# SPECIAL PERMIT APPLICATION

## EXHIBIT 13
## WAIKOLOA QUARRY KA PA‘AKAI DISCUSSION

# WEST HAWAII CONCRETE WAIKŌLOA QUARRY
*Ka Pa'akai* Discussion

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West Hawaii Concrete intends to continue and expand the currently permitted use of an approximately 220 acre portion of the existing West Hawaii Concrete Waikōloa Quarry Property (TMK: (3) 6-8-001:066) in Waikōloa Ahupua'a, South Kohala District, Island of Hawai'i (Figure 1). West Hawaii Concrete has been carrying out quarrying operations since at least 1995 and plans to extend their existing Special Permit beyond quarrying to include the following activities: green waste processing and composting, cement concrete recycling and asphalt concrete recycling. For this expansion of activities, West Hawaii Concrete must obtain approval from the County of Hawai'i Leeward Planning Commission and Hawai'i State Land Use Commission (LUC) in order to extend and modify their current Special Permit to include the proposed uses.

Article XII, section 7 of the Hawai'i Constitution obligates the State and its agencies, such as the LUC, "to protect the reasonable exercise of customarily and traditionally exercised rights of native Hawaiians to the extent feasible when granting a petition for reclassification of district boundaries." (*Ka Pa'akai O Ka'āina* v *Land Use Commission*, 94 Hawai'i 31, 7 P.3d 1068 [2000]). Under Article XII, section 7, the State shall protect all rights, customarily and traditionally exercised for subsistence, cultural and religious purposes and possessed by *ahupua'a* tenants who are descendants of native Hawaiians who inhabited the Hawaiian Islands prior to 1778, subject to the right of the State to regulate such rights. In the context of land use permitting, these issues are commonly addressed when the LUC is asked to approve a petition for the reclassification of district boundaries, as such an action most often initiates activities that precede initial intensive development. While the approval of a Special Use Permit for a green waste processing and concrete recycling project does not involve the reclassification of any lands, West Hawaii Concrete thought it prudent to provide a discussion of such rights to facilitate the Special Use Permit decision making processes for both the Leeward Planning Commission and the LUC.

In the September 11, 2000 Hawai'i Supreme Court landmark decision (*Ka Pa'akai O Ka'āina* v *Land Use Commission*), an analytical framework for addressing the preservation and protection of customary and traditional native practices specific to Hawaiian communities was created. The court decision established a three-part process relative to evaluating such potential impacts: first, to identify whether any valued cultural, historical, or natural resources are present; and identify the extent to which any traditional and customary native Hawaiian rights are exercised; second, to identify the extent to which those resources and rights will be affected or impaired by the proposed action; and third, to specify the feasible action, if any, to be taken by the regulatory body to reasonably protect native Hawaiian rights if they are found to exist.

In an effort to identify whether any valued cultural, historical, or natural resources are present within the proposed project area, and identify the extent to which any traditional and customary native Hawaiian rights are, or have been, exercised (the first part of the analytical process); historical archival information was investigated, and prior cultural studies that included consultation and oral-historical interviews were reviewed. A summary of this analysis is presented below.



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One of the earliest specific references to Waikōloa appears in the work of Samuel Mānaiakalani Kamakau who recounted the chants and legendary traditions of Hawaiian prehistory in his writings. According to Kamakau (1976) the priest Pā'ao arrived in the Hawaiian Islands during the 13th century from Kahiki, which has since been interpreted as Tahiti. Pā'ao, who was the keeper of the god Kū'kā'ilimoku, had fought bitterly with his older brother, the high priest Lonopele, who expelled him from his homeland (Kamakau 1991). Lonopele did not let Pā'ao leave peacefully, but instead called forth a series of wind storms to sink his canoe; one of the winds, a cold north wind, was named "Waikōloa" (Kamakau 1991:5). Despite Lonopele's best efforts, Pā'ao's canoe was not destroyed and he and his companions (thirty eight men, two stewards, his sister, chief Pili and his wife and the prophet Makuaka'ūmana) arrived safely in Hawai'i after their perilous journey. Kamakau recounts the following details of Pā'ao and Pili's arrival in Hawai'i:

> 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 is 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.
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> . . . 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. (Kamakau 1991:100–102)

The *moku* of Kohala appears in several versions of the Pili ruling line's origin story; such as a version discussed by Beckwith (1976) in which Mo'okini and Kaluawilinau, two *kāhuna* of Moikeha, decide to stay on at Kohala. In addition, Kamakau (1964) recounts that

> In the burial cave of Pu'uwepa in Kohala, Hawaii are deposited the bones of Pa'ao, the famous kahuna who built the heiau of Mo'okini at Kohala, and who lived a span of 15 generations before he died. Its entrance is said to be beneath the sea (1964:41)

The Pili chiefs initial ruling center was likely in Kohala, but Cartwright (1933) suggests that Pili later resided in and ruled from Waipi'o Valley in the Hāmākua District.

In addition to the tales of legendary chiefs, the Legend of Kanikū and Kanimoe, two *mo'o* or water-spirits with lizard bodies, is relevant to the current analysis because the project area is located within the lava flow (Figure 2) that bears one of the water spirit's name (Kanikū). According to an interview documented by Wolforth et al. (2005:6), these two *mo'o* took the form of beautiful women and lived in the "large coastal fishpond of Waīnānāli'i in Pu'uanahulu." According to the legend, Kanikū and Kanimoe were turned to stone when a lava flow covered the fishpond and as a result, their bodies still lie side by side in the middle of the *'a 'ā* flow, which is how the Kanikū Lava Flow got its name (Wolforth et al. 2005).

According to Maly (1999:25) the name Waikōloa literally translates to "water carried far" and he cites the origin of this translation to be a historical account entitled *Ka'ao Ho'oniua Pu'uwai No Ka Miki* (The Heart Stirring Story of Ka Miki) that was published as a serial in the Hawaiian Language newspaper *Ka Hōku o Hawai'i* between 1914-1917, and authored by John Wise and J.W.H.I. Kihe. As Maly translated, there was an event where Ka Miki (the hero of the story) was carrying sacred water in an *'awa* bowl when the wind Waikōloa lifted water out of the bowl and transported it a long distance (from Holoholokū to Waiki'i) to form a new spring.

