

# Archaeological Monitoring Plan for the Residential Development of TMK: (3) 6-9-002:031

Lālāmilo Ahupua‘a  
South Kohala District  
Island of Hawai‘i

FINAL VERSION



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# 1. INTRODUCTION AND ARCHAEOLOGICAL BACKGROUND

At the request of Lisa Treadwell (property owner), ASM Affiliates, Inc. has prepared this archaeological monitoring plan in support of the development of a single-family residence on TMK: (3) 6-9-002:031 (formerly a portion of TMK: (3) 6-9-002:026) located in Lālāmilo Ahupua‘a, South Kohala District, Island of Hawai‘i (Figures 1 and 2). The development activities are being reviewed under County SMA rules and are subject to a 40 foot shoreline setback regulation. In their review of the SMA Assessment Application, DLNR-SHPD (DOC NO: 1404MV05) requested that an archaeological study of the property be conducted and that subsurface testing be a part of that study. The archaeological study was recently completed (Rechtman 2014) and approved by DLNR-SHPD (DOC NO: 1405MV20). While no archaeological sites were identified during the study, it was recommended that an archaeological monitor be present in the event that the development activities impact native soil, particularly in the *makai* portion of the parcel; the *mauka* portion of the parcel has been extensively graded to bedrock.

The current study parcel, located along the coast in the community of Puakō, is bounded to the north by a narrow stretch of beach and the coastal bedrock flat at Puakō Bay, to the west and east by developed residential parcels, and to the south by Puakō Beach Drive (Figure 3). The study parcel is currently undeveloped (except for the small area within the eastern triangular projection that has been developed as part of the neighboring parcel; Figure 4), but appears to have been grubbed and partially graded in the past as it is flat and relatively clear of vegetation (Figure 5). Current vegetation includes *kiawe* (*Prosopis pallida*), Coconut (*Cocos nucifera*), *milo* (*Thespesia populnea*), tree heliotrope (*Heliotropium curassavicum*), and bougainvillea (*Boerhavia spectabilis*) (see Figure 5; Figure 6).

Multiple archaeological studies have been conducted in the Puakō area and in the surrounding *ahupua‘a* from Kawaihae, south to Anaeho‘omalulu Bay (Table 1). These investigations vary from general reconnaissance level surveys to intensive data recovery efforts and have identified a range of archaeological and historical site types in this coastal setting. Sites types recorded in the coastal portions of Puakō consist of caves (lava tubes), petroglyphs, cairns, trails, rock and cave shelters, refuge caves, burials, a *hōlua* slide, and features associated with both temporary and permanent habitation including house platforms, overhangs, terraces, modified outcrops, paved areas, U-shape enclosures, sinkholes, walls, and rubble excavation areas. Coastal and inland (*mauka/makai*) trail networks have been documented throughout the South Kohala and North Kona Districts and were most likely used for coastal travel between *ahupua‘a* and to facilitate resource extraction and exchange between the coastal areas and the upland agricultural fields. The absence or minimal presence of agricultural features in this coastal zone suggests an occupational emphasis on the extraction of marine resources.

These studies have also generated settlement pattern models and have proposed chronological constructs, the dating of which was established primarily through hydration rind techniques. Although these dates correlate with the general settlement models and chronology, the hydration rind dating technique used on Hawaiian volcanic glass is questionable at best (Olson 1983).

1. Introduction and Archaeological Background

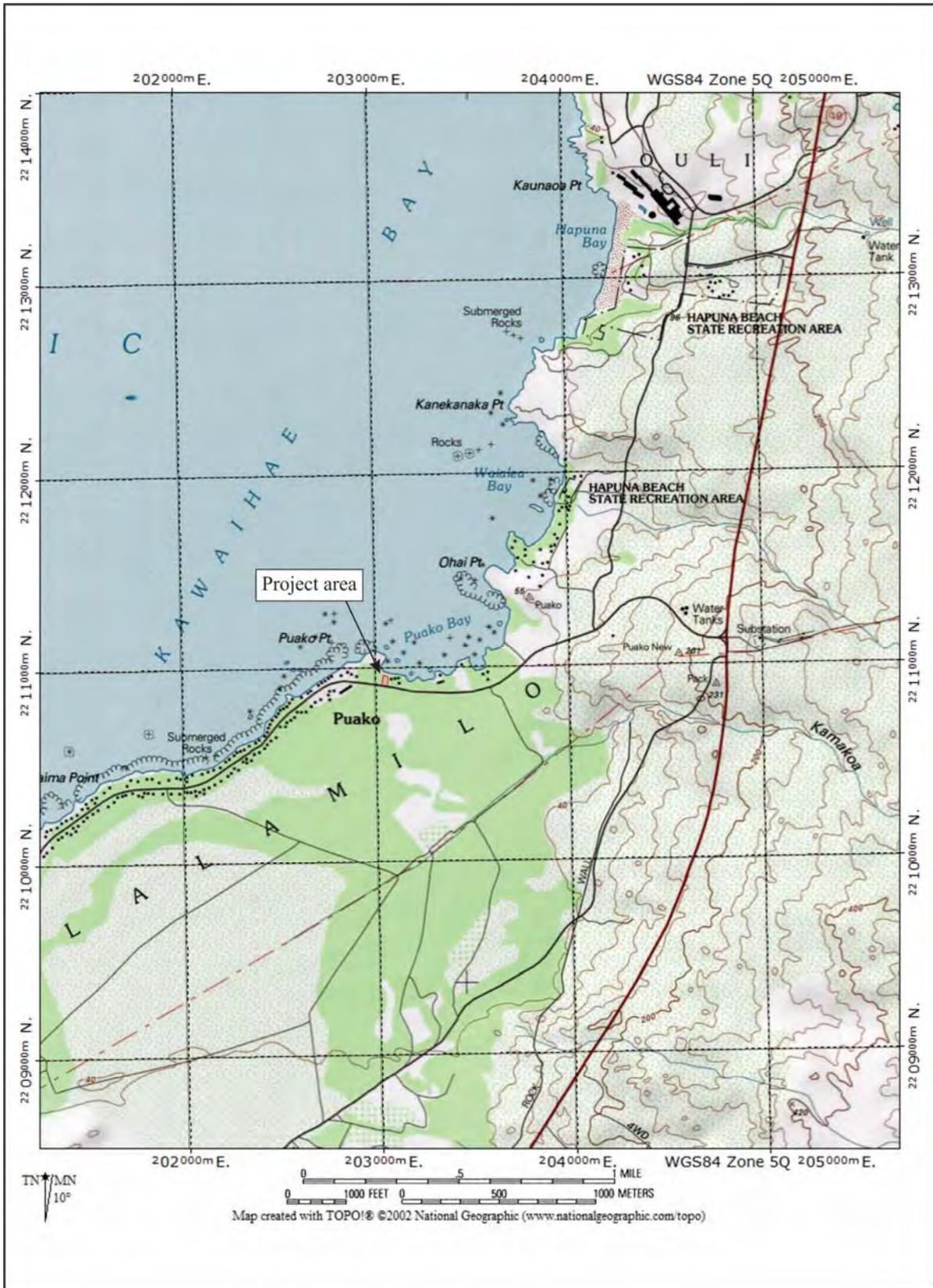


Figure 1. Project area location.





Figure 3. Google Earth™ satellite image showing the current project area (outlined in red and shaded).

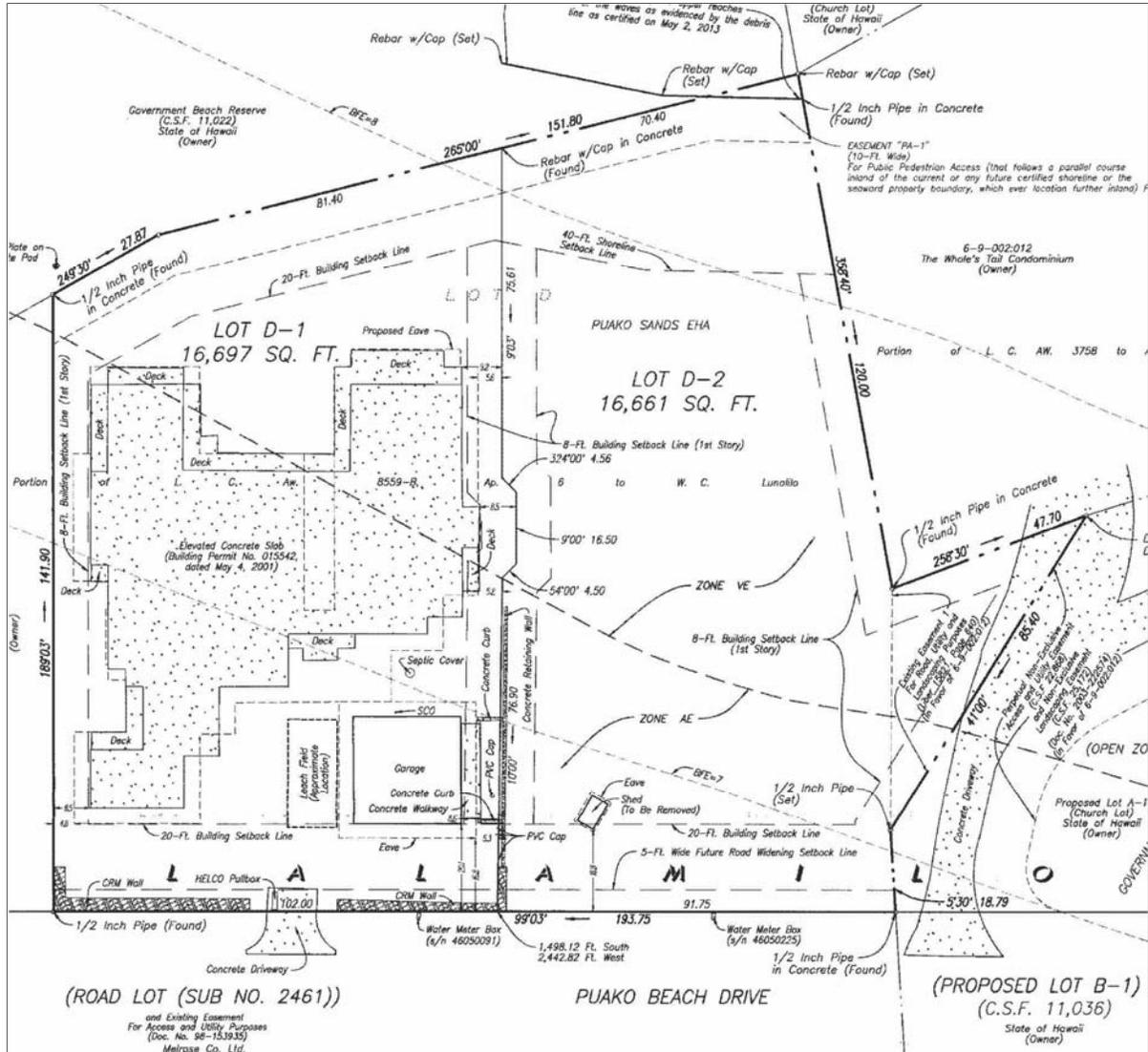


Figure 4. Portion of surveyor’s map showing new subdivision of study parcel (Lot D-2).



