit. Given their formal attributes, the pits appear to be planting areas, designed to retain soil and mulch on the bedrock slope. A single water-worn cobble was associated with one pit.



Figure 104. SIHP Site 2516, typical vegetation in the *mauka* zone, view to the northwest.



Figure 105. SIHP Site 2516, neatly stacked enclosure wall in the *mauka* zone, view to the southwest.



Figure 106. SIHP Site 2516, enclosure with pineapples in the *mauka* zone, view to the north.



Figure 107. SIHP Site 2516, cobble mound in the *mauka* zone, view to the northwest.



Figure 108. SIHP Site 2516, water-worn cobble in the *mauka* zone, overview.



Figure 109. SIHP Site 2516, neatly constructed mound in the low-lying area of the *mauka* zone, view to the southeast.



Figure 110. SIHP Site 2516, *mauka* zone enclosure remnant, view to the west.



Figure 111. SIHP Site 2516, modified *pāhoehoe* edge at the *makai* end of the *mauka* zone, view to the southeast.



Figure 112. SIHP Site 2516, pits on a *pāhoehoe* slope in the central zone, view to the northeast.



Figure 113. SIHP Site 2516, typical (larger) pit on the bedrock slope within the central zone, view to the east.

The pits extend up the slope to the southeast direction to an intensively modified area on the uppermost spine of the *pāhoehoe* formation within the central zone of Site 2516 (see Figure 96). Within a roughly 90 meter long by 10 meter (at *makai* end) to 30 meter (at *mauka* end) wide area of raised *pāhoehoe*, a series of walls, mounds, and modified outcrop edges create a bewildering array of enclosed areas and planting depressions that extend to the southeast on the top of the ridge formation (Figure 114). Many of the walls/edges are neatly stacked but are covered with vegetation including *hala*, guava, vines, *alahe'e*, *ti*, *laua'e*, *noni*, and octopus tree. A section of this area was cleared for photographs, which revealed that almost all the bedrock edges in this section of Site 2516 are modified with stacked and piled cobbles standing 0.5 to 1.5 meters tall (Figure 115 and 116). The cobbles constructions form interconnected, large enclosures with associated mounds and modified outcrops on the fairly flat upper bedrock surfaces. Linear mounds are constructed along the down-slope bedrock edges as well (Figure 117). These modifications appear designed to create planting locales that could be mulched and would retain soil, and also to clear the low areas where soil naturally accumulates. Much more clearing in this area is needed to see the full extent of the modifications. A few of the linear mounds and walls extend into the *makai* zone of the agricultural complex.

At the northeast end of the central area, the cobble modification extends on the *pāhoehoe* ridge formation nearly to the enclosing wall. Adjacent to the enclosing wall, where a possible entry break occurs, is a 10 meter wide span of level soil that has a thick growth of almost exclusively *ti* plants. To the southeast of the area of *ti*, where the enclosing wall descends into the narrow drainage channel (see Figure 96), the northeast facing *pāhoehoe* slope and the disaggregated *pāhoehoe* within the drainage, within an area measuring roughly 50 meters long by 10 to 20 meters wide, contains informally constructed pits that may have been planting areas. Along the southwestern edge of the *pāhoehoe* ridge in the central zone the *hala* growth becomes much thicker and covers a disaggregated section of *pāhoehoe* where a checker-board of pits (measuring one to two meters in diameter) have been excavated within a roughly 70 meter by 30 meter area that extends southwest to the bulldozing on the adjacent property. A small section of this area was cleared for photographs (Figure 118), but the pits are shallow and difficult to discern because of the loose crumbly nature of the cobble material. It is possible that this was an area planted using the *pahala* method described by Handy and Handy (1991), where pits in the 'a'ā were first mulched, then planted and covered with *hala* leaves. The pits also continue into the *makai* zone of Site 2516 where a change in vegetation occurs.



Figure 114. SIHP Site 2516, enclosed planting areas and mounds on the *pāhoehoe* ridge formation within the central zone, view to the northwest.



Figure 115. SIHP Site 2516, stacked enclosure edge within the central zone, view to the northwest.



Figure 116. SIHP Site 2516, stacked mound edge within the central zone, view to the northwest.



Figure 117. SIHP Site 2516, example of a linear mound along a downslope bedrock edge in the central zone, view to the northeast.



Figure 118. SIHP Site 2516, pits in a *hala* grove to the southwest of the *pāhoehoe* ridge in the central zone, view to the northeast.

Makai zone

The *makai* zone of Site 2516 is a roughly 30 to 40 meter wide band at the *makai* end of the enclosed area, where coconuts are the primary vegetation (see Figure 96). This zone appears to contain a more spread out version of the intensive central zone type features with large piled/stacked *mauka/makai* trending walls that extend almost to the Site 2516 enclosing wall at the Old Government Road (Site 2530). At least two such walls are present (measuring 0.5 to 1.5 meters tall by 0.5 to 2 meters wide) with the area between them containing almost entirely coconut vegetation (Figures 119 and 120). The *pāhoehoe* ground surface in the central to southwestern portion of the *makai* zone is almost completely obscured by coconut debris.

At the extreme southwestern end of the zone near the southwestern property boundary the ground transitions to disaggregated *pāhoehoe* and pits (a continuation of the pits from the central zone) are present along the edge of the *pāhoehoe* ridge (Figure 121). Coconut is the predominant species at the *makai* extent of that area, but vegetation quickly mixes going *mauka* with *hala*, shoebutton holly, and vines. Some terrace walls and pits are present near the vegetation transition to *hala*. The rough terraces are loosely constructed of disaggregated *pāhoehoe* cobbles, and they appear to form right angles (Figure 122).

At the northeastern end of the *makai* zone, in the east corner of the enclosed area, are a series of mounds and modified bedrock edges that may also be a continuation of the central zone features constructed on the *pāhoehoe* ridge (Figure 123). This area is smooth *pāhoehoe*, and contains only a few coconut trees concentrated at the southwest end, with *kamani* and *hala* trees becoming more prevalent at the northeast end, and a growth of *ti* occurring throughout. Some *pāhoehoe* excavations in this area may have been used as planting areas (Figure 124).



Figure 119. SIHP Site 2516, wall remnant in the *makai* zone, view to the northwest.



Figure 120. SIHP Site 2516, wall in the *makai* zone near the vegetation transition to *hala* of the central zone, view to the west.



Figure 121. SIHP Site 2516, pit along the edge of the *pāhoehoe* ridge within the *makai* zone, view to the northwest.



Figure 122. SIHP Site 2516, loosely constructed terrace wall in the *makai* zone, view to the northwest.



Figure 123. SIHP Site 2516, mound in the northeast portion of the *makai* zone, view to the northwest.



Figure 124. SIHP Site 2516, *pāhoehoe* excavation in the *makai* zone, view to the northwest.

The Site 2516 agricultural complex seems to represent intensive use of the outskirts of Keahialaka Village for planting purposes during the Precontact and early Historic Periods. This area may have been originally established to support *ali* 'i residing at the nearby village, then later enclosed by a core-filled wall during Historic times to protect it from cattle and other free-ranging animals. Over time, this agricultural area would have fallen into disuse as the Hawaiian population along the Puna coast dwindled, and modern industry and agriculture were established during the twentieth century. Coconut, 'ulu, ti, noni, and pineapple appear to have been grown at Site 2516 and are still present in areas. The different zones of the complex and sub-zones within them were likely planted with different crops. *Hala* may have been kept in groves, but is currently a hindrance to site clearing and inspection. Pits and depressions could have contained 'uala or other crops (possibly 'awa or taro). Additional recording, mapping, and testing at Site 2516 should help with an understanding of the type and age of planting that occurred. Only water-worn cobbles and modern debris were observed on the surface of the site. Site 2516 likely continued southwest prior to the bulldozing of that property sometime before 1972. Maps from 1893 and 1895 (see Figures 30-34) show the *makai* section of Site 2516 corresponding to an enclosure belonging to Piena, who was a witness for the 1873 Keahialaka Ahupua'a Boundary Commission hearings (see Culture-Historical Contexts section of this report). The enclosure wall shown on those maps does not correspond to the enclosing wall currently surrounding Site 2516 on three sides, but it is not clear if this is because the wall was constructed at a later date, or because the enclosure was simply sketched on to the earlier maps, and is not to scale.

SIHP Site 2530

Site 2530 is a portion of the Old Government Road with an associated wall located in the southeast portion of the study area, approximately thirty to forty-five meters *mauka* from the coast (see Figure 47). The wall and road enter the project area from the southwest (off property) and extend in a northeasterly direction for roughly 160 meters across Keahialaka Ahupua'a to the Pohoiki boundary (see Figure 125). Although numerous SIHP site numbers have been assigned to coastal trails/roads in the Puna District (c.f. Maly 1999), the Site 2530 designation was assigned to a section of the same road that runs through the project area (to the southwest of the current study parcel) by Bevacqua and Dye (1972), and that designation is maintained for the current study. The portion of the road within the current study area was likely constructed during the late 1860s (Bevacqua and Dye 1972). By the early 1900's the Old Government Road was replaced by the current alignment of the Kalapana-Kapoho Road (Route 137). Regular use of the Government Road between Pohoiki and Keahialaka appears to have continued into the mid-twentieth century however (see Figure 39 and oral information from Mrs. Annie Kuakai presented above).

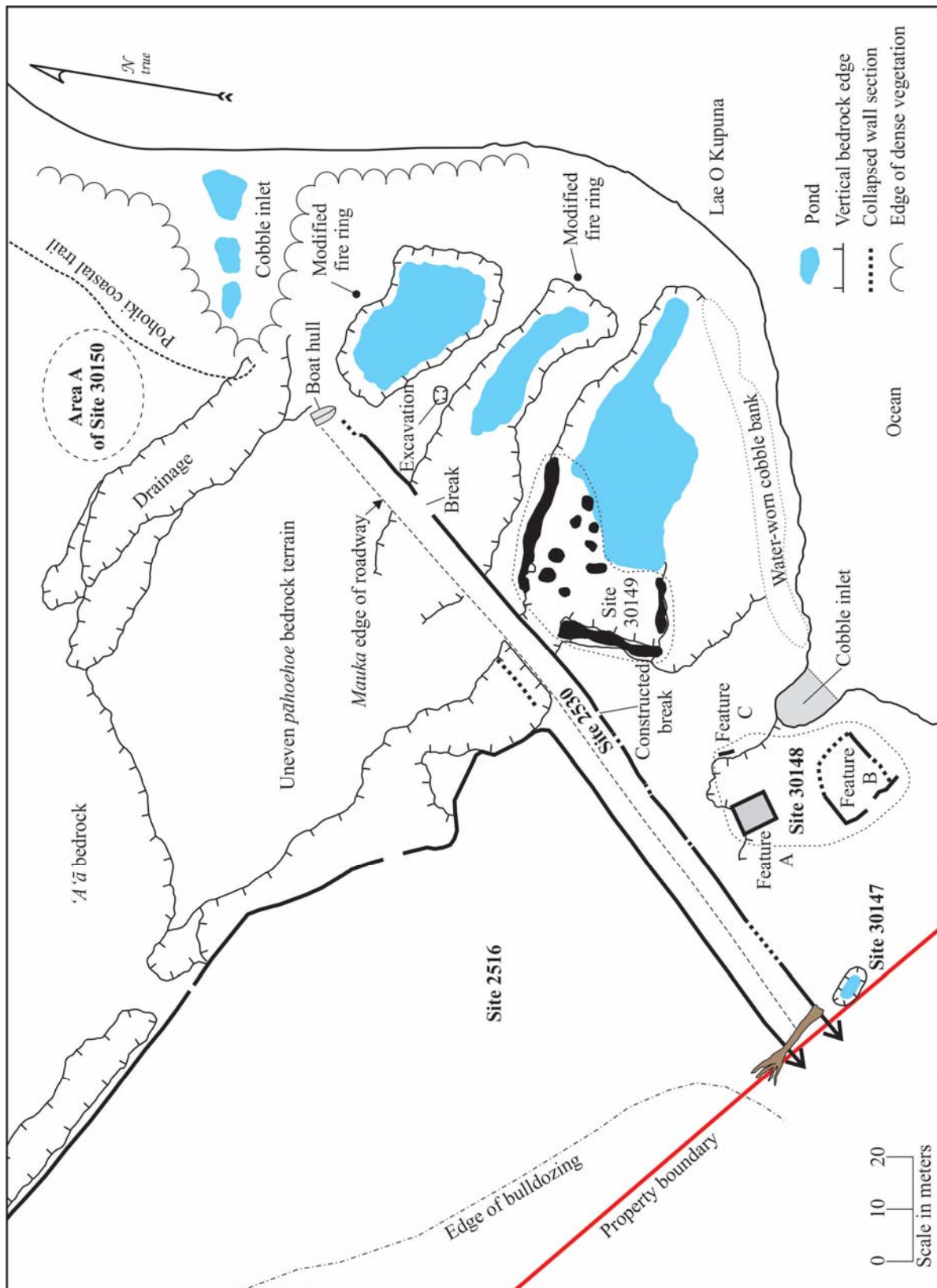


Figure 125. SIHP Site 2530 plan view.

The old road bed is constructed on fairly level *pāhoehoe* bedrock and is mostly clear of larger rock material. The road is defined along its *mauka* edge by a portion of the Site 2516 wall for roughly eighty-five meters within the project area (see Figure 97), and along its *makai* edge by another parallel wall for roughly 150 meters within the project area (both walls continue beyond the project area to the southwest). The average width of the road in the section that is lined on either side by walls is 8 meters wide (Figures 126 and 127). Beyond the *mauka* wall's termination the road becomes narrower, averaging four to five meters wide. A rough cobble alignment defines the *mauka* edge of the old road for a distance of twelve meters where it crosses a natural drainage roughly four meters northeast of Site 2516's eastern corner. The alignment measures roughly 20 centimeters tall by 40 centimeters wide and consists of a single course of *pāhoehoe* cobbles (Figure 128). The Keahialaka portion of the Old Government Road appear to be seldom traveled these days and is largely overgrown. The walls along both sides of this section of road are shown on maps from the late 1800s (see Figures 33 and 34), with the *makai* wall terminating near the Keahialaka/Pohoiki boundary, as it does today.

The wall along the *makai* edge of the road in Keahialaka Ahupua'a measures 150 meters long and is constructed of loosely stacked small to large *pāhoehoe* cobbles and small boulders, as well as a few large water-worn cobbles (Figure 129). The wall is in fair condition, and at intact sections the wall averages 0.6 to 0.8 meters wide and stands 0.6 to 1 meter tall along the road side edge. The exterior edge is similar in height, except in one area where the wall crosses a low spot, and the exterior edge stands nearly 2 meters tall (Figure 130), indicating that the road bed in that area has been artificially built up and leveled. The wall continues off property to the southwest, and at its northeast end the wall terminates near a rocky inlet at the Keahialaka/Pohoiki boundary. There are two breaks in the wall, one of which, located in the central portion of its span, appears to be constructed. This constructed break is narrow, measuring roughly 1 meter wide (Figure 131). This break may have been an access point to the costal Sites 30148 and 30149 (see Figure 125). The second break is located sixteen meters from the wall's northeastern terminus, and measures 4.6 meters wide. The cobbles at this break are missing, which suggests pirating for use elsewhere. At its collapsed northeast end the amount of cobbles dissipates and the wall becomes untraceable. A few large trees and areas of dense vegetation obscures portions of the wall and road.



Figure 126. SIHP Site 2530, old road bed lined by walls on both sides, view to the northeast.



Figure 127. SIHP Site 2530, road bed at the southwestern boundary of the current project area, view to the southwest.



Figure 128. SIHP Site 2530, rough alignment along the *mauka* edge of the road, view to the northwest.



Figure 129. SIHP Site 2530, wall along the *makai* edge of the old road, view to the south.



Figure 130. SIHP Site 2530, exterior edge of the *makai* wall where it crosses a low area, view to the northwest.



Figure 131. SIHP Site 2530, break in the *makai* wall, view to the southeast.

At the northeastern end of the *makai* wall (near the boundary of Keahialaka and Pohoiki *ahupua'a*), where a flipped boat hull (probably washed ashore by large waves) sits in its path (Figure 132), the old road bed becomes untraceable. Beyond the boat hull, on the opposite side of the rocky inlet at the *ahupua'a* boundary, the road turns into a well-travelled, narrow footpath that continues northeast to Isaac Hale Beach Park. Although a majority of the trail consists of a level surface cleared of cobbles (Figures 133, 134, 135), it meanders and does not appear to be the exact route of the Old Government Road. At its northeast end (between Site 2510 and Pohoiki Bay) the trail has been recently paved with 'ili'ili stones that are plentiful along the coast in that area and is kerb-stone lined (Figure 136). The paving and kerbing appear to be recent alterations. The Pohoiki section of the Old Government Road is shown as a dashed line on maps from the late 1800s (see Figures 30-34), and was likely never as well established as the Keahialak section, which is lined by walls on both sides. A map prepared by Chas. L. Murray on April 24, 1939 labels Site 2530, near the boat landing in Pohoiki Ahupua'a, as the "Government Trail". According to Mrs. Annie Kuakai, who used to travel along the road as a child, portions of the Old Government Road in front of the Kuamo'o property disappeared into the ocean during a 1975 earthquake that caused much of the Puna coast to subside.

SIHP Site 30129

Site 30129 is a circular concrete cistern located in the northwest portion of the current study area, approximately thirty-five meters northwest of Site 2511, the concrete mill structure, and ten meters northwest of Site 30130 (see Figures 46 and 47). The cistern is situated within elevated ground surface made up of loose cobbles, boulders, and exposed bedrock. It measures 12.8 meters in diameter and has an average depth of 1.5 meters below the surrounding ground surface (Figure 137). It appears that the elevated area, which the cistern is constructed in, was created as a result of quarrying the interior cobbles and placing them along the edges. The ground within 1 to 2 meters of the cistern's edge is level, and beyond that distance is berm that encircles the level area. This berm is higher on the west and south sides (up to 60 centimeters) than on the north and east sides (up to 30 centimeters) of the cistern, and it is likely made up of earthen material carved out for the sunken cistern. The cistern consists of vertical concrete walls with a thin layer of plaster. The rough concrete contains water-worn pebbles, sand, and small cobbles, and is only visible on only the upper surface of the walls where plaster has either chipped off or was never applied. Within the vertical walls of the cistern, lines and cracks in the plaster mark the underlying concrete form lines. The form lines are horizontal and at approximately 48 centimeters (19 inches) and 114 centimeters (45 inches) from the base. Concrete at the top of the cistern is roughly 28 centimeters (11 inches) thick. In the northeast corner is a 4.2 meter long portion of plaster along the top (horizontal) surface of the wall.



Figure 132. SIHP Site 2530, boat hull resting on the road bed, view to the northeast.



Figure 133. SIHP Site 2530, northeast portion of the trail, view to the southwest.



Figure 134. SIHP Site 2530, portion of the trail near the Kuamo‘o Property, view to the northeast.



Figure 135. SIHP Site 2530, central portion of the trail, view to the southwest.

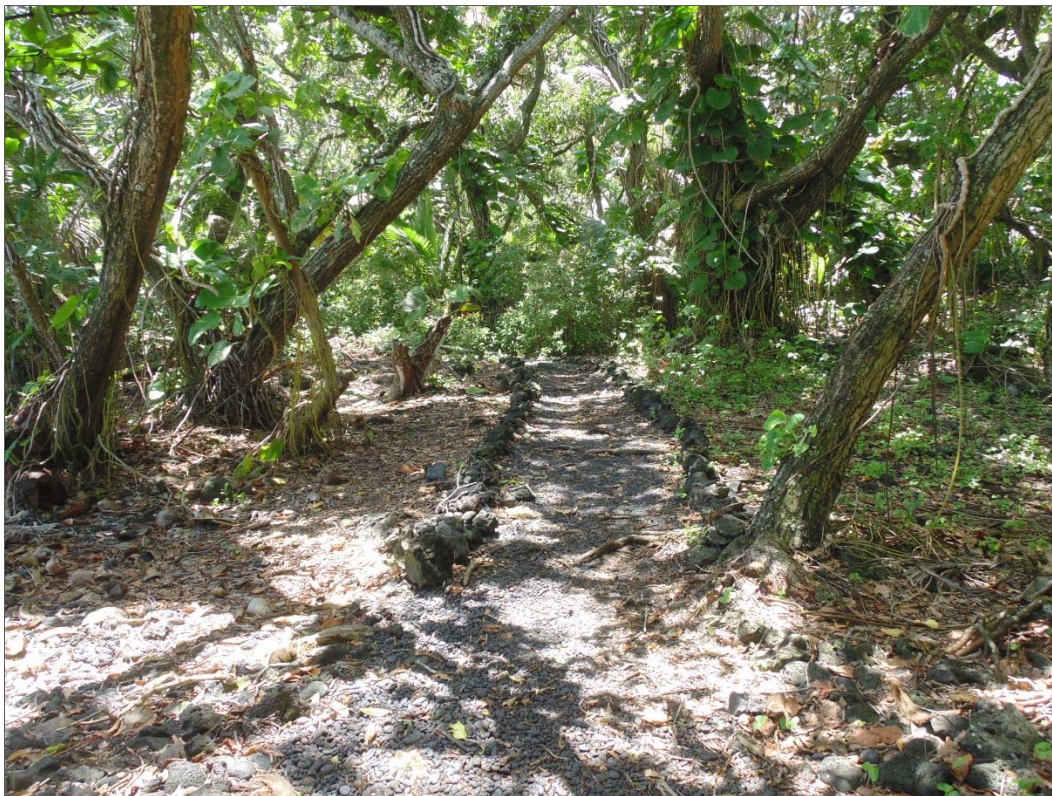


Figure 136. SIHP Site 2530, gravel-filled and curb-lined portion of the trail, view to the northeast.



Figure 137. SIHP Site 30129, circular-shaped concrete cistern, view to the northwest.

4. Fieldwork

Two metal pipes, the upper with a diameter of 1.5 inches and the lower a diameter of 2 inches, extend into the cistern in the eastern portion (*makai* end closest to the mill). The lower pipe extends 80 centimeters out from the wall at a height of 105 centimeters (41 inches), and the upper pipe extends 0.6 centimeters from the wall at a height of 125 centimeters (49 inches). The concrete floor below these pipes slopes down in a bowl-like fashion, which suggests the location of the drain. A trench in-line with the pipes leads to the southeast toward the mill structure. The trench starts 3.9 meters from the cistern. It measures 4.1 meters long and averages 80 centimeters wide by 80 centimeters deep (Figure 138). The pipes likely ran through the trench and supplied water to the mill structure, indicating that Site 30129 and Site 2511 were built contemporaneously in ca. 1893-1895.

To the east of the cistern, near the base of the berm, is a collection of historic glass bottles. One of the bottles is an early twentieth century clear “Pahoa Soda Works” bottle (Figure 139). Pahoa Soda Works was based in Pahoa in the S. Miura Store (in Pahoa Village Lot 12) and lasted from 1910 to 1953. An amber “Primo” beer bottle produced at the Honolulu Brewing Corporation was also observed in the bottle scatter (Figures 140 and 141). This style of “Primo” bottle was in production during the 1930s to 1940s. A few unidentified bottle fragments (including a *sake* bottle) were also observed in this area (Figure 142).



Figure 138. SIHP Site 30129, trench to the southeast of the mill, view to the northwest.

SIHP Site 30130

Site 30130 is a rectangular-shaped pit located ten meters east of Site 30129 and twenty meters northwest of the concrete mill structure (Site 2511; see Figures 46 and 47). The site is situated on a fairly level ground surface of jumbled ‘a‘ā cobbles, organic soil, and bedrock. It is within a dense canopy of mango and yellow strawberry guava. The pit measures 1.4 meters long by 1.1 meters wide and is constructed of stacked small and medium cobbles (Figure 143). The southeast and southwest edges are neatly stacked, its northeast edge consists of loosely piled cobbles, and its northwestern edge is collapsed (Figure 144). The interior of the pit contains jumbled cobbles that slope down to the southeast. The intact edges extend to a depth of 21 to 67 centimeters below the surrounding ground surface. A single water-worn cobble is located forty centimeters north of the pit’s southern corner. No other cultural material was observed at the site. Based on its location, between Site 30129 and the concrete mill structure, Site 30130 was likely constructed during Historic times and is associated with the nearby mill infrastructure. Its exact function is unknown, but may have been related to the transport of water from the Site 30129 cistern to the Site 2511 mill.



Figure 139. SIHP Site 30129, clear "Pahoa Soda Works" bottle, overview.



Figure 140. SIHP Site 30129, amber "Primo" beer bottle, overview.



Figure 141. SIHP Site 30129, amber “Primo” bottle base, overview.



Figure 142. SIHP Site 30129, unidentified sake bottle, overview.