Bernice Judd, a former librarian at the Hawaiian Mission Children's society, offered a different origin of the name Waikōloa and explained that:

> In the early days Waimea meant all the plateau between the Kohala Mountains and Mauna Kea, inland from Kawaihae. This area is from eight to ten miles long and from three to five miles wide. There was no running water on Mauna Kea, so the inhabitants lived at the base of the Kohala Mountains, where three streams touched the plain on their way towards the sea. . . The middle stream, which was famous for wild ducks, was named Waikoloa, or Duckwater. This and the most westerly stream, called Kahakohau, went towards Kawaihae, but neither reached the sea, except in times of flood. (Judd 1932:14)

Traditionally, Waikōloa was an *'ili* of the *kalana* (or *'okana*) of Waimea (Figure 3), a land division that in ancient times was treated as a sub-district, smaller than a district (*moku o loko*), but comprised of several other land divisions that contributed to its wealth (Maly and Maly 2002). The lands within the *kalana* of Waimea were those that form the southern limits of present day South Kohala District including 'Ōuli, Wai'aka, Lālāmilo, Puakō, Kalāhuipua'a,

'Anaeho'omalu, Kanakanaka, Ala'ōhi'a, Paulama, Pu'ukalani, Pu'ukapu, and Waikōloa, where the project area is located. In some early accounts, Waikolōa Ahupua'a was referred to as Waikōloa Nui, and the neighboring *ahupua'a* of Lālāmilo as Waikōloa Iki (Maly 1999).

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 who ruled from Waipi'o Valley, is often credited with uniting the island of Hawai'i under one rule (Cordy 1994). According to Kamakau (1992) 'Umi was a skilled fisherman, and fishing for *aku*, his favorite fish, often brought him to the beaches of South Kohala from Kalahuipua'a to Makaula, where he also fished for *'ahi* and *kala* with many other famed fishermen and all the chiefs of the kingdom. '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).

Lonoikamakahiki's reign was marked by political intensification and regularly occurring wars between intra-island and inter-island polities, which included battles that transpired in the general vicinity of the current project area. One such battle was fought between Lonoikamakahiki (Lono) and his older brother, Kanaloakua'ana, who rebelled against him. According to Fornander, Kanaloakua'ana and his rebel forces were situated at:

> . . . the land called Anaehoomalu, near the boundaries of Kohala and Kona. The rebel chiefs were encamped seaward of this along the shore. The next day Lono marched down and met the rebels at the place called Wailea, not far from Wainanalii, where in those days a watercourse appears to have been flowing. Lono won the battle, and the rebel chiefs fled northward with their forces. At Kaunooa [Kauna'oa], between Puako and Kawaihae, they made another stand, but were again routed by Lono, and retreated to Nakikiaianihau, where they fell in with reinforcements from Kohala and Hamakua. Two other engagements were fought at Puupa [on the plain north of Waikōloa] and Puukohala, near the Heiau of that name, in both of which Lono was victorious. . . (Fornander 1996:120-121)

Later, Lonoikamakahiki battled the forces of Maui led by Kamālālawalu (Kama) on the plain of Waikōloa below Pu'u 'Ōā'oaka (Maly and Maly 2002). According to Kamakau:

> After Kama-Iala-walu's warriors reached the grassy plain, they looked seaward on the left and beheld the men of Kona advancing toward them. The lava bed of Kaniku and all the land up to Hu'ehu'e was covered with the men of Kona. Those of Ka'u and Puna were coming down from Mauna Kea, and those of Waimea and Kohala were on the level plain of Waimea [Waikōloa]. The men covered the whole of the grassy plain of Waimea like locusts. Kamalalawalu with his warriors dared to fight. The battlefield of Pu'oa'oaka was outside of the grassy plain of Waimea, but the men of Hawaii were afraid of being taken captive by Kama, so they led [Kamalalawalu's forces] to the waterless plain lest Maui's warriors find water and hard, waterworn pebbles. The men of Hawaii feared that the Maui warriors would find water to drink and become stronger for the slinging of stones that would fall like raindrops from the sky. The stones would fall about with a force like lightning, breaking the bones into pieces and causing sudden death as if by bullets . . .
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> . . . The Maui men who were used to slinging shiny, water-worn stones grabbed up the stones of Pu'oa'oaka. A cloud of dust rose to the sky and twisted about like smoke, but the lava rocks were light, and few of the Hawaii men were killed by them. This was one of the things that helped to destroy the warriors of Kama-lala-walu: They went away out on the plain where the strong fighters were unable to find water . . . The warriors of Maui were put to flight, and the retreat to Kawaihae was long. [Yet] there were many who did reach Kawaihae, but because of the lack of canoes, only a few escaped with their lives ... Kamalalawalu, ruler of Maui, was killed on the grassy plain of Puako, and some of his chiefs were also destroyed. (Kamakau 1991:58-60)

While the project area is located proximate to the lands in these stories, it receives no specific mention suggesting that it was peripheral to the areas and events described.

Marking the end of the Precontact Period, Hawaiians' first significant encounter with Europeans occurred in 1778 when Captain James Cook and his crew on board the ships *H.M.S. Resolution* and *Discovery* arrived in Kaua'i. With the arrival of foreigners, Hawai'i's culture and economy were drastically altered. Demographic trends during this period indicate population reduction in some areas, due to war and disease, yet increases in others, with relatively little modification of material culture. There was a continued trend toward craft and status specialization, intensification of

agriculture, *ali'i* controlled aquaculture, upland residential sites, and the enhancement of traditional oral history. 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). This marked the end of an era of uniquely Hawaiian culture. 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, potatoes, corn, beans, figs, oranges, guava, and grapes (Wilkes 1845).

In 1792, Captain George Vancouver, who had sailed with Cook during his 1778-1779 voyages, arrived in Kealakekua Bay with a small fleet of British ships, where he met with Kamehameha. Vancouver stayed only a few days during this first visit, but returned again in 1793 and 1794 to resupply his fleet. Vancouver introduced cattle and sheep to the Island of Hawai'i during his 1793 and 1794 visits, giving them as gifts to Kamehameha I, who immediately made them *kapu*, thus preventing them from being killed (Kamakau 1992). Five cows, two ewes, and a ram brought by Vancouver in 1793 were set free to roam in the saddle area of Waimea between Mauna Kea, Mauna Loa, and Hualālai (Escott 2008).

During one of his visits Vancouver anchored at Kawaihae and a member of his crew, Archibald Menzies, a surgeon and naturalist, trekked inland towards Waimea. Menzies' journal records the journey and describes the land in the vicinity of the project area as follows:

> I travelled a few miles back...through the most barren, scorching country I have ever walked over, composed of scorious dregs and black porous rock, interspersed with dreary caverns and deep ravines...The herbs and grasses which the soil produced in the rainy seasons were now mostly in the shriveled state, thinly scattered and by no means sufficient to cover the surface from the sun's powerful heat, so that I met with few plants in flower in this excursion. (Menzies 1920:55)

In the early 1800s, Kamehameha gave control of present day Waikōloa then Waikōloa Nui Ahupua'a (excluding the coastal *'ili* of 'Anaeho'omalu and Kalāhuipua'a) to Isaac Davis (Rosendahl 2000). Although the land of Waikōloa Nui gifted to Davis encompassed a large area, it lacked extensive resources, and was primarily a place for catching birds and gathering *pili* grass. When Davis died in 1810 without naming an heir, John Young took control of the land and protected it for Davis' children, who were at that time too young to take on the responsibility (Rosendahl 2000).