Figure 5. View of the study parcel to the northwest.



Figure 6. View of the study parcel to the southeast.

**Table 1. Prior studies.**

<i>Year</i>	<i>Author</i>	<i>Ahupua'a</i>	<i>Type of Study</i>
1930	Reinecke	General	Reconnaissance
n.d.	Emory	Lālāmilo	Excavation
1964	Smart	Lālāmilo	Excavation
1971	Ching	General	Intensive survey
1972	Rosendahl	Waikōloa, Lālāmilo	Excavation
1973	Barrera	General	Intensive survey
1975	Kirch	Waikōloa	Intensive survey, excavation
1979	Kirch	Lālāmilo	Excavation
1980	Kennedy	Lālāmilo	Intensive survey
1981	Soehren	Lālāmilo	Reconnaissance
1982	Kaschko and Rosendahl	Kawaihae 2 <sup>nd</sup> , 'Ōuli	Reconnaissance, historical
1982	Tomonari-Tuggle	Lālāmilo	Reconnaissance
1983	Rosendahl	'Ōuli	Intensive survey
1983	Clark and Kirch	General	Intensive survey
1984	Welch	Lālāmilo	Intensive survey
1985	Rosendahl	Kukio 1 <sup>st</sup>	Reconnaissance
1988	Welch	Lālāmilo	Intensive survey, excavation
1989	Welch	Lālāmilo	Intensive survey, excavation
1989a	Jensen	Waikōloa	Intensive survey
1989b	Jensen	'Anaeho'omalu	Excavation
1990	Burgett and Rosendahl	Lālāmilo	Archaeological Inventory Survey
1990	Carlson and Rosendahl	Kawaihae 2 <sup>nd</sup>	Intensive survey
1991	Jensen	Waikōloa	Excavation
1992	Jensen	Lālāmilo	Data recovery
1992	Dunn and Rosendahl	Lālāmilo	Intensive survey, excavation
1992	Burgett et al.	Lālāmilo	Intensive survey, excavation
1993	Greene	Kawaihae	Arch./Historical Assessment
1993	Graves	'Ōuli	Data recovery
1993	Boudreau and Graves	Lālāmilo	Data recovery
1993	Maly and Rosendahl	'Ōuli	Archaeological Site Preservation Plan
1994	Jensen	Lālāmilo	Inventory survey
1994	Landrum and Williams	'Anaeho'omalu	Archaeological
1995	Nees and Williams	'Anaeho'omalu	Archaeological
1996	Ogden	'Anaeho'omalu	Archaeological Site Preservation Plan
1999	Maly	General	Oral, Archival-Historical Research
2002	Dougherty and Rechtman	Lālāmilo	Archaeological and Cultural Assessment
2007	Clark and Rechtman	Lālāmilo	Archaeological Inventory Survey
2007	Corbin	Lālāmilo	Archaeological Assessment
2008	Clark and Rechtman	Lālāmilo	Archaeological Assessment
2014	Rechtman	Lālāmilo	Archaeological Assessment

The studies conducted in the more proximate Puakō area (Figure 7) are further discussed. To the south of the current study area, the Puakō Petroglyph Archaeological District (SIHP Site No. 4713) was nominated to the National Register of Historic Places by Myra Tomonari-Tuggle and David Tuggle on behalf of the Waimea Hawaiian Civic Club and Mauna Lani Resort (Dunn and Rosendahl 1992, Appendix B:B-6). The site was listed on the State of Hawaii Register of Historic Places in 1982, and in April of 1983 it was listed on the National Register. The site area was formally recorded by the Bishop Museum in 1964 (Kennedy 1980) and was noted as “one of the largest fields of its kind in the Hawaiian Islands” (Dunn and Rosendahl 1992, Appendix B:B-4); the petroglyph area consists of three major groupings of more than 3,000 incised figures and represents some of the oldest images in the Hawaiian Islands.

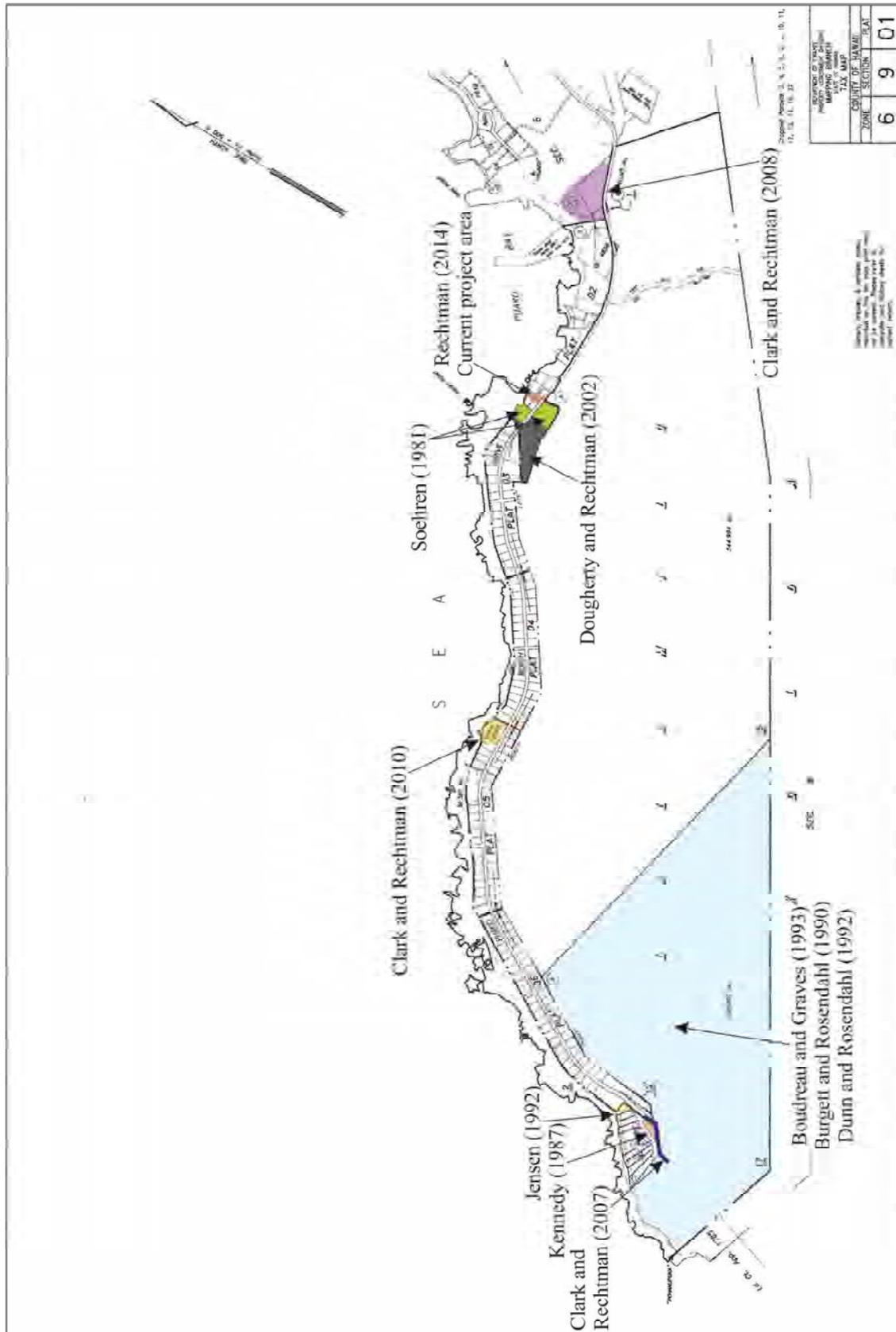


Figure 7. Locations of prior archaeological studies within the immediate Puako area.

Several studies were conducted for the extension of Puakō Beach Drive (Boudreau and Graves 1993; Burgett and Rosendahl 1990; Dunn and Rosendahl 1992), an intensive archaeological survey of the “Paniau” parcel (TMK: (3) 6-9-001:027) was completed (Kennedy 1980), and an inventory survey for the Puakō community emergency access road was also conducted (Clark and Rechtman 2007). Twenty-five sites containing a total of 75 features were recorded within the Puakō Beach Drive extension corridor (Dunn and Rosendahl 1992), and a total of twenty-four sites containing 47 features were recorded on the “Paniau” parcel (Kennedy 1980). Formal feature types recorded during these studies included caves, petroglyphs, terraces, modified outcrops, overhangs, modified sinks, *pāhoehoe* excavations, mounds, walls and enclosures. Most of these sites were interpreted as being used for or related to Precontact coastal habitation (Dunn and Rosendahl 1992). Radiocarbon age determinations from the “Paniau” parcel suggest that coastal habitation in the Puakō area occurred primary between A.D. 1640 and A.D.1890 (Jensen 1992). A trail, consisting of a cleared pathway across an ‘a’ā flow, was the only site recorded by Clark and Rechtman (2007).

To the southwest of the current study parcel, Clark and Rechtman (2010) conducted an archaeological inventory survey of Lot No. 6 of the Puakō Beach Lots (TMK: (3) 6-9-005:018). Historical records indicated, and subsurface testing confirmed the presence of an early twentieth century archaeological site (Site 50-10-11-28257) associated with the residential use of the property by Michael Kaloa. No structural remains of the residence were present on the surface, but a 1920 map of Lot No. 6 of the Puakō House Lots shows that two structures were formerly extant on the property. The residence included a larger rectangular structure to the north (seaward) with a smaller rectangular structure adjacent to its southern (inland) edge. Historic maps indicated the structures were built sometime between 1900 and 1920. A 1 x 1 meter test unit hand excavated in the general vicinity of the former residence revealed possible foundation structural remains associated with Historic Period artifacts.

In 1981 the Bishop Museum conducted surface reconnaissance surveys (Soehren 1981) of two parcel, one (TMK: (3) 6-9-002:013) next to the current study area, and one (TMK: (3) 6-9-002:023) across the street from the current study parcel. No archaeological sites were reported on either of these two parcels. TMK: (3) 6-9-002:023, across the road from the current project area was investigated again by Dougherty and Rechtman (2002), who prepared an archaeological and limited cultural assessment of a 5.2 acre area containing TMKs: (3) 6-9-02:023 and 027. To the east of the current project area near the Puakō boat ramp Clark and Rechtman (2008) prepared an archaeological assessment of a 5-acre portion of TMK: (3) 6-9-01:001. No archaeological sites were reported as a result of either of these studies largely due to mechanical disturbance that had occurred prior to the fieldwork. Clark and Rechtman (2008) did, however, note the presence of archaeological remains adjacent to their study area within a larger 750-acre area that had been previously studied by Burgett and Rosendahl (1990), Dunn and Rosendahl (1992), and Jensen (1994) for the expansion of the Hapuna Beach State Recreation Area. Within that larger area 164 sites containing 425 features were identified with feature types that included C-shapes, alignments, cairns, walls, cleared areas, paved areas, enclosures, midden scatters, modified outcrops, mounds, overhangs, terraces, rubble concentrations, trails, and upright stones. These features were interpreted as being used for agriculture, ranching, hunting, military, marker, possible ceremonial, temporary habitation, recreation, and indeterminate purposes.

