



HAWAII COMMUNITY DEVELOPMENT AUTHORITY

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January 9, 2020

Ms. Suzanne Case
Chairperson
Board of Land and Natural Resources
1151 Punchbowl St.
Honolulu, HI 96813

Dear Ms. Case:

Subject: Hawaii Revised Statutes (HRS) § 6E-42 Review for the Proposed
Kalaeloa Home Lands Solar Energy Project

Pursuant to HRS § 6E-42 and Hawaii Administrative Rules (HAR) § 13-284-5, HCDA hereby submits to the Department of Land and Natural Resources, State Historic Preservation Division (SHPD), the following document for review and comment:

- *Archaeological Field Inspection of TMK: (1) 9-1-013:029, Honouliuli Ahupua'a, 'Ewa, Island of O'ahu, prepared by ASM Affiliates, February 28, 2019.*

Notably, the field inspection conducted by ASM Affiliates indicates that there are no historic properties present on the site of the project and a low probability of archaeological resources remaining following the site's previous uses.

Pursuant to HAR § 13-284-5, HCDA shall first consult with SHPD to determine if the area proposed for the project needs to undergo an inventory survey to determine if historic properties are present. SHPD shall supply a response in writing within thirty days of the receipt of the initiating request at the SHPD office.

Should you have any questions regarding this matter, please contact Ms. Tesha Malama, Kalaeloa Director of Planning and Development, at 620-9643 or via e-mail at tesha.malama@hawaii.gov.

Sincerely,

Aedward Los Banos
Executive Director

c: Alan Downer, Ph.D., Administrator, SHPD
Susan A. Lebo, Ph.D., Archaeology Branch Chief, SHPD
Nick Azari, Ph.D., Arion Energy, LLC
David Robichaux, North Shore Consultants, LLC
Michael L. Iosua, Imanaka Asato, LLLC
Robert B. Rechtman, ASM Affiliates

February 28, 2019

Susan Lebo, Ph.D.
Archaeology Branch Chief
DLNR-SHPD
Email: susan.a.lebo@hawaii.gov

Subject: Archaeological Field Inspection of TMK: (1) 9-1-013:029, Honouliuli Ahupua‘a, ‘Ewa, Island of O‘ahu.

Dear Susan:

At the request of Dave Robichaux of North Shore Consultants, LLC ASM Affiliates (ASM) conducted an archaeological field inspection of TMK: (1) 9-1-013:029 owned by Hawaiian Home Lands and situated at the extreme northwestern end of the X-shaped Kalaeloa Airport runway in Honouliuli Ahupua‘a, ‘Ewa, Island of O‘ahu (Figures 1 and 2), in anticipation of proposed development of the parcel. The roughly 30-acre project area is located approximately 1 mile inland from the coast and 1.6 miles northeast of the Barber’s Point lighthouse, at elevations between 16 and 33 feet above sea level. The subject parcel is bounded to the north by Midway Road and a solar farm, to the east by Lake Champlain Street and the Kalaeloa Airport, to the south by Lake Champlain Street and an undeveloped parcel, and to the west by Saratoga Avenue (Figure 3).

In 2010, ASM conducted a brief archaeological inspection of the property as part of a due diligence assessment of the subject parcel. No archaeological resources were identified as a result of this earlier inspection. Rather, it was reported that the project area had been severely impacted from prior ground-disturbing activity associated with the construction and maintenance of the adjacent former Naval Air Station Barbers Point (NASBP) runway. The purpose of the current field inspection and archival review was to verify the earlier negative findings and determine if any undocumented historic properties exist on the subject parcel. The following contextual discussion includes oral traditions and historical accounts recorded by visitors about the *ahupua‘a* of Honouliuli and the greater ‘Ewa District; and concludes with the findings from archaeological investigations conducted in the project area vicinity. This information is presented to provide a comprehensive understanding of the cultural significance of the area and the potential effects of the proposed solar farm on any previously recorded, or as yet unidentified cultural resources.