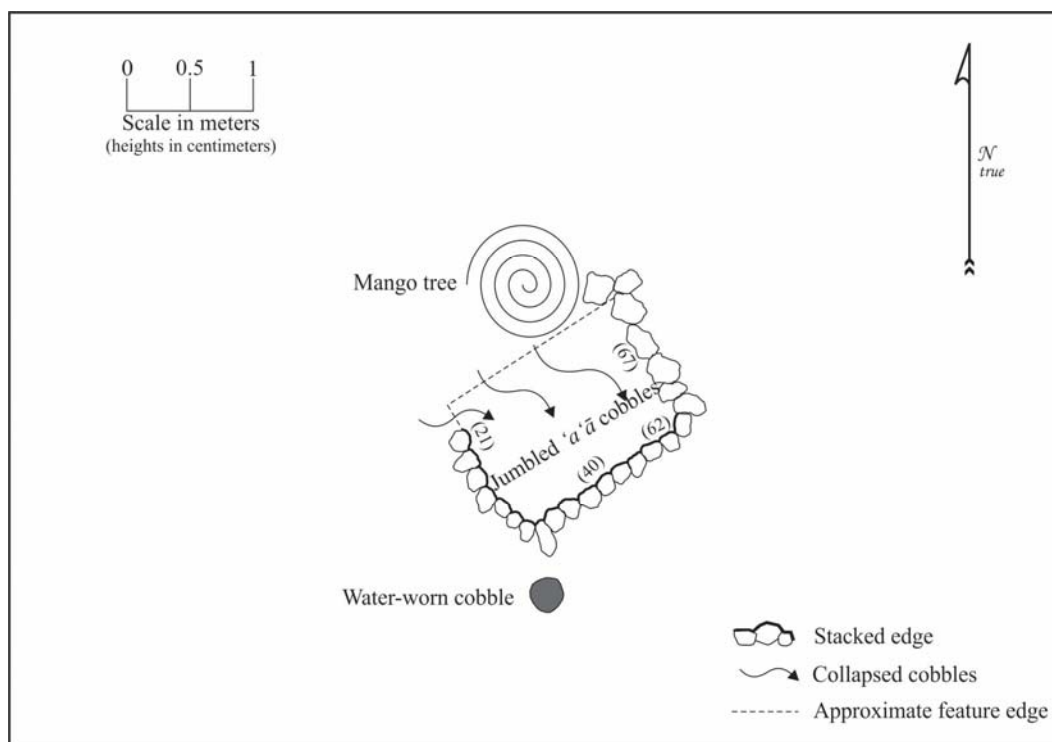


Figure 143. SIHP Site 30130 plan view.



Figure 144. SIHP Site 30130, rectangular-shaped pit, view to the southwest.

SIHP Site 30131

Site 30131 consists of an enclosure that contains a series of constructed *mauka/makai* raised rows separated by equally wide troughs (Figure 145). The site is located along the driveway, southwest of Site 2511, the old coffee mill (see Figure 46 and 47). Site 30131 measures 103 meters (northwest/southeast) by 45 meters (northeast/southwest), the edges of which are defined by the enclosure wall. The site is covered in dense vegetation consisting of *kamani*, *noni*, *waiwī*, *hala*, shoebutton holly, and *Philodendron* sp. The enclosure wall has an average height of 1.3 meters tall but reaches 1.5 meters tall in a few locations, and has an average width of 0.8 meters (Figure 146). The wall is core-filled and composed of medium to large ‘a‘ā cobbles with a few water-worn cobbles also observed. The wall is in good condition (Figure 147), with only a couple of collapsed segments.

The interior of the enclosure has been completely modified into eight elevated rows with deep furrows between them that run the northwest/southeast length of the enclosure (see Figure 145). The rows are parallel with the northeast (driveway side) enclosure wall, but due to the acute angle of the southeast (*makai*) enclosure wall, the rows get progressively shorter to the southwest. The rows consist of vertically stacked edges (Figure 148) constructed with small to large (mostly ‘a‘ā) cobbles, with smaller cobbles and pebbles observed on the upper surface. At intact locations, the rows have squared off upper surfaces, but in most places they were rounded at the top, due to the collapse of the upper portions of the side walls (Figure 149). The dissimilar angle of the southwestern enclosure wall with the angle of the rows causes the *mauka* end of the southwestern-most row/trough to be truncated. Two cross-section profiles of the feature were drawn to show the spatial distribution (northeast/southwest) of the rows at locations twenty-five meters from the *mauka* and *makai* ends of the enclosure (see Figure 145). The rows were found to have an average width of 2.6 meters on the *mauka* end, and an average width of 2.4 meters on the *makai* end. The average width of the troughs between the raised rows on the *mauka* end measure 2.9 meters, and on the *makai* end the troughs have an average width of 2.4 meters. At the *mauka* end, the rows have an average height of 1.2 meters tall, and at the *makai* end the average 0.9 meters tall. The raised rows and troughs are slightly wider on the *mauka* end, and were observed to be 20 centimeters, on average, taller than the rows on the *makai* end. A linear earthen mound and two cobble mounds were observed outside the enclosure’s southwest wall in the rough location of the exterior continuation of the truncated southwestern row.

The close proximity of Site 30131 to Site 2511, the coffee mill, suggests a correlation in function, however the specific function of the enclosure remains unknown. The Smiths, who currently live in the mill structure, have suggested that the site as a nursery where coffee plants were started and set on the rows by Rycroft during the late nineteenth century. While this explanation of site function is certainly possible, the enclosure is fairly far removed from the Rycroft coffee fields, and the effort expended to create the rows and furrows seems exorbitant for a coffee nursery. It is also curious that the large enclosure does not show up on any of the late nineteenth century maps that show the rest of the Rycroft built infrastructure at Pohoiki (see Figures 30-34). Perhaps Site 30131 was used for one of one of Rycroft’s other exploits, such as his lumber and saw milling operation.

The frame of a Muley Sawmill manufactured by Chandler & Taylor after 1877 is currently resting against the northern corner of the enclosure, adjacent to the driveway (Figure 150). This large iron machine part has raised writing on it that reads “CHANDLER & TAYLOR / PATENTED / DEC. 1, 1874 / DEC. 15, 1874 / JAN 12, 1875 / MAY 15, 1877 / INDIANAPOLIS, IND. / No. 111”. The use of a Chandler and Taylor Muley Sawmill was described in an 1879 article as follows:

Chandler and Taylor were operating a Muley Saw Mill by a portable ten horse power engine. The mill itself can be taken down in a few days, if timber could be inconvenient. The saw has a reciprocating motion but running without a sash frame. The saw and principal part of the machinery are supported by a solid iron frame, cast in one piece. We saw it cut a sycamore plank twelve feet long and sixteen inches wide in one minute and twenty-five seconds with a ten horse power running with seventy pounds of steam. It is admirably adapted to forest lumbering. (*Annual Report of the Indiana State Board of Agriculture*, 1879. Vol. 21, page 142).

This part (shown in Figure 29) is the vertical framework of the sawmill that held the upper end of the saw blade. This particular piece was manufactured between the latest patent date shown, 1877, and 1898, the final year that Chandler and Taylor manufactured sawmills (<http://vintagemachinery.org>). It is known that during his residency at Pohoiki, beginning in about 1882, Rycroft operated a Chandler and Taylor Muley Sawmill (see Culture-Historical Context section of this report); one such mill he advertised for sale on November 30, 1886 in the *Hawaiian Gazette* newspaper, but it was reported in an April 20, 1891 article in the *Daily Pacific Commercial Advertiser*, that he intended to purchase another such mill to install in his new factory (Site 2511) erected in ca. 1893-1895.

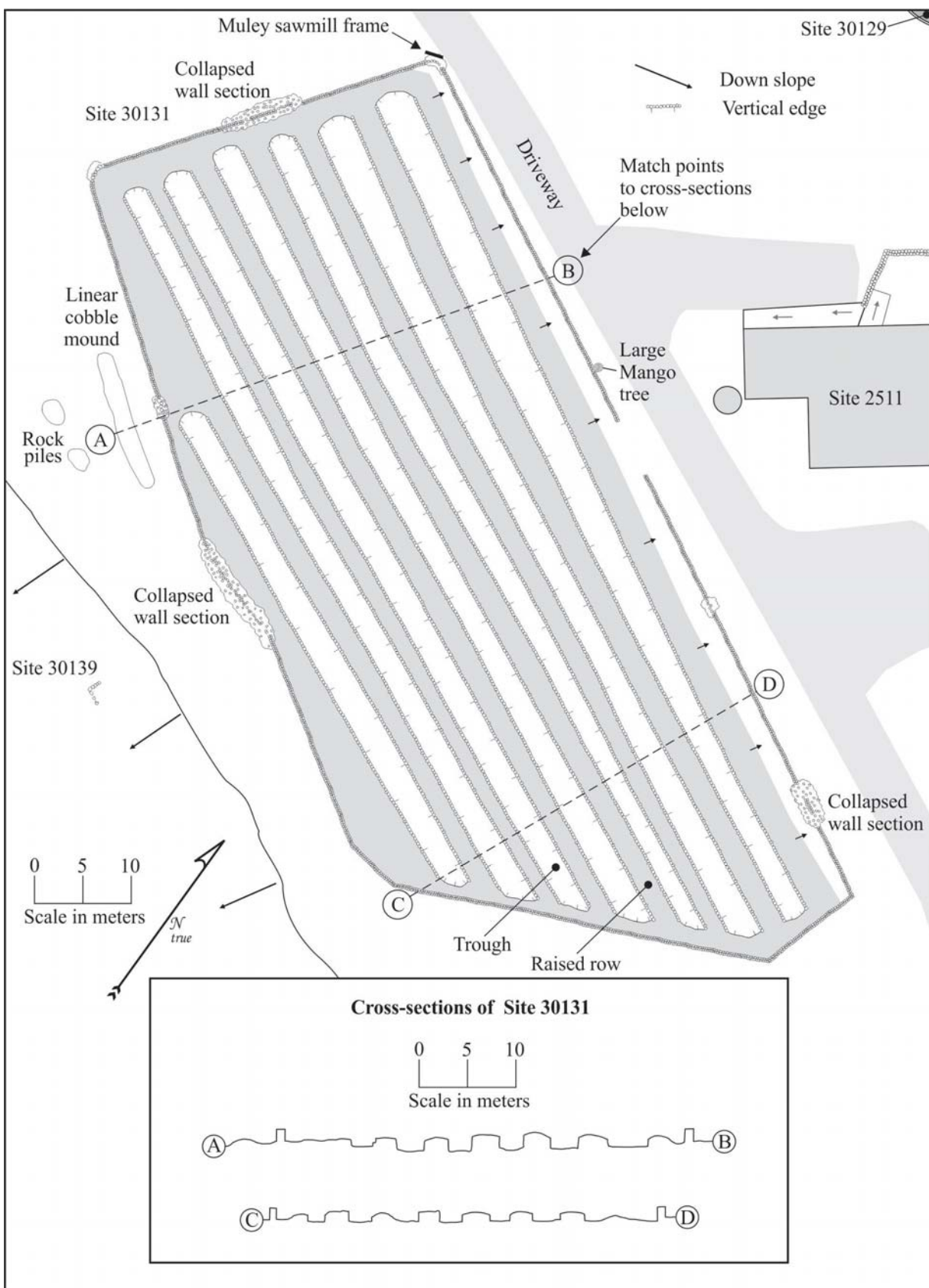


Figure 145. SIHP Site 30131 plan view.



Figure 146. SIHP Site 30131, northeast wall of the enclosure, view to the southeast.



Figure 147. SIHP Site 30131, eastern corner of the enclosure wall, view to the west.



Figure 148. SIHP Site 30131, *mauka* portion of the interior raised rows, view to the northeast.



Figure 149. SIHP Site 30131, stacked edge of a row in the central *mauka* portion, view to the southwest.



Figure 150. SIHP Site 30131, frame of a Chandler and Taylor Mule Sawmill, view to the south.

SIHP Site 30132

Site 30132 is a rectangular-shaped concrete foundation located in the northeast portion of the study area, 6.3 meters southwest of the Pāhoa-Pohoiki Road (see Figures 46 and 47). The foundation is situated on a level ground surface of soil with scattered cobbles and large tree roots beneath a dense canopy of mango and *noni* covered in *Phylodendron* sp. vines. Site 30132 measures 8.6 meters long by 4.3 meters wide, and consists of formed concrete that was poured in place (Figure 151). The foundation floor consists of level concrete covered by organic debris and an area of scattered cobbles along its southwestern edge. Numerous small *noni* trees are growing out of cracks in the concrete floor, and roots from larger trees growing nearby have also disturbed the floor of Site 30132. The foundation is bounded on the northeast, southeast, and southwest sides by a concrete sill (Figure 152). The sill averages 13 centimeters wide with interior heights ranging from 15 to 30 centimeters tall and exterior heights ranging from 13 to 33 centimeters tall. In some sections the sill is cracked and not aligned with the floor as a result of large tree roots growing into the foundation. Cultural material observed at Site 30132 consists of a single water-worn cobble at the southwest exterior edge of the foundation, near the base of a large mango tree.

Although no structures are shown at the location of Site 30132 on maps from the late 1800s (see Figures 30-34), or on any later maps, based on the concrete construction of the foundation and its close proximity to the mill structure (Site 2511), Rycroft's Road (Site 30137), and the Pāhoa-Pohoiki Road, the site may be associated with the nearby Rycroft Estate. Although its exact function is unknown, the absence of a concrete sill along the northwestern edge of the foundation and the close proximity to the roads mentioned above, may suggest that Site 30132 formerly functioned as a garage or shed, that wheeled vehicles or equipment could be easily rolled into and stored in. The Smiths, who currently reside in Rycroft's old mill (Site 2511) suggest that this foundation may have been a barn.

SIHP Site 30133

Site 30133 consists of two remnant concrete structures (Features A and B) that seem to postdate the construction of Site 30134 (a concrete oven and chimney) located only 30 inches to the northwest of the northernmost wall of Feature A (see Figures 46 and 47). Architectural as well as oral evidence indicates that Site 30133 was a pig pen and related infrastructure. It is likely that both Features A and B were once roofed with a gutter system that fed the subterranean concrete cistern that forms the southern portion of Feature A (Figure 153).

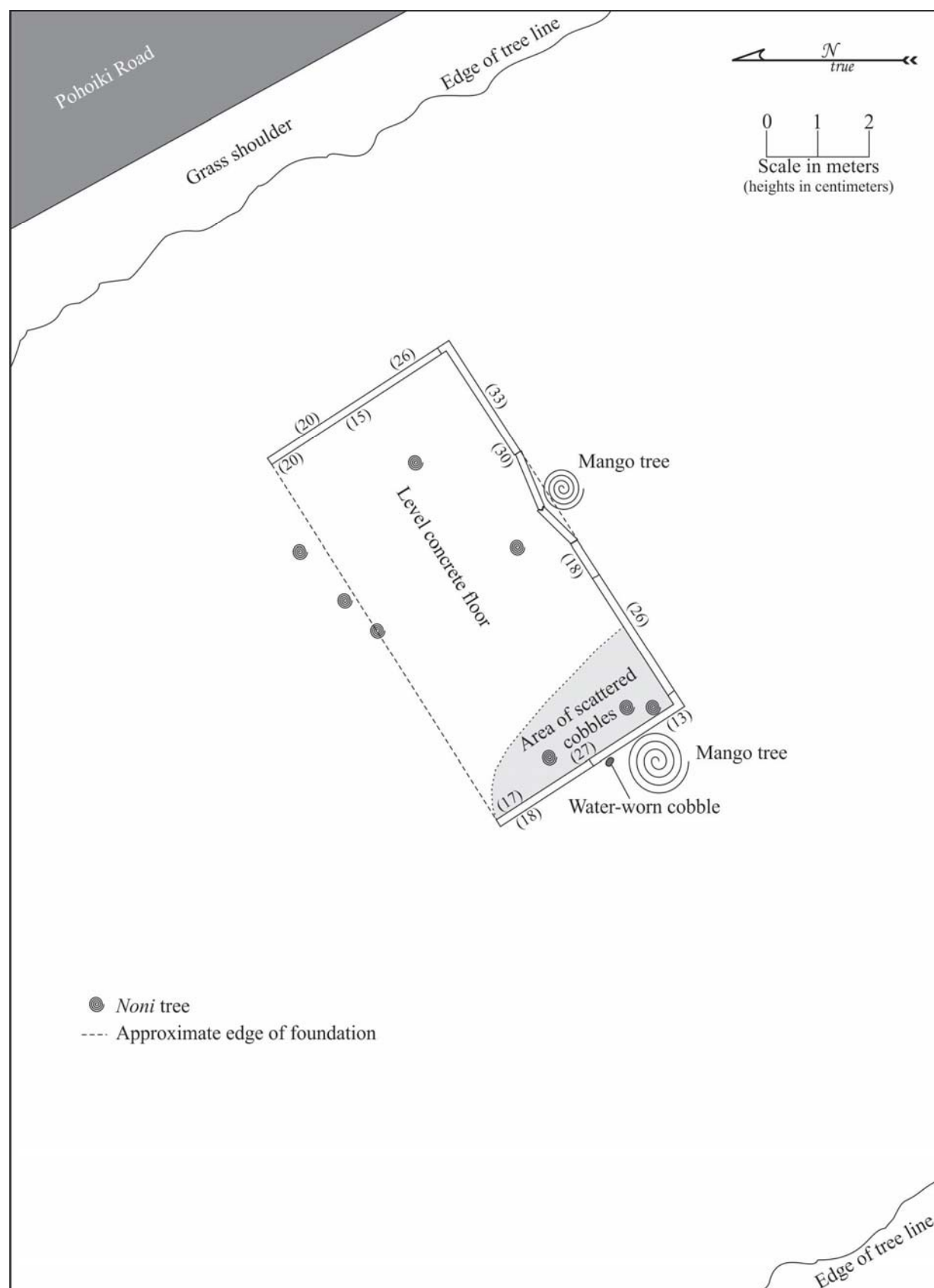


Figure 151. SIHP Site 30132 plan view.



Figure 152. SIHP Site 30132, concrete foundation, view to the southwest.

Feature A

Feature A is a rectangular concrete structure having an overall external dimension of 51 feet 6 inch long by 14 feet 3 inch wide with four compartments and an attached subterranean cistern (see Figure 153). This feature is currently used as a residential and storage structure, which prevented complete access for making observations; however enough of the structure was accessible and visible to record the construction details. The poured in place concrete exterior and remaining interior walls are 6 inches thick and where intact, 48 inches tall. The northernmost compartment measures 10 feet by 13 feet 3 inches with a 2 foot wide broken area (Figure 154) in the eastern wall (currently used as an entry way to the residence) where a former low arched doorway once existed. The wall separating this compartment from the next compartment to the south has been almost completely removed; only remnants of it are visible on the interior face of the external walls. At the base of the eastern exterior wall are two 9 inch tall by 30 inch wide rectangular holes (Figure 155) leading from the inside to the outside of the structure. These holes likely function as cleanouts when washing out the compartment interiors.

The next compartment to the south measures 8 feet wide and has an intact arched doorway area in the eastern exterior wall. This doorway is 2 feet wide and 2 feet 6 inches tall at the top of its arched opening (Figure 156). It is likely that a wooden door once hung on metal pin hinges that are still present in the wall (Figure 157) and was retained by a metal latch system, an element of still remains (Figure 158). There are also two 9 inch tall by 30 inch wide rectangular holes at the base of the eastern exterior wall at this compartment. The wall is intact between this and the next compartment to the south, which measures 10 feet wide and also has a similarly shaped and sized door wall and rectangular cleanouts. The wall between this and the last compartment to the south is broken with a 3 foot wide section missing (Figure 159). The last compartment is 8 feet wide with its entire eastern wall broken and missing (see Figure 153). Only the metal pin hinges (indicating that the wall once had an arched door opening like the other compartments) remain (Figure 160). The floor surfaces within the compartments is cemented *'ili'ili* (Figure 161).

Attached to this series of compartments is a 13 foot wide 44 inch deep concrete cistern (Figure 162). It appears to have been poured in place against the exterior wall of the adjacent compartment, as evidenced by the 6 inch added thickness occupying the lower 44 inches of the of the 92 inch combined height of the northern wall of the cistern and the southern exterior wall of the southernmost compartment (Figure 163). It is likely that this cistern was constructed as a water catchment receptacle. Near the top of the southern wall a plastic pipe has been recently put in place that seems to feed a more *makai* garden area, and a wood frame structure has been added to the 6 inch thick top of the cistern.

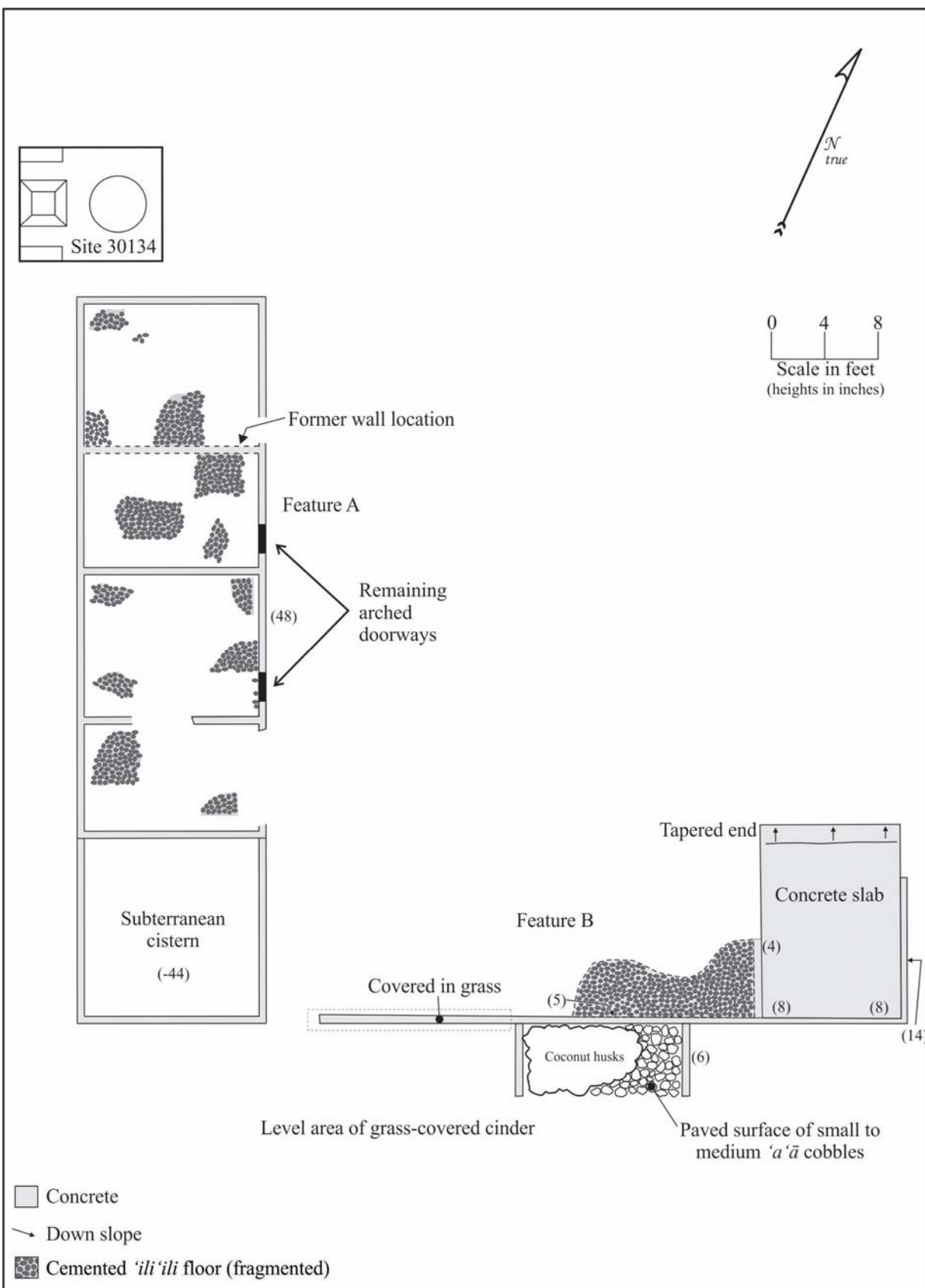


Figure 153. SIHP Site 30133 plan view.

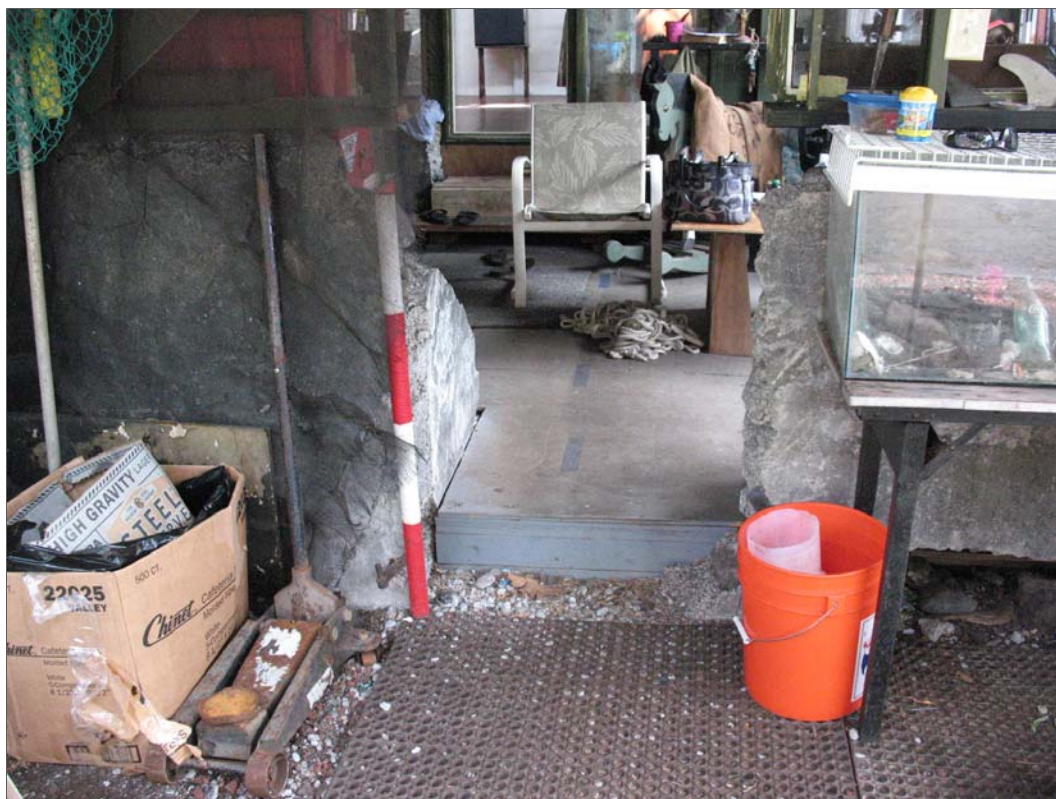


Figure 154. SIHP Site 30133 Feature A, broken access way at location of former low arched entry.