As previously stated, the current study parcel was recently subject to an archaeological assessment (Rechtman 2014), which included a 100% surface reconnaissance and the mechanical excavation of three test trenches and two exploratory pits. There were no archaeological features observed on the surface nor were any identified during the subsurface testing, although a very spatially restricted subsurface deposit of late nineteenth to early twentieth century material was encountered that was interpreted to be a secondary deposit; thus, no archaeological sites were identified and recorded as a result of that archaeological study. It was concluded that the development of a single-family residence on this parcel would likely have no effect of historic properties; however, as a precautionary measure it was recommended that an archaeological monitor be present if unforeseen subsurface disturbance becomes necessary in the *makai* portion of the parcel, particularly in the area where Test Trench 2 had been excavated.

The current monitoring plan has been prepared in conformance with HAR 13§13-279. The following pages contain a brief culture-historical context, a summary of anticipated remains, a presentation of the development activities, the details of the monitoring effort (field methods and treatment of recovered remains), as well as post monitoring reporting and curation concerns.

## 2. CULTURE-HISTORICAL CONTEXT

The current project area lies within the town of Puakō in the *ahupua'a* of Lālāmilo, South Kohala District, Island of Hawai'i. The name Puakō literally translates as “sugarcane blossom” (Pukui et al. 1974), but according to the *Legend of Kaulanapokii* (Fornander 1917), the area may have been named for a handsome man who once lived there. The story tells of five sisters (Kaulanapokii being the youngest) who one day set out site seeing along the West Hawai'i coast, and upon arriving in Kohala (at Kalāhuipua'a) they met Puakō, who took Mailelailii, the oldest sister, as his wife. Fornander writes:

Puako was a very handsome man whose form was perfect. When he saw Mailelailii he took her to be his wife and that night they were covered with the same kappa. Very early the next morning the girls looked and saw Puako carrying sea water and filling pools for salt making. Upon seeing this the sisters got disgusted and said to Mailelailii: “Say, if that is going to be your husband we will all be made weary carrying sea water for salt making and our skins will look like the windward bark of a noni tree.” Mailelailii then said to Puako: “My sisters are urging me to continue on our way sight seeing.” Puako consented to this, so the girls departed on their way to Kohala. (1917:560-562)

The first Hawaiians may have settled in the Puakō area as early as A.D. 1200, with major population expansion occurring between A.D. 1500-1700 (Dunn and Rosendahl 1992; Kirch 1979). The original settlers must have been attracted to this arid stretch of coastline by the numerous anchaline ponds that offered abundant, marginally potable water, and the easy access to the rich pelagic and benthic marine resources. The early community likely shared extended familial relations and there would have been an occupational focus on the collection of marine resources. As illustrated in the *Legend of Kaulanapokii*, some residents of Puakō were also engaged in salt making. Additionally, where conditions allowed, small scale agriculture must have been practiced, although much of the produce consumed by the coastal residents likely came from the uplands of Waimea. Handy and Handy write that, “Puako near the Kona border was a sizeable fishing village at one time where there were undoubtedly many sweet-potato patches” (1972:532).

Coconuts were another abundant natural resource of Puakō. When King Kamehameha needed coconuts for the rededication of *heiau* in the Waimea area, he sent his people to Puakō to gather them. Kamakau tells the following story of this event:

While Kamehameha was living with the chiefs at Waimea [he was] engaged in restoring the old heiaus. When the fence of images (*paehumu*), the oracle tower (*anu'unu'u*), and the pavement (*Kipapa*) of the heiau of Uli had been restored, all the people had to go down to Puako after coconuts. When each had taken up his load to return there remained still 480 nuts unhusked. All had gone except Kamehameha and one other to whom the chief was unknown. Kamehameha turned to him and said, “It looks as if there would not be enough coconuts for the dedication in the morning.” It is possible that the man recognized the chief for he replied, “They will all be there.” The two put the nuts into nets and fastened them together into a huge load that stood taller than either of them. The road from Puako to Waimea is close to twenty miles in length. Occasionally when the man seemed tired Kamehameha took a turn at the load. At dusk as they neared their destination, and it came time for evening prayer, Kamehameha left the man, saying, “When you get to the heiau spend the night with the people of the place, but do not tell them that Kamehameha helped carry the load on his back.” Because of this feat of strength and another later, when he took up two hogs each more than a fathom long and carried them without help, this Ku-i-helani, as his name was, became a great favorite with the chief and held an important office under him. He was allowed to have ten wives, an honor allowed to no other chief besides, and there was no home happier than his, no governor of a district to be compared with Ku-i-helani. (1992:183)

Early Western visitors to Puakō noted the bleak appearance of the land, the lack of agriculture, and the residents' dependence on the ocean for sustenance. Archibald Menzies, a botanist who travelled to Hawai'i in 1792 with Captain George Vancouver, observed that the land was “... barren and rugged with volcanic dregs and fragments of black lava ... in consequence of which the residents were obliged to have to recourse to fishing for their sustenance” (1920:99).

Lorenzo Lyons, who arrived in Hawai'i at Kawaihae on July 16, 1832, replaced Reverend Dwight Baldwin as the minister in Waimea (Maly 1999). Lyons' missionary territory, although centered in Waimea, included the districts of Kohala and Hāmākua. He served as the preeminent missionary of the area until his death in 1886 (Puakō Historical

Society 2000), becoming one of the most beloved of the Hawaiian missionaries, known to his parishioners as *Ka Makua Laiana, haku mele o ka aina Mauna* (Father Lyons, lyric poet of the mountain country). During his tenure at Waimea Lyons' travelled the territory spreading the gospel and helping the needy. He helped establish and maintain many of the early churches and schools in Kohala, including a school at Puakō and Hōkūloa Church. In 1835 Lyons visited Puakō, writing in his journal:

Wednesday: Rose at four o'clock and walked to Puako, five or six miles distant. When it was light I gathered a few shells. I walked along the shore - alone. On one hand was the ocean; on the other a dreary, desolate waste -rocks, lava, coral. I thot of home as I often do. I wonder what my friends would think if they knew just where I am... I reached Puako at an early hour. As I was alone carrying my own calabash, the natives mistook me for some wandering foreigner, and when I spoke to them in their own language how startled they were! But some knew me. They expressed a great deal of pity for me because I had to carry my own baggage ... I excited a great deal of curiosity, I then had breakfast - that is I sat on a stone and ate a biscuit. No water could be found but salt water. As soon as the people could be collected together I talked to them; examined their school, after which I took a look at their salt works, took dinner, drank some coconut water, and started for home, my horse having come after me.

Puako is a village on the shore, very like Kawaihae, but larger. It has a small harbor in which native vessels anchor. Coconut groves give it a verdant aspect. No food grows in the place. The people make salt and catch fish. These they exchange for vegetables grown elsewhere. (Doyle 1945:85)

Between 1839 and 1846 Lyons documented the worsening condition of life for the general population of Puakō as its inhabitants adjusted to a more Western way of life and a market economy. Lyons blamed the system of taxation and the lack of economic opportunity, which led to severe food shortages (Puakō Historical Society 2000). In 1844 he wrote that the poor people of Puakō could not raise enough fish or *poi* for their Thanksgiving feast, and that he never ate nor drank anything while there (Doyle 1945). In another entry he writes:

Not infrequently at Kawaihae and Puako there is no food to be had. The people live without food for days, except a little fish which prevents starvation. Nor is this to be had everyday, the ocean being so rough they cannot fish, or a government working day interferes, when the sailing of a canoe is tabu - unless the owner chooses to pay a fine. The water too at these places is such that I cannot drink it. I would as soon drink a dose of Epsom salts ... (Doyle 1945:108-109).

By the mid-nineteenth century, the ever-growing population of Westerners forced socioeconomic and demographic changes that promoted the establishment of a Euro-American style of land ownership, and in 1848 the *Māhele 'Āina* became the vehicle for determining ownership of native lands. This change in land tenure was promoted primarily by the missionaries and Western businessmen in the island kingdom. Generally these individuals were hesitant to enter business deals on leasehold land. The *Māhele* (division) defined the land interests of Kamehameha III (the King), the high-ranking chiefs, and the *konoiki*. During the *Māhele*, all lands in the Kingdom of Hawai'i were placed in one of three categories: (1) Crown Lands (for the occupant of the throne); (2) Government Lands; and (3) *Konoiki* Lands (Chinen 1958:vii and Chinen 1961:13). The chiefs and *konoiki* 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.

All three types of land were subject to the rights of the native tenants therein; those individuals who lived on the land and worked it for their subsistence and the welfare of the chiefs. Native tenants could claim, and acquire title to, *kuleana* parcels that they actively lived on or farmed at the time of the *Māhele*. The Kuleana Act of December 21, 1849 provided the framework by which native tenants could apply for and receive fee-simple interest in their *kuleana* lands from the Land Commission. The Board of Commissioners over saw the program and administered the lands as Land Commission Awards (LCAw.). Not all lands that were claimed were awarded.

As a result of the *Māhele* of 1848 the *'ili* (land division smaller than an *ahupua'a*) of Puakō and Lālāmilo in the *kalana* (land division smaller than a district) of Waimea were both awarded to William Charles Lunaliilo, who would eventually become the ruler of Hawai'i, as part of LCAw. 8559-B (Foreign Testimony Vol. 16:81). During the *Māhele* eight *kuleana* parcels were claimed in Puakō, but only four were awarded. All four of the awards were residential lots located along the coast (Maly 1999), three of which (LCAws. 3736, 3758, and 4102) are located nearby the current project area (see Figure 2). The three nearby claims are described in the *Māhele* records as follows:

**LCA 3736 to Petero Wahakane** – I have three places to describe: at Puako is a house lot, at Waimea is a house lot, at Waipio are 17 taro pond fields (*loi*), District 6, Hawaii. (Native Register Vol. 8:52)

Kamahiai sworn and stated: I have seen (his land), there in the land section of Lalamilo at Puako, Hawaii. It is not enclosed, there are two houses within it, one for Wahakane and one for Kai who dwells under Wahakane. The boundaries are; inland and waho is Uilama Pekeles land, is so on all sides. It was vacant before Wahakane received it in 1843... (Native Testimony Vol. 4:19)

**LCA 3758 to Akahi (w.)** – I have a house lot at Puako, in Waimea, at the shore [Figure 8]. It is 16 fathoms long and 16 fathoms wide. It has been surrounded with a stone wall from ancient times. (Native Register Vol. 8:52)

Kamahiai sworn and stated: I have seen Akahi's Place, it is at Puako in Waimea, Hawaii, in one section. It has been enclosed and there are four house, two of which are for Akahi, and one for Kahenehene (w.) and the other for Napuupuu. On the upland and Waho sides is the land of Uilama, the Konohiki; towards the sea is Hueu's land; and towards Kawaihae is Uilama Pekele's land. Akahi has a very old claim and no one has objected... (Native Testimony Vol. 4:20)

**LCA 4102 to Kamahiai** – I hereby describe to you my house lot at Puako...[Figure 9] The circumference is 80 fathoms, it is for you to affirm. I am your obedient servant. (Native Register Vol. 8:65)

Akahi sworn and stated: I have seen there in the land section of Lalamilo, adjoining Puako, a house lot with three houses in it. It is enclosed with a wall. One house is for Kamahiai, one for Naoho, and one for Kahaanapilo. On the upland side is William B.; on the outer Kohala side is William B., on the shoreward side is Akahi's lot, and on the Kohala side is William B. He got it from Hueu in 1842. No one has objected...