The subject *ahupua‘a* of Honouliuli (“*Lit.*, dark bay” [Pūku‘i et al. 1974:51]) is the largest traditional land unit of O‘ahu and the westernmost *ahupua‘a* of the District of ‘Ewa. Honouliuli is located within the emerged coral reef known as the ‘Ewa Plain that comprises the southwestern extreme of the island. In ancient times, the traditional *moku* (district) of ‘Ewa “consisted of both seaward and high interior plains, the deep leeward valleys of the Ko‘olau mountain range, and the coastal region of the Wai‘anae range to the northwest” (Handy et al. 1972:469). Per Handy et al., by the early twentieth century ‘Ewa had “been diminished by the political redivisioning of 1886 and 1909” (ibid.). However, ‘Ewa remained vital because of the resources contained within the estuary of Pearl Harbor known to the ancient Hawaiians as “Ke-awa-lua- o-Pu‘uloa” or “The- many (*lau*)-harbors (*awa*)-of Pu‘uloa” (ibid.). ‘Ewa translates literally as “crooked” (Pūku‘i et al. 1974:28), which may be inspired by the many streams that flow from the Ko‘olau Range, although the western reaches of the *moku* are arid. Handy et al. further described the environment of ‘Ewa District as follows:

... The length or depth of the valleys and the gradual slope of the ridges made the inhabited lowlands much more distant from the *wao*, or upland jungle, than was the case on the windward coast. Yet the *wao* here was more extensive, giving greater opportunity to forage for wild foods in famine time.

The people needed this resource because ‘Ewa, particularly its western part, got very little rain in the summer months when the trade winds dropped their moisture in the interior. Stream water for irrigation, however, was always abundant. In the summer, compared with the windward coast, ‘Ewa was considerably hotter in the daytime, and warmer at night, often rather windless. (1972:469)

There are many myths and legends about ‘Ewa, most of which are associated with the waters of Pu‘uloa. For instance, it is believed that the first breadfruit planted in the Hawaiian Islands was brought from Upolu Samoa and planted at Pu‘uloa in ‘Ewa by Kaha‘i (Fornander 1916-1917:392), the grandson of the great navigator and *alli‘i nui* Moikeha (Emerson 1893). In another story about Pu‘uloa, Hawaiian Historian Samuel Kamakau recounts the legend of a *mo‘o* (a shape-shifting water lizard) called Kanekua‘ana who came from Kahiki and brought bounties of fish with her to the people of ‘Ewa. Among the blessings bestowed upon ‘Ewa, were the *pipi* or pearl oysters from which Pearl Harbor got its name, as told in the following excerpt, which mentions Honouliuli by name:

Kanekua‘ana was the *kia‘i* [guardian] of ‘Ewa, and the *kama‘aina* from Halawa to Honouliuli relied upon her. Not all of the people of ‘Ewa were her descendants, but the blessings that came to her descendants were shared by all. . . (Kamakau 1964:83)

Other legendary accounts of ‘Ewa make specific references to Honouliuli Ahupua‘a or *wahi pana* (legendary places) therein, some of which are presented below and their locations are depicted in Figure 4. One such legendary account told to Elspeth Sterling by Simeon Nawaa in 1954 and published in *Sites of Oahu* tells how the Gods Kāne and Kanaloa established the ‘Ewa district boundaries, as follows:

Meaning of Ewa (‘Ewa)

When Kane and Kanaloa were surveying the islands they came to Oahu and when they reached Red Hill saw below them the broad plains of what is now Ewa. To mark boundaries of land they would throw a stone and where the stone fell would be the boundary line. When they saw the beautiful land lying below them, it was their thought to include as much of the flat level land as possible. They hurled the stone as far as the Waianae range and it landed somewhere in the Waimanalo section. When they went to find it, they could not locate the spot where it fell. So Ewa (strayed) became known by that name. The stone that strayed.

Pili o Kahe

Eventually the stone was found at Pili o Kahe. This is a spot where two hills of the Waianae range come down parallel on the boundary between Honouliuli and Nanakuli (Ewa and Waianae). . . (Sterling and Summers 1978:1)