Figure 155. SIHP Site 30133 Feature A, rectangular cleanout in westernmost compartment.



Figure 156. SIHP Site 30133 Feature A, remaining low arched entry in third compartment to the east.



Figure 157. SIHP Site 30133 Feature A, metal pin hinge in concrete next to arched door opening.



Figure 158. SIHP Site 30133 Feature A, metal latch keeper in concrete next to arched door opening.

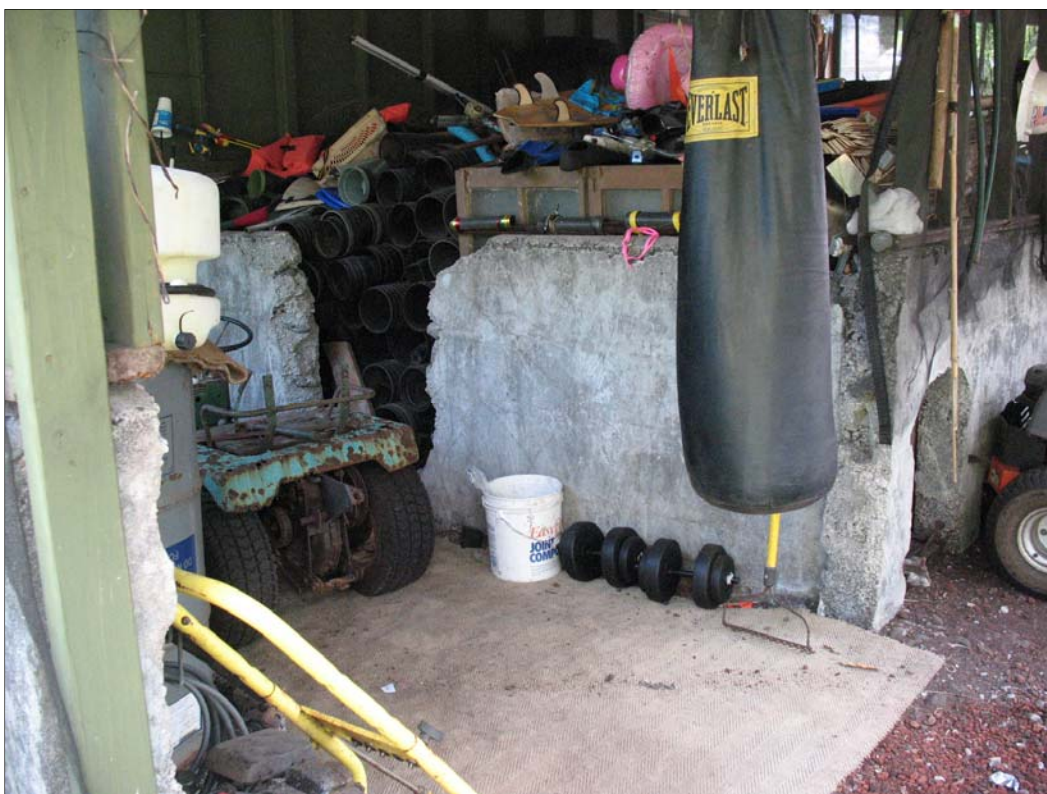


Figure 159. SIHP Site 30133 Feature A, easternmost compartment showing missing front wall.



Figure 160. SIHP Site 30133 Feature A, remnant metal pin hinges in easternmost compartment indicating former presence of a door.



Figure 161. SIHP Site 30133 Feature A, cemented 'ili 'ili floor in easternmost compartment.



Figure 162. SIHP Site 30133 Feature A, cistern at eastern end of feature, view to the south.



Figure 163. SIHP Site 30133 Feature A, cistern showing connection to easternmost compartment, view to the west.

Feature B

Feature B of Site 30133 is a concrete foundation remnant of a former structure that was likely similar in form to Feature A. Feature B is separated from the cistern portion of Feature A by a roughly 40 inch wide gap (see Figure 153). It is possible that this gap represents an ingress/egress point leading from the interior portion of Site 30133 to the more coastal portions of the property. The foundation remnant consist of a 40 foot long by 6 inch thick concrete wall that extends exactly perpendicular to the long axis of Feature A (Figure 164). This wall is broken along its entire upper surface with the tallest remnant being only 14 inches. It is quite possible that this wall once extended to 4 feet similar to Feature A. At the eastern end of the feature is another broken wall, also 6 inches thick, extending in a northerly direction for a distance of 10 feet to where it has been broken. Ten feet to the west of this wall and running parallel to it off of the main wall is a low concrete sill (Figure 165) raised 4 inches above the concrete slab and extending for a distance of 5 feet 3 inches. Between the sill and the eastern wall the 10 foot wide space is filled with a poured concrete floor that extends 13 feet 3 inches out from the feature's main wall (Figure 166); this is the exact same depth as the room compartments in Feature A. On the north side of the slab, the concrete tapers down, which would have facilitated the use of a wheel conveyance. On the western side of the sill the floor surface is a remnant cemented 'ili'ili (Figure 167), identical to the floor surface in room compartments at Feature A. Much of this pebble floor is covered with soil and grass and it likely extends over the entire floor surface of the former structure.

Extending in a southerly direction from the feature's primary wall are two 5 foot long by 6 inch wide wall remnants spaced 12 feet apart. Like the primary feature wall these walls are also broken (in this case at a height of 6 inches above the ground surface), making a determination of their original height impossible. The ground surface between the two walls is roughly paved with small to medium 'a'ā cobbles and a few water-worn cobbles intermixed; it is not cemented. The paved floor is level with the height of the broken walls; and a large portion of this floor is currently covered by discarded coconut husks (Figure 168).

Given the extent of impact observed at both the Feature A and B structures, the integrity and condition of this site is assessed as poor.



Figure 164. SIHP Site 30133 Feature B, view to the northwest.



Figure 165. SIHP Site 30133 Feature B, low sill extending west from the primary feature wall, view to the east.



Figure 166. SIHP Site 30133 Feature B, concrete slab within the northern end of the feature, view to the north.



Figure 167. SIHP Site 30133 Feature B, concreted 'ili 'ili pavement.



Figure 168. SIHP Site 30133 Feature B cobble floor covered in coconut husks, view to the north.

SIHP Site 30134

Site 30134 is a freestanding concrete oven and smokestack located in the immediate proximity of the current caretaker's residence and Site 30133, within the north central portion of the study area (see Figures 46 and 47). While it stands less than one meter to the west of the northernmost wall of Site 30133, this feature appears to differ from Site 30133 in both temporal origin and function. Although it may have been reused in association with Site 30133, Site 30134 appears to be older than Site 30133 based on the construction materials and techniques, and may be more similar in age to Site 2011, or perhaps a few years older. Site 30134 consists of a poured in place rectangular (8 X 10 feet) concrete base oriented at 70/250° (true north) with an internal cavity lined with fire-brick that is used to heat a ½ inch thick 46 inch diameter metal wok that is embedded toward the front of the feature on its upper surface, which is 4 feet 4 inches above the ground surface (Figure 169). The front corners of the base structure are chamfered with a lark's tongue finish at the upper end and the front face of the feature (now completely obscured by household items; Figure 170) has an opening for placing fuel. The back face of the feature has a small (1 foot wide by 10 inches tall) opening (Figure 171) that appears to be a vent for controlling airflow and creating a draft. Toward the back of the feature are two 1 foot by 3 foot constructed cut outs (Figure 172) at the rear corners. These are 2 foot 2 inches above the ground surface and may have acted as steps to access the upper surface and wok area. Also toward the rear of the feature extending upward from the top of the rectangular construction is a concrete smokestack (see Figure 169) measuring 3 feet 3 inches on each side. This upwardly tapering construction has chamfered corners ending in lark's tongues top and bottom (similar to the smokestack at Site 2511), and extends to a height of 19 feet 6 inches above the ground surface. The smokestack is topped with an ornamental circular concrete vent cap (Figure 173), not dissimilar to the cap that originally topped the smokestack at Site 2511, but which is no longer present. The smokestack portion of Site 30134 is severely damaged exhibiting fracturing at its base (Figure 174) and near its cap (see Figure 169), with a major crack (Figure 175) running longitudinally from its base to its cap. Given this damage, the site condition is considered poor.

SIHP Site 30135

Site 30135 is a square-shaped concrete cistern located roughly three meters northeast of Site 30138, and twenty meters southeast of Site 30134 (see Figures 46 and 47). The cistern measures 6.7 meters by 6.3 meters, and is constructed of poured concrete formed with 2" x 18" boards. The smooth vertical walls average 30 centimeters wide with an interior depth of up to 2.6 meters, and exterior walls that stand 30 centimeters above the surrounding ground surface (Figure 176). The floor of the cistern is level concrete covered by leaf debris. An out-flow pipe, 6 centimeters (roughly 2 inches) in diameter, exits through the northern wall of the cistern 40 centimeters below the top edge. Site 30138 forms the southwestern retaining edge of an elevated area with a level surface and sloped sides that extends three to four meters from the cistern edges. This area was likely created as a result of excavating the hole for the cistern. A large *kamani* tree is growing from the elevated cobble area along the southwest exterior edge of Site 30135. It is evident that Site 30135 was constructed during the Historic Period for water storage purposes, it may have been associated with Rycroft's old mill that is shown on maps from the late nineteenth century (see Figures 30-32) nearby this general location, but is longer extant on the property.

SIHP Site 30136

Site 30136 consists of a walled enclosure (Feature A) and a former privy hole (Feature B) located in the eastern corner of the current study area (see Figures 46 and 47). The enclosure (Figure 177) is bordered on the northeastern side by the Pāhoa-Pohoiki Road, and on the southwest by the road that leads to the boat ramp within Isaac Hale Beach Park (Figure 178). To the northwest is an overgrown area, and to the southwest of the enclosure is mowed lawn, the former location of Site 30137, which is labeled on late nineteenth century maps as Rycroft's Road (see Figures 30-34). On those same maps an enclosure, containing several structures that are labeled Rycroft's (house), is shown at the location of Site 30136.

The interior of Site 30136 is partially overgrown with vegetation that includes *kamani*, *noni*, coconut, *waiwī*, and vines. The interior ground surface of the enclosure is relatively level, with a few slight undulations. Nearly the entire area has been subject to modern grubbing and grading, and breaks in the enclosure walls appear to have been caused by a bulldozer. Modern rubbish is present throughout the interior of Site 30136, and along the exterior sides of the walls (Figure 179), and a layer of imported gravel has been spread over a ten by six meter area on the interior ground surface adjacent to the southern break in the wall. A rectangular depression was observed at the northern end of the enclosure adjacent to the northeastern wall that appears to be the result of mechanical grading (caused by a bulldozer pushing material in two directions up to and against the wall). Features A and B of Site 30136 are described in detail below.

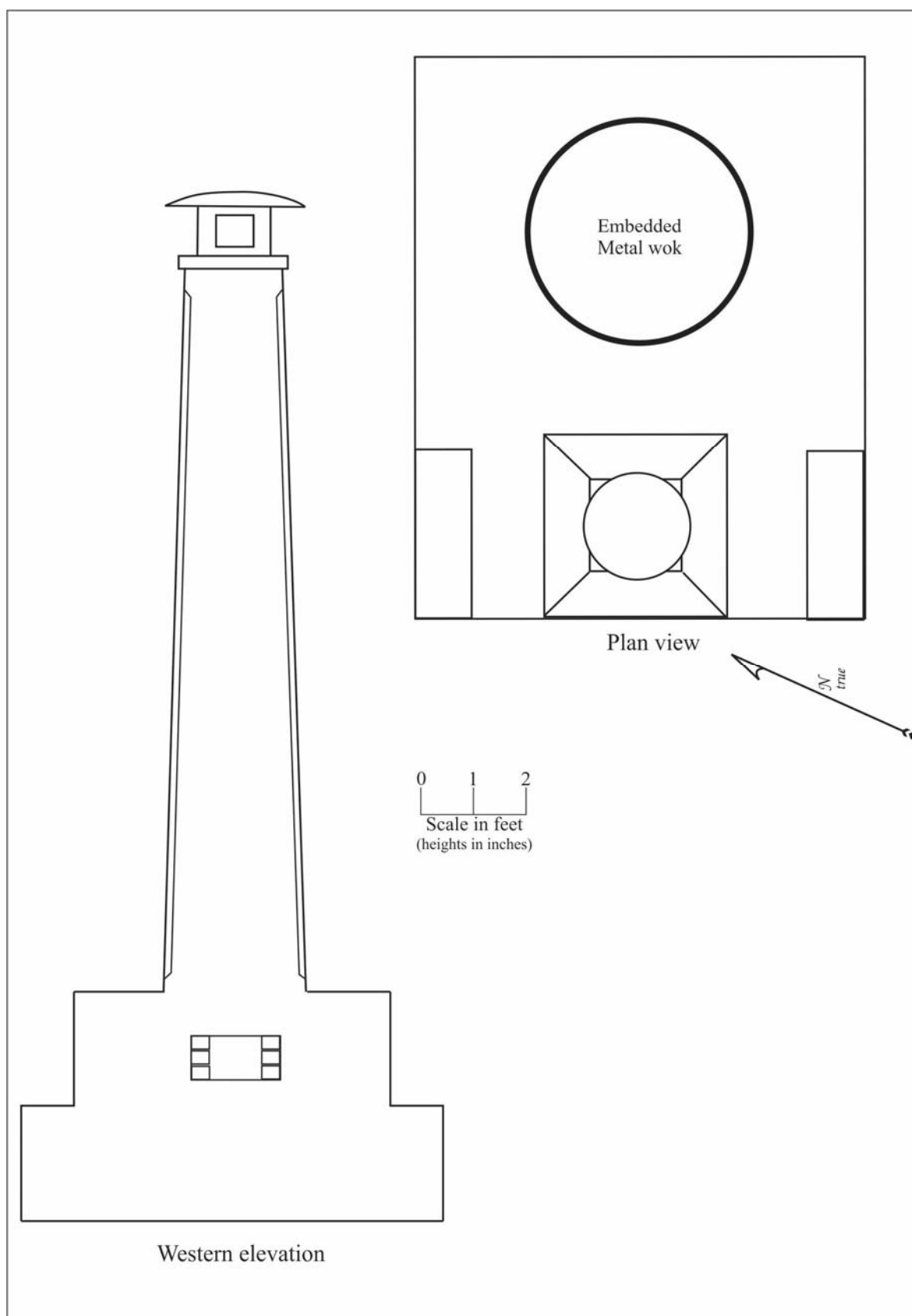


Figure 169. SIHP Site 30134 plan view.



Figure 170. SIHP Site 30134, obscured front of structure, note chamfered corner with lark's tongue finish.



Figure 171. SIHP Site 30134, air vent in back face of structure.



Figure 172. SIHP Site 30134, step area at *makai* rear corner.



Figure 173. SIHP Sites 30134, circular smokestack cap, note the numerous cracks and fractures.



Figure 174. SIHP Site 30134, showing fractures near base of smokestack.



Figure 175. SIHP Site 30134 showing major longitudinal crack in smokestack.



Figure 176. SIHP Site 30135, square-shaped concrete cistern, view to the west.

Feature A

Feature A of Site 30136 is a stone wall enclosure that measures 55 meters long (northwest/southeast) by 35 meters wide (northeast/southwest) (see Figure 177). There are two openings; one 8 meters wide located in the western end of the northwestern wall, and one 10 meters wide at the southern end of the southwestern wall (Figure 180). Disturbed portions of wall adjacent to the opening suggests that they may have been created or enlarged by bulldozing. The wall of the enclosure has areas of collapse as well as relatively intact portions (Figure 181). The average height of the walls is 0.8 meters, but reaches a maximum height of 1.4 meters, and the average width measures 0.9 meters, but one intact area was observed with a width of 1.4 meters. The enclosure wall is core-filled, consisting of mostly medium and large 'a'ā cobbles stacked on the sides, and small and medium cobbles used to fill the interior. A few water-worn cobbles were also used in the construction of the wall. The southern end of the southwest wall, *makai* of the 10 meter wide opening, is collapsed. At the south side of the opening is a 6 meter long extension of the wall that extends perpendicularly into the enclosure. A few of the collapsed locations in the wall adjacent to the Pāhoa-Pohoiki Road are crossed regularly by pedestrians. Two Modern Period semi-circular planters with stacked cobble edges were constructed off of the wall just north of the opening in the southwest wall around the trunks of large trees.

Feature B

Feature B consists of a square concrete lined pit that is adjacent to an excavated pit located 1.3 meters southeast of the northwestern wall of Feature A at Site 30136 (see Figure 177). The feature measures 3 meters (northeast/southwest) by 1.7 meters (northwest/southeast). The square pit has 1.7 meter long concrete sides that measure 0.15 meters thick. The top of the concrete walls are level with the surrounding ground surface on the exterior, and in the interior consists of decomposing organic debris, gravel, and small cobble (Figures 182 and 183). The western half of the pit is filled higher than the shallower eastern corner where the concrete walls are exposed to a depth of 45 centimeters. Concrete chunks that have broken off of the top of the southwestern wall of the pit, possibly during the excavation of the adjacent pit, are lying on the interior fill along the southwest side. The exterior of the southwestern concrete wall is exposed due to the excavation of an adjacent oval pit that measures 1.5 meters (northwest/southeast) by 1.35 meters (northeast/southwest) and has a depth of 0.75 meters. The excavated pit has revealed that the upper concrete portion of the southwestern wall extends to a depth of 30 centimeters, and was poured atop a stacked wall composed of medium cobble that extends an additional 45 centimeters to the base of the pit, and possibly deeper.

4. Fieldwork

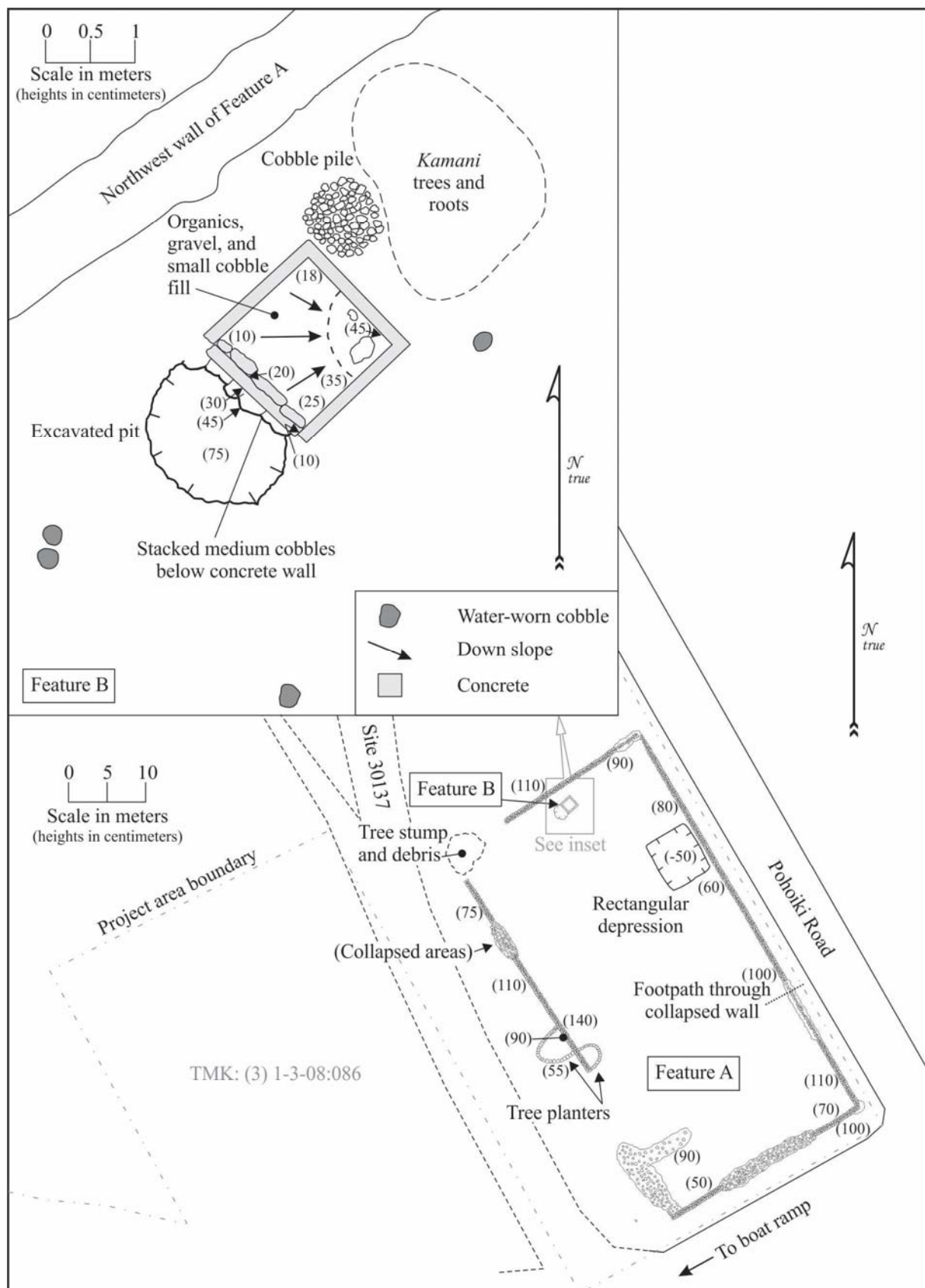


Figure 177. SIHP Site 30136 plan view.



Figure 178. SIHP Site 30136, southeastern corner of Feature A with Pohoiki Road on the right and the road to the boat ramp to the left, view to the west.



Figure 179. SIHP Site 30136, rubbish just outside the northwest wall of Feature A, view to the east.



Figure 180. SIHP Site 30136, southern opening of Feature A, view to the northwest.



Figure 181. SIHP Site 30136, intact portion of the southwestern wall of Feature A, view to the east.



Figure 182. SIHP Site 30136, Feature B privy consisting of a concrete lined square pit and excavated pit, view to the north.



Figure 183. SIHP Site 30136, Feature B showing the profile of the southwest exterior wall of the concrete square pit, view to the east.

A pile of small cobble that measures 80 centimeters in diameter by 25 centimeters tall, is located just north of the Feature B concrete square and may be a portion of the material excavated from the pit. There were five randomly distributed medium to large water-worn cobbles observed in the vicinity of Feature B. Roots from a cluster of *kamani* trees that are spread over a 3 by 5 meter area just north of the feature may be covering an additional component of the feature. The square concrete lined pit and the adjacent earthen pit likely functioned together as a privy.

Site 30136, based on its location and size, appears to be the enclosure shown on Historic maps from the late nineteenth century as Robert Rycroft's residence (see Figures 30-34). No evidence of the former structures once located inside the area enclosed by Feature A was discovered during the current study. Although Feature A is in the same location as the enclosure that surrounded the Rycroft residence, many alterations have occurred since then, and it is a remnant of its original form. The southwest wall was shown to have been stepped in two places, which created a narrower *mauka* end, as opposed to its current plain rectangular shape. The 1895 map also shows that a store was located just outside the northern end of the southwestern wall, but no evidence of a structure was observed in that location during fieldwork. Rycroft is known to have lived at Pohoiki from ca. 1877 to 1900. Oral information indicates that the Hale family moved into the house after Rycroft left, but that the structures were torn down in 1928 by John Hale's father (see Summary of Oral-Historical Information presented above). Photographs from the archives at the Lyman Museum show the Rycroft house standing at Pohoiki Bay in 1911 and 1916 (see Figures 37 and 38). Curiously the Feature A wall, shown on maps from 1893 and 1895, is not visible in the 1916 photograph. Feature B, the privy, is not shown on any of the Historic maps, but was likely associated with Rycroft's, or later tenure, at the site. Hale family members recalled a Japanese man named Togashi residing within the enclosed area during the mid-twentieth century, and thought the outhouse may have been built by him.

SIHP Site 30137

Site 30137 is a portion of an old *mauka/makai* road that once extended from Pohoiki Bay to the uplands of Pohoiki Ahupua'a (see Figures 46 and 47). The road is labeled on Historic maps as "Rycroft's Road" (see Figures 30-34). Site 30137 is known to have been built by Robert Rycroft between ca. 1881 and 1885 to access his coffee plantation in the uplands of Pohoiki/Keahialaka. Most of the roadway, with the exception of the portion across the current project area, has been superseded by the current alignment of the Pāhoa-Pohoiki Road. No physical evidence of the road remains within the current project area, but its former route across the property was plotted using the alignment shown on the maps from 1893 and 1895. An overlay of those maps onto the current project area map shows that Site 30137 once travelled through the current project area for approximately 120 meters, extending from Isaac Hale Beach Park between Site 30136 and the Hale residence to the Pāhoa-Pohoiki Road near Site 30132. The former route of the road is now mostly a mowed grass lawn a driveway leading to the Hoapili-Smith residence (Figures 184 and 185).