Kalala testifies the same as Akahi. (Native Testimony Vol. 4:21)

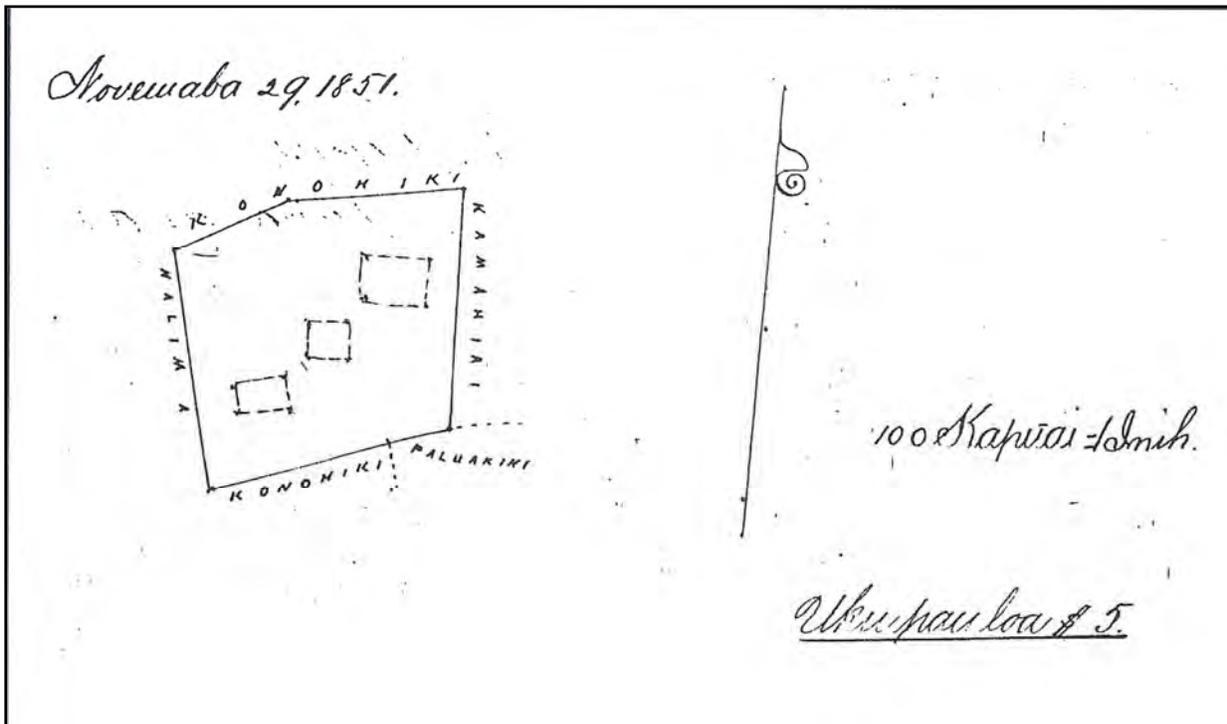


Figure 8. Diagram of LCAw. 3758 to Akahi (*Māhele* Book Vol. 4:627).

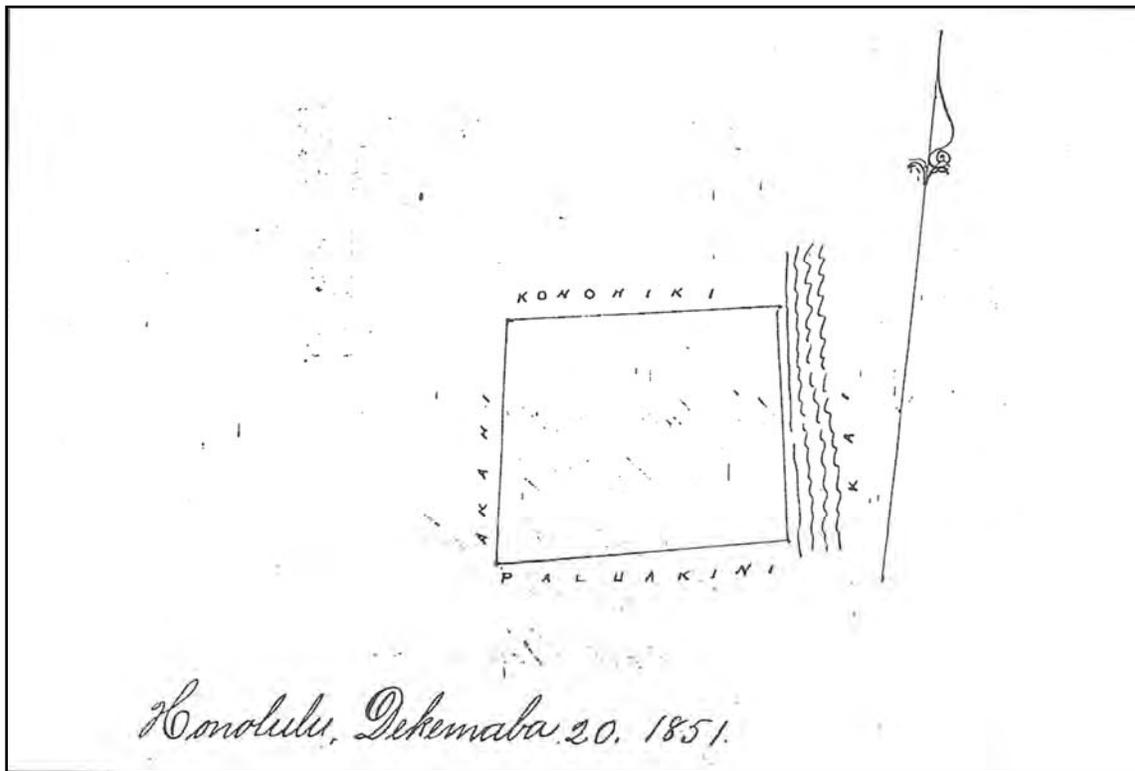


Figure 9. Diagram of LCAw. 4102 to Kamahiai (*Māhele* Book Vol. 4:626).

Although there are some minor discrepancies within the Akahi and Kamahiai testimonies with respect to location, orientation, and ownership of adjoining lands, it is clear that the Akahi *kuleana* was surrounded by a stone wall and that the area to the west of the Akahi award (the current study area) may have been occupied by Nalima. A review of the unawarded *kuleana* for Puakō does not list Nalima as a claimant. Akahi's presence in the Puakō area seems to be of greater antiquity than that of her fellow awardees; as Kamahiai (who received his land in 1842) relates "Akahi has a very old claim."

To the east of the current study area, the recipient of LCAw. 3736, Petero Wahakane was the school teacher at Puakō at that time. His lot was located adjacent to (east of) the school lot. The school at Puakō had been established sometime prior to Lorenzo Lyons' visit to Puakō in 1835 (see above). Wahakane taught subjects such as reading, arithmetic, geography, penmanship, philosophy, science, and religion, but in a January 10, 1848 letter to Keoni Ana, P. Wahakane laments that the Puakō school program was suffering great difficulties, largely due to the lack of funding for facilities and teachers' salaries (Maly 1999). On December 6, 1851 the school house, which was originally built on vacant land, was formally granted with a piece of land to the Board of Education as Grant No. 13:1 (Figure 10). The boundaries of the lot were described as follows:

School lot at Puako, Waimea, Hawaii. Beginning at a coconut tree on the Northern corner next to the land of Wahakane, proceeding South 24° East 184 feet, then along the land of the *Konohiki*, South 74 1/4° West 228 feet; then along Mokuheia's land North 5 3/4° West 169 feet; then proceeding near the shore North 78½ East 177 feet to the place of commencement.

Within this is 903 fathoms.

C.I. Lyons.

(Board of Education Grant No. 13:1; in Maly 1999:76)

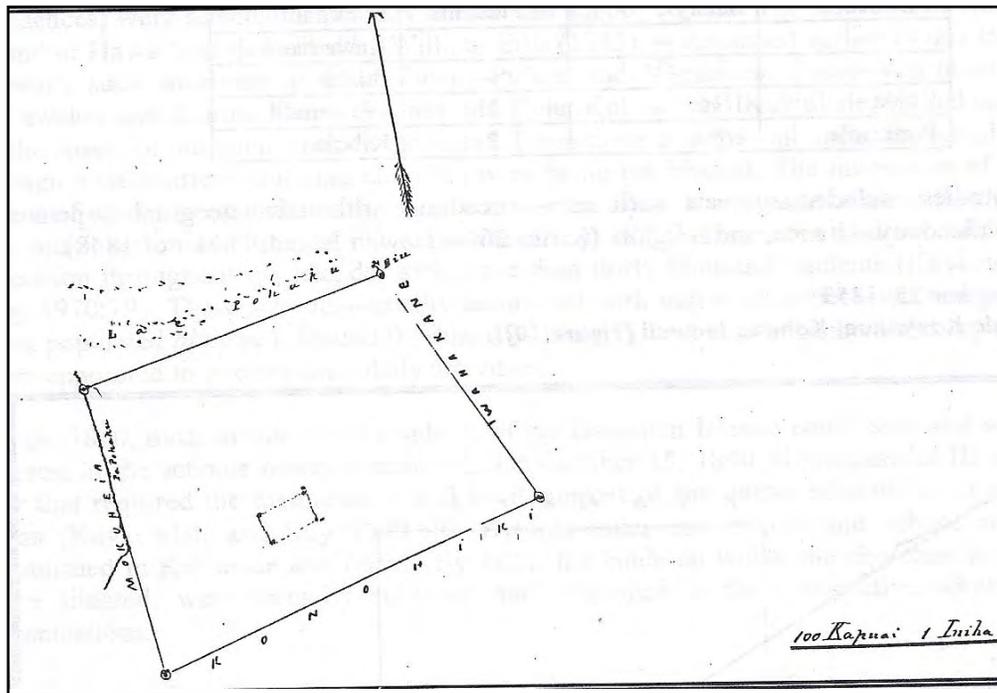


Figure 10. School lot at Puakō (in Maly 1999:76).