Waikōloa Nui would eventually become a favored pasture for the cattle given by Vancouver to Kamehameha. By the early nineteenth century the *kapu* cattle quickly multiplied in the region to the extent that they became a scourge for the native planters of the Waimea area. In order to protect the upland agricultural fields from the overwhelming number of grazing cattle, sometime between 1813 and 1819, Kamehameha ordered the construction of a wall extending from the northern boundary of Waikōloa Nui to near Pu'u Huluhulu (Barrère 1983). The wall was designed to keep wild cattle in Waikōloa Nui and out of the more agriculturally productive areas on the Waimea side. The wall was called *Pā* of Kauliokamoa after the *konohiki* who oversaw its construction (Wolforth 2000).

The year 1819 was a pivotal one in Hawaiian history. In May of that year Kamehameha died in Kona and his young son Liholiho assumed rule over the kingdom. In concert with Kamehameha's widows Ka'ahumanu and Keōpūolani, Liholiho abolished the ancient religion and quelled a rebellion to reinstate the traditional *kapu* system in December of 1819. In October of 1819, seventeen Protestant missionaries set sail from Boston to Hawai'i and arrived in Kailua-Kona on March 30, 1820, to a county in religious turmoil and ripe for conversion. Many of the *ali'i*, who were already exposed to western material culture had adopted their dress and welcomed the opportunity to become educated in a western style. Soon they were rewarding their teachers with land and positions in the Hawaiian government. During this period, the sandalwood trade wreaked further havoc on the lives of the commoners, as they weakened from the heavy production, exposure, and famine just to fill the coffers of the *ali'i*, who were no longer under any traditional constraints (Oliver 1961; Kuykendall and Day 1976). The lack of control of the sandalwood trade was to soon lead to the first Hawaiian national debt as promissory notes and levies were initiated by American traders and enforced by American warships (Oliver 1961). The Hawaiian culture was well on its way towards Western assimilation as industry in Hawai'i went from the sandalwood trade, to a short-lived whaling industry, and gave way to the more lucrative, but environmentally destructive sugar industry.

The population of South Kohala continued to reside either near the shore or in the uplands of Waimea throughout the first half of the nineteenth century, but as previously discussed, the arrival of foreigners, their introduction of a western economy, and the rise of the sugar and cattle industries had a profound impact on daily life in Kohala. Even the landscape of Waimea was substantially altered; initially through deforestation associated with the sandalwood trade, followed by the effects of countless grazing cattle (Rechtman and Prasad 2006). A network of stone walls began

to appear as a way for people to keep feral cattle out of their gardens and house lots. Commercial ventures soon replaced traditional agricultural practices and introduced crops (Irish potatoes, watermelons, cabbage, onions, tomatoes, mulberries, figs, and beans) were grown to replenish the cargo ships at Kawaihae Harbor; and in the late 1840s many of the potatoes grown in the Waimea area were shipped to California to help feed the gold rush (Haun et al. 2003). In addition, a sugar mill operated in the Waimea area from the 1820s until the 1840s.

As reported in the *Sandwich Island Gazette* in September 10, 1836, the lower elevation of Waikōloa (inclusive of the current project area) was considered to be inhospitable:

> The western part of the district remains to be noticed. This consists of a gradual descent of about 10 miles to the seaside. It is entirely composed of an uneven rock waste, covered with long grass. This barren tract is untenanted and uncultivated, Rain seldom falls here and, besides the grass, nothing is seen to vary the monotony until you approach the coast, when the eye is only relieved by the tallow blossoms of the Nohu [Tribulus].

By the mid-nineteenth century, the agriculturally marginal areas of leeward Kohala were abandoned in favor of more productive and wetter lands in windward Kohala. According to Tomonari-Tuggle (1988), the remnant leeward population was concentrated into a few small coastal communities (such as Puakō, located roughly 5 miles northwest of the project area) and dispersed upland settlements. These settlements were no longer based on traditional subsistence patterns, largely because of the loss of access to the full range of necessary resources. As a result, the windward slopes of North Kohala and the Waimea plain eventually became the population centers for the district. Tomonari-Tuggle clarifies some of the reasons for this migration:

> Outmigration and a demographic shift from rural areas to growing urban centers reflected the lure of a larger world and world view on a previously isolated community. Foreigners, especially whalers and merchants, settled around good harbors and roadsteads. Ali'i and their followers gravitated towards these areas, which were the sources of Western material goods, novel status items which would otherwise be unavailable. Associated with the emergence of the market, cash-based economy, commoners followed in search of paying employment. (1988:33)

The population of the district of Kohala declined rapidly as native populations were decimated by disease and a depressed birth rate. Epidemics in 1848 and 1849 killed more than 10,000 people in twelve months throughout the Hawaiian Islands (Tomonari-Tuggle 1988). In 1848 in North Kohala, Rev. Bond reported that 100 people had died within a three week period, and in October of that year he reported that a measles epidemic had nearly every resident of the district in the hospital (Damon 1927). Following these epidemics, the population of the district had been reduced to nearly half of the more than 6,000 people reported in the 1835 census (Schmitt 1977). The number of coastal residents soon dwindled and most of the coastal villages were inhabited by only a few solitary residents. An 1848 description of the town of Waimea cited by McEldowney stated that "it can scarcely be said that there is any native population at all."(1983:432). This statement seems to sum up the devastating demographic changes that were taking place as the native population had been reduced by disease, displacement, and ongoing revisions in land tenure.

At the time of the Great *Māhele* in 1848, the disposition and distribution of the lands of Waimea was rather complicated and was under dispute between the Boundary Commissioners, *kama'āina* informants, and land petitioners. Waimea was a discrete land unit (Figure 4) considered to be a *kalana* (county) or *'okana* (subdistrict) as opposed to an *ahupua'a* (Pukui and Elbert 1986). To further confound the issue, some of the land units within Waimea were considered *ahupua'a* while others were considered *'ili kūpono*, defined by Puhui and Elbert as "A nearly independent *'ili* land division within an *ahupua'a* paying tribute to the ruling chief and not the chief of the *ahupua'a*. Transfer of the *ahupua'a* from one chief to another did not include the *'ili kūpono* located within its boundaries" (1986:98). As a result of the *Māhele* and Boundary Commission testimonies, many smaller *ahupua'a* names were dropped and the *'ili kūpono* were given *ahupua'a* status; the majority of the Waimea area was retained as Crown Lands, with the exception of a portion of Waikōloa Ahupua'a that was awarded as *Konohiki* Lands. Over 140 claims for Land Commission Awards (LCAw.) were made by native tenants within the Waimea area. Nearly all of these claims were for house lots or cultivated sections (Haun et al. 2003). Of the land commission awards reviewed by Kelly and Nakamura (1981:30), over twenty percent were issued to persons with non-Hawaiian surnames.