Honouliuli and *wahi pana* located there are mentioned in a *mele* published as part of “History of Kualii” in a *Collection of Hawaiian Antiquities and Folk-lore Volume IV* by Fornander (1916-1917:364-433). Kūali‘i was a celebrated chief of O‘ahu and is believed to have possessed supernatural powers. This *mele* was composed by two brothers Kapaahulani and Kamakaaulani, “men in search of a new master or lord” (ibid.:364). These brothers devised a plan in which Kamakaaulani would give the *mele*’s name to Kūali‘i while Kapaahulani would urge his rival “to make war upon Kualii” and upon reaching the battlefield, Kapaahulani would chant their prayer, thus ending the battle before it began. Everything went according to plan and Kapaahulani chanted the *mele* of Kūali‘i on the plains of Keahumoa in Honouliuli on the eve of Kāne (moon phase). After he finished, “the two armies came together and the battle was declared off” (ibid. 400). As a result, “the king of Koolauloa then gave over, or ceded, the districts of Koolauloa, Koolaupoko, Waialua and Waianae” (ibid.). The following excerpt is from the *mele* for Kūali‘i:

. . . O Kawelo! Say, Kawelo!	Blue is the poi which appeases
Kaweloiki, the sharp-pointed hill,	[the hunger] of Honouliuli;
Hill of Kapolei.	Fine the salt of Kahuaike—Hoaeae. . . (ibid.)

Another legend that features Honouliuli and *wahi pana* therein is that of Pele's youngest sister Hi'iaka-i-ka-poli-o-Pele (Hi'iaka) who made an epic journey through the Hawaiian Islands. In 1996, Kepā Maly translated a version of the legend titled "He Moololo Kaa no Hiiaka-i-ka-poli-o-Pele (A Traditional Tale of Hiiaka who is Held in the Bosom of Pele)," which was published in the Hawaiian language newspaper *Ka Hoku o Hawaii* between September 1924 and July 1928 (Maly n.d.:1). This account tells of Hi'iaka's journey from Hawai'i to Kaua'i in pursuit of chief Lohi'au, the object of Pele's affection. While on her way back from Kaua'i, she stopped in O'ahu where "she elected to travel overland through Wai'anae, to the heights of Pōhākea [see Figure 4], and across the plain of Honouliuli" (ibid.:3). From Pōhākea, she descended to Keahumoa where she encountered several women making *ma'o* (*ma'oma'o*) flower *lei* for themselves. Hi'iaka wanted one for herself and offered the women the following chant that mentions Pu'uku'ua and 'Āpuku, *wahi pana* located in the *mauka* plain of Honouliuli:

E lei ana ke kula o Keahumoa i ka ma'o	The plain of Keahumoa wears the ma'o blossoms as its lei.
'Ohu'ohu wale nā wahine kui lei o ke	Adorning the women who string garlands in the Kanahele wild
Ua like no a like me ka lehua o Hōpoe	It is like the lehua blossoms of Hōpoe
Me ha pua kolii lehua ala i ka lā	Lehua blossoms upon which the sun beats down
Ka oni pua koai'a i ka pali	On the nodding koai'a flowers of the cliff
I nā kaupoku hale o 'Āpuku	On the rooftops of the houses at 'Āpuku
Ke ku no i ke alo o ka pali o Pu'uku'ua	Rising in the presence of the cliff of Pu'uku'ua
He ali'i no na'e ka 'āina	The land is indeed a chief
He kauwā no na'e ke kanaka	Man is indeed a slave
I kauwā no na'e wau i ke aloha	I am indeed a slave to aloha—love
Na ke aloha no na'e i kono e haele no	It is love which invites us two—come
Māua	
E hele no wau a-	I come- (ibid.:6)

The women bestowed their *lei* upon Hi'iaka and the chant above "became a prayer for those women in their days of trouble" (Maly n.d.:6). Hi'iaka proceeded across the "unpeopled" 'Ewa plain to Pu'uloa where she "saw two women who were busy stringing garlands of 'ilima (*Sida fallax*) blossoms" (ibid.:7) beside the trail. The women recognized Hi'iaka and feared she would kill them, so they transformed into their *mo'o* forms and hid on a "stone that was situated along the side of the trail which continued on to Wai'anae" (ibid.). The account continues thusly:

Now from ancient times till recently [ca. 1927], the place at which this stone was situated was called "Pe'e-kāua" (We two hidden). Now that the road [Government Road/Farrington Highway] has been made, the stone at which these two *mo'o* wahine (lizard women) [hid] has been destroyed. (ibid.)