SIHP Site 30138

Site 30138 is a *mauka/makai* wall segment that begins three meters southwest of Site 30135 and fifteen meters southeast of Site 30134 (see Figures 46 and 47). The wall is described in two separate *mauka* and *makai* segments. The *mauka* segment is constructed along the southwest edge of the constructed cobble landform that surrounds the Site 30135 cistern. This segment measures 12 meters long and forms a terrace that helps to retain the cobbles located between the cistern and the wall. It is constructed of loosely stacked small and medium cobbles with a few large water-worn cobbles (Figure 186). This section the wall is partially collapsed, but at intact sections the wall averages 60 centimeters wide. Along its down-slope edge the wall stands up to 70 centimeters tall and on its upslope edge it is level with the cobble surface surrounding the cistern. The *mauka* section of wall terminates at collapse at either end. At its *makai* end is a 4.6 meter wide gap that separates it from the *makai* wall segment (Figure 187). It appears that the gap is the wall was created by a bulldozer, perhaps to allow access for vehicular traffic.

The *makai* wall segment extends in a southeast direction for 17 meters from the gap in the wall toward a junction of rough walls behind the Hale property (TMK: (3) 1-3-08:013). This wall is in poor condition with only the central portion of the wall being intact. At the intact portion the wall averages 0.7 meters wide and stands up to 1.5 meters tall. The wall is constructed with small to large cobbles mixed with water-worn cobbles. In the central intact section (seven meters *makai* of the gap) is a metal sign with the painted words "Wrong Way / Hoapili Smith / Aina / Please Kokua" (Figure 188). This sign is hanging on from a wire wrapped around a cut dead tree stump placed on the wall's surface. On the wall's surface below the dead tree stump are a few coral fragments, which appear to have been recently placed. Site 30138's core-filled construction and apparent relationship to Site 30135, a Historic Period cistern, suggest that it is contemporaneous with Rycroft's residency at Pohoiki. The specific function Site 30135 is unknown, but the wall likely served a boundary function, and was used to divide space near the Pohoiki boat landing and the Rycroft Estate.



Figure 184. SIHP Site 30137, former location of the Rycroft's Road, view to the northwest.



Figure 185. SIHP Site 30137, former location of the Rycroft's Road, view to the southeast.



Figure 186. SIHP Site 30138, portion of the *mauka* wall segment, view to the northeast.



Figure 187. SIHP Site 30138, gap in the wall separating the *mauka* and *makai* wall segments, view to the east.



Figure 188. SIHP Site 30138, sign on the *makai* wall segment, view to the northeast.

SIHP Site 30139

Site 30139 is an L-shaped alignment located roughly eighteen meters southwest of Site 30131 and thirty meters northwest of Site 2515 (see Figure 46). The site is situated at the base of a southwest facing ‘*a*’ landform and below a dense canopy of *waiwī*, *hala*, and vines. The alignment measures 1.9 meters by 1.5 meters and is constructed of loosely piled medium and large ‘*a*’ cobbles. The alignment utilizes the natural slope edge to form a rough enclosure that opens to the southeast. It has interior wall heights standing up to 60 centimeters tall and exterior wall heights ranging from 30 to 42 centimeters tall (Figure 189). The interior of the partially enclosed area consists of jumbled cobbles that slope toward the southwest. Approximately 2.2 meters northeast of the alignment is a rock pile, constructed near the top of the slope (Figure 190). It extends 1.5 meters down-slope and has an average width of 0.4 meters. It is constructed of approximately twenty medium and large loosely piled ‘*a*’ cobbles. The pile has an up-slope height of up to 32 centimeters and a down-slope height of up to 50 centimeters. Several plastic bags and pots were observed on the ground surface in the jungle surrounding the alignment. This, combined with the loose construction and isolated location, suggests that Site 30139, may have been constructed for Historic or Modern opportunistic (or illicit) agricultural activities.

SIHP Site 30140

Site 30140 is core-filled wall segment located in the eastern portion of the study area, roughly five meters southwest of Feature F of Site 2515 and thirty meters *mauka* of the coast (see Figures 46 and 84). Site 30140 measures 8.8 meters long by 0.67 meters wide and stands 0.67 to 0.74 meters tall (Figure 191). It extends northeast/southwest between the Kuamo‘o property (TMK: (3) 1-3-08:013) and Site 2515, and is situated just *mauka* of the Pohoiki coastal trail (Site 2530) on a slightly sloping ground surface of soil and cobbles. The wall has stacked medium to large cobbles along each edge that retain an interior fill of smaller cobbles. It is in good condition with only a small amount of collapse, although both ends do terminate in collapse short of the perpendicular walls at either end. A large *kamani* tree is growing out of its northeast end. It is likely that prior to collapse, the wall extended at each end to intersect with the other perpendicular walls. This wall appears to be the *mauka* wall of an enclosure shown of maps from the late nineteenth century (see Figures 30-34) between the Site 2515 enclosure and the enclosure surrounding the Pohoiki Courthouse and Jail (the current Kuamo‘o property).



Figure 189. SIHP Site 30139, L-shaped alignment exterior edge, view to the west.



Figure 190. SIHP Site 30139, rock pile northeast of the alignment, view to the northeast.



Figure 191. SIHP Site 30140, core-filled wall segment, view to the northwest.

SIHP Site 30141

Site 30141 consists of a two cobble alignments and an enclosure located west of the road easement that leads to the Kuamo‘o property (Figure 192) in the central/eastern portion of the project area (see Figure 46). The features are approximately fifty meters *mauka* of the 0.411-acre Kuamo‘o property (TMK: (3) 1-3-08:013). The site measures approximately 145 meters long (northwest/southeast) by 30 meters wide (northeast/southwest). The first alignment (Feature A) runs along the western side of the road easement, the second alignment (Feature B) extends perpendicular to the road easement, and the enclosure (Feature C) is situated west of Feature A and south of Feature B (Figure 193). Vegetation in the vicinity of Site 30141 consists of *laua‘e*, *hala*, *noni*, Christmas-berry, shoebutton holly, hog peanut, mango, pineapple, coconut, and octopus trees. All of the features appear to be of relative recent construction, and may date to the later Historic Period. Each of the features is described in detail below.

Feature A

Feature A is an alignment of loosely stacked cobbles constructed intermittently along the southwestern side of the 145 meter long dirt road easement that extends between Kapoho-Kalapana Road and the Kuamo‘o property (TMK: (3) 1-3-008:013) (see Figure 192). The alignment consists of mostly small to large ‘*a‘ā* cobbles with several water-worn cobbles observed next to the *mauka* portion of the road. The alignment has an average width of 60 centimeters and an average height of 40 centimeters tall (Figure 194). This alignment must have been built sometime after the road to the Kuamo‘o property was established during the first part of the twentieth century, and it was likely built after Moses Kuamo‘o purchased the property in ca. 1939. Mrs. Annie Kuakai (b. 1944), the niece of Moses Kuamo‘o, recalled that a portion of the driveway did have a wall along it when she was a child.

Feature B

Feature B is a curvilinear alignment that is constructed perpendicular to Feature A, located midway between Kapoho-Kalapana Road and the Kuamo‘o property (TMK: (3) 1-3-008:013). A 50 centimeter wide constructed gap in the Feature A alignment is located just south of the intersection with Feature B (Figure 195). The intersection of the two alignments consists of a contiguous ninety degree turn, and the two alignments are similar in construction style and size. The roughly southwest/northeast oriented Feature B alignment extends 30 meters to the west from the roadway (Figure 196), and consists of five aligned bracket ([]) shaped segments that form kerbing along the *makai* edge of an apparent pathway. The bracket shapes create four kerb-lined gaps between them that area spaced 4 to 8 meters apart

4. Fieldwork

(see Figure 193). The gaps measure 0.5 to 0.7 meters wide, and the kerbing that lines each side of each gap, extends roughly 1 meter *makai* from the main alignment (Figure 197). Feature B has an average width of 40 centimeters and an average height of 30 centimeters. The alignment is constructed with mostly medium to large 'a'ā cobbles. Some portions of the alignment are constructed with a single large cobble, and other areas are stacked three cobbles high by two to three cobbles wide. Three pineapple plants were observed a few meters south of the western end of the alignment, and a mango tree was observed at the eastern end.

Given the location and orientation of Feature B, the alignment may represent kerbing along the *makai* edge of a pathway that once extended southwest from the easement to the Kuamo'o property. This alignment is contiguous with, and has similar formal attributes to Feature A, and therefore is believed to have been built contemporaneously with, or subsequent to, the alignment along the driveway (post ca. 1939). The presence of pineapples near the feature, and the bracket shaped form of the segments that make up Feature B, seems to indicate that the individual alignments were garden beds created (or started, but not finished) along the *makai* edge of the walking path. Mrs. Kuakai vaguely recalled this feature, and thought that taro may have been grown at this location by her elder family members.



Figure 192. SIHP Site 30141, road entering the Kuamo'o property, view to the north.

Feature C

Feature C is an oval enclosure located fifteen meters south of the western end of Feature B, and twenty meters west of Feature A and the road easement (see Figure 193). The enclosure measures 7 meters (east/west) by 5.2 meters (north/south), has an average wall width of 0.8 meters that stand up to 1.2 meters tall. The exterior side of the enclosure wall is sloped from collapse, and shows very little intact stacking, but the stacking on the interior of the wall is mostly intact (Figure 198). A 2 meter section of the wall in the southwestern portion has completely collapsed and consists of a pile of scattered cobbles (Figure 199). The wall is constructed of small to large 'a'ā cobbles and a few small boulders. A 1 meter wide gap in the northwestern portion of the enclosure may have served as the entryway (Figure 200). The uneven interior surface of the enclosure is covered with jumbled cobbles that likely tumbled in from the walls. The construction style of the enclosure, and its close proximity to Features A and B, suggest it too is Late Historic or Modern in age. This may have been a planting area, with walls to keep pigs out, or it could have served as pen.

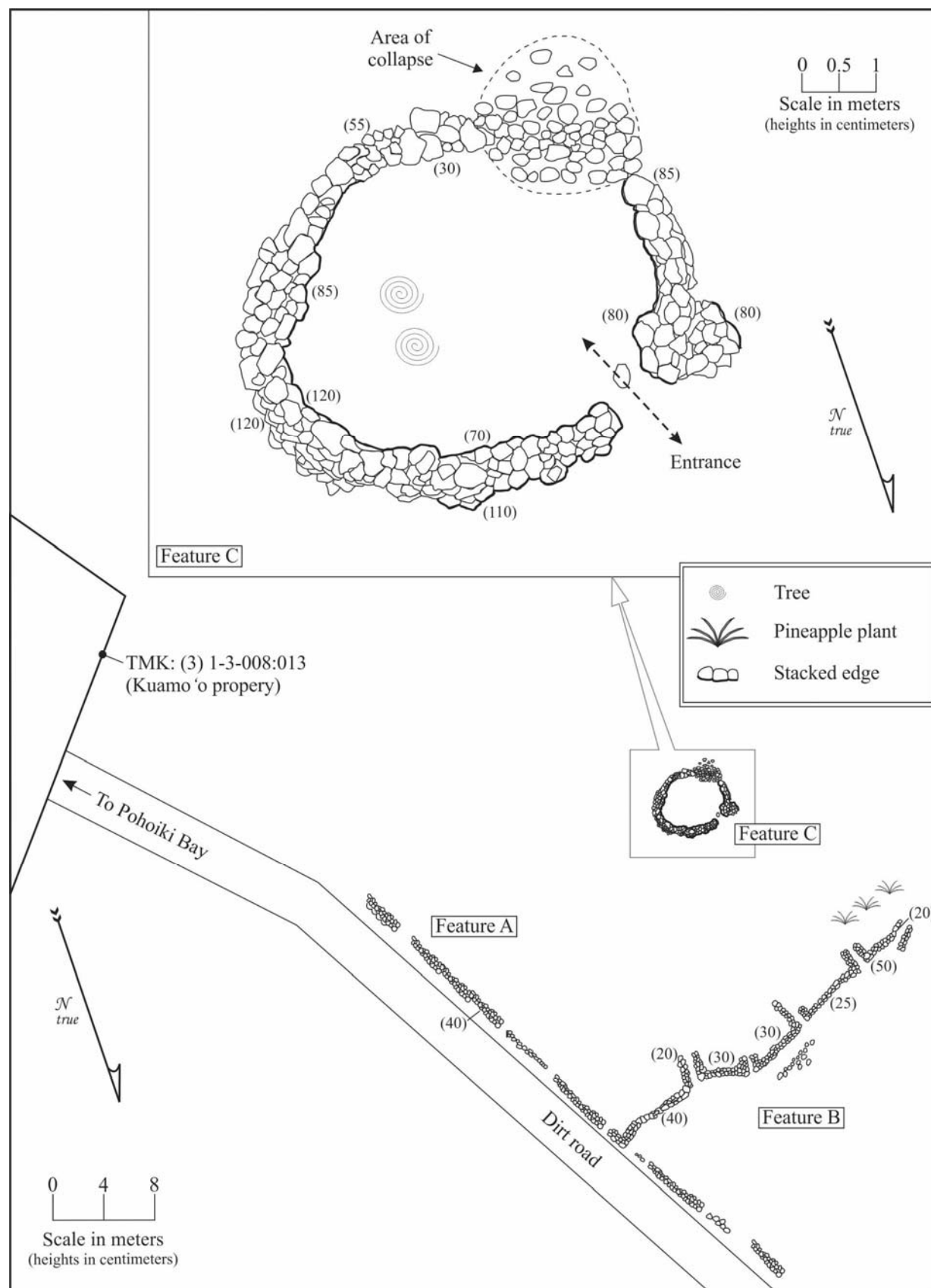


Figure 193. SIHP Site 30141 plan view.



Figure 194. SIHP Site 30141 Feature A, cobble alignment along the southwest side of the road easement, view to the northwest.



Figure 195. SIHP Site 30141, gap in the Feature A alignment at Feature B, view to the west.



Figure 196. SIHP Site 30141 Feature B, curvilinear east/west cobble alignment, view to the west.



Figure 197. SIHP Site 30141 Feature B, constructed gap in the alignment, view to the south.



Figure 198. SIHP Site 25304 Feature C, interior stacked edge on the eastern side of the enclosure, view to the east.



Figure 199. SIHP Site 25304 Feature C, oval enclosure (collapsed portion in foreground), view to the northeast.



Figure 200. SIHP Site 25304 Feature C, possible entryway to the enclosure, view to the south.

SIHP Site 30142

Site 30142 is a complex of agricultural features located just northeast of the center of the project area (see Figure 46). The complex is situated on a relatively gentle slope with undulating bedrock outcrops, and is bordered to the north by the sloped edge of a more recent 'a 'ā lava flow. Vegetation within the site is extremely dense and consists of *kamani*, *noni*, *hala*, strawberry guava, *laua* 'e, octopus tree, shoebutton holly, *Phylodendrum* sp., and other vines. The features consist of fifteen linear cobble piles (five with stacking), nine mounds, and one modified depression (Table 4 and Figure 201). Two water-worn cobbles were noted in the central portion of the site, but otherwise only modern debris was observed. The water-worn cobbles could represent a possible trail route, as a stepping-stone trail alignment (Site 30144) extends inland from the coast to the southwest of Site 30142, with a branch potentially extending to the agricultural complex. The *makai* portion of the site is partially enclosed by a more recently constructed wall (Site 30143).

The features recorded at Site 30143 appear to be the by-product of planting area preparation, which consisted of clearing cobbles from low areas between bedrock outcrops, and piling, or sometimes stacking the cobbles to the side, usually on top of the bedrock contours. The site occurs on the youngest (p4y) lava substrate within the property, but is situated at the base of a southwest facing slope that represents the transition to the oldest (p3) lava flow located inland of Pohoiki Bay (see Figure 17). This area, given the proximity to the older lava, may contain greater soil development than elsewhere on the younger flow, as formal agricultural features such as Site 30142 were not encountered elsewhere on this (p4y) 'a 'ā lava substrate. Mrs. Kuakai thought that bananas and taro may have been formerly grown here. Each of the features at Site 30142 are described in detail below and listed in Table 4. The locations of the features and the soil areas that were potentially used for planting are shown in Figure 201.

Feature 1

Feature 1 is a curvilinear cobble pile located in the central portion Site 30142 (see Figure 201). The cobble pile is constructed on a *mauka/makai* oriented bedrock formation. The pile consists of small to large cobble, and measures 13.5 meters long by an average width of 0.5 meters, and has an average height of 0.35 meters (Figure 202). The bedrock formation beneath the pile stands 70 to 80 centimeters tall on the eastern side, and 30 centimeters tall on the west side, and continues an additional 7 meters beyond the piled cobbles in the *makai* direction. A level, roughly 20 meter long (northeast/southwest) by 7 meter wide (northwest/southeast) possible planting area was observed east of the linear pile.

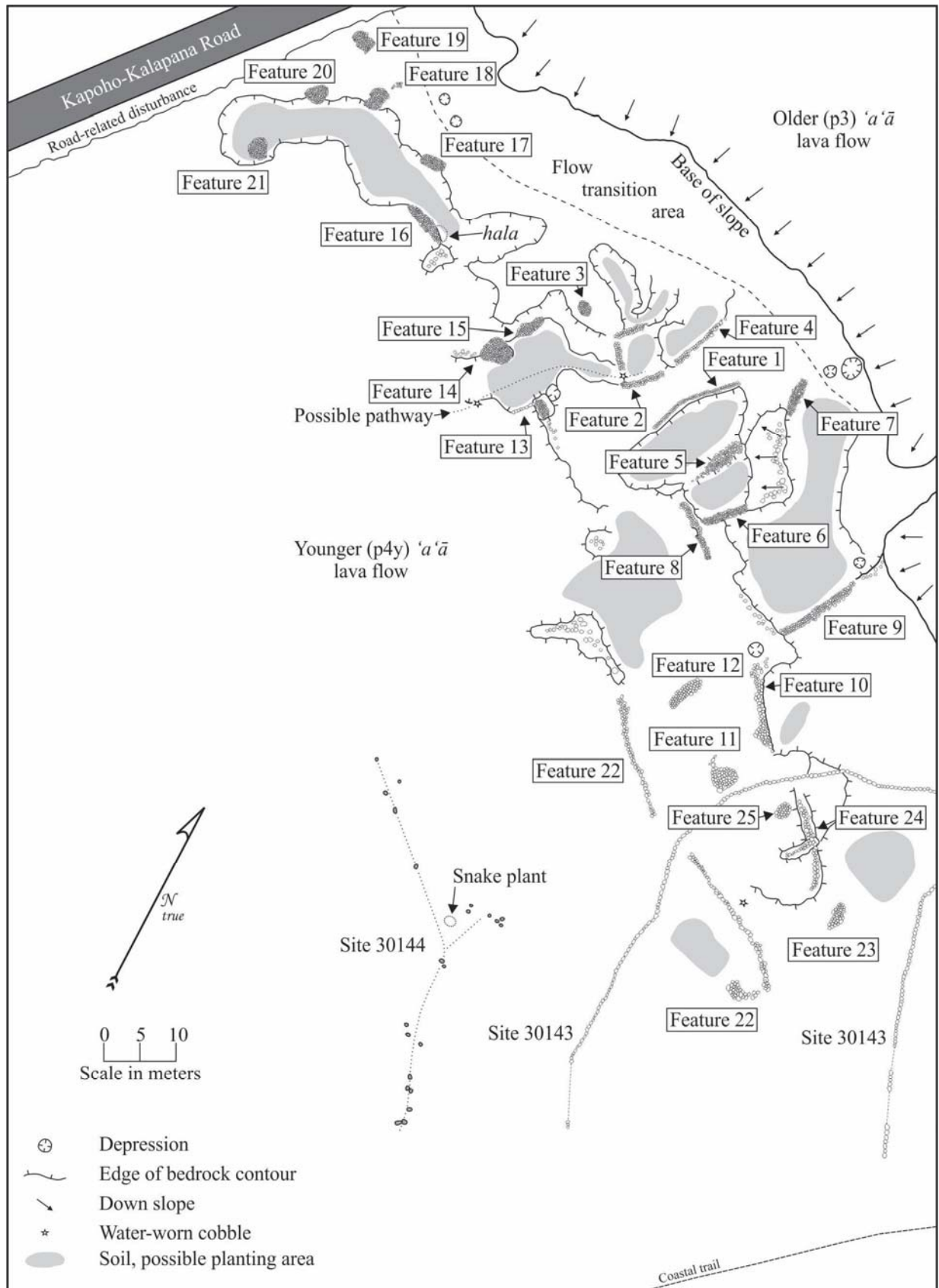


Figure 201. SIHP Site 30142 plan view.

Table 4. Features of SIHP Site 30142.

<i>Feature No.</i>	<i>Feature Type</i>	<i>Feature Shape</i>	<i>Size (in meters)</i>
1	Cobble pile	Linear	13.5 x 0.5
2	Modified depression	Rectangular	9.4 x 6
3	Mound	Oval	2.6 x 1.6
4	Cobble pile	Linear	10.7 x 1.4
5	Cobble pile	Linear	9.4 x 2
6	Cobble pile	Linear	6.5 x 1.5
7	Cobble pile	Linear	6 x 2.2
8	Cobble pile with stacking	Linear	10 x 2
9	Cobble pile	Linear	9 x 2
10	Cobble pile with stacking	Linear	10 x 2.3
11	Mound	Irregular	4.1 x 3.8
12	Cobble pile	Linear	3.4 x 6
13	Cobble pile and wall segment	Linear/L shaped	4 x 2.4
14	Mound	Irregular	4.6 x 4.2
15	Cobble pile	Linear	4.6 x 2
16	Cobble pile with stacking	Linear	6.2 x 2.3
17	Mound	Irregular	3.3 x 2
18	Mound	Irregular	3.7 x 2.7
19	Mound	Irregular	3 x 2
20	Mound	Irregular	3.5 x 3.1
21	Mound	Irregular	3 x 3
22	Cobble pile with stacking	Linear	46 x 0.8
23	Cobble pile	Linear	4.3 x 2
24	Cobble pile	Linear	13 x 1.5
25	Mound	Irregular	2.7 x 2.7



Figure 202. SIHP Site 30142 Feature 1, linear cobble pile, view to the southwest.

Feature 2

Feature 2 is a modified depression edge located in the central portion of Site 30142, four meters east of Feature 1 (see Figure 201). The feature consists of piled small to large cobbles on the southeast, southwest, and northwest sides of a rectangular shaped depression. The modification on the southeastern side of the depression consists of a 6 meter long linear cobble pile with an average width of 1 meter, and average height of 0.55 meter. The modification on the southwest side consists of a 9.4 meter long cobble pile with an average width of 1.8 meters wide, and an average height of 0.4 meters (Figure 203). The modification to the northwestern side of the depression is minimal, consisting of several scattered cobbles. A gap that measures 1.5 meters wide was observed in the south corner where the southeastern and southwestern modified edges meet. In the center of the gap a water-worn cobble was observed (Figure 204).



Figure 203. SIHP Site 30142, cobble pile on the southwest side of Feature 2 (modified depression), view to the southwest.

Feature 3

Feature 3 is a stacked mound located in the central portion of Site 30142, approximately five meters west of Feature 2 (see Figure 201). The mound measures 2.6 meters (northwest/southeast) by 1.6 meters (northeast/southwest), and stands 1.1 meters tall. The mound has an oval shape, and is constructed on a relatively level, elevated bedrock outcrop (Figure 205). The mound is constructed with small to large, mostly 'a'ā cobbles, and is in good condition, with no collapse observed.

Feature 4

Feature 4 is a linear cobble pile located in the central portion of Site 30142, just north of Feature 2 (see Figure 201). The linear pile is constructed on the northern continuance of the same *mauka/makai* oriented bedrock contour as the southeastern edge of the modified depression, Feature 2. The linear pile consists of mostly small to medium cobbles, with a few large cobbles. The feature measures 10.7 meters long and has an average width of 1.4 meters, and an average height of 0.75 meters tall (Figure 206). To the west of Feature 4 is a low, level soil area that measures roughly 10 meters long by 4 meters wide, and may have been used as a planting area.



Figure 204. SIHP Site 30142, water-worn cobble in a gap of Feature 2, view to the south.



Figure 205. SIHP Site 30142 Feature 3, mound, view to the southeast.



Figure 206. SIHP Site 30142 Feature 4, linear cobble pile, view to the northwest.

Feature 5

Feature 5 is a linear cobble pile located in the central portion of Site 30142, seven meters east of Feature 1 (see Figure 201). The linear pile measures 9.4 meters long overall (north/south), however, the majority of the cobbles are piled within the northern 5.5 meters, and the southern end consists of a few cobbles piled on an elevated bedrock contour. The feature has a maximum width of 2 meters, and a maximum height of 1.3 meters (Figure 207). Possible planting areas were observed to the east and west of the feature.

Feature 6

Feature 6 is a linear cobble pile located in the central portion of Site 30142, five meters east of Feature 5 (see Figure 201). The linear pile measures 6.5 meters long (northeast/southwest) by 1.5 meters wide, and stands 0.7 meters tall (Figure 208). This pile bridges a gap between two tall bedrock formations, and is constructed with small to medium cobbles with a few large cobbles. Possible planting areas were observed to the northwest and southeast of the feature.