During the *Māhele*, Waikōloa (Nui) Ahupua'a, including the project area, was awarded to George Davis Hū'eu (LCA 8521-B; Figure 5), son of Isaac Davis, one of Kamehameha I's trusted advisors. According to Wolforth et al. (2005), Kamehameha I had given Davis the land as a reward for his service, but after Davis died prematurely under suspicious circumstances in 1810, his friend John Young (another advisor to Kamehameha I) took it upon himself to make sure that Isaac Davis' children would receive their father's lands when they came of age. A portion of Young's Last Will and Testament read as follows (Cahill 1999:167):

> ... I give and bequeath to be equally divided between my surviving children and the surviving children of my departed friend, the late Isaac Davis, of Milford in England, in such manner as it may please His Majesty the King and his Chiefs; Provided always that each and all of the said children receive a just and equal portion. (reproduced in Wolforth et al. 2005:12)

As a result, John Young's lands were designated *'ina ho'oilina* or inherited lands, during the *Māhele*, a designation applied only to these lands that does not appear elsewhere in the *Māhele* records (Wolforth et al 2005).

Royal Patent number 5671 was issued to Isaac Davis that consisted of a large area of dry, non-arable terrain on grassy slopes known as *pili* lands (after the *pili* grass that grew in abundance there), which extended to the *'a'ā* on the Kona District boundary; and did not include any portion of the fertile uplands or shoreline access (Wolforth et al. 2005). In 1865, George Hū'eu, Davis's only surviving heir, received Waikōloa as an unsurveyed Land Commission Award.

> We consider it clear that in making the grant the King intended to give, and did give to Isaac Davis, a tract of land of very great extent, although not of proportionate value, There were no cattle or sheep in this country when the grant was made, and the land given to Isaac Davis only yielded what revenue could be derived from wild birds and pili grass (Boundary Commission 1867 in Wolforth et al 2005:13)

In 1868, George Hū'eu leased his remaining lands in Waikōloa to the Waimea Grazing and Agricultural Company, which made them the largest ranching operation on the island (Escott 2008). Under the terms of the lease, the Hū'eu family was allowed to continue grazing their 1,000 head of cattle, 1,000 head of sheep, and 100 horses there (Escott 2008). By the late-1870s, largely due to persistent drought conditions within its grazing lands, the Waimea Grazing and Agricultural Company went out of business; Parker Ranch purchased their herd and acquired their lease for roughly 95,000 acres of Waikōloa. A sketch map prepared by J. S. Emerson in 1882 during the Hawaiian Government Survey of South Kohala (Figure 6), shows the Parker Ranch grazing lands and the network of trails that ran through them; none of these trail are located in the vicinity of the current project area, which is simply labeled as *'a'ā* on the map.

The coastal areas of Waikōloa, 'Anaeho'omalu and Kalāhuipua'a had been passed from Kamehameha I to Kamehameha II and then to Kamehameha III who retained them as Crown Lands until he passed them on to his wife Queen Kalama (LCA 4452; Wolforth et al. 2005). Only nine small residential *kuleana* were awarded in the uplands of Waikōloa near the town of Waimea and none were awarded within or in close proximity to the current project area (Maly 1999). Coastal residents in South Kohala, relied primarily on the ocean for sustenance, and they augmented their diet with produce procured through trade with the upland areas. In addition, according to testimony from 1865 Boundary Commission hearings, Waikōloa Ahupua'a was known as a place for bird catching; Ehu testified, "Waikōloa was the land that had the birds" (Maly 1999:88).

In the decades following the *Māhele* of 1848, the population along the Kohala coast continued to decline and the remnant inland agricultural fields were abandoned as they succumbed to the ravages of free-range cattle or were bought up by ranching and sugar interests. The remaining tenants built *kuleana* walls to enclose their homes, gardens, and domesticated animals in an effort to keep free-ranging animals out of their property and also to mark property boundaries as part of the new land tenure system (Tomonari-Tuggle 1988). The economy also transitioned, becoming cash based and taxes were collected. Foreigners controlled much of the land and most of the businesses, and the native population was largely dependent on these foreigners for food and money (Haun et al. 2003).

Between the years of 1895 and 1913, the Puakō Sugar Plantation and Mill operated on 1800 acres along the bay in Puakō (Puakō Hisotrical Society). This short-lived operation was run by the Hinds who also founded the Hāwī Mill and Plantation in North Kohala and included leased portions of the Parker Ranch. T Puakō Sugar Plantation was forced to close as a result of damaging floods, the lack of freshwater and the high winds that plagued the area (John Hind n.d.). While operational, the Puakō Sugar Plantation led to an influx of population in the area and helped spur the development of roadways connecting Puakō with Kawaihae and Waimea. Upon cessation of plantation activities, the leased lands reverted back to Parker Ranch. The landholdings of Parker Ranch continued to grow as then manager Alfred W. Carter acquired thousands of acres in Waikōloa and neighboring *ahupua'a* that included the Pu'uloa Sheep and Stock Company, which encompassed over 3,700 acres and the Ke'amuku Sheep Station in Waikōloa. Over the next decade these lands were converted to cattle ranching. By 1932, Parker Ranch had grown to include over 325,000 acres of fee lands (Bergin 2004). With the expansion of ranching operations, population also expanded in Waimea.

In December of 1943, nearly 123,000 acres of land in the Waimea-Waikōloa area were leased by the U. S. War Department for use as a troop training area (Escott 2008). The U.S. Military's 91,000-acre Waikōloa Maneuver Area was the site of an artillery firing range on which live ammunition and other explosives were employed, with the

remaining acreage utilized for troop maneuvers. The Waikōloa Manuever Area extended from the coast to present-day Pohakuloa Training Area, and from the Waimea-Kawaihae Road to south of Waikoloa Road, where the current project area is located. According to Escott:

> The military utilized portions of this property for troop maneuvers and weapons practice, while other areas served as artillery, aerial bombing and naval gun fire ranges. Troop exercises were conducted using 30 caliber rifles, 50 caliber machine guns, hand grenades, bazookas, flame throwers, and mortars. Larger ordnance and explosive (OE) or unexploded ordnance (UXO) items used included 37 millimeter (mm), 75 mm, 105 mm, and 155 mm high explosive (HE) shells, 4.2 inch mortar rounds, and barrage rockets. From 1943 through 1945 nearly the entire Waikoloa Maneuver Area was in constant use, as the Marine infantry reviewed every phase of training from individual fighting to combat team exercises. (Escott 2008)

In September of 1946, the Waikōloa Maneuver Area, with the exception of the 9,141 acre Lālāmilo Firing Range, was returned to Parker Ranch (Haun et al. 2010). When the use permit was cancelled in December of that year, the lands once again reverted to leased cattle pasture administered by the Territory of Hawai'i. Following World War II, the lands in the vicinity of the project area were once again used for cattle ranching and bird hunting; however, clean-up of unexploded ordnance within the Waikōloa Maneuver Area is still ongoing.