By 1855 D. Kilakau was listed as the teacher at Puakō School, which at that time had 18 students (Maly 1999). On July 19, 1865, Chas Gulick, the school inspector, visited the Puakō School, and reported the following findings in his report:

1. Puako: In a S.W. direction from Kawaihae, about 5 miles distance, pleasantly situated amidst cocoanut groves, at the foot of the barren hills, along the shore. It is quite a village, with a painted and well kept meeting house and several newly built dwelling houses. The school house is of stone and mortar, substantially built and was once upon a time whitewashed. But time and neglect has laid their hands heavily upon it as evidenced in the dirty and broken walls, the want of floor and benches and its broken door and mud stained windows. Although the school site belonging to it was about an acre large, the house stood pinched up within a narrow enclosure of stone. I ordered the Agent to repair and whitewash the house, put floor and benches in it, enlarge the enclosure in conformity with the original lot, have it cleaned and planted, and to stir up the parents to assist in the work. This school carries 18 children on the register, but only 10 attended on the day I was there. The proficiency of the scholars was not very satisfactory. I am inclined to believe that “the School master is abroad” too much of his time, he living at Kawaihae too far from the school; but none other was to be had. (in Maly 1999:78)

The next school report in 1873 lists Josepa as the Puakō schoolteacher with 20 students and a daily salary of fifty cents (Maly 1999). By 1911 the old stone and mortar school house had been replaced by a tongue and groove frame building with a shingle roof and an outhouse. The Puakō School remained in operation until the 1920s. James La‘au was the last teacher at the school. After the school closed, children from Puakō went to Kawaihae to attend school (Maly 1999).

In 1853 King Kamehameha III gave a piece of his own royal lands in Puakō to Lorenzo Lyons for the use of his ministry (Maly 1999; Puakō Historical Society 2000). This land would eventually become the location of Hōkūloa Church. The lot, located adjacent to Kamahiai’s *kuleana* (LCAw. 4102) consisted of land that at the time of the *Māhele* of 1848 was identified by the name Paluakini (see Figures 8 and 9). The boundaries of the church lot were described on September 17, 1853 as follows (Figure 11):

at the northern corner adjoining Kamahiai’s lot and proceeding along Kamahiai’s lot South  $80\ 1/2^\circ$  West 150 feet; then along Kauhini’s lot South  $69\ 1/2^\circ$  West 24 feet; then along the Konohiki’s land South  $90^\circ$  West 150 feet; North  $80\ 1/2^\circ$  East 200 feet; and North  $19^\circ$  West 155 feet to the point of commencement. (in Maly 1999:77)

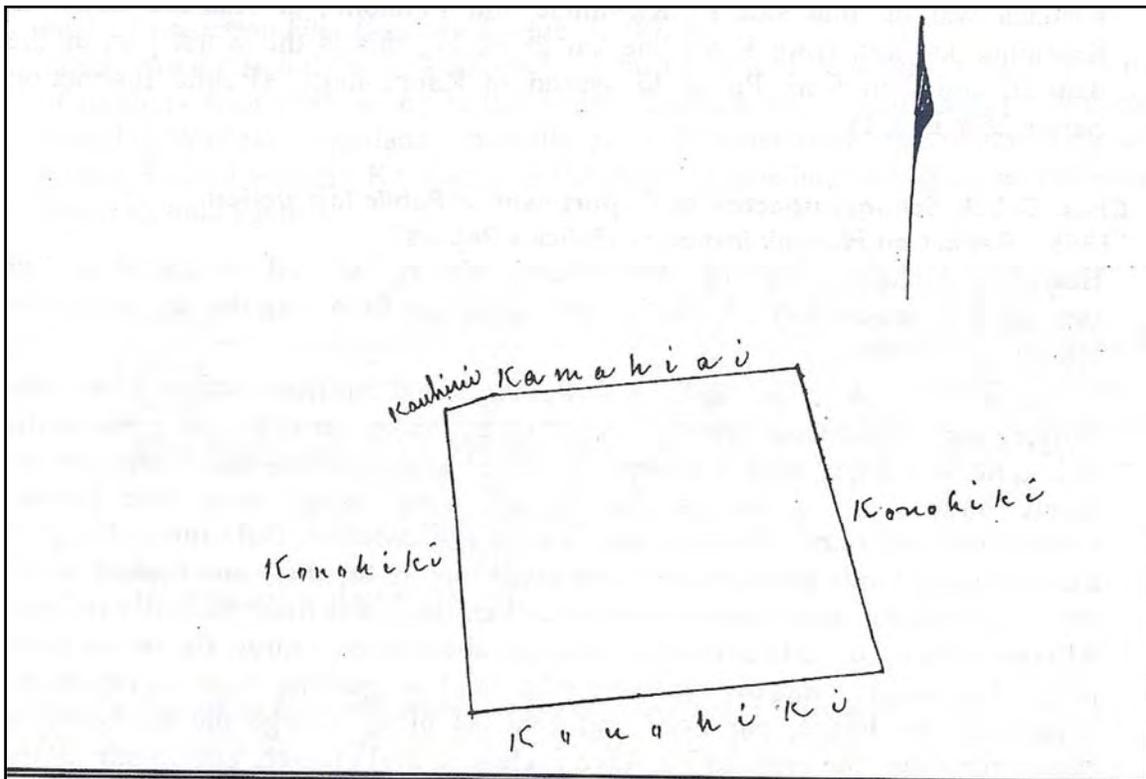


Figure 11. Church lot at Puakō (in Maly 1999:77).

In 1858 work commenced on Hōkūloa Church, which was named after the evening star. The men of the parish volunteered their labor to construct the edifice. A twenty-one by thirty-six foot foundation was laid for the structure. Divers cut and brought up coral blocks from the Puako reef, which were then fired in pits, ground, and mixed with sand and water to make the mortar for the rock walls. Floor planks were cut and hewed from *koa* trees that were hauled down from the high forests (Puakō Historical Society 2000).

In an 1859 report Lorenzo Lyons provides some details of the church building efforts and the general state of affairs in Puakō:

I reported this [church] last year as on the way—the stone walls up-laid in mortar-& windows procured. This is the poorest parish in my field, rendered still poorer of late by the frequent rains that have prevented the people from making salt—one of their chief dependencies—the wind-rough weather, & the heat of the volcanic stream that entered the sea near this place [from the 1859 eruption of Mauna Loa] have killed or frightened away all their fish the 2nd source of wealth. There remain the fruit of a few cocoa nut [sic] trees, & the lauhala from the leaf of which the women busy themselves in making mats. The men can sometimes find a job of work that will bring them in something, i.e. if they can manage to obtain food, all of which comes from a distance. One such job they have found. They have built a stone schoolhouse plastered inside and out & surrounded it with a stone wall, & turned all the avails 120\$ [sic] into their [church]. The avails of the women's mats are disposed of in the same way. With the funds obtained & any others I may be so fortunate as to secure by begging or otherwise, I am authorized by the trustees to purchase materials for the roof - floor &c. We have resolved to have the roof & belfrey & the floor laid by the next communion season—which is the, last week in Aug. (in Puakō Historical Society 2000:49-50)

An 1859 watercolor of Puakō by the Swiss artist Paul Emmert, a resident of Kailua-Kona, depicts the coastal village during the building of Hōkūloa Church. The painting shows three plumes of the Mauna Loa eruption on the horizon, with the half-completed church surrounded by scaffolding (to the right above the traditional sailing canoe), the school building within an enclosed lot (in the center), and some scattered thatched houses and numerous coconuts along the shore (Figure 12). The current project area is located at the far right of the painting (the cluster of three houses may be the location of LCAw. 3758 to Akahi).

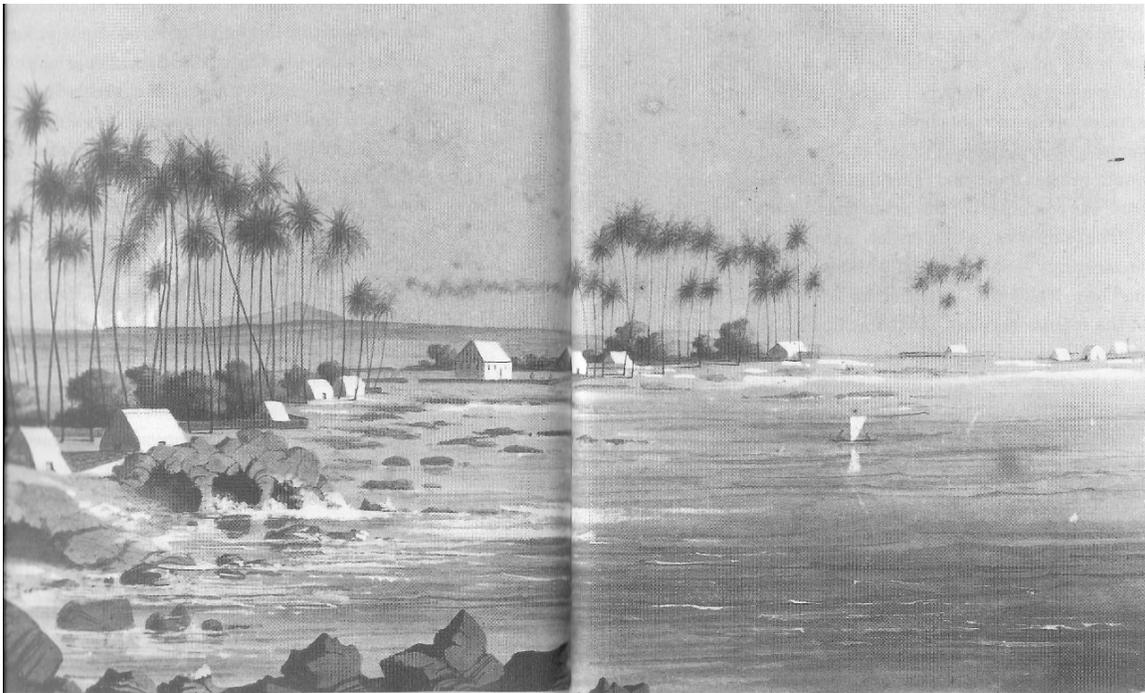


Figure 12. “Puako, Kohala, Hawai‘i”, watercolor by Paul Emmert, 1859 (in Puakō Historical Society 2000:52-53).