Feature 7

Feature 7 is a linear cobble pile located in the central portion of Site 30142, seven meters north of Feature 5 (see Figure 201). The linear pile measures 6 meters long (north/south) by 2.2 meters wide, and stands 1.1 meters tall (Figure 209). The feature consists of piled small and medium cobbles with a few large cobbles constructed along a *mauka/makai* oriented bedrock formation. A depression with possible modification is located 5.2 meters to the northwest.

Feature 8

Feature 8 is a linear cobble pile with a section of vertical stacking located in the central portion of Site 30142, two meters *makai* of, and perpendicular to Feature 6 (see Figure 201). The feature measures 10 meters long (northwest/southeast) and consists of linear cobble piles on both ends that are separated by a 2 meter long by 1.4 meter tall C-shaped stacking in the center that opens to the south. The piled cobbles west of the stacking measures 3.8 meters long by 2 meters wide and stands 0.75 meters tall (Figure 210). The piled cobbles east of the stacked central portion measures 4.3 meters long by 2 meters wide and stands 0.55 meters tall (Figure 211). The stacking within the cobble pile may be a recent modification, possibly associated with illicit growing activities (plastic pots and grow bags were observed in this area).



Figure 207. SIHP Site 30142 Feature 5, linear cobble pile, view to the southwest.



Figure 208. SIHP Site 30142 Feature 6, linear cobble pile, view to the southwest.



Figure 209. SIHP Site 30142 Feature 7, linear cobble pile, view to the north.



Figure 210. SIHP Site 30142, northwest end of Feature 8 linear cobble pile, view to the southeast.



Figure 211. SIHP Site 30142, stacking on the southwest side in the center of Feature 8, view to the northeast.

Feature 9

Feature 9 is a linear cobble pile located in the central portion of Site 30142, five meters north of Feature 10 (see Figure 201). The cobble pile measures 11 meters long (north/south) by 2 meters wide, and stands 0.9 meters tall on the west side and 0.5 meters tall on the east side. The pile is composed of small to large cobbles that are placed on a natural bedrock contour (Figure 212). To the west is a level area, possibly used as a planting area that extends 30 meters to the north. A depression that measures 3 meters in diameter by 1.2 meters deep, is located approximately 3 meters south of Feature 9 (Figure 213).

Feature 10

Feature 10 is a linear cobble pile with a stacked edge located in the southeastern portion of Site 30142, five meters south of Feature 9 (see Figure 201). The linear feature is constructed on the southern continuation of the same bedrock contour that Feature 9 is constructed on to the north. Like the contour on which it is constructed, Feature 10 is curvilinear, and is oriented northwest/southeast. The feature measures 10 meters long, and has a maximum width of 2.3 meters in its central portion. The eastern edge of the linear feature consists of large cobbles that have been loosely stacked to a height of 1 meter tall (Figure 214). The western side of the feature consists of piled cobbles that stand an additional 60 centimeters above the top of the stacking on the east side. A small level area to the east of the feature may have been used as a planting area.

Feature 11

Feature 11 is a mound located in the southeastern portion of Site 30142, five meters southwest of Feature 10 (see Figure 201). The mound consists of piled small to large cobbles with a few small boulders on a relatively level ground surface (Figure 215). The mound has an irregular shape, and measures 4.1 meters (north/south) by 3.8 meters (east/west) and stands 1.4 meters tall.



Figure 212. SIHP Site 30142 Feature 9, linear cobble pile, view to the northeast.



Figure 213. SIHP Site 30142, depression between Features 9 and 10, view to the east.



Figure 214. SIHP Site 30142 Feature 10, stacked linear cobble pile, view to the southeast.



Figure 215. SIHP Site 30142 Feature 11, mound, view to the southwest.

Feature 12

Feature 12 is a linear cobble pile located in the southeastern portion of Site 30142, seven meters west of Feature 10 (see Figure 201). The linear pile measures 6 meters long (north/south) by a maximum width of 3.4 meters wide at the southern end, and stands 1.1 meters tall (Figure 216). The feature consists of mostly large cobbles piled on a level bedrock outcrop.



Figure 216. SIHP Site 30142 Feature 12, linear cobble pile, view to the north.

Feature 13

Feature 13 is a linear cobble pile with a stacked wall segment extending perpendicularly from its western end. The feature is located in the central portion of Site 30142, seven meters east of Feature 14 (see Figure 201). The piled portion of the feature measures 4 meters long by 2.4 meters wide, and stands 1 meter tall. The cobbles are piled on top of an elevated bedrock contour that is oriented northwest/southeast. The stacked wall portion is constructed off of the northwestern end of the bedrock contour, and spans a low area between it and another bedrock formation to the southwest (Figure 217). The stacked wall measures 2.8 meters long by 0.3 meters wide, and stands 0.7 meters tall. It consists of large cobbles stacked up to 3 courses tall, and is a single cobble wide.

Feature 14

Feature 14 is an irregular shaped mound located in the central portion of Site 30142, 1.5 meters south of Feature 15 (see Figure 201). The feature measures 4.6 meters (northeast/southwest) by 4.2 meters (northwest/southeast) and stands 1.2 meters tall (Figure 218). The feature consists of small to large cobbles piled on a bedrock contour that forms the western boundary of a level, possible planting area. At the north end of the feature is an intact stacked edge that stands 0.8 meters tall, which suggests that the feature, prior to collapsing, may have had more intact stacking around its perimeter.

Feature 15

Feature 15 is a linear cobble pile located in the central portion of Site 30142, 1.5 meters north of Feature 14 (see Figure 201). The linear pile measures 4.6 meters long by 2 meters wide, and stands 1.1 meters tall on the east side, and 0.4 meters tall on the west side (Figure 219). The feature is constructed upon the same bedrock contour as Feature 14, to the south, and borders the western side of a level, possible planting area.



Figure 217. SIHP Site 30142 Feature 13, stacked wall segment, view to the east.



Figure 218. SIHP Site 30142 Feature 14, mound, view to the north.



Figure 219. SIHP Site 30142 Feature 15, linear cobble pile, view to the northeast.

Feature 16

Feature 16 is a linear cobble pile with stacked edges located in the northwestern portion of Site 30142, six meters south of Feature 17 (see Figure 201). The feature measures 6.2 meters long (east/west) by 2.3 meters wide, and stands 0.8 meters tall (Figure 220). Feature 16 is constructed on a bedrock contour that continues to the southwest and to the southeast. The eastern end of the north edge of the feature consists of vertical, loosely stacked small, medium and mostly large cobbles. A *hala* tree is growing from the north stacked edge at the eastern end of the feature. A level, possible planting area is situated north of the feature, and it extends to the west.

Feature 17

Feature 17 is an irregular shaped mound located in the northwestern portion of Site 30142, six meters north of Feature 16 (see Figure 201). The feature is constructed on an east/west oriented bedrock contour and measures 3.3 meters long by 2 meters wide, and stands 1.1 meters tall (Figure 221). The mound consists of piled small and medium cobbles, with a few large cobbles. A level, possible planting area is located to the south of the feature, and extends to the west.

Feature 18

Feature 18 is an irregular shaped mound located in the northwestern portion of Site 30142, nine meters west of Feature 17 (see Figure 201). The feature measures 3.7 meters (northwest/southeast) by 2.7 meters (northeast/southwest) and stands 1.1 meters tall on the downslope side, and 0.6 meters tall on the upslope side (Figure 222). The mound is constructed on the same bedrock contour as Feature 17 to the east, and Feature 20 to the west, which is also the northern boundary of a level, possible planting area that is oriented in an east west direction in this portion of Site 30142.

Feature 19

Feature 19 is an oval shaped mound located in the northwestern portion of Site 30142, five meters northwest of Feature 18 (see Figure 201). The feature measures 3 meters long (northwest/southeast) by 2 meters wide (northeast/southwest), and stands 1.2 meters tall on the downslope side, and 0.9 meters tall on the upslope side (Figure 223). The mound consists of mostly small and medium cobbles, and is constructed on moderately sloped terrain *mauka* of the level area that may have served as a planting area in this portion of Site 30142. The feature is 1.3 meters *makai* of disturbance associated with Kapoho-Kalapana Road.



Figure 220. SIHP Site 30142 Feature 16, linear cobble pile, view to the southeast.



Figure 221. SIHP Site 30142 Feature 17, mound, view to the north.



Figure 222. SIHP Site 30142 Feature 18, mound, view to the northwest.



Figure 223. SIHP Site 30142 Feature 19, mound, view to the north.

Feature 20

Feature 20 is an irregular shaped mound located in the northwestern portion of Site 30142, five meters southwest of Feature 18 (see Figure 201). The feature measures 3.5 meters (east/west) by 3.1 meters (north/south), and has a downslope height of 1.4 meters, and an upslope height of 0.7 meters tall (Figure 224). The mound consists of mostly small cobbles, with a few medium and large cobbles piled on the same bedrock contour that Features 18 and 17 are constructed upon. The contour is the northern borders of the level, possible planting area in this portion of Site 30142.

Feature 21

Feature 21 is an irregular shaped mound located in the northwestern portion of Site 30142, eight meters south of Feature 20 (see Figure 201). The feature measures 3 meters by 3 meters, and has stacked sides that stand 0.5 meters tall (Figure 225). From the top of the stacking, the upper surface of the mound has a gently sloped dome shape. The mound consists of mostly small cobbles on the upper surface, and the edges are stacked with medium to large cobbles. This mound was constructed within the level, possible planting area, just north of the bedrock contour that defines its southern edge.

Feature 22

Feature 22 is a linear cobble pile located partially within Site 30143 (enclosure), in the southeastern portion of Site 30142, six meters southwest of Feature 12 (see Figure 201). The feature measures 46 meters long (northwest/southeast), and has an average width of 0.8 meters and an average height of 0.7 meters. The western side of the linear pile is stacked in places, and is taller (0.9 meters) than the eastern side (0.6 meters) due to the natural bedrock contour that the cobbles were piled upon. The linear pile was bisected by the subsequent construction of 30143 (enclosure), which created a 7 meter gap in the center of 30136, likely due to the pirating of cobbles to construct the enclosure wall.

Feature 23

Feature 23 is a linear cobble pile located within Site 30143 (enclosure), in the southeastern portion of Site 30142, four meters east of Feature 24 (see Figure 201). The feature measures 4.3 meters (northeast/southwest) by 2 meters wide, and stands 0.8 meters tall (Figure 226). The linear pile was constructed on a bedrock contour that extends beyond the feature to the northwest. The feature consists of small to large cobbles, with loose stacking observed on the northwestern edge. A level, possible planting area was observed approximately five meters north of Feature 23.

Feature 24

Feature 24 is a T-shaped linear cobble pile located within Site 30143 (enclosure), in the southwestern portion of Site 30142, two meters east of Feature 25 (see Figure 201). The northwest/southeast linear pile measures 13 meters long (northwest/southeast) by 1.5 meters wide, and stands 0.9 meters tall on the northeast side and 0.5 meters tall on the southwestern side (Figure 227). The feature consists of small to large cobbles and a few small boulders that were piled on a northwest/southeast oriented bedrock contour. In the central portion of its span, a 5 meter long, perpendicular linear pile extends along a bedrock contour to the southwest. This linear pile measures 0.9 meters wide and stands 0.5 meters tall above the bedrock, and consists of mostly large cobbles.

Feature 25

Feature 25 is an irregular shaped mound located within Site 30143 (enclosure), in the southeastern portion of Site 30142, two meters west of Feature 24 (see Figure 201). The feature measures 2.7 meters by 2.7 meters and stands 0.85 meters tall (Figure 228). The mound consists of large cobbles with a few small and medium cobbles present as well, piled on relatively level rocky ground.



Figure 224. SIHP Site 30142 Feature 20, linear cobble pile, view to the southwest.



Figure 225. SIHP Site 30142 Feature 21, mound, view to the southwest.



Figure 226. SIHP Site 30142 Feature 23, linear cobble pile, view to the southeast.



Figure 227. SIHP Site 30142 Feature 24, linear cobble pile, view to the northwest.



Figure 228. SIHP Site 30142 Feature 25, mound, view to the southeast.

SIHP Site 30143

Site 30143 is a large irregular-shaped enclosure located in the eastern portion of the study area just inland of the Pohoiki coastal trail (Site 2530) near the southwestern edge of the Kuamo‘o property (see Figure 46). The site occupies a relatively flat ground surface beneath a dense canopy of *kamani*, *hala*, *noni*, and vines, with a single mango tree also present. The enclosure (Figure 229) measures 55 meters long by 45 meters wide and has an associated wall segment located roughly three meters from its northeast corner that extends northeast for 9.7 meters along a meandering path (Figure 230). The wall segment is roughly 40 centimeters wide, and stands no more than 60 centimeters tall. Recently milled lumber was found resting on this segment of wall.

The large enclosure does not have a *makai* wall, and is open to the southeast (facing the ocean). The enclosing wall is crudely constructed and mostly collapsed with only some remnant stacking. At intact sections the wall has an average width of 0.4 meters and heights along its edges vary from 0.5 to 0.9 meters (Figure 231). The wall consists of loosely dry-stacked medium to large cobble, except in the northeast corner where the construction style transitions to loosely core-filled. This core-filled section of the wall averages 0.7 meters wide and stands up to 0.7 meters tall (Figure 232). A collection of modern food cans have been discarded in this corner of the enclosure (Figure 233). The interior of the enclosure is fairly flat with a jumbled surface of ‘*a‘ā* and *pāhoehoe* cobbles, a few areas of piled cobbles, and numerous large trees and vines growing throughout. The wall partially encloses the *makai* portion of Site 30142 and appears to have been built after the construction of the agricultural complex, as it bisects at least two of the walls of that complex (Features 22 and 24/10; see above). Modern debris within the enclosure including plastic pots, cans, a metal cage, body board and fins, plastic bottles, indicates recent camping and growing activities (Figures 234 and 235).

This enclosure is unlike the other agricultural features in the area, and its construction style suggests later Historic or Modern origins (Site 30143 was certainly built after the features of Site 30142 that it encloses). The construction style is similar to that observed at Site 30141, and it may be that the enclosure was built during the middle of the nineteenth century and that its function is associated with the use of the nearby Kuamo‘o property (Mrs. Annie Kuakai did not recall features being present in this area during her childhood). Whatever the case, the specific use and purpose of construction at Site 30143 is unclear. The enclosure seems intended to define space, and either to control movement into or out of that space. It is possible that prior to the coastal subsidence at Pohoiki the enclosure had a *makai* wall that is no longer present.

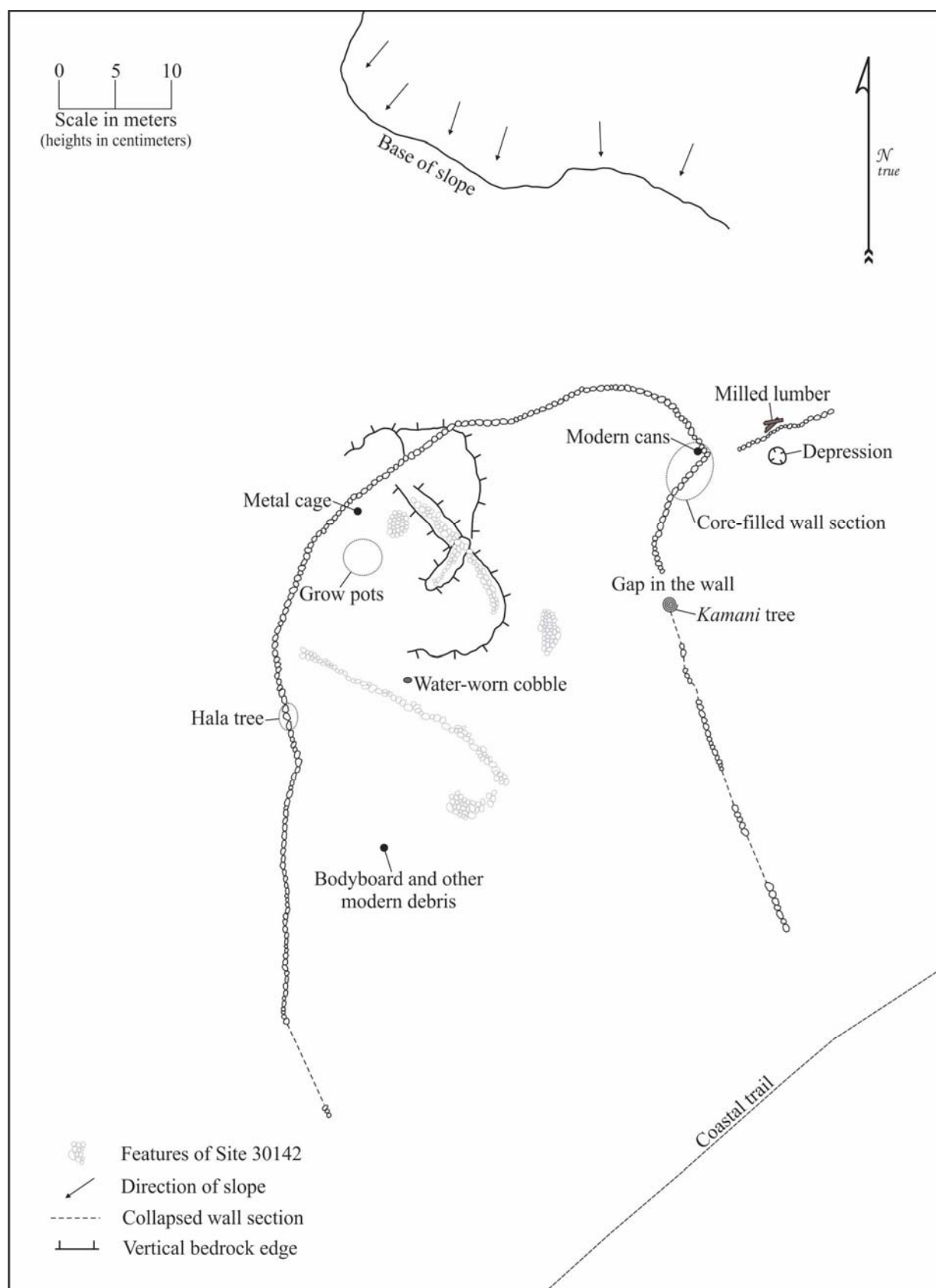


Figure 229. SIHP Site 30143 plan view.



Figure 230. SIHP Site 30143, wall segment northeast of the enclosure, view to the northeast.



Figure 231. SIHP Site 30143, intact portion of the enclosing wall, view to the northwest.



Figure 232. SIHP Site 30143, intact northeast corner of the enclosure, view to the northeast.



Figure 233. SIHP Site 30143, modern debris (metal cans) within the enclosure, overview.



Figure 234. SIHP Site 30143, modern debris (metal cage) within the enclosure, view to the northwest.



Figure 235. SIHP Site 30143, modern debris within the enclosure, view to the northwest.

SIHP Site 30144

Site 30144 is a stepping-stone trail remnant located in the central portion of the study area, just west of Site 30143 (see Figure 46). The trail is situated on a slightly undulating 'a'ā lava flow beneath a dense canopy of *kamani*, *hala*, *noni*, and shoebutton holly. The trail measures 42 meters long and runs in a *mauka/makai* (roughly northwest/southeast) direction to the southwest of site 30142 and 30143 (see Figure 201). The trail consists of rounded, flat, water-worn cobbles and some angular water-worn cobbles that average 20 to 40 centimeters across (Figure 236). The stepping stones were found in clusters that were separated by gaps where neither water-worn cobbles, nor any other trail construction (i.e., kerbing or surface leveling), was observed. Within the clusters, the stones appear displaced, and are not aligned, but rather scattered about, likely due to disturbances from pigs and tree root upheaval (Figure 237).

The *makai* end of the trail is located thirty-two meters *mauka* of the Pohoiki coastal trail (Site 2530). The first section consists of nine stepping stones placed 0.1 to 4 meters apart over a 14 meter span. A cluster of 2 stones was observed after a gap of 8 meters in the *mauka* direction, followed by a single stone observed after a 13 meter gap. At the *mauka* end of the traceable section of trail, after a gap of 7.8 meters, was a cluster of four stepping stones spaced 2 to 4 meters apart over an 8 meter span. Another cluster of water-worn cobbles was discovered seven meters northeast of the aforementioned northwest/southeast oriented trail segment. This cluster consists of 6 stones that are spaced 0.2 to 3.2 meters apart, and possibly represents a branch of the trail that heads to the northeast. Observed between this cluster and the main trail route, was a stand of snake plant (*Sansevieria trifasciata*).



Figure 236. SIHP Site 30144, portion of the *makai* stepping stone trail, view to the southeast.

SIHP Site 30145

Site 30145 is a core-filled wall segment located in the central portion of the study area roughly seventy meters *makai* of the Kalapana-Pohoiki Road right-of-way (see Figure 46). The wall is situated on a fairly level ground surface with several 'a'ā undulations and depression in the vicinity. A dense growth of *hala* surrounds the wall, which is oriented lengthwise in a northwest/southeast direction and measures 10 meters long by 0.6 meters wide and up to 0.7 meters tall (Figure 238). The wall has stacked medium to large cobbles along each edge that retain an interior fill of smaller cobbles (Figure 239). There are two gaps within the wall segment; one at the center which appears to be constructed, and the other at the northwest end which appears to be collapsed rather than constructed.



Figure 237. SIHP Site 30144, stepping stones displaced by roots at the *makai* end of the trail.

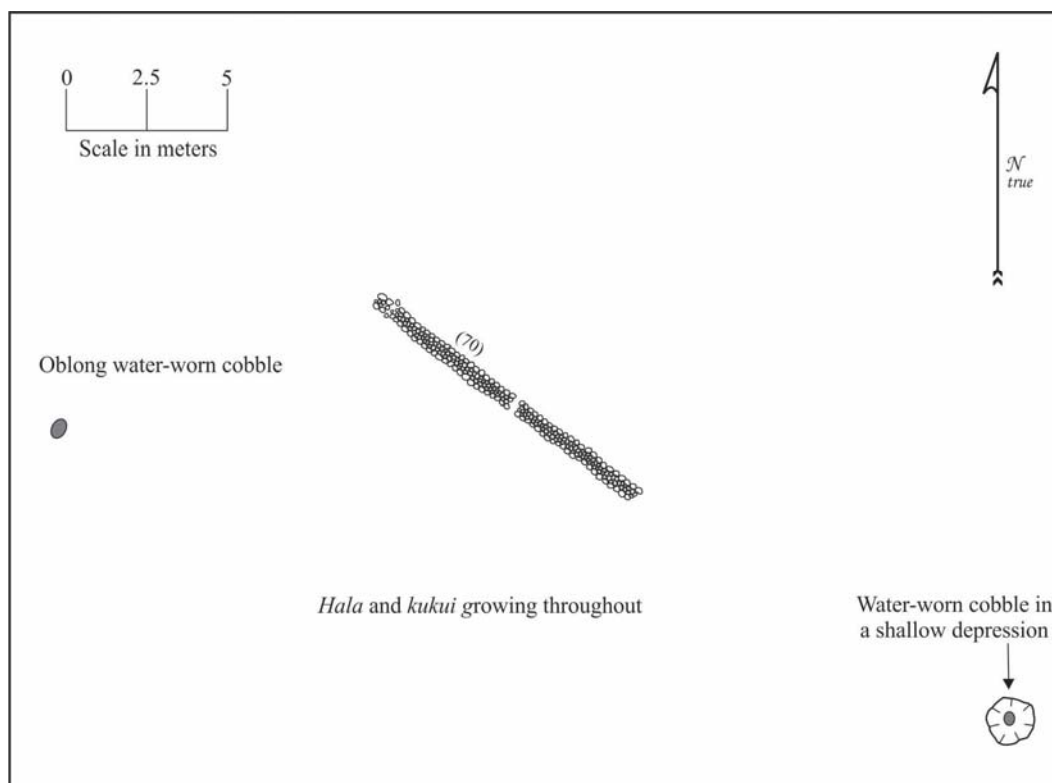


Figure 238. SIHP Site 30145 plan view.



Figure 239. SIHP Site 30145, core-filled wall segment, view to the southwest.

Two water-worn cobbles were observed near the Site 30145 wall (see Figure 238). The first was observed in a depression in the 'a'ā located roughly thirteen meters southeast of the wall (Figure 240). The water-worn cobble measures 23 centimeters long by 22 centimeters wide by 13 centimeters thick. The second water-worn cobble was observed on the ground surface ten meters northwest of the wall. This second cobble measures 39 centimeters long by 15 centimeters in diameter (Figure 241). The function of the Site 30145 wall is not clear based solely on surface observations, neither is the wall's association with the two water-worn cobbles. It may be that this site represents formal agricultural use of the Site 30150 informal agricultural complex (see description below) that surrounds it. The core-filled construction style of the wall, however, suggests that the use of this site occurred during the Historic Period when the agricultural use of Site 30150 is thought to have been waning.