Since the 1950s modern development, concentrated along the coast and around the Villages of Waimea and Waikōloa, north of the project area, has intensified. In 1949-50 the coastal lands of Puakō were divided into the Puakō Beach Lots and a road was built to Kawaihae, which brought many new residents to the area (Maly 1999). During the 1970s the current alignment of Queen Ka'ahumanu Highway (Highway 19), extending from Kailua to Kawaihae, was constructed across the coastal sections of Waikōloa *ahupua'a*; Waikōloa Road was built to connect the new lower highway with the upper highway (Highway 190); and Waikōloa Village was established about 3.5 miles northeast of the project area. With the construction of the new highways and the shifting residential patterns, the older coastal roads and *mauka/makai* travel routes largely fell into disuse.

In 1991, the current project area was included in an archaeological inventory survey (Jensen and Burgett 1991) of a roughly 300-acre property conducted by Paul H. Rosendahl, Ph.D., Inc. (PHRI) for the then proposed quarry location. PHRI identified nineteen sites and established an archaeological preserve with a fifty foot buffer zone, which led to the boundary definition of the current quarry parcel. The archaeological preserve is located on TMK: (3) 6-8-001:067 immediately to the north of the current study area (Figure 7). The nineteen sites were recorded along the top and around the margins of two *'a'ā* ridges located within the northern third of their study area. These sites appeared to be interconnected by a poorly defined trail system, which was likely only minimally used at the time the features were constructed and for limited access thereafter. No midden, artifacts, or other portable cultural material were detected on the surface of any of the features or in the subsurface testing of a rock shelter feature (SIHP Site 15051B). Although never excavated, the features at this site were mostly interpreted to be burials and as a result of the PHRI investigation, all nineteen sites were preserved "as is". The Waikoloa Development Company chose not to proceed with any additional data recovery or further evaluation at that time. As previously discussed, a buffer zone of fifty feet was created around the area where the archaeological features were found, and an archaeological preserve was created on the parcel (TMK: (3) 6-8-001:067) to the north of the current study area.

In May of 1999, PHRI conducted archaeological monitoring for further development of the quarry site and associated access road. In a letter report, PHRI (Rechtman 1999) confirmed that the established buffer zone was maintained: the access road was well *makai* of the buffer boundary and the northern boundary of the quarry (the current project area) was placed an additional 50 meters south of the buffer zone

During the archaeological study (Gotay and Rechtman 2015) conducted in support of the present permit application no archaeological sites were observed with the current project area and almost no natural landscape was present as prior and ongoing mechanical quarrying activity and the associated network of ungraded and graded access roads cover roughly ninety-five percent of the approximately 220 acre project area; this is clearly seen in a recent aerial photograph (Figure 8).

There have been several studies conducted over the past fifteen or so years (Haun et al. 2010; Maly 1999; Maly and Maly 2002; Wolforth et al. 2005; Wong-Smith 2007, 2009) that contain cultural and oral-historical information relevant to Waikōloa Ahupua'a and the general area covered under the current permit application. A review of the information contained in these studies is relevant for the present analysis.

Maly (1999), in his study of the coastal trails of South Kohala, reported the results of oral-historical interview with ten individuals knowledgeable of the South Kohala inclusive of the current permit area. His interviewees included: Robert Keākealani, Sr. (from earlier 1980-86 taped interviews); Robert Keākealani, Jr.; Leina'ala

Keākealani-Lightner; Jiro Yamaguchi; William Akau; A. Kahikilani Akau; F. Coco Vredenburg-hind; Kenneth Francis Brown; E. Tita Ruddle-Spielman; and J.K. Spielman. In addition to discussions of the locations and use of trails, one of Maly's interviewees described a traditional dryland planting area known as Makahonu located within a kīpuka in the Kanikū flow in Waikōloa Ahupua'a in the vicinity of the current intersection of Waikōloa Road and Queen Ka'ahumanu Highway, *makai* of the current project area. Agricultural activities (the cultivation of sweet potato, pumpkin, and sugarcane) continued at this location into the early twentieth century.

The Maly and Maly (2002) study focused on an area of Waikōloa that is *mauka* of the current permit area, in the vicinity of Waiki'i and Ke'āmoku. They conducted comprehensive archival-historical research as well as a series of oral-historical interviews with elder native Hawaiians and *kama'āina* residents of the greater region. Among other conclusions, they related that the pu'u (hills) on the landscape are significant and the names of many are still in common use, "pu'u such as Ahumoa, Po'opo'o, 'Iwa'iwa, Holoholokū, Pā, and Hīnai, are integral to the storied landscape of Waikōloa . . ." (Maly and Maly 2002:212).

An area to the north and slightly *makai* of the current project area has been the subject of three previously completed cultural impact assessments related to the Villages of 'Āina Le'a project. Helen Wong-Smith's (2007) conclusion in that study relates similarly to the current permit area:

> The cultural impacts to any locale in Hawai'i are not always readily evident. What is assessed by Western eyes as "barren land" may be a rich resource to Hawaiians for harvesting material i.e. *pili* grass; spiritual aspects, i.e. the wind; or for the trails on which to travel. References to these cultural features have been found for the general Waikōloa, but not specific to the project area, Most cultural sites in this section of South Kohala occur between 40 and 280 ft. elevation, with the highest density near gullies and gulches, dropping off at 160 ft. (Wong-Smith 2007:21)

In a follow-up study, Wong-Smith (2009) conducted focused research on a potential *mauka/makai* trail with the assistance of Sonny Keākealani (the son of Robert Keākealani Sr.). Together they identified a trail used by cattle ranchers that extended from Pu'uwa'awa'a Ranch to Puako across the Villages of 'Āina Le'a project area in Waikōloa Ahupua'a. This historic trail is well to the north of the current West Hawaii Concrete permit area. A third Cultural Impact Assessment for the 'Āina Le'a development area was conducted by Haun et al. (2010) for a utility corridor at a similar elevation but quite different environment than the current permit area. Their study area was conducted of an area on an older lava flow with well-developed soil and dry stream beds. Based on archival research and a field inspection, their "study did not identify any culturally significant resources or any evidence that the project areas are currently being used for any traditional cultural practices." (Haun et al. 2010:19).