Despite the hardships faced by the residents of Puakō, Hōkūloa Church was completed and dedicated on March 21, 1860. A fine new bell placed in a little steeple replaced the conch shell horn that had formerly called the faithful to worship (Puakō Historical Society 2000). In his journal, Lyons described the scene with satisfaction, writing, “The stone chh [sic], with its whitened walls, & reddened roof & humble spire give the place an air of civilization & religiousness, & the school house in close proximity with its similar walls tho’ thatched roof, makes something of a show” (in Puakō Historical Society 2000:51). A review of Lyons’ journal entries and annual reports following the completion of Hōkūloa Church provides some additional information concerning life in Puakō during the 1860s-70s:

The seventy-member parish held a festival to help payoff the remaining \$1,200 debt. For the next years, the annual reports note only passing news of the community as it continued its gradual decline. Barenaba K, the sub pastor, was found to be not highly qualified for the job. The schoolteacher, a “smart young man”, fell and was injured. He was replaced by an older fellow “whom the last examination shows to be incompetent for his position.” A mother and daughter were burned to death in a house fire, and that same year a deacon of the church, a carpenter, died. (Puakō Historical Society 2000:51)

Attendance at the church gradually waned as the population of Puakō declined, and the parish eventually gave up some of its regular services (Puakō Historical Society 2000). Some of the Puakō residents may have moved elsewhere seeking economic gains. In 1880, George Bowser, editor of *The Hawaiian Kingdom Statistical and Commercial Directory and Tourists Guide*, described Puakō as it appeared then:

At Puako there is some grief for the eye, in the shape of a grove of cocoa-palms, which are growing quite close to the water’s edge. These had been planted right amongst the lava, and where they got their sustenance from I could not imagine. They are not of any great height, running from twenty to sixty feet. There are about a dozen native huts in the place. These buildings are from twenty to forty feet long and about fifteen feet high to the ridge of the roof. They only contain a single room each, and are covered with several layers of matting. [Bowser 1880:546]

A map prepared by J. S. Emerson in 1882 (Hawai‘i Reg. Map No. 1278) shows a few scattered houses along the shore in Puakō within a coconut grove near the church and school house along the coastal road (Figure 13). By this time Hōkūloa Church must have fallen on hard times and suffered from lack of repair; it is labeled on the map “puako church ruins”. No houses are shown in the vicinity of the current project area on the 1882 map.

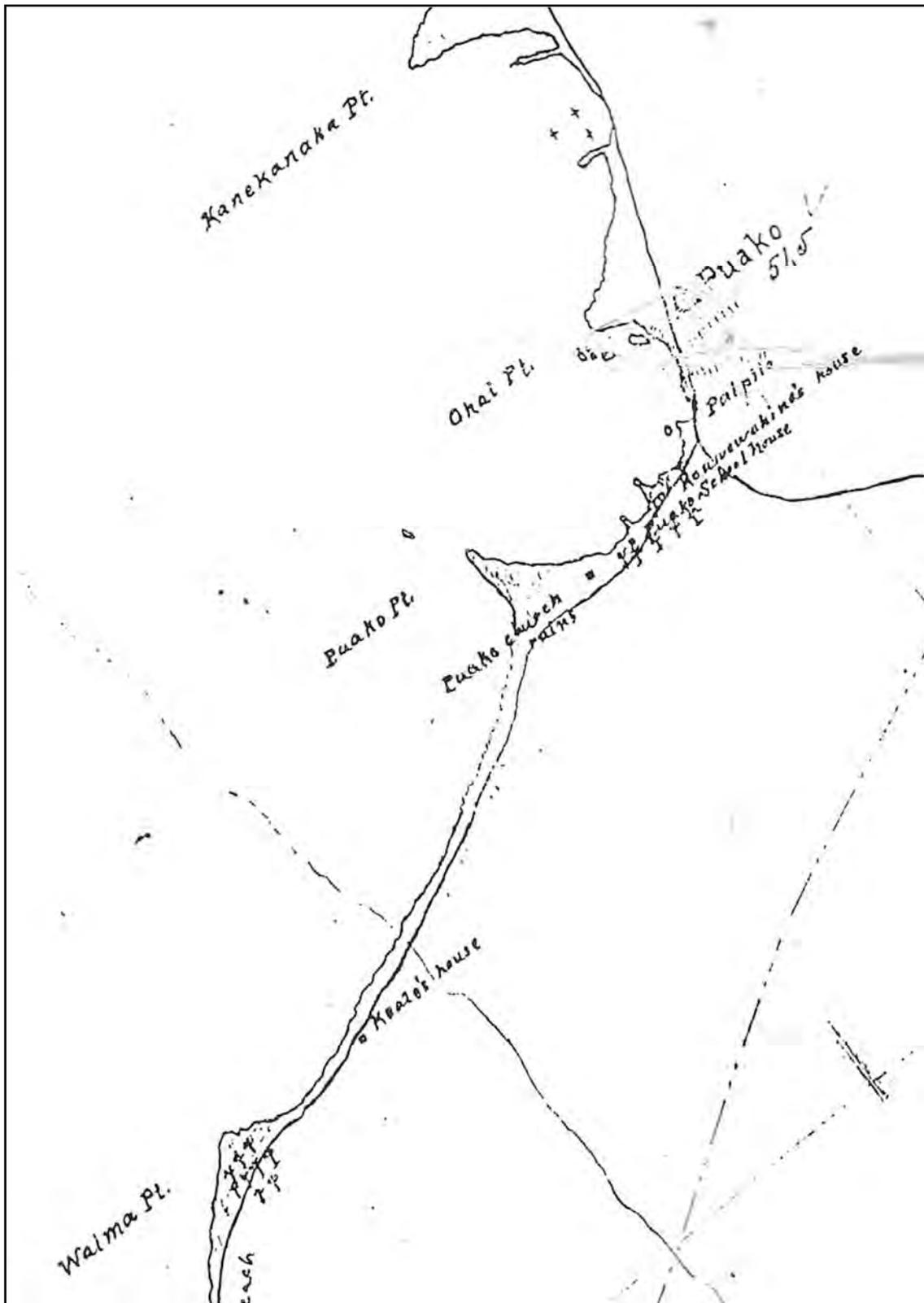


Figure 13. Portion of Reg. Map No. 1278 prepared by J. S. Emerson in 1882, showing coastal Puakō.

## 2. Culture-Historical Context

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In 1884, under the guidance of Reverend Johnathon Stuppelbeen, Hōkūloa Church underwent considerable restoration, and was rededicated on January 1, 1885 (Puakō Historical Society 2000). In 1895 a chance discovery was made that would briefly change the economic fortunes of Puakō. It was in that year that Mr. Wilmot I. Vrendenberg, a British national, came across sugarcane growing wild in the Puakō area. Delighted by his discovery, Vrendenberg immediately took the sugarcane to Robert Hind and his son John who in ca. 1880 had founded the Hāwī Mill and Plantation Company in North Kohala (Puakō Historical Society 2000). John Hind described this chance encounter, which would soon lead to the establishment of the Puakō Sugar Plantation, in his journals:

Mr. W. I. Vrendenberg one Sunday came to Hawi in a state of considerable excitement, with four or five sticks of fine looking cane strapped to his saddle, which, as he put it, he discovered at Puako the day before while on a shooting trip. This cane was grown without irrigation, and he enthusiastically announced there were large areas of as good land as that on which these sticks were grown.... Conditions appeared extremely favorable.... Soil was analyzed... a well was sunk (about ten feet) water analyzed and found to contain no more salt water than other plantations, using well water. An experimental plot was planted, which for growth exceeded anything I had ever seen. (John Hind manuscript in Puakō Historical Society 2000:56)

The Hinds, excited by the prospects of a new plantation, soon entered into negotiations with the Parker Ranch for land at Puakō. Subsequent to the Māhele Parker Ranch had acquired some of Lunalilo's royal lands around the bay as a winter range for their cattle, and as a place to occasionally ship cattle from (Puakō Historical Society 2000). The Hinds were able to trade a piece of land in Hilo for a swath of Parker Ranch land in Puakō, and they leased additional acreage from the Territory of Hawai'i (Maly 1999). These lands (between 1,500-1,800 acres) eventually (by ca. 1902) became the Puakō Sugar Plantation.

Norman G. Campion, a marine engineer, was hired to design the Puakō sugar mill and oversee its construction on a four acre property along the shore to the east of the current project area (Grant No. 4856; Figure 14). A wharf was constructed first to facilitate the shipment of materials for mill construction. Then, as John Hind writes, "a fine up to date little mill with all the appurtenances which go with a modern plantation was installed [ca. 1905], on an ideal site, a hundred or so yards from the landing" (Hind ms.:50 in Maly 1999:122). The mill area housed crushing machinery, mixers, vats, and all the other mechanical necessities for the mill, along with dormitories and a camp for over three hundred workers, a company store, two schoolhouses, an office building, various storehouse and warehouse facilities, and a shed for honey processing machinery (Puakō Historical Society 2000). A rail line connected the mill operations with field operations (see Figure 14). Other improvements to the plantation included the construction of an approximately eight-mile long wooden flume that carried water from Waimea Stream to the plantation. Vrendenberg, who was nicknamed Manuwai (sea bird) because of his dislike of ocean travel, was hired by the Hinds to manage the plantation (Puakō Historical Society 2000).

From the beginning Puakō Sugar Plantation was plagued by periods of heavy rain and floods, followed by prolonged droughts and strong winds that deposited salt in the fields and broke the cane stalks (Puakō Historical Society 2000). Eventually, abnormally dry weather caused Waimea Stream to dry up, which cut off the plantation's water supply, and as a result, the sugar venture in Puakō failed by ca. 1914 (Maly 1999). The mill and machinery were sold and shipped elsewhere, and Puakō soon returned to its roots as a small coastal community. A "Map of Puako" prepared by the surveyor Chas V. E. Dove in 1900 (Hawai'i Registered Map No. 1974; Figure 15) depicts several structures clustered along the shore to the west of the mill property (Grant No. 4856). This map shows details of the current project area, including walls and a pen, with the road further inland than it is today.

When the sugar mill closed only seven families remained at Puakō (Puakō Historical Society 2000). The remaining families were clustered along the bay in the area from the mill property. None of the families had houses within the current project area, but a stone house on the nearby Akahi kuleana (LCAw. 3758) was occupied by the Akona family (Puakō Historical Society 2000). The church, which had fallen into disrepair, no longer held services. By the 1920s the school house had also burned. With no money to rebuild it, the remaining children in Puakō went elsewhere to receive an education (Puakō Historical Society 2000).

Despite the failure of the sugar plantation, Robert Hind continued to foster economic development in Puakō area. By 1914 he had leased 1,000 acres of coastal Lālāmilo Ahupua'a (General Lease No. 840) for a period of 15 years. Excluded from the lease were LCAw. 3736, 3758, 4102, and 8550-B Ap. 6; the Puakō House Lots Nos. 2, 3, 4, 5, 6, and 7; Grant Nos. 8821 (to David Kaono) and 4856 (to John Hind); the Puakō Shool Lot and Church lot; and the existing government roads and trails (Figure 16). The main beach road is shown closer to the coast than on the 1900 map (cf. Figure 15). Hind used his lease land for a number of economic endeavors including, "extending his ranching interests (a kiawe feed lot and cattle shipping operation), honey making, and making charcoal" (Maly 1999:118).