SIHP Site 30146

Site 30146 is a wall located in the central portion of the study area, roughly eighty meters southwest of Site 30145 and 100 meters northeast of Site 2516 (see Figure 46). The wall is fairly straight, running in a north south direction for 19.7 meters (Figure 242). It is constructed of stacked medium to large cobbles with an average width of 75 centimeters and an average height of 80 centimeters (Figure 243). It seems to be constructed along an arbitrary boundary, as it runs straight, up and down natural undulations. The wall is in fairly good shape, with collapse occurring at its central and southern portions. Land clearing (possibly by a bulldozer) is present along the east (*makai*) edge of the wall, near its central and northern portions. The land clearing extends to the east (Figure 244) all the way to the Pohoiki coastal trail (the Old Government Road; Site 2530). Where the wall abuts the cleared area it appears that some of the cobbles were fairly recently fractured and then used in the wall's construction (possibly indicating that the wall was breached by a bulldozer and later rebuilt, or that that the wall was built subsequent to the land clearing activity). The north end of the wall is flattened and collapsed, but the south end is intact and terminates abruptly to the south of the cleared area (Figure 245). No cultural material was observed at Site 30146. The relationship of the wall to the cleared land suggests fairly recent origins or reuse of Site 30146. The vegetation within the cleared area has barely grown back, leaving it one of the least vegetated areas in the entire forested portion of the study parcel. The ground surface to the east of the wall seems mechanically leveled, and portions of the wall appear rebuilt, but large *hala* trees growing on the southern portion of the wall may suggest that it is older and perhaps served a similar function to Site 30145. The specific function of the wall is not clear based solely on its surface attributes.



Figure 240. SIHP Site 30145, water-worn cobble in depression, view to the northwest.



Figure 241. SIHP Site 30145, water-worn cobble on the ground surface northwest of the wall.

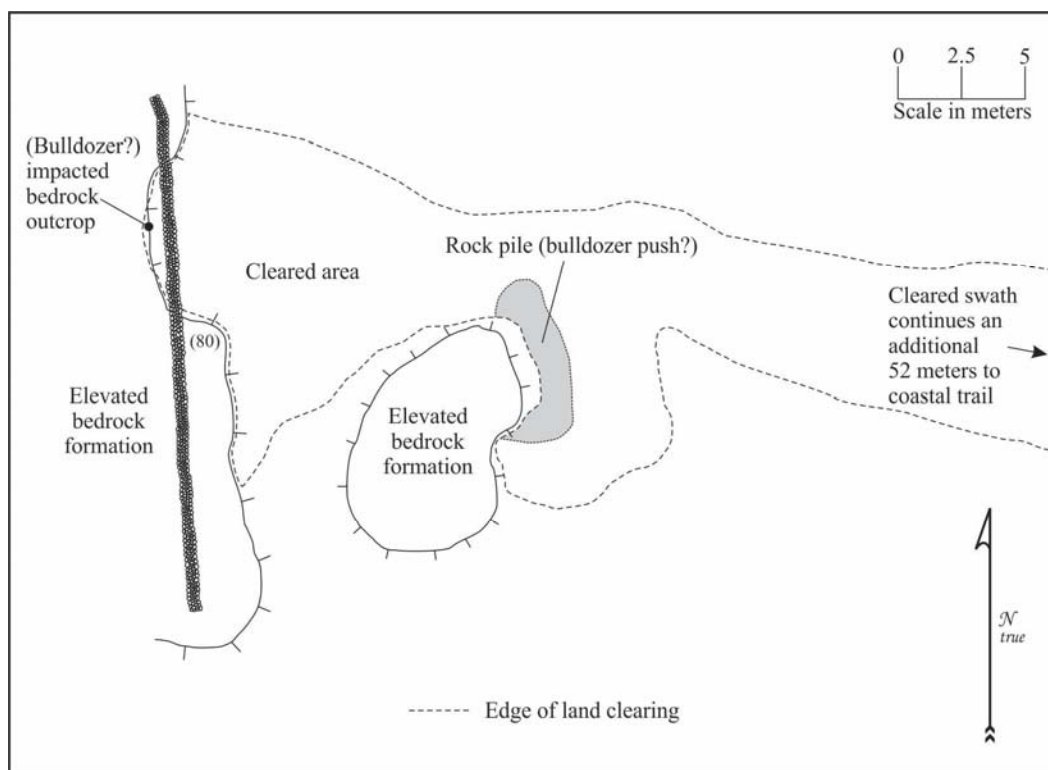


Figure 242. SIHP Site 30146 plan view.



Figure 243. SIHP Site 30146, wall running in a north/south direction, view to the west.



Figure 244. SIHP Site 30146, cleared area east (*makai*) of the wall, view to the south.



Figure 245. SIHP Site 30146, south end of the wall, view to the northwest.

SIHP Site 30147

Site 30147 is a brackish-water pond located adjacent to the southwestern boundary of the study parcel, roughly four meters *makai* of the Old Government Road (Site 2350) and forty-five meters inland of the coast (see Figures 46 and 125). The pond is located in a bedrock depression situated within in a grove of coconut trees (Figure 246). Chainsaw cut marks on some of the trees near the pond indicate fairly recent clearing activities at the site. The oval-shaped pond measures 7.6 meters long by 5 meters wide by 0.3 meters deep. The pond is spring fed, and has water levels that vary with the tide. The edges of the pond consist mostly of exposed bedrock, but a few large boulders are present along the northern edge. Two water-worn cobbles were also noted near the edge of the pond. Numerous ‘*ōpae‘ula* were observed swimming in the pond. The Site 30147 pond, like Site 2510, is more of a natural resource than an archaeological site, but was undoubtedly utilized by the coastal residents of Keahialaka Ahupua‘a, and possibly by travelers along the Old Government Road.



Figure 246. SIHP Site 30147, brackish-water pond, view to the southwest.

SIHP Site 30148

Site 30148 is a complex consisting of a platform (Feature A), an enclosure (Feature B), and a wall segment (Feature C) located adjacent to the coastline near the southern tip of the project area (see Figure 46). The site (Figure 247) measures 31 meters (north/south) by 21 meters (east/west), and is situated in a coconut grove on a relatively level ground surface *makai* of the Old Government Road (Site 2530). In addition to the coconut trees, large *kamani* trees, *hala*, and vines are also growing within the site area. No cultural debris was observed at Site 30148, but based on the surface attributes of the features and the lack of Historic debris, the complex may have been utilized for habitation purposes during the Precontact Period, with Feature A serving as a house foundation, Feature B serving an ancillary habitation function, and Feature C as a boundary marker. The coast fronting the complex (Figure 248) is primarily a low *pāhoehoe* cliff, but a narrow cobble inlet to the east of the site (see Figure 125) would have provided a serviceable location for landing a canoe. All three features of Site 30148 are in poor condition, and Feature B in particular appears to have been impacted by large coastal swells. Each of the features of Site 30148 are described below.

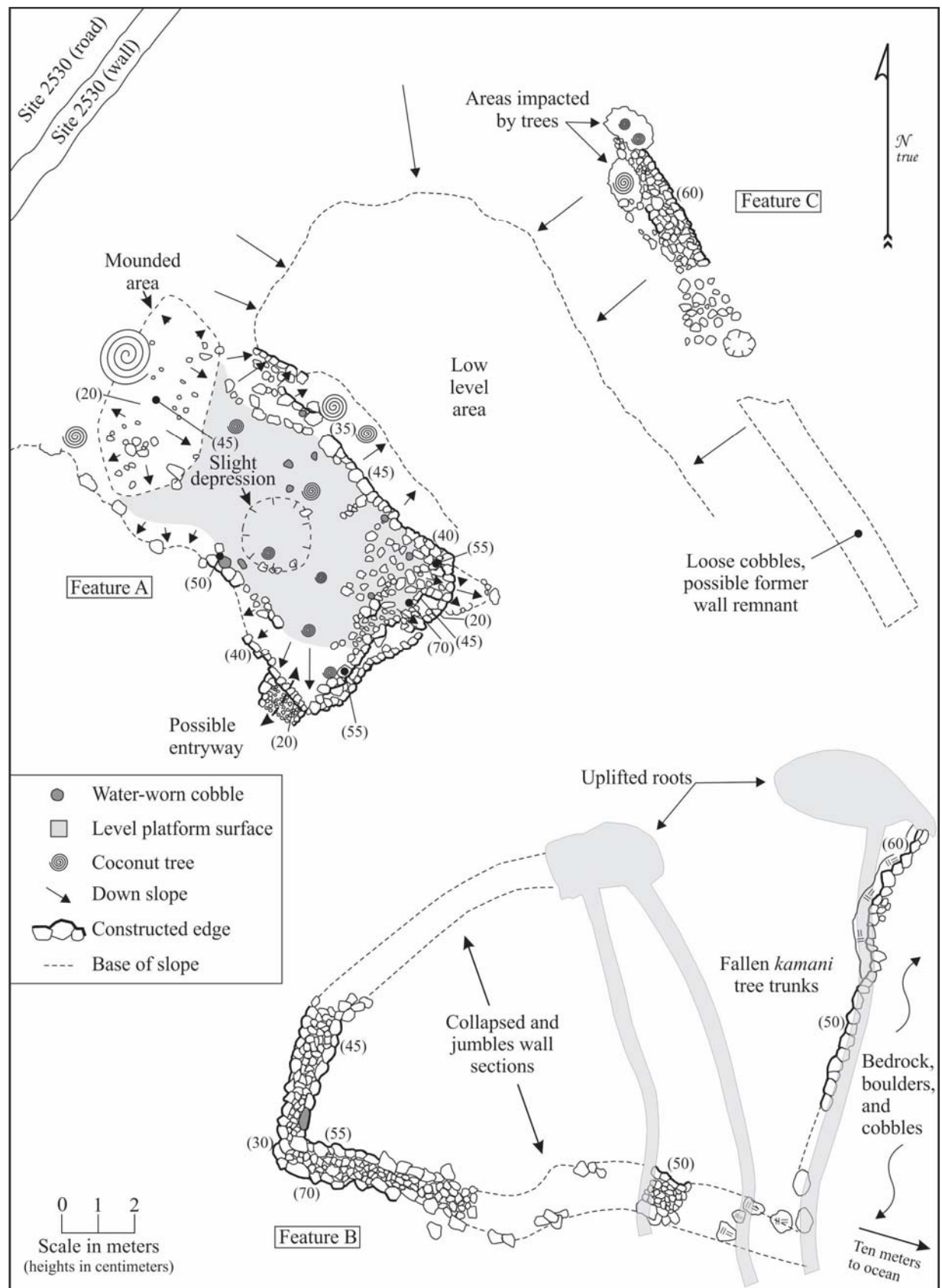


Figure 247. SIHP Site 30148 plan view.

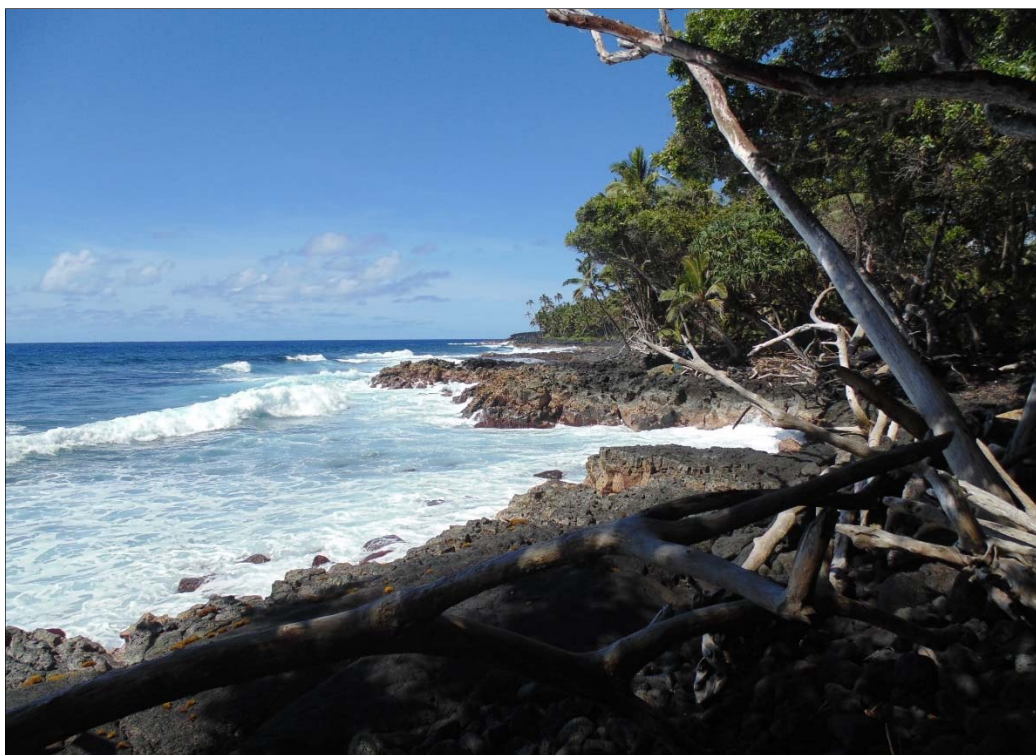


Figure 248. Coastline in front of Site 30148, with an inlet that could have been used as a canoe landing in the foreground center, view to the southwest.

Feature A

Feature A of Site 30148 is a platform located six meters north of Feature B, and ten meters southwest of Feature C. The platform is situated in a low level area southwest of an elevated bedrock formation. The platform measures 8.2 meters by 6 meters (see Figure 247). The northeast, southeast and southwest sides of the platform consist of constructed edges that are elevated above the surrounding ground surface, and the northwest side terminates at the base of a mound of small to medium cobbles. The constructed edges of the platform have an average height of 50 centimeters, and consist of roughly aligned medium to large cobbles (Figure 249). Stacking is present in a few locations, but most of the edges collapsed and jumbled (Figure 250). The surface of the platform is obscured by organic debris, but several medium to large cobbles (including water-worn cobbles) are visible, with the highest number of cobbles concentrated at the *makai* end. A faint circular shaped depression with a depth of 15 centimeters was observed in the center of the platform's surface. In the southern corner of the platform, a rectangular arrangement consisting of medium cobbles on the edges with small cobbles paving the interior, may have been a step, and therefore, the possible location of an entryway.

Feature B

Feature B is an enclosure located six meters *makai* of Feature A in the southern portion Site 30148 (see Figure 247). The enclosure is situated in the same low-lying area as Feature A, and is flanked on the *makai* side by a wave washed bank of cobbles and boulders that line much of the coast in this area. The enclosure measures 18 meters (east/west) by 10 meters (north/south). The northeastern portion of the wall is missing, and was probably destroyed by tidal surges, but additional impacts such as large uprooted *kamani* trees, and encroaching debris from the coast may have also contributed to its absence. Intact stacking was observed at the exterior southwest corner (Figure 151) and along the northeast interior edge of the enclosure (Figure 252). The wall, where intact, measures roughly 1 meter wide and stands up to 70 centimeters tall. A single water-worn cobble was observed within the wall construction in the southwestern corner. The northern side of the enclosure is either collapsed or missing, and consists of loose cobbles with a large *kamani* tree uprooted at the eastern end. The east wall is constructed up against the formation of cobbles, bedrock, and boulders that parallel the coast. This (*makai*) wall of the enclosure consists of cobbles that are stacked 60 centimeters tall on a base of bedrock that stands 30 centimeters tall, giving it an overall height of 90 centimeters above the interior surface of the enclosure (Figure 253). The interior of the enclosure consists of jumbled cobbles with areas of exposed bedrock.



Figure 249. SIHP Site 30148, northeastern edge of Feature A, view to the southwest.



Figure 250. SIHP Site 30148, *makai* edge of Feature A, view to the north.



Figure 251. SIHP Site 30148 Feature B, exterior southwestern edge, view to the northeast.



Figure 252. SIHP Site 30148 Feature B, interior southwestern corner, view to the west.



Figure 253. SIHP Site 30148 Feature B, *makai* wall of the enclosure, view to the east.

Feature C

Feature C is a wall segment located ten meters northeast of Feature A in the northeastern portion of Site 30148 (see Figure 247). The wall segment runs along the upper edge of a slope that descends to the low area occupied by Features A and B to the south and west. The wall segment consists of stacked medium to large cobbles (Figure 254) and measures 3.3 meters long by 0.8 meters wide, and has a maximum height of 0.6 meters tall. The short wall segment has been impacted by coconut trees growing along the edges, which have caused cobbles from the wall to tumble down the slope to the southwest. The wall becomes untraceable to the northwest, and to the southeast in the *makai* direction is a low lying collection of cobbles on bedrock that follows the top of the slope. It is likely the former route of the wall, and was probably disturbed by waves.

SIHP Site 30149

Site 30149 is a mound complex (Features A-H; Figure 255) and modified outcrop edge (Feature I) located in the southeast portion of the study area, five meters *makai* of the Old Government Road (Site 2530) (see Figure 46). The site is situated in a low-marshy area roughly ten meters inland of the coast within a dense growth of *hau*, coconut, *laua* 'e, birds-nest fern, and vines (Figure 256). The overall complex is defined by a modified outcrop (Feature I) that consists of loosely piled cobbles that surrounds its north, west, and south edges. The mounds are constructed within a 20 meter by 13 meter area at the back (inland) edge of the tidal marsh area (lowest area of the site), but overall (including Feature I and the tidal marsh), the site measures 70 meters by 60 meters. The tidal marsh area is separated from the coast by a berm of wave deposited water-worn cobbles and bedrock. During low-tide it becomes dried out and turns to mud, but during high tide it fills with water and becomes a shallow pond. When the pond is inundated, 'ōpae 'ula (*Halocaridina rubra*) can be seen swimming in it. Each of the features of Site 30149 are described below.

Feature A

Feature A (see Figure 255) is a mound that measures 5 meters long by 2-5 meters wide, and is constructed of loosely piled small to large cobbles (Figure 257). The mound stands up to 1.3 meters tall and is hollow in its *makai* portion, possibly from root uplift caused by a fallen tree. Modern debris including a tire and wheel rim are present on its surface.



Figure 254. SIHP Site 30148, Feature C wall segment, view to the southwest.

Feature B

Feature B is a mound located two meters northeast of Feature A (see Figure 255). The mound measures 4.2 meters long by 2.9 meters wide, with a maximum height of 1 meter tall (Figure 258). It is constructed of loosely piled small to large cobbles, and it is tallest in the center. A small amount of black plastic and cut up *hau* stumps are scattered on the surface of the mound.

Feature C

Feature C is a mound located three meters southeast of Feature B and one meter north of Feature A (see Figure 255). The mound measures 3.6 meters long by 2.4 meters wide, and has a maximum height of 0.73 meters tall. It is constructed of loosely piled small to large cobbles (Figure 259).

Feature D

Feature D is a mound located 1.5 meters northeast of Feature C and 1.5 meters southeast of Feature B (see Figure 255). The mound is constructed of loosely piled small to large cobbles (Figure 260) and measures 3.7 meters long by 3.4 meters wide. It has a maximum down-slope height of 1.4 meters tall, and an upslope height of 0.7 meters tall. The mound has been impacted by a large *hau* tree growing along its southern edge.

Feature E

Feature E is a mound located roughly two meters northeast of Feature D (see Figure 255). The mound measures 5.4 meters long by 4.6 meters wide with a maximum height of 1.3 meters tall. It is constructed of loosely piled small to large cobbles and has several large tree branches resting on its surface (Figure 261).

Feature F

Feature F is a mound located roughly three meters northwest of Feature A (see Figure 255). The mound measures 4.7 meters long by 3.5 meters wide and has a maximum height of 1.4 meters tall (Figure 262). It is constructed of piled small to large cobbles that are currently covered by a layer of coconut debris.

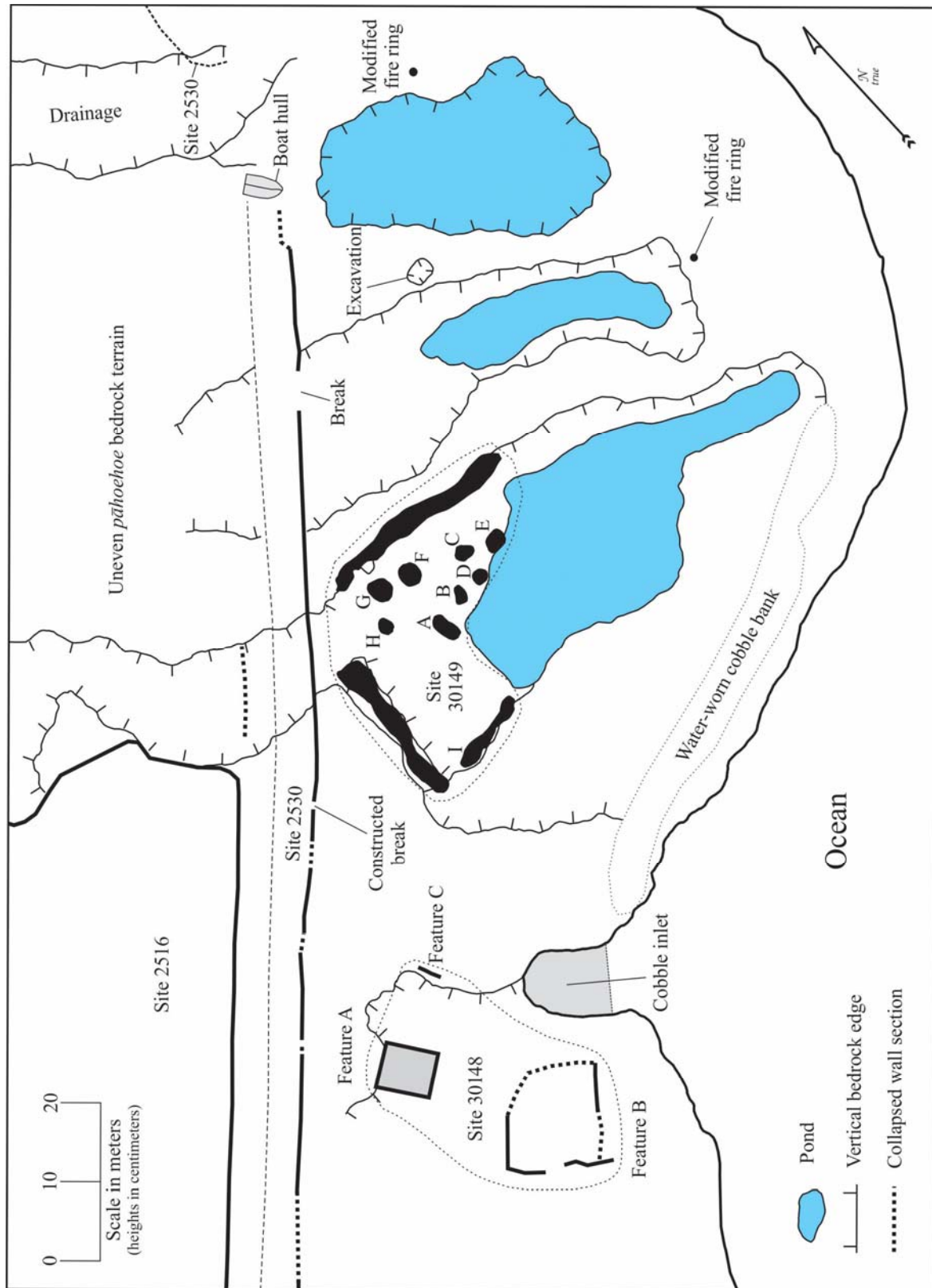


Figure 255. SIHP Site 30149 plan view.



Figure 256. SIHP Site 30149, general mound area, view to the northwest.



Figure 257. SIHP Site 30149 Feature A, view to the southeast.



Figure 258. SIHP Site 30149 Feature B, view to the north.



Figure 259. SIHP Site 30149 Feature C, view to the north.



Figure 260. SIHP Site 30149 Feature D, view to the north.



Figure 261. SIHP Site 30149 Feature E, view to the north.



Figure 262. SIHP Site 30149 Feature F, view to the northwest.

Feature G

Feature G is a mound that abuts the northwest edge of Feature F (see Figure 255). The mound measures 4.5 meters long by 4.2 meters wide with a maximum height on its upslope edge of 1.3 meters tall and a height of 1.6 meters tall on its down-slope edge. It is constructed of loosely piled small to large cobbles (Figure 263). A large *kamani* tree is growing between Feature G and Feature F.

Feature H

Feature H is a mound located roughly four meters southwest of Feature G (see Figure 255). It measures 2.9 meters long by 2 meters wide with a maximum height of up to 0.85 meters tall. The mound is constructed of loosely piled small to large cobbles (Figure 264).

Feature I

Feature I is the modified outcrop edge that surrounds the north, west, and south sides of the low, marshy area at Site 30149 (see Figure 255). The outcrop edges in these areas are modified with loose collections of cobbles (presumably cleared from the central marshy/soil area) that stand 1.2 to 1.6 meters tall against bedrock (Figure 265). At the eastern end of the marshy area is a natural bedrock and cobble berm that separates the tidal pond from the ocean.

Based on the location of the mounds, at the back edge of the low-marshy area, it is possible that they were constructed of cobbles that were cleared from the wet areas in preparation of growing *kalo* (*Colocasia esculenta*). *Kalo* would have grown well in this low, marshy environment, as it is capable of acquiring nutrients and sustenance from brackish-water. Based on ethnographic investigations, Handy and Handy relate that, “the wet and sometimes marshy pandanus forests from Kapoho through Poho-iki to ‘Opihikau used to be planted with taro in places” (1991: 541).



Figure 263. SIHP Site 30149 Feature G, view to the southwest.



Figure 264. SIHP Site 30149 Feature H, view to the northwest.



Figure 265. SIHP Site 30149 Feature I, modified outcrop, view to the northwest.