One final study is worth mentioning here, a Section 106 study (Wolforth et al. 2005) conducted for the Saddle Road Extension Project, the corridor of which extends down from Highway 190 through Waikōloa Ahupua'a except in the vicinity of the West Hawai'i Concrete Quarry where it bends to the south into Pu'uanahulu Ahupua'a to avoid the quarry and then back into Waikōloa then down to Queen Ka'ahumanu Highway. As part of the consultation for that project eighteen individuals were contacted. While substantial cultural information was shared about the general area, no cultural places or practices were identified to exist or have taken place in the portion of their study corridor that is in the vicinity of the quarry parcel (current permit area).

Upon collective review of these prior cultural studies, a pattern that emerges is that two types of significant cultural resources are regularly referenced in the historical and oral-historical literature. One of these types of resources are landscape features referred to as *pu'u* (prominent hills) and the other are trails; both are highly traditionally valued and culturally significant. Pu'u not only mark the traditional landscape, but these natural features are almost always named and storied places with ancestral associations; while the network of trails on the traditional landscape provides a connection of both place and people. Numerous *pu'u* and trails are identified within Waikōloa, but none are within or in the proximity of the subject permit area.

Given the culture-historical background presented above, along with the summarized results of prior archaeological and oral-historical studies in the general Waikōloa area, and combined with the twenty year history of intensive land use within the permit area, it is the finding of the current analysis that there are no specific valued natural and cultural resources within the current project area; and there has been no evidence identified of traditional and customary cultural practices having been exercised, nor have any such practices been documented as taking place in the past within this project area.

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Figure 1. Google Earth™ satellite image showing location of the project area outlined in red.

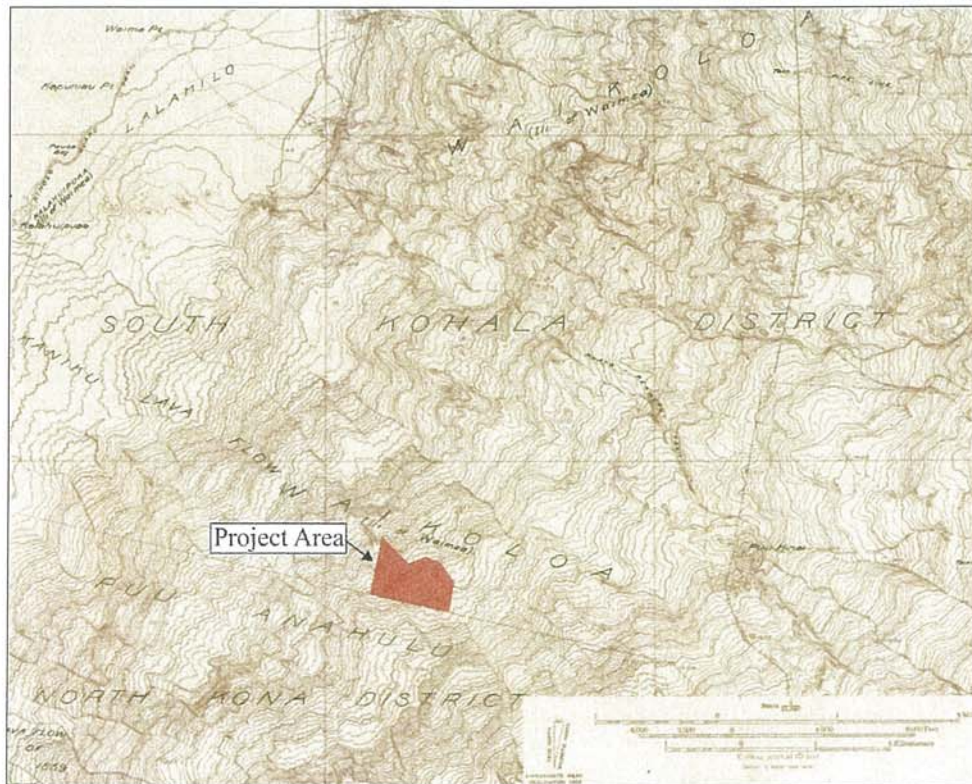


Figure 2. Portion of 1923 USGS. Pu'u Hinai quadrangle showing the project area within Kanikū Lava Flow.