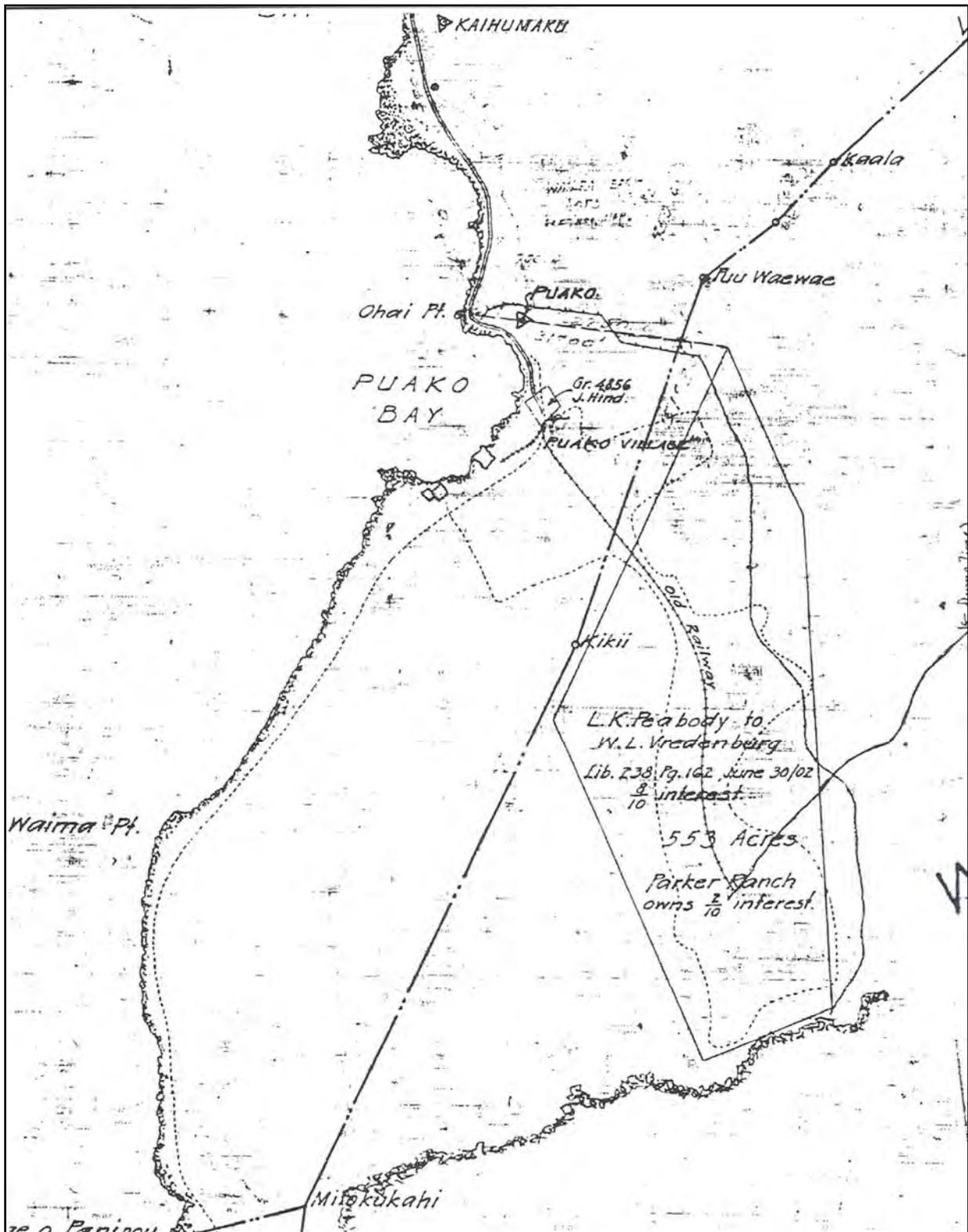


Figure 14. Portion of Reg. Map No. 2786, Puakō Plantation Section, prepared by G.F. Wright in 1917.

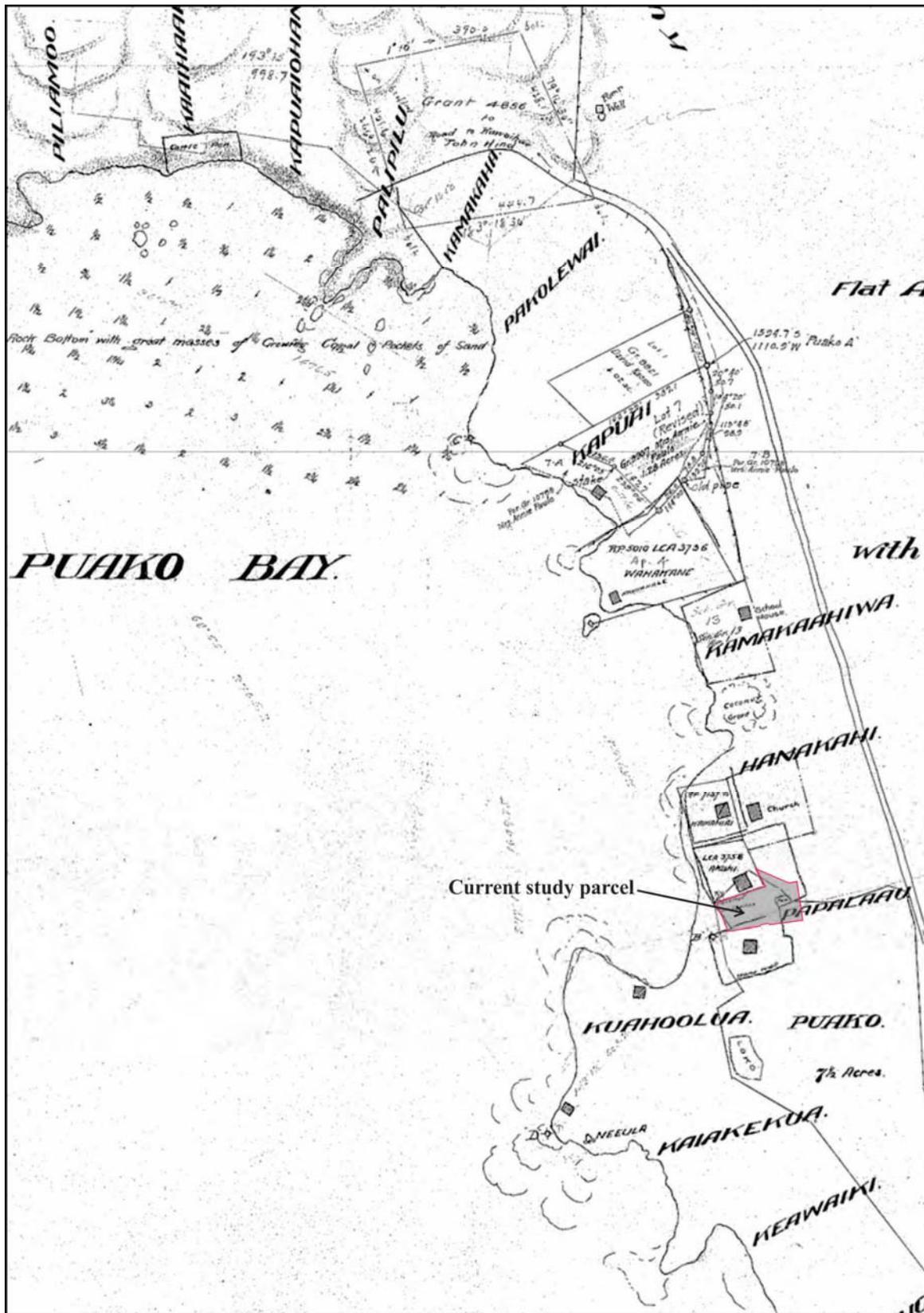


Figure 15. Portion of a Map of Puakō (Reg. Map No. 1974) prepared by Chas V. E. Dove in 1900.

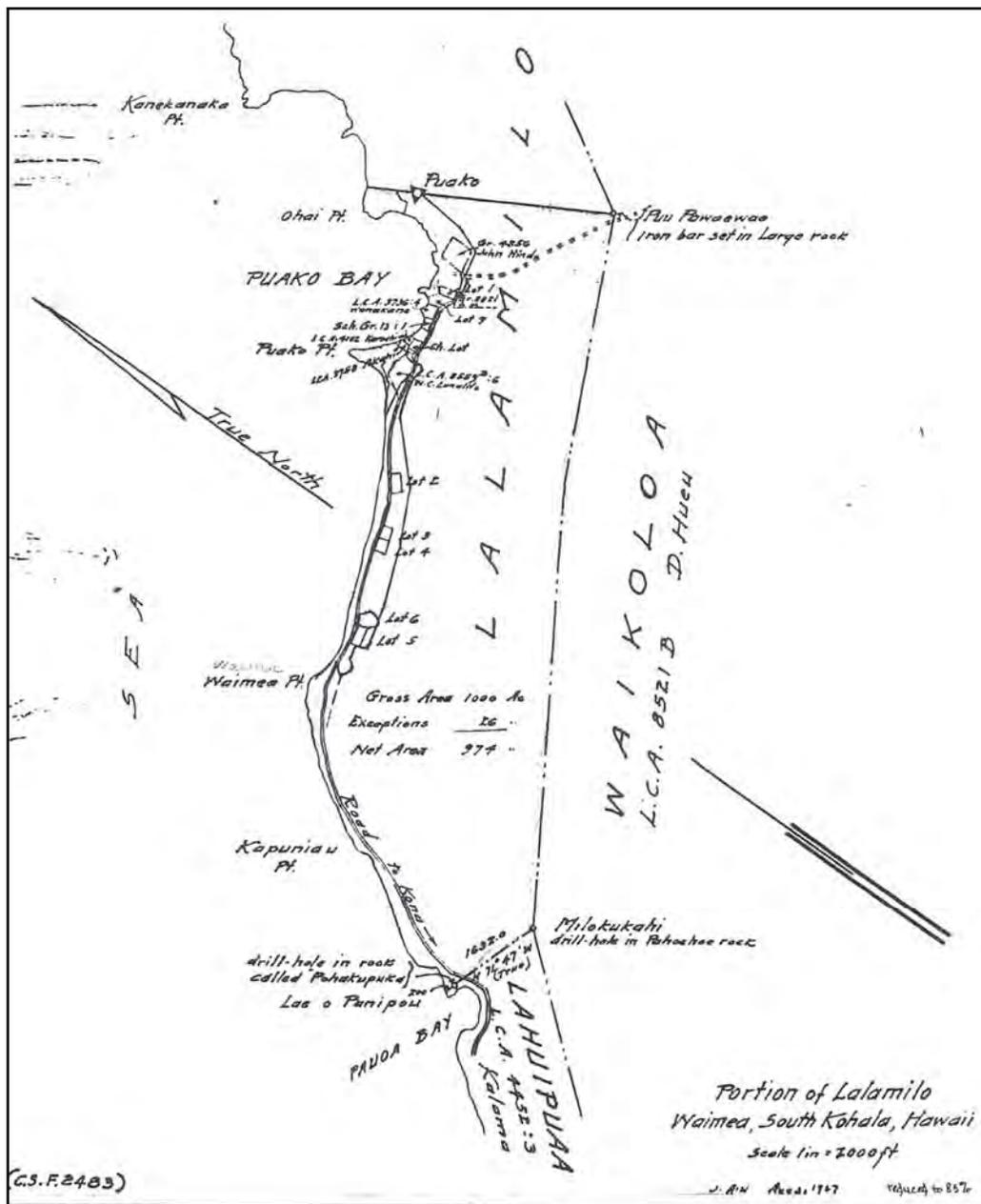


Figure 16. 1927 map of a portion of Lālāmilo showing General Lease No. 840 to Robert Hind and the exclusion areas (from Maly 1999:121).