SIHP Site 30150

Site 30150 is the designation for a large area in the central portion of the study parcel where it appears that informal agriculture may have occurred during Precontact times (see Figure 46). Very few formal agricultural features are associated with this site, but a surface inspection of this land area indicates that the ‘a ‘ā flow between Site 30142 and Site 2516 (both formal agricultural complexes) could have been planted using the *pahala* method described in Handy and Handy (1991) where depressions in the lava flow amongst *hala* trees are created, mulched, and planted. The current vegetation cover within the study parcel, especially the *hala*, makes the identification of these informal agricultural features nearly impossible, and leaves only the impression, in certain areas, that agriculture may have occurred there in the past. A large area in the central portion of this site consists of fairly level ‘a ‘ā with a high occurrence of *kukui* and mango trees, suggesting that it may have been a utilized tree grove. These trees do not occur in areas where ‘uala (sweet potato), *kalo* (taro), *noni*, *awa* or other crops may have been cultivated in informal, spread out patches amongst the groves of *hala* trees. It is the description of *pahala* planting in the wet lowland forest areas of Puna, explained to Mary Kawena Pukui by Joseph Ilala‘ole in the late 1930s, that provides the basis for interpreting the agricultural features at Site 30150:

At Kalapana, Kehena and Kamaili our kinsmen grew fine taro by the *pa-hala* (pandanus clearing) method and the advantage was that there was not the constant weeding required by taros growing in good soil. This is the process: Make holes in the ‘a ‘a (broken lava) by taking out some of the stones. Be sure that the place chosen is in a *pu hala* grove, to save the labor of hauling *hala* branches into the patch later on. Fill the holes with whatever weeds can be found and leave them there for six weeks or more. The weeds rot and make soil. When the weeds have rotted away, the taro *huli* are wrapped in *lau hala* (*hala* leaves) to keep them moist and are planted. When three or four leaves have appeared on each *huli* then that is the time to cut down the *pu hala* to let in the sun. The branches of the *hala* are cut off and the patch is covered with them until there is not a trace of the taro to be seen. This is left until sufficiently dry to set on fire. The fire does not hurt the taro much as the *huli* were already well rooted. The *hala*, reduced to ashes, gives the taro the needed nourishment and they grow so tall that a man can be hidden under their leaves. (Handy and Handy 1991:104-105)

Site 30150 occupies a roughly 45,000 square meter area (approximately 11.5 acres) by 180 meter in the central portion of the study parcel that extends for nearly 250 meters (northeast/southwest) between Sites 30142 and 2516 (two formal agricultural complexes) and 180 meters (*mauka/makai*) between the Pohoiki coastal trail (Site 2530) and the Kapoho-Kalapana Road (Route 137). This area is covered by dense vegetation, especially thick groves of *hala* trees, that make walking and examination of the ground surface difficult. During the initial transects across the study parcel the entire site area was walked in an east/west direction with fieldworkers spaced at twenty meter intervals. As a result of these transects two walls were identified (Sites 30145 and 30146; see above), and four distinct areas (Areas A, B, C, and D; Figure 266) were noted where the 'a'ā ground surface appears slightly modified (with loose mounds and depressions), indicating potential agricultural use in the past.

To record Site 30150, the four potentially modified areas were cleared of vegetation and thoroughly inspected for constructed features. At each of the areas the impression of former modification was present, but formal features were largely absent (Area C contained the only cobble stacking in the entire Site 30150 complex). It is the crumbly, ephemeral, nature of mounds and depressions constructed in the 'a'ā, combined with the dense vegetation cover and root uplift from fallen trees (which also make mounds and depression when they fall and the roots pull up mounds of 'a'ā cobbles from the adjacent root depression) that makes quantifying the number of individual agricultural features at Site 30150 impossible. Instead, for the purposes of the current study, each of the four areas cleared within Site 30150 was photographed and the overall characteristics of the cleared areas were described. Rather than assigning individual site numbers to each of the four locales where agricultural modification seems to have occurred in the past, the boundaries of Site 30150 were expanded to include all of the project area lands where informal agricultural could have occurred (between the two formal agricultural complexes discussed above).

The areas described below are representative examples of what informal agriculture may have looked like within the study parcel, and are presented in an effort to provide a more holistic understanding of past land use and resource procurement within the low land *hala* forests of the Puna District. Site 30150 was likely not only planted with food crops, but was the location of tree groves and forest plants (such as *hala*, *kanmani*, and breadfruit) that were maintained and nurtured to provide many important resources needed for survival of the Hawaiian population along this portion of the Puna coast. Agricultural exploitation at Site 30150 would have reached its maximum extent towards the end of the Precontact/Proto-historic Period, when the Hawaiian population had grown to its largest numbers, and then declined fairly rapidly during the Historic Period, as the population of the rural Puna District dwindled. Use of the forest resources is likely to have continued unabated during the early Historic Period, however.

Site 30150 Area A

Area A contains the *makai*-most modification observed at Site 30150 (see Figure 266). This area, which measures minimally 50 meters long by 25 meters wide, is situated on an 'a'ā ground surface along the inland edge of the Pohoiki coastal trail (Site 2530) between a drainage channel (to the southwest) along the Keahialaka/Pohoiki boundary, and a relatively recently cleared swath of land that extends to Site 30146. This area contains numerous heaped piles of 'a'ā, all of which are small and informal, and none of which can be said with any certainty to have been created by human hands. The ground surface within Area A consists of 'a'ā bedrock with scattered small to large cobbles on the surface (Figure 267). The inland portion of the area is covered by a dense growth of *hala* and the *makai* portion contains *hau* and a few *kamani* trees. The area is bordered to the west by a low drainage that separates the 'a'ā flow from the *pāhoehoe* flow in Keahialaka Ahupua'a that does not have any cobble modification. Several of the piles appear to be situated on exposed bedrock outcrops. The piles (Figure 268) contain small to large cobbles, with most containing more smaller cobbles than larger ones. In the *mauka* portion of Area A, away from the coastal trail, the number of piles decrease, and eventually the modification dissipates at a steep 'a'ā slope.

Site 30150 Area B

Area B is a concentration of possible informal agriculture features situated north of Site 2516 in the southwestern portion of Site 30150, roughly mid-way between Area A and the Kapoho-Kalapana Road along the Pohoiki/Keahialaka boundary (see Figure 266). A 40 meter by 30 meter area at Area B was hand-cleared of vegetation, revealing several possible depressions (planting areas) and mounds on a fairly level 'a'ā ground surface (Figures 269 and 270). Six potential mounds and three depressions were noted (Figure 271), but it could not be determined if these features are the result of old tree falls, or if the mounds were built up from rocks excavated from depressions, or simply eroding 'a'ā outcrops (Figure 272). The forest surrounding the cleared area for a distance of minimally 30 meters in all directions contains similar looking potential modifications, but a dense growth of *hala* in these areas hinders examination of the possible features. To the northeast of Area B, the potential modification seems to dissipate where a growth of *kukui* and mango trees occurs within an area that has a relatively flat 'a'ā ground surface, as opposed to the up and down (mound and depression) terrain within the cleared area and surrounding locales.

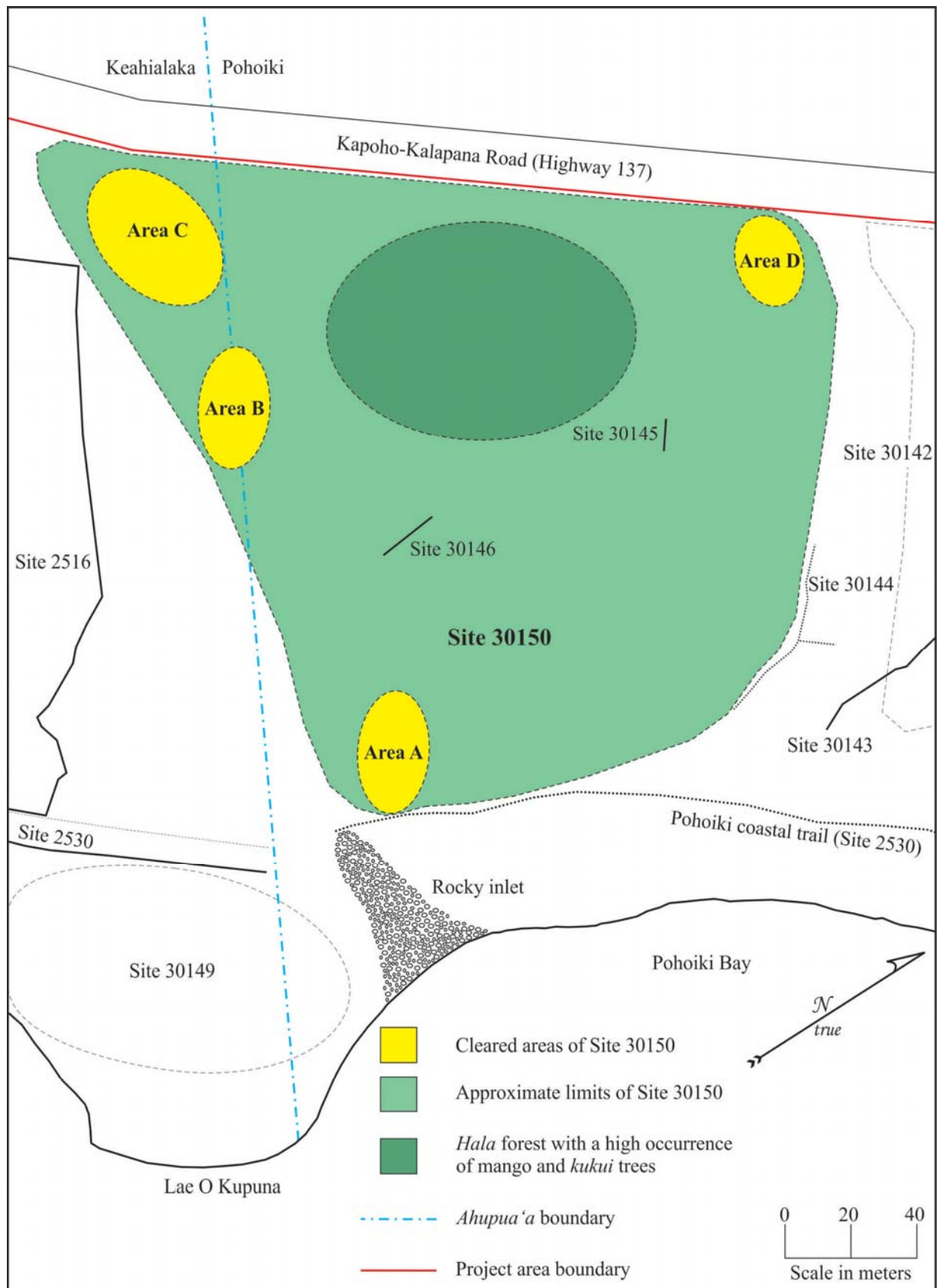


Figure 266. SIHP Site 30150 plan view.



Figure 267. SIHP Site 30150 Area A, view to the northwest from the coastal trail.



Figure 268. SIHP Site 30150 Area A, typical cobble pile, view to the west.



Figure 269. SIHP Site 30150 Area B, view to the south.



Figure 270. SIHP Site 30150 Area B, view to the southwest.



Figure 271. SIHP Site 30150 Area B, potential mound and depression, view to the north.

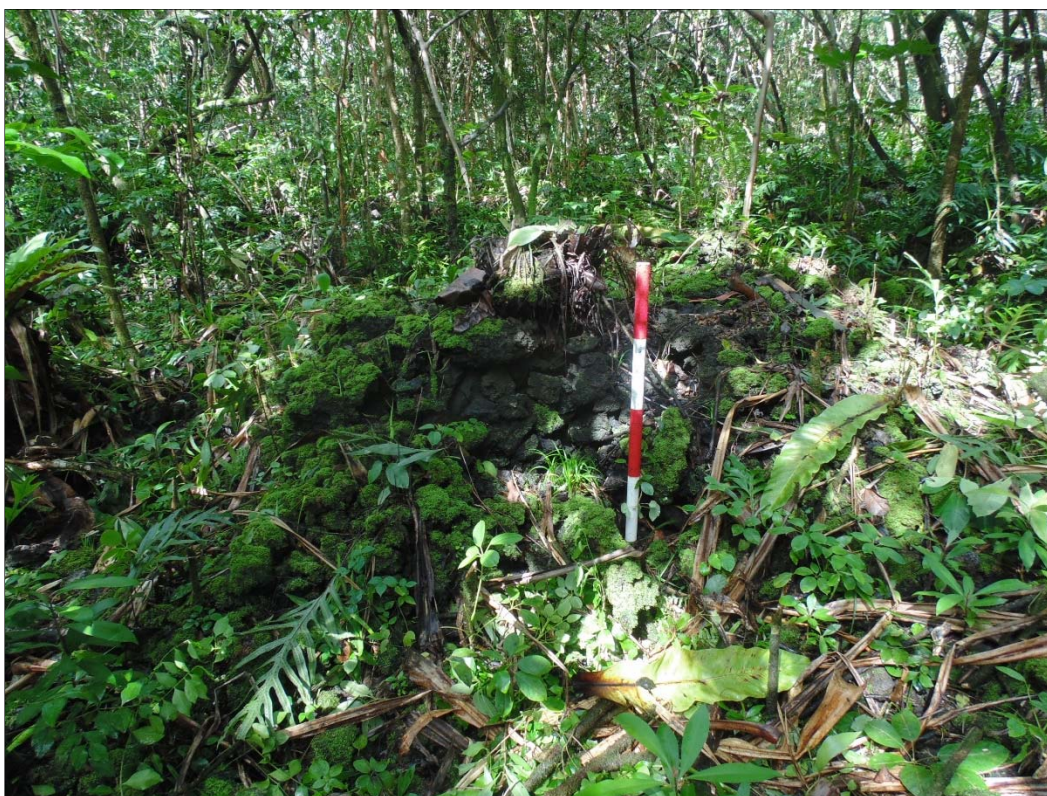


Figure 272. SIHP Site 30150 Area B, possible mound or eroding outcrop, view to the north.

Site 30150 Area C

Area C, situated in the *mauka*-westernmost portion of Site 30150 near Site 2516 and the Kapoho-Kalapana Road (see Figure 266), contains the most formal agricultural modifications. Three features with actual stacking – a modified bedrock edge, a modified depression, and a mound – were discovered at Area C, along with an area of several potential informal features (Figure 273). The informal features are similar to those observed at Area B, and include possible mounds, depressions, and ‘*a*’*ā* undulations located to the north of the more formal features on a raised level landform adjacent to the Kapoho-Kalapana Road (Figure 274). The three more formal appearing agricultural features at Area C were cleared, mapped, and photographed, and are described below; the informal potential features were cleared and examined, but are not discussed further.

The modified bedrock edge (see Figure 273) is located against a raised outcrop that extends down-slope from the Kapoho-Kalapana Road. The modification occurs along the eastern edge of the outcrop and measures roughly 16 meters long. It consist of stacked medium to large cobbles standing up to 110 centimeters tall that are obscured by a dense growth of *hala* roots (Figure 275).

The modified depression (see Figure 273) measures 3 meters long by 2.2 meters wide and consists of stacking along the west, north, and east edges of a natural bedrock depression. The stacking creates a C-shape construction and consist of medium to large cobbles standing up to 1.1 meters tall (Figure 276).

The mound (see Figure 273) is constructed of stacked medium cobbles on a bedrock outcrop. It measures 2.5 meters long by 1.4 meters wide and stands up to 1 meter tall (Figure 277). The mound is surrounded by numerous depressions that may be the source of the material used in its construction, and could have been planting areas.

This more formal agriculture area may mark a transition from the less formal seaward agricultural areas to the more intensively utilized inland areas, where soils, rainfall, and general growing conditions would have allowed for increased plant yields. Ethno-historical information indicates that the planting areas in Keahialaka and Pohoiki *ahupua* ‘*a* were primarily in the uplands where the best soil was found, and rainfall was more plentiful. The proximity of Area C to Site 2516, could also suggest that these formal agricultural features were once growing areas associated with that site, but that when the core-filled wall was constructed around that intensively utilized agricultural area during the Historic Period to prevent incursions by free-roaming animals, the more marginal sections, such as Area C, were excluded from the enclosure.

Site 30150 Area D

Area D, located in n the northern corner of Site 30150 (see Figure 266), is an area of undulating ‘*a*’*ā* with a series of rough mounds and modified outcrops. This area of modification measures roughly 35 meters by 35 meters and, like Area C, is situated along the *makai* edge of the Kapoho-Kalapana Road (Figure 278). Within this modified area are three linear rock-piles, seven irregular-shaped mounds, and numerous modified outcrops (Figures 279 and 280). Area D is situated at a similar elevation to Area C, and could also mark a transition from the less formal seaward agricultural areas to the more intensively utilized inland areas, where soils, rainfall, and general growing conditions would have allowed for increased plant yields. The proximity of Area D to Site 30142, could suggest that it is associated with the use of that more formal agricultural complex, although no concrete connections were observed in the field (there appears to be a section of unmodified land containing a dese growth of *hala* between Site 30150 and Site 30142).

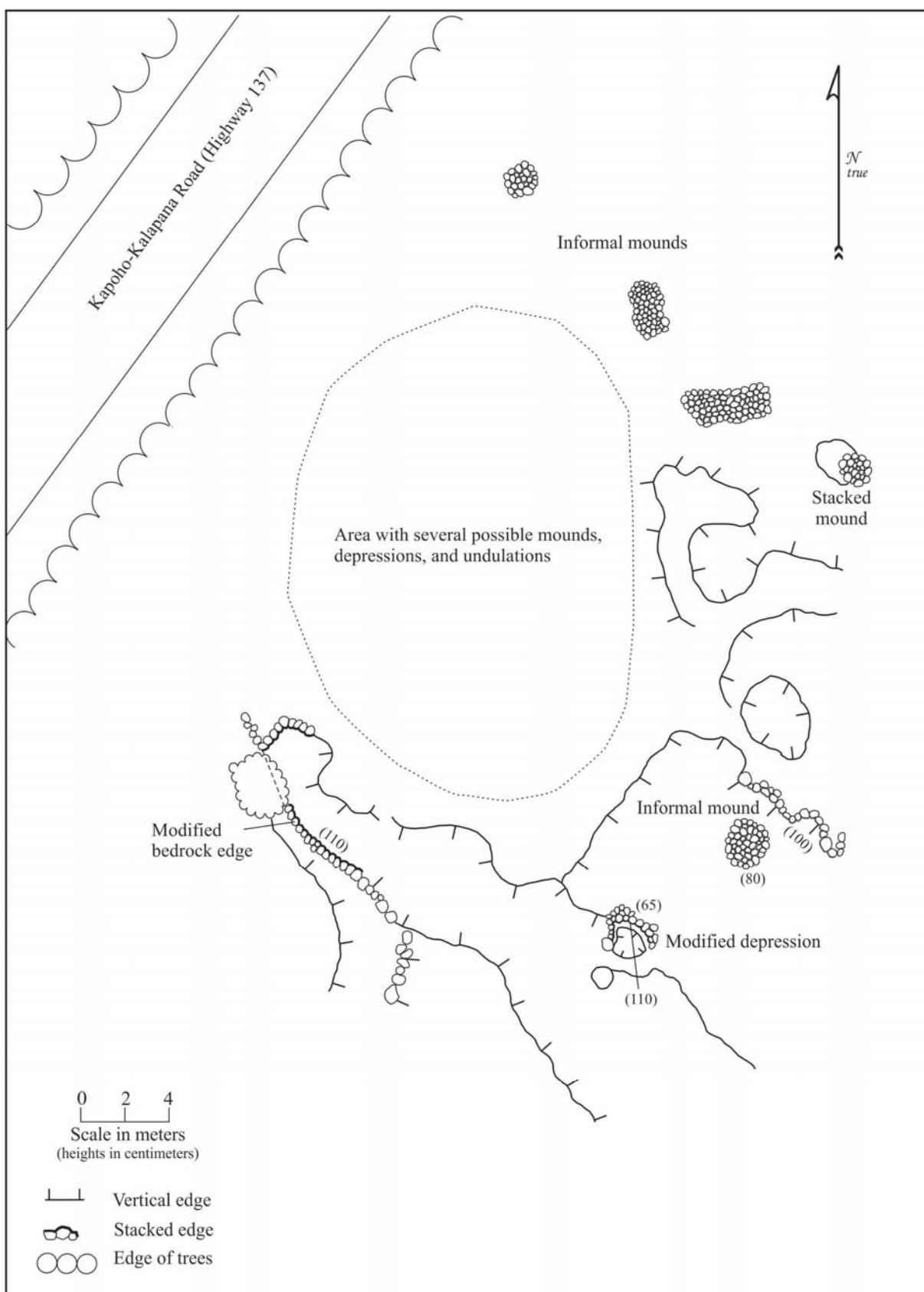


Figure 273. Site 30150 Area C plan view.



Figure 274. SIHP Site 30150 Area C, informal agricultural area near the Kapoho-Kalapana Road, view to the northeast.



Figure 275. SIHP Site 30150 Area C, modified bedrock edge, view to the southwest.



Figure 276. SIHP Site 30150, modified depression with C-shaped stacking, view to the north.



Figure 277. SIHP Site 30150 Area C, stacked mound, view to the south.



Figure 278. SIHP Site 30150 Area D, area of undulating 'a 'ā with a series of rough mounds and modified outcrops, view to the east.



Figure 279. SIHP Site 30150 Area D, typical linear mound in the area of undulating 'a 'ā, view to the northwest.



Figure 280. SIHP Site 30150 Area D, typical mound in the area of undulating 'a'ā, view to the southwest.

SUMMARY

The current project area is situated at Pohoiki Bay along the southeastern coast of the District of Puna within Pohoiki and Keahialaka *ahupua'a*. This sheltered bay, one of the best canoe landings along the entire Puna coast, would have been populated during the initial settlement of Hawai'i Island, and development of the lands would have occurred fairly rapidly thereafter. Radiocarbon dates obtained by Dunn et al. (1995) suggest that initial occupation of this area may have begun by about A.D. 1250, with intensification of use around A.D. 1400-1700. The relatively young age of the lava flows that make up the southwestern-Keahialaka portion of the project area (ca. 200-400 years before present; Wolfe and Morris 1996), where the majestic female fire deity, Pele, is said to have first landed on the Island of Hawai'i, may suggest that the area was initially settled and then covered by lava flows, only to be resettled again later.

During the Precontact Period population centers developed at the coast within both Pohoiki Ahupua'a (at Pohoiki Bay) and Keahialaka Ahupua'a (to the southwest of the current project area). The initial occupational focus at these settlements would have been on the collection of marine resources, but as the populations expanded into the early Historic Period, agricultural exploitation of suitable lands within the *ahupua'a* would have increased. Handy and Handy (1991) suggest that the wet and sometimes marshy *hala* forests along the coast of this area would have been planted using the *pahala* method, which involved planting in excavated pits within the 'a'ā flows.

The settlement at Keahialaka, as indicated by both legendary references (Maly 1998), historical descriptions (Ellis 2004), and the presence of the coastal *heiau* of Mahinaakaaka (a *luakini* dedicated to Kamehameha's god, Kā'ili; Stokes and Dye 1991), appears to have supported a resident *ali'i* population. An inference that was all but confirmed during the *Māhele 'Āina* of 1848, when both Keahialaka and Pohoiki *ahupua'a* (5,562 and 652 acres respectively) were claimed as Crown Land by William Charles Lunalilo, the future King of Hawai'i (Pohoiki Ahupua'a was later commuted to the Government in lieu of fees on other lands). It may be that prior to the *Māhele* both *ahupua'a* contributed to the same royal population, with the smaller *ahupua'a* of Pohoiki assuming a subordinate role to the larger *ahupua'a* of Keahialaka and its vast upland resources.

Kuleana claims, grant documents, and Boundary Commission testimony (a legacy of the Great *Māhele* of 1848) indicate that a sizeable Hawaiian community still resided along the shore of both Pohoiki and Keahialaka *ahupua'a* during the middle to late 1800s. In Pohoiki Ahupua'a, *kuleana* and grant documents from the mid-1800s, describe

coastal house lots belonging to native residents that were enclosed by stone walls. Boundary descriptions of Keahialaka Ahupua‘a, recorded during the last quarter of the nineteenth century and provided by knowledgeable *kama‘āina*, many of whom were born and lived within the study *ahupua‘a*, name many of the individuals who resided at the shore of that *ahupua‘a* during the mid-1800s, and provide vivid descriptions of the use of resources within the entire land unit. Maps of the late 1800s show that, while the coastal lands of Pohoiki largely fell under the influence of an Englishman named Robert Rycroft (by ca. 1877) and were developed for modern industry, Keahialaka remained a native village surrounded by groves of coconuts.

The archaeological sites recorded during the current study reflect this pattern and their distribution is perhaps best discussed in the context of the proposed subdivision. In the southern two thirds of the study area (roughly equivalent to the proposed County parcel) the archaeological landscape is dominated by traditional (non-western) features with two formal agricultural sites (one in Keahialaka [Site 2516] and one in Pohoiki [Site 30142]) and an intervening area (Site 30150) having been used for agriculture in a much more informal fashion. The habitation sites (e.g. Site 30148) in this area are also of a traditional style. In contrast, in the northern third of the study area the landscape of the proposed Smith parcel is very much a reflection of the industrial activities that took place there during the late nineteenth and early twentieth century. Although individually designated, Sites 2511, 30129, 30130, 30131, 30132, 30133, 30134, 30135, 30136, 30137, and 30138 can be considered elements of a larger complex associated with Robert Rycroft’s activities between 1877 and 1899 and perhaps some later Puna Sugar activities until about 1920. Rycroft established a residential area within a walled compound (Site 30136) and built several industrial structures only a few of which remain on the property. The most substantial of these structures, and the one most intact is Site 2511, a two-story concrete building that was used primarily in conjunction with timber milling and coffee bean production. The building is perhaps the last structure Rycroft completed on the property (ca. 1895) before sell the land to Puna Sugar Plantation in 1899. Oral information provided by members of the Hale family suggest that after the Rycroft era of habitation, a portion of the property continued to be used and cared for by their family under a lease agreement with Puna Sugar. Ultimately all of the structures on the study property fell in to a state of disrepair. Fortunately, when the Smith’s purchased the property and renovated the concrete mill building (Site 2511) as a residence their actions served to protect it from further degradation.