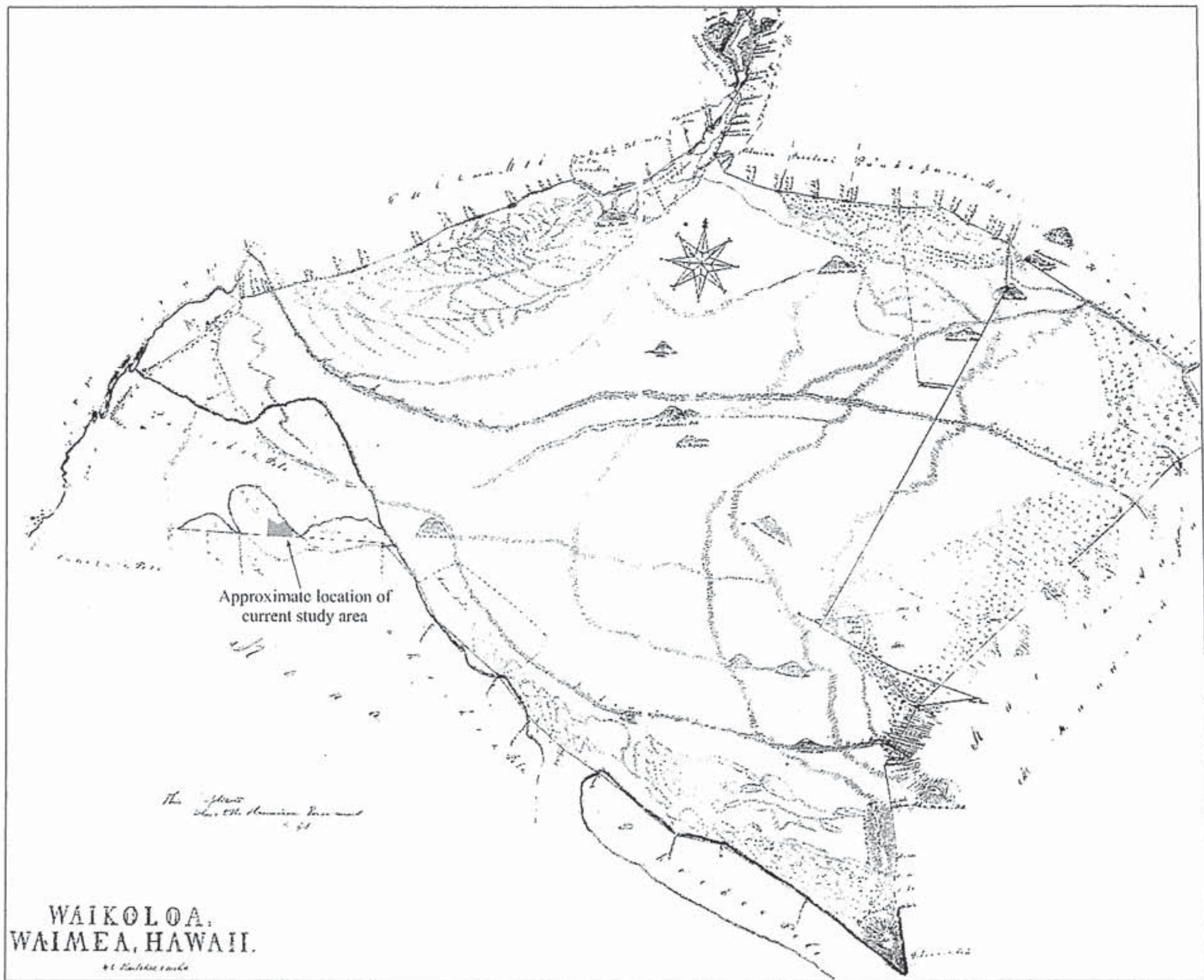


Figure 3. Registered Map No. 574 showing Waikōloa, the *kalana* of Waimea and the approximate location of the current study area (prepared by Kaelemakule, n.d.).

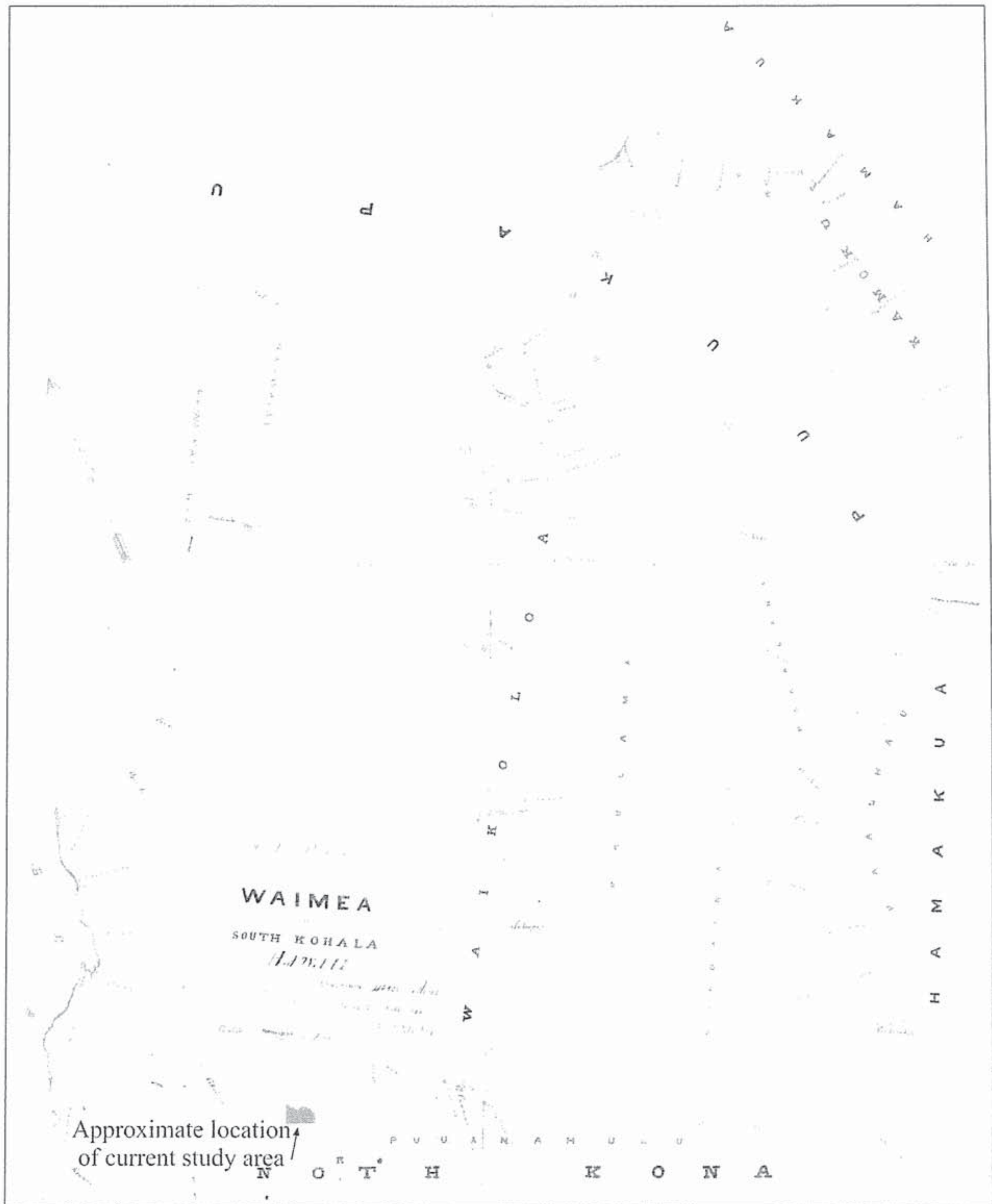


Figure 4. Hawai'i Registered Map No. 712 showing the *kalana* of Waimea and associated *ahupua'a* ca. 1866 with approximate location of the current study area.

Figure 5. Tax Map Key (TMK) showing LCAw 8521-B and the location of the current project area (Parcel 066 por.) shaded red.