During World War II the United States Military used the coastal area around Hapuna Beach and the upland areas of Lālāmilo and Waikōloa for training exercises. Use of the area included the construction of “many small defensive outposts along ridges and elsewhere” (Jensen 1994:14). Roads were bulldozed by the military during the early 1940s along the coast of South Kohala, including Puakō (Maly 1999). After the war, interest in the Puakō Beach Lots increased and pressure was brought on the Territory to create a subdivision. In 1950 a survey was conducted laying out the Puakō Beach Road and dividing the coastal lands of Lālāmilo into 163 lots (Puakō Historical Society 2000). The 1950 map prepared by C. L. Murray (Hawai‘i Registered Map No. 4027) shows the realigned road at its current location and the old (shaded) alignment through the current study area (Figure 17). In 1960 a *tsunami* generated by an earthquake in Chile struck Puakō. Many of the older structures along the shore were damaged including six dwellings near the boat harbor that were completely destroyed (Puakō Historical Society 2000). Modern use of the Puakō area has been primarily for residential and resort development, with a few integrated commercial ventures.



## 4. THE DEVELOPMENT PLAN

The property owner intends to have a single-family residence constructed on the parcel (Figure 18). The development plan, as related by the development contractor, specifies that only the *mauka* portions of the parcel will be subject to subsurface disturbance as the post footings within the house footprint will be placed one foot deep into two feet of imported and engineered fill. If the footing specifications are adhered to, then there will be very little to no chance of impacted any intact subsurface cultural deposits or features.

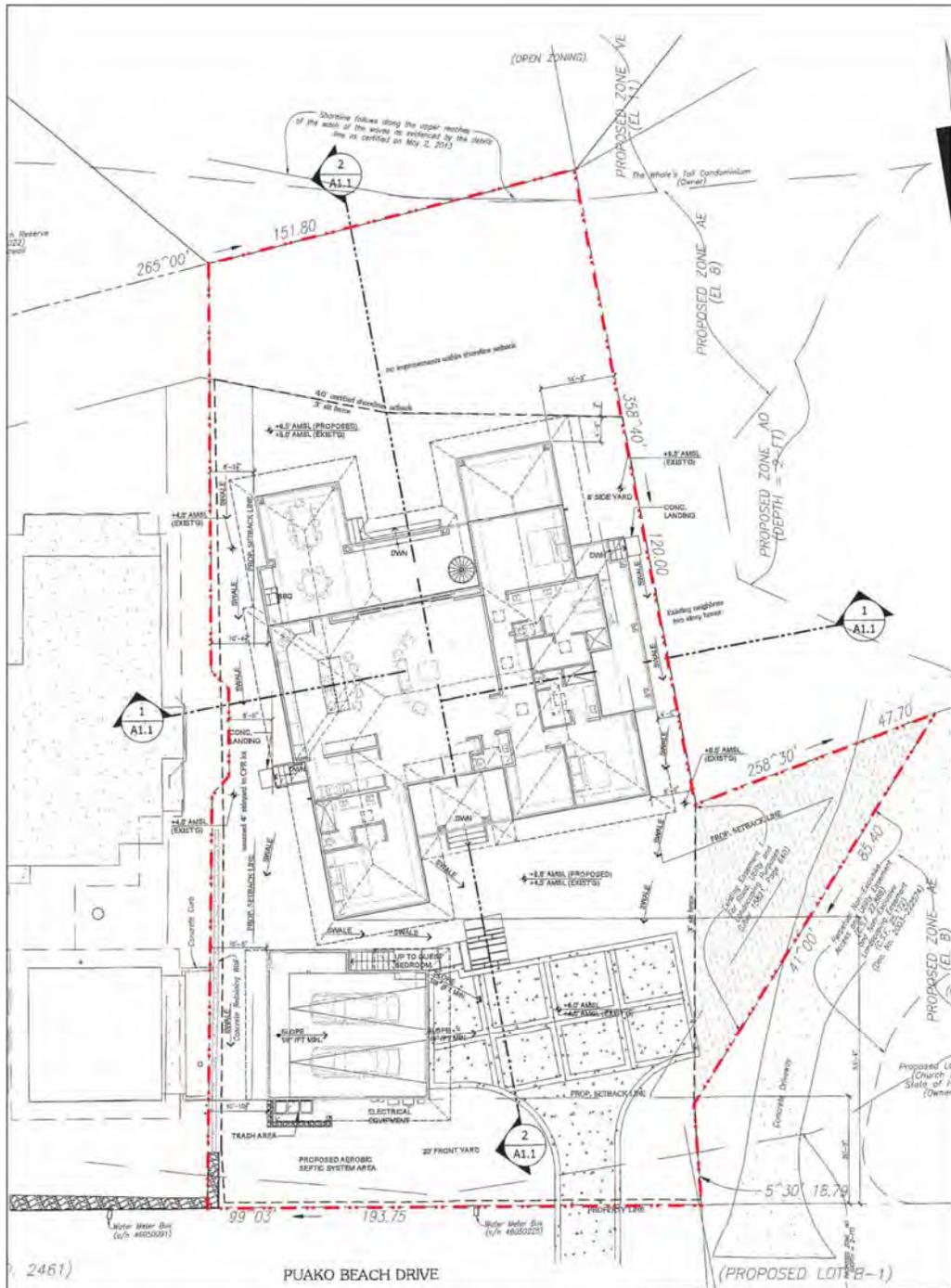


Figure 18. Portion of architectural site plan.

## 5. THE MONITORING EFFORT

On-call archaeological monitoring is the general approach for this project. As it is the development contractor's intention to import and engineer two feet of fill material, then excavate one foot deep footing in this material, there should be no subsurface disturbance of native soil within the house foot print. Prior to construction, the archaeological monitor will meet with the development contractor's management personnel and the equipment operators to discuss the procedures for monitoring. It will be explained that when on site, the monitoring archaeologist has the authority to halt land-altering activities in the event that cultural resources are encountered. If cultural resources identified during monitoring are deemed significant, the monitoring archaeologist will immediately notify DLNR-SHPD and coordinate consultation as appropriate with any groups or organizations. Additionally, DLNR-SHPD will be notified upon the on-set and completion of all on-site monitoring activities.

### FIELD METHODS

As stated above archaeological monitoring for this project will be on an on-call basis, unless subsurface activities take pace that have the potential to impact native soil. If such activities are to take place, the development contractor will provide advance notice, and a qualified archaeological monitor will be present on-site to observe all such activities. When on site, the monitor will keep a daily log of activities performed and any discoveries made. The monitor will inspect all exposed soil, and the stratigraphic profiles of any deep cuts will be examined. This practice will be followed in an effort to identify previously undiscovered and undisturbed cultural deposits, features, artifacts, and human skeletal material. If any such resources are encountered the monitor will initiate the following procedures:

#### *Intact Cultural Deposits*

If intact cultural deposits are discovered during monitoring, an assessment will be made as to their integrity and significance. If deemed significant, and the deposit is likely to be further impacted by demolition activities, work in the affected area will be curtailed, and an appropriate mitigation strategy developed in consultation with DLNR-SHPD.

#### *Cultural Features*

Subsurface cultural features observed will be fully described, drawn, and photographed. Provenience information will also be recorded and related to an established project datum ensuring accurate horizontal and vertical placement. The limits of the feature will be defined, if possible without further excavation, and any associations natural or cultural (including surrounding soil) will be noted. Where appropriate samples for further analyses will be collected and processed.

#### *Artifacts*

Artifacts observed in the removed soil would be collected and general provenience recorded. The precise locations of any items found in situ will be recorded and the items collected. Any observed association would also be documented.

#### *Human Skeletal Remains*

It is possible that human skeletal remains could be discovered during the monitoring. If such material is encountered, ground-disturbing activity in the immediate area of the discovery will be halted, the remains stabilized, and the appropriate authorities contacted. If the skeletal material is determined to be historic or Precontact (as opposed to recent), the monitoring archaeologist will direct the applicant to seek DLNR-SHPD guidance on how to proceed with the discovery. If the remains are determined to be recent, the Hawai'i County Police Department will be contacted.

### TREATMENT OF RECOVERED REMAINS

All recovered material will be temporarily stored within a secure location. The collected items will be recorded in a field catalog, and upon completion of the monitoring fieldwork the disposition of the items will be as follows:

#### *Cultural Material*

Artifacts from intact contexts will be analyzed; those recovered from fill will simply be cataloged. Analyzed items will be cleaned, weighed, measured, and illustrated (if appropriate). Analysis will include formal description and functional interpretation.

*Recovered Samples*

All recovered samples (soil, charcoal, etc.) will be initially processed by the qualified archaeological monitor before being dispersed to the appropriate institutions for detailed analysis.

*Human Skeletal Remains*

If DLNR-SHPD determines that the removal of buried human remains is an appropriate course of action, then a treatment/reburial plan will be developed in consultation with DLNR-SHPD and other consulted parties, as appropriate. Such treatment might include reburial without further analysis, or reburial following analysis. If osteological analysis is deemed appropriate, the analysis will comply with Hawaii State law as outlined in Hawai'i Administrative Rules 13§13-300.

**REPORTING**

Following completion of the monitoring a final monitoring report will be prepared and submitted to DLNR-SHPD for review and approval. This report will follow the specifications contained in Hawai'i Administrative Rules (HAR) 13§13-279-5. If any human skeletal remains are recovered and analyzed as part of the monitoring project they will be addressed in the final monitoring report following procedures contained in HAR 13§13-300. A final monitoring report will be submitted to DLNR-SHPD within 180 days of completion of the monitoring fieldwork.

**CURATION OF RECOVERED ITEMS**

Any material recovered during the project will be temporarily stored for a period of no more than one year following submission of the final monitoring report, during which time arrangements will be made for permanent curation in consultation with the landowner and DLNR-SHPD. It will be the landowner's responsibility to secure permanent curation in an acceptable facility; included in this responsibility are the costs associated with long-term curation.

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