From the plain of Honouliuli, Hi'iaka turned her gaze to another *wahi pana* known as Pu'u Kapolei (see Figure 4), a hill located to the northeast of the current project area, within the northeast corner of Kapolei Regional Park. The legend tells of two old women Puuokapolei and Nāwahineokama'oma'o "who dwelt there in the shelter of the growth of the 'ōhai (*Sesbania tomentosa*), upon the hill, and where they were comfortably refreshed by the blowing breezes" (Maly n.d.:8). In response to Hi'iaka's chant of greeting, the elderly women spoke of their hunger despite their having cultivated 'uwala (sweet potato) in the barren 'Ewa plain:

. . . We have planted the ‘uwala (sweet potato) shoots, that have sprouted and grown, and have been dedicated to you, our lord. Thus as you travel by pull the potatoes and make a fire in the imu, so there will be relief from the hunger. For we have no food, we have no fish, and no blanket to keep us warm. We have but one kapa (covering), it is the pilipili-‘ula grass (*Chrysopogon aciculatus*). When it blossoms, we go and gather the grass and plait it into coverings for us. But in the time when the grasses dry and none is left on the plain, we two are left to live without clothing. The cold breeze blows in the night, the Kēhau and Waikōloa, the cold does not remain though, and when the grasses of the land which give us warmth, begin to grow again, our nakedness is covered, and we are a little better off than the flowers of the ma‘o. . . (ibid.:8-9)

Hi‘iaka made other observations of the subject *ahupua‘a*, which she incorporated into her chants, such as the following: “The sun is exceedingly hot on Pu‘uokapolei” and “the ma‘o growth is stunted on the seaward plain” (Maly n.d.:9). From Pu‘u Kapolei, Hi‘iaka turned and looked back to Pu‘uku‘ua and Kānehōa (to the northwest; see Figure 4) and chanted, “. . . the awe-inspiring sun. . . has been seen by me at the mountain cliffs Pu‘uku‘ua at Hale‘au‘au the sprouting of the kukui growth dancing in the sun of Kānehōa. . .” (ibid.:10). Hi‘iaka continued *makai* down the trail until she reached Kualaka‘i on the coast of Honouliuli to the south of the project area (see Figure 4), where she found a fresh water spring called Hoakalei, which was flanked by two beautiful *lehua* (*Metrosideros polymorpha*) trees from which she took blossoms to string into more *lei*. Hoakalei was located to the north of Kualaka‘i, near Kalaeloa (Barber’s Point), and from there she walked on to Pu‘uloa.

Another legend of Pu‘u Kapolei (Puuokapolei) tells the story of how Kamapua‘a, the powerful pig-god and chief, took his grandmother to live there. This account also includes details about the conditions of a residence formerly located there, as follows:

Kamapuaa subsequently conquered most of the island of Oahu, and, installing his grandmother as queen, took her to Puuokapolei, the lesser of two hillocks forming the southeastern spur of the Waianae mountain range, and made her establish her court there. This was to compel people who were to pay tribute to bring all the necessities of life from a distance, to show his absolute power over all.

Puuokapolei. . . is as desolate a spot as could be picked out on the whole island. It is almost equally distant from the sea, from which came the fish supplies; from the taro and potato patches of Ewa, and from the mountain ravines containing the banana and sugar plantations.

A very short time ago the foundations of Kamaunuanoho’s house could still be seen at Puuokapolei; also the remains of the stone wall surrounding her home. It has even been said that her grave could then be identified, but since the extension of cane and sisal planting to the base of Puuokapolei, it is possible the stones may have been removed for wall-making. (Nakuina 1904:50-51)

Pu‘u Kapolei also appears among the earliest formal descriptions of archaeological sites on O‘ahu originally recorded and published in *Archaeology of Oahu* by McAllister (1933). In this volume, Pu‘u Kapolei is designated Site 138, as the site of a former *heiau* of the same name; and a legendary association with Kamapua‘a, as in the account presented above. However, by the time McAllister conducted his fieldwork in the early 1930s, the *heiau* had been destroyed,

The stones from the heiau supplied the rock crusher which was located on the side of this elevation, which is about 100 feet away on the sea side. There was formerly a large rockshelter on the sea side where Kamapuaa (the pig-god) is said to have lived with his grandmother (Kamaunuanoho). (1933:108).

McAllister and others have since recorded additional archaeological sites in the seemingly inhospitable terrain of the coastal ‘Ewa