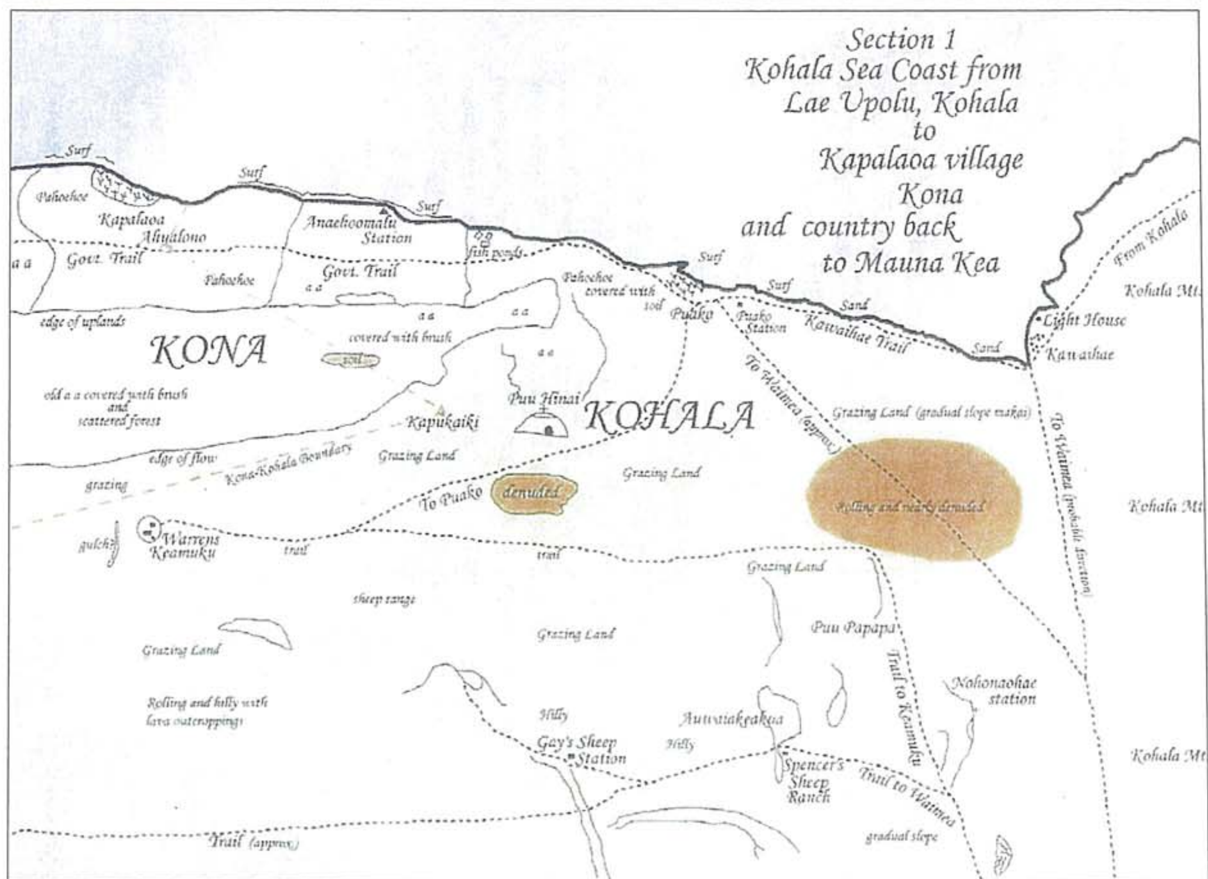


Figure 6. Emerson sketch map of South Kohala coast ca/ 1882 (from Escott 2008:43).

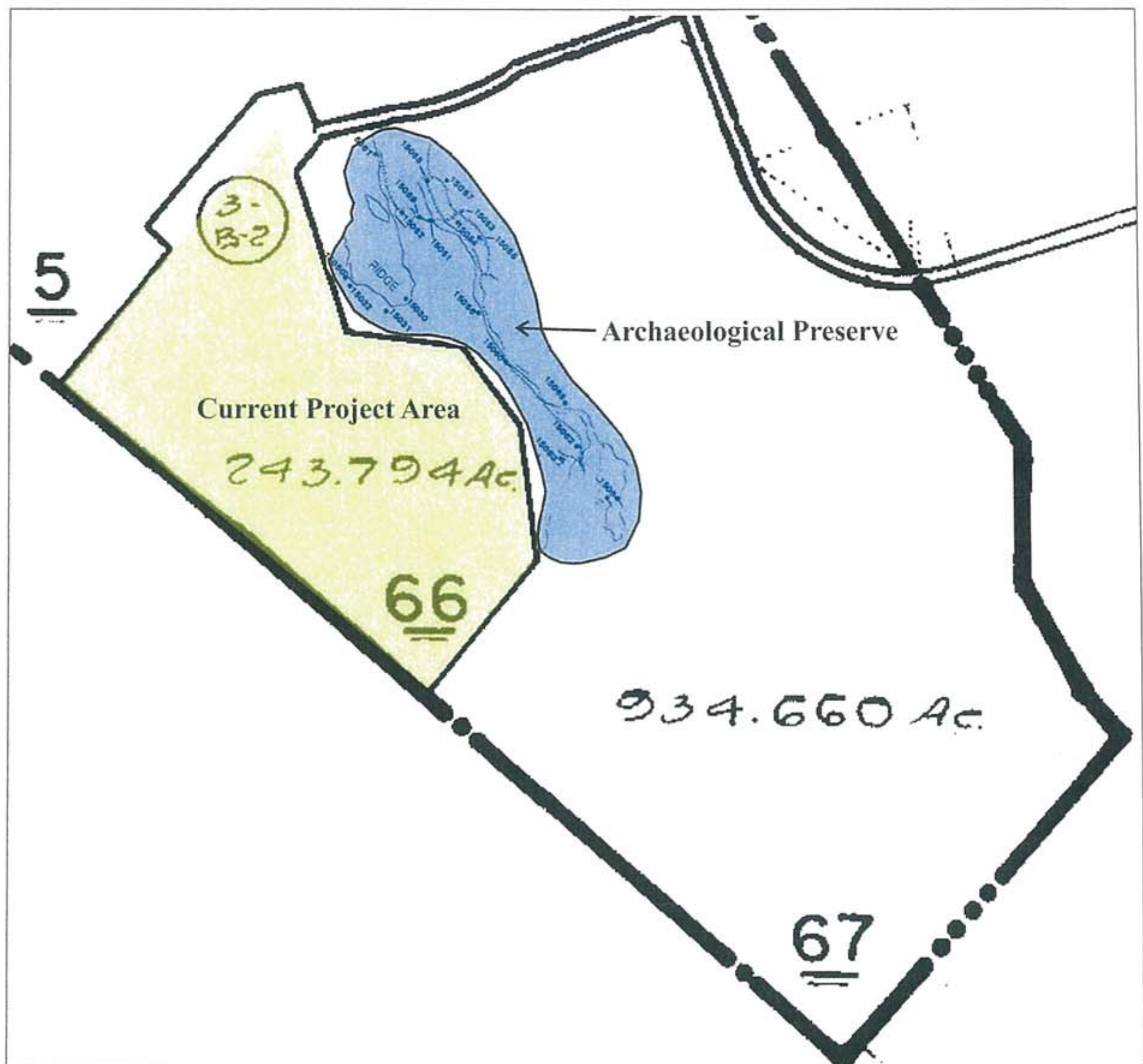


Figure 7. Portion of Tax Map (3) 6-8-001 showing archaeological preserve adjacent to current project area.

Figure 8. Google Earth image of study area showing network of access roads and quarried areas.