5. SIGNIFICANCE EVALUATION AND TREATMENT RECOMMENDATIONS

The recorded archaeological sites are assessed for their significance based on criteria established and promoted by the DLNR-SHPD and contained in the Hawai'i Administrative Rules 13§13-284-6. This significance evaluation should be considered preliminary until DLNR-SHPD provides concurrence. For a resource to be considered significant it must possess integrity of location, design, setting, materials, workmanship, feeling, and association and meet one or more of the following criteria:

- A Be associated with events that have made an important contribution to the broad patterns of our history;
- B Be associated with the lives of persons important in our past;
- C Embody the distinctive characteristics of a type, period, or method of construction; represent the work of a master; or possess high artistic value;
- D Have yielded, or is likely to yield, information important for research on prehistory or history;
- E Have an important traditional cultural value to the native Hawaiian people or to another ethnic group of the state due to associations with traditional 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.

The significance and recommended treatments for the twenty-seven recorded sites are presented in Table 5 and discussed below.

Table 5. Site significance and treatment recommendations.

<i>SIHP Site #</i>	<i>Site Type</i>	<i>Temporal Affiliation</i>	<i>Significance</i>	<i>Recommended Treatment</i>
2510	Pond	—	D	Preservation
2511	Concrete building complex	Historic	A, B, C, D	No further work
2515	Habitation complex	Precontact/Historic	D	Preservation
2516	Agricultural complex	Precontact/Historic	C, D	Data recovery/Preservation
2530	Government Road	Historic	D	Preservation
30129	Concrete cistern	Historic	D	No further work
30130	Cobble-lined pit	Historic	D	No further work
30131	Agricultural enclosure	Historic	C, D	Preservation
30132	Concrete foundation slab	Historic	D	No further work
30133	Concrete pig pen structure	Historic	D	No further work
30134	Concrete Smokestack	Historic	D	No further work
30135	Concrete cistern	Historic	D	No further work
30136	Habitation complex	Historic	B, D	No further work
30137	Roadway	Historic	B, D	No further work
30138	Wall	Historic	D	No further work
30139	Rock alignment	Historic/Modern	D	No further work
30140	Boundary wall	Historic	D	Preservation
30141	Landscape complex	Historic/Modern	D	Preservation
30142	Agriculture complex	Precontact/Historic	D	Preservation
30143	Enclosure	Historic	D	Preservation
30144	Steppingstone trail	Precontact/Historic	D	Preservation
30145	Wall	Historic	D	Preservation
30146	Wall	Modern/Historic	D	Preservation
30147	Pond	—	D	Preservation
30148	Habitation	Precontact/Historic	D	Preservation
30149	Agriculture complex	Precontact/Historic	D	Preservation
30150	Agricultural 'a'ā area	Precontact	D	Preservation

5. Significance Evaluation and Treatment Recommendations

All of the sites are considered significant under Criterion D for the information they have yielded and can continue to yield with respect to Precontact land use activities and patterns as well as how the study area landscape evolved through Historic times into the present. Two of the sites (SIHP Sites 2516 and 30131) are considered additionally significant under Criterion C as excellent examples of their respective sites types; both agricultural in nature, one of a traditional type dating from the Precontact/Historic Periods and the other a unique example of a site type dating from the late nineteenth/early twentieth century. Two sites (SIHP Sites 30136 and 30137) are considered additionally significant under Criterion B as they are directly associated with Robert Rycroft, a locally significant historic figure. Lastly, there is one site (SIHP Site 2511) that is considered additionally significant under Criterion A for its association with early timber milling and coffee production in the Puna area, Criterion B for its direct association with Robert Rycroft, a locally significant historic figure, and Criterion C as an rare and excellent example of an early industrial concrete structure, perhaps the earliest of its design and size on Hawai'i Island.

The treatment of these sites will be presented in the context of the two proposed parcels separately, as the ownership of each parcel will eventually be different; the County of Hawai'i will own the southern 26.782 acres and the Smiths will own the northern 8.785 acres. The conditions of the County ownership will be that the land will remain undeveloped, thus all fourteen of these sites (SIHP Sites 2510, 2516, 2530, 30140, 30141, 30142, 30143, 30144, 30145, 30146, 30147, 30148, 30149, 30150) on that soon to be created parcel will be preserved, with one of those sites (SIHP Site 2516) recommended for further investigation (as agreed upon with DLNR-SHPD) through a selective data recovery process to aid in comprehending the specific functional nature of some of its many features and to better understand the temporal development of the site.

The 8.785 acre parcel that will be retained by the Smith's has a predominately late nineteenth/early twentieth century archaeological landscape consisting of thirteen sites (SIHP Sites 2511, 2515, 30129, 30130, 30131, 30132, 30133, 30134, 30135, 30136, 30137, 30138, and 30139), all of which (with the exception of Site 2515) likely somewhat interrelated with respect to Rycroft's residential, commercial, and industrial use of the land. As this assemblage of sites has been comprehensively documented as a result of the current study, no further historic preservation work is recommended for these sites, except for Site 30131, which is recommended for preservation. The one site on the 8.785 acre that appears to represent an earlier (Precontact/early Historic) time period is SIHP Site 2515; this site is recommended for preservation.

Going forward, the owners of the eventual 8.785 acre parcel should prepare a preservation plan for SIHP Sites 2515 and 30131 in compliance with HAR 13§13-277; and the County of Hawai'i should prepare a preservation plan for the fourteen sites on their eventual 26.782 acre parcel in compliance with HAR 13§13-277. This latter plan should contain a data recovery element for SIHP Site 2516 and consultation with DLNR-*Na Ala Hele* Program with respect to the long-term treatment of SIHP Site 2530 (the old Government Road). These plans should be submitted to DLNR-SHPD for their review and approval.

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APPENDIX A – SIHP Site 7386 Hawai‘i Register of Historic Places Site Form

ARCHAEOLOGICAL COVER SHEET

HAWAII REGISTER OF HISTORIC PLACES

50 - 1 0 - 4 6 - 7 3 8 6
1 2 3 4 5 6 7 8 9
 SITE IDENTIFICATION NUMBER
2 1 c. 1 8 9 5
10 11 12 13 14 15 16 17 18 19 20
 CARD No. DATE/PERIOD
 PRESENT LAND USES : None
 DESTRUCTION: X No Known Future Danger Possible Future Danger Future Danger Certain
 Present Danger Presently Being Destroyed Ruins
 STATUS: Occupied X Unoccupied CONDITION: Excellent Good Fair X Deteriorate
 INTEGRITY: X Unaltered, Orig Loc Unaltered, Moved Altered, Orig Loc Altered, Moved
 ACCESSIBILITY: Unrestricted X Restricted Inaccessible

SITE NAME/TYPE: Pohoiki Mill Ruins
 DISTRICT: Puna
 AREA: square s
 CATEGORY: X Single Feature Complex Places
 OWNERSHIP: Public X Private
 PHOTOGRAPHS: X Yes No (Temp/Tech)
 KNOWN PRESSURES ON SITE: None known

LEGENDARY MATERIALS KNOWN: Yes X No WRITTEN HISTORICAL MATERIALS: X Yes No
 IMPORTANCE AS EXAMPLE OF TYPE SITE: X Good Moderate Poor
 SUSCEPTABILITY TO INTERPRETATION: Good X Moderate Poor
 RESEARCH POTENTIAL: Good Moderate Poor
 LOCAL ATTITUDES ABOUT SITE: Valuable Moderate Value Low Value Ambivalent Unknown

BRIEF DESCRIPTION (Columns 21-80): Ruins of old mill constructed out of reinforced
concrete; Two floors with truss gable roof; Remains of boiler ovens ;
Large chimney stack with moulded base

STAFF EVALUATION: High Value X Valuable Reserve Marginal
 SUGGESTED THEMES: 03; 04; 11 Agriculture; Architecture; Industry;

DATE SUBMITTED TO REVIEW BOARD:

REVIEWER'S RECORD AND EVALUATION

NAME: DATE REVIEWED
 CATEGORY: High Value Valuable Reserve Marginal
 SIGNIFICANCE: National State Local
 RECOMMENDED DISPOSITION: Nominate National Register State Register Staff Files
 RECOMMENDED THEMES:

REVIEWER'S COMMENTS:

REVIEW BOARD EVALUATION RECORD

DATE REVIEWED: RECORDER:
 OFFICIAL CATEGORY: High Value Valuable Reserve Marginal
 OFFICIAL SIGNIFICANCE: National State Local
 OFFICIAL THEMES:

OFFICIAL DISPOSITION: National Register Nomination State Register Staff Files
 REVIEW BOARD COMMENTS:

VOTING RECORD: Daws Hormann Jackson Kikuchi
 Lind Mark Nagata Paglinawan
 Roche Tuggle

FORM CS-1

Number 10-46-7386

Name Pohoiki Mill Ruins

Review

23 Jul 74 originals sent to state

Review Board Action

Files

Original _____

Certification _____

Working _____

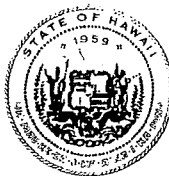
Certification _____

Form 51 ☒ _____

Comment Not yet reviewed (10-46-74)

good

JUL 22 1975
JK



10 / 46 / 7386
 island quad site number
 HRHP I.D. NO.

STATE OF HAWAII
 DEPARTMENT OF LAND AND NATURAL RESOURCES
 DIVISION OF STATE PARKS
 P. O. BOX 621
 HONOLULU, HAWAII 96809

HAWAII REGISTER OF HISTORIC PLACES

Historic Sites Information and Review Form

Name of Site (Common): Pohoiki Mill Ruins	
And/Or Historic: Rycroft Mill	
Street Address: None	
City or Town: Pohoiki	Latitude-Longitude Coordinates: 19° 27' 45" N 154° 50' 47" W
County: Hawaii District: Puna	Tax Key Numbers: 1-3-08- 34 34
Type of Site: Building <u>X</u> Public _____ Industrial-Commercial <u>X</u> Religious-Educational _____ Residence _____ Other (Specify) _____	
Historic Site (No Structure) _____ Historic District _____ Historic Object _____	
Location Map of the Site: 	
Approximate Acreage of Site:	Status of Site (Endangered?) No
Present Ownership: Private <u>X</u> Federal _____ State _____ City-County _____	

PRESENT INFORMATION ON THE SITE

NAME OF PRESENT OWNER(S):

Puna Sugar Company Ltd.

ADDRESS OF PRESENT OWNER(S):

Keaau, Hawaii

OWNER'S ATTITUDE:

Unrestricted Research Allowed X
 Restricted Research Allowed _____
 No Research Allowed _____

ACCESSIBILITY:

Unrestricted Access X
 Restricted Access _____
 No Public Access _____

PRESENT USE OF THE SITE:

Agricultural _____	Commercial _____	Educational _____	Entertainment _____
Government _____	Industrial _____	Military _____	Museum _____ Park _____
Residence _____	Religious _____	Scientific _____	Transportation _____
Other (Specify) _____	None _____		

PRESENT CONDITION OF THE SITE:

Excellent _____ Good _____ Fair X Deteriorated _____ Ruins _____

INTEGRITY OF THE SITE:

Altered _____ Unaltered X Moved _____ Original Place X
 (If Moved, note original location): _____

ARCHITECTURAL DESCRIPTION OF THE SITE AT PRESENT, INCLUDING SKETCHES:

General Description: Set in overgrown surroundings are the reinforced concrete remains of the Pohoiki Coffee Mill. This two-story rectangular structure is capped with a gable roof. A one-story wing or extension of the entrance area is located on the South side. Walls are 18 inches thick on the first floor and 14 inches thick above and are composed of solid concrete with textured aggregate stones.

All windows and doors have disappeared although the openings are still intact. Windows measure $3\frac{1}{2}$ feet by 6 feet and doors are usually double arched openings. There are no entrances from the exterior on the West end of the first floor as a raised entrance area on this side gives access to the second floor. This side is opened by two sets of double arched doors and two windows. The raised platform extends around to the South end. A rock wall encloses a trapezoidal area in front of the second floor entrance.

Wood flooring on the second floor is constructed from 2 inch by 12 inch planks. Ten truss units support the gable roof and the height from the floor to the top of the wall is 10 feet and 4 inches tall. Scarf joints are used in the construction.

On the first floor are the remains of machinery and ovens. An exterior stack is located on the Northeast end. Set in a tall base, the stack pedestal is moulded with a stepped pattern. This small detail along with the arched doorways are the only decorative note to this functional building.

Condition of Fabric: Fair

Quality of Maintenance: Excellent _____ Standard _____ Poor _____ None X

ARCHITECTURAL DESCRIPTION OF THE SITE AT PRESENT, INCLUDING SKETCHES:

Detailed Description of Exterior:

Foundation: Concrete

Wall Construction: Concrete

Structural System: Structural concrete walls, maybe steel reinforced, although not rubble; Wood timber frame inside; Wood truss roof.

Porches and Stoops: None; plain concrete openings

Openings: Doors: Doors all disappeared (probably wood)

Windows: All disappeared (probably wood sashes)

Roof: Shape and Covering: Low pitch gable on wood truss; corrugated iron cover

Detailed Description of Interior:

Floor Plan: See drawing; Long, rectangular
Two-story building (30 feet by 80 feet); Ground floor with wood posts down the center; Upper floor completely open space.

Stairways: None

Flooring: Ground floor; Cement
Upper floor; 2 inch by 6 inch wood planks on wood joists

ARCHITECTURAL DESCRIPTION OF SITE AT PRESENT, INCLUDING SKETCHES:

Wall and Ceiling Finish: Wall - Both floors are structural concrete
Ceiling-ground floor, Open wood joists; No cover
Ceiling-upper floor, Open wood truss; No finish

Decorative Features and Trim: None

Notable Hardware: None

Lighting: None

Additions and Alterations: None

Sites and Surroundings:

Orientation: Southwest to Northeast, principal entrance on Southwest end

Other Structures:

High concrete stack on Northeast side
Low concrete cistern near Southeast wall

Landscaping: Formerly open work yard at two levels; Presently all overgrown

Walks - None visible, probably all open earth areas
Walks, Drives, Walls: Drives - None visible, access road is narrow earth public
road, leads past the Southwest side of property
Walls - Concrete retaining wall around upper West terrace;
Rock wall encloses small yard adjacent to terrace
Miscellaneous (If more space is needed, please use continuation
sheets, HRHP-4-73A): There are some indications of former machinery and equipment
but mostly all is cleared out and abandoned.

HISTORICAL AND/OR ARCHITECTURAL SIGNIFICANCE

PERIOD OF SIGNIFICANCE:

EARLY CONTACT _____

MISSIONARY _____

MIDDLE 19th CENTURY _____

MONARCHY _____

TURN OF THE CENTURY X

20th CENTURY _____

ARCHITECT: Unknown

BUILDER: Assumed to be
Robert Rycroft

SPECIFIC DATES: c. 1985

STATEMENT OF SIGNIFICANCE, INCLUDING HISTORICAL SKETCH:

The Pohoiki Coffee Mill is being recommended for Valuable status based on its historic association with coffee growing in Puna. It represents efforts in the area to promote the industry and is a visible reminder of its short-lived success. Architecturally, the coffee mill is one of a few examples of reinforced concrete construction used in an early industrial building. It is believed to be the first concrete structure on the island.

It is not known when the structure was built or if it ever was completed. It is believed to have been constructed by Robert Rycroft, Pohoiki agriculturalist.

Rycroft came to Hawaii in 1864 aboard the ship Comet. He worked for Honolulu Iron Works later leaving his job to enter an independent plumbing business. He also owned the Fountain Restaurant and Temperance Saloon, both located on Fort Street. Other business ventures included the Nuuanu Valley, Honolulu Ice Works. Rycroft also spent two years in Australia promoting ice machines and returned to Hawaii to settle on the Big Island in 1877.

While on Hawaii he began shipping awa (Piper methysticum), a medicinal plant, and later entered the cattle business after purchasing 9,000 acres of land in Pohoiki and Keahi-aleka. He began the first systematic cultivation of coffee in Puna around 1891. His plantation, located three miles from the beach at Pohoiki, was at an elevation of 500 feet. In 1894 35 acres had been planted, half of which were mature trees (three years old). A saw-mill was erected to clear the land and wood was supplied to the government. Railroad ties for the Oahu Railway and Land Company were also manufactured at the saw mill.

Rycroft was a member of the Puna Road Board before moving to Honolulu. In 1899 Rycroft sold his coffee plantation, which consisted of 65 acres in Puna and 170 acres in Olaa. The venture had not been as successful as Rycroft had hoped, as coffee prices began to drop in 1899 due to the collapse of the world coffee market.

In 1899 Rycroft moved to Honolulu with his wife and six children and opened the Rycroft Arctic Soda Company. He died in 1908.

The Lobenstein map of 1895 of the Pohoiki area shows two mill sites. One is identified as the old mill and presumably refers to the sawmill and the other is identified as the new mill. An informant also stated that the roof of the mill was shipped to Pohoiki in 1895. This information along with the age of the coffee trees at this time negates earlier beliefs that the mill was constructed in the 1880's. Further, in view of the sudden collapse of the world coffee market in 1899, it is likely that the mill never was completed.

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MAJOR LITERARY SOURCES: Hawaiian Gazette, March, 9, 1900, p.5.

Records, Archives of Hawaii

Hawaii Directory, 1880

Lobenstein Map, 1895

Paradise of the Pacific, Aug. 1894, Nov. 1894

OTHER SOURCES (personal interview, etc.):

Gilbert Hayes

Dorothy Barrere

REPRESENTATION IN OTHER SURVEYS:

Title of Survey: None known

Date of Survey: _____

Records Located: _____

LOCATION OF LEGAL DESCRIPTION: Bureau of Conveyances
403 Queen Street
Honolulu, Hawaii 96813

COMMENTS: Recommendation: Valuable

If the site is to be made into a "living" coffee industry museum, it would seem desirable first to think such a project through, as the site is not typical of historical coffee growing and the mill is not typical of the processing mills of Hawaii, and there seems to be evidence that in fact, the mill never operated at all.

The Loo, Bonk report on the coffee mill (n.d. 60) was not available

SURVEY CARRIED OUT BY:

Name

Historian

Title

Name

Architect

Title

Hist

PHOTOGRAPHS: Yes X No _____ By: John C. Wright

Name

DATE: December, 1973

HAWAII REGISTER OF HISTORIC PLACES

HISTORICAL SITES INFORMATION AND REVIEW FORM---CONTINUATION SHEET Page One

Please note subject heading (Statement of Significance, etc.; use separate sheet for each heading).

Site #7386

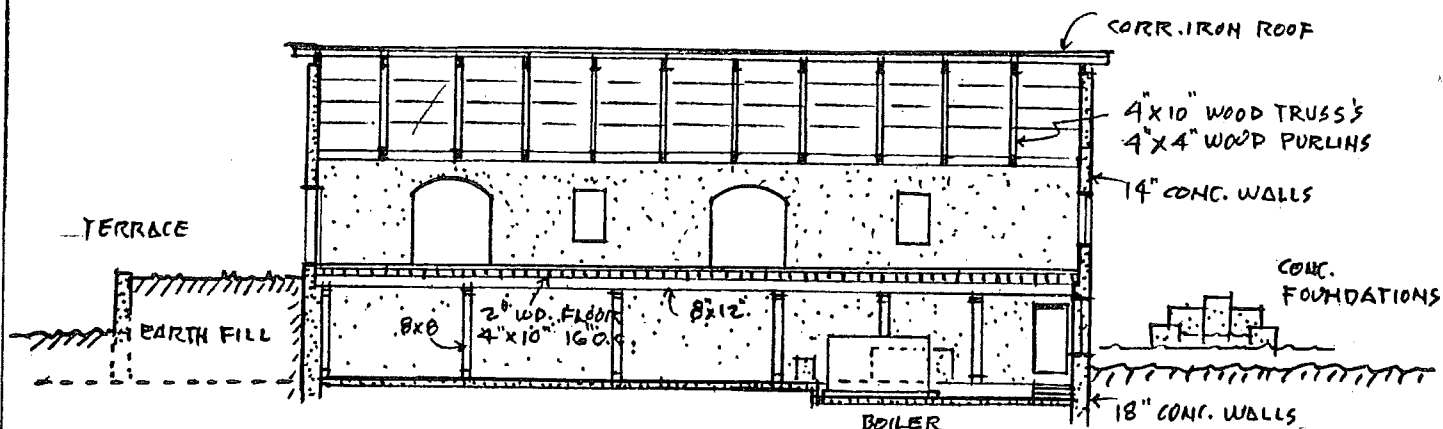
General description - continued

A polygonal tank, probably a cistern, is located to the East of the structure. Other stone and cement foundations are still visible on the Northwest end.

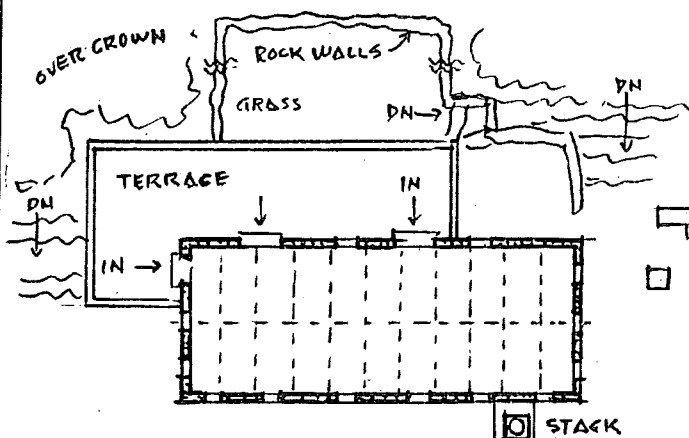
HAWAII REGISTER OF HISTORIC PLACES

HISTORICAL SITES INFORMATION AND REVIEW FORM---CONTINUATION SHEET

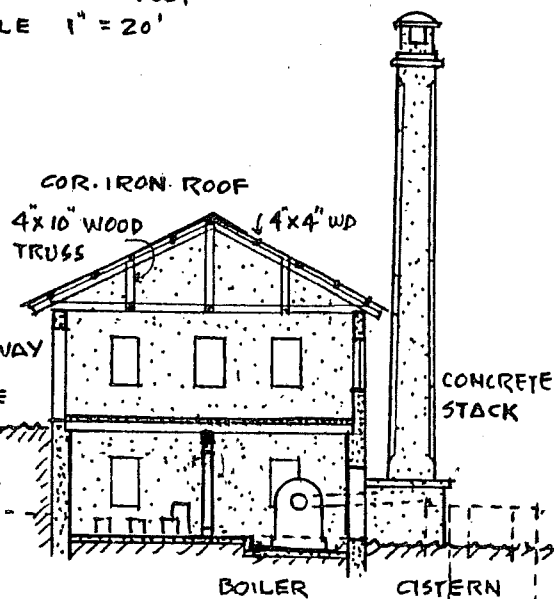
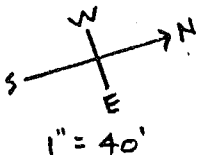
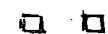
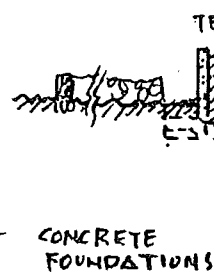
Please note subject heading (Statement of Significance, etc.; use separate sheet for each heading).



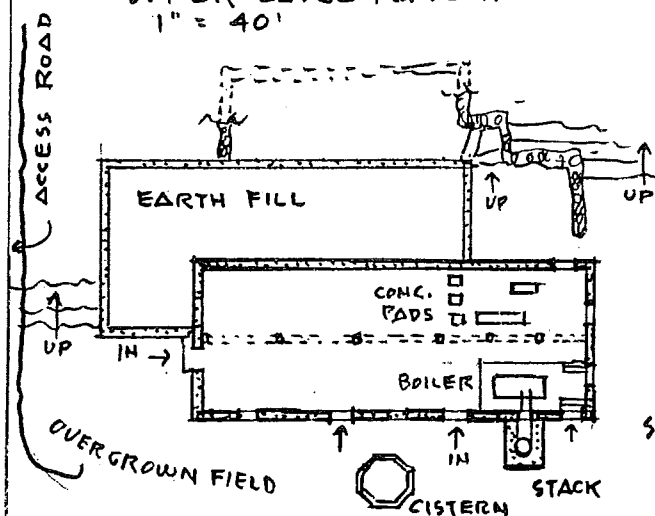
LONG. SECTION LOOKING WEST
SCALE 1" = 20'



UPPER LEVEL FL. PLAN
1" = 40'



CROSS SECTION (NORTH)
1" = 20'



LOWER LEVEL PLAN
SCALE 1" = 40'

POHOIKI
COFFEE MILL.
PUNA, HAWAII.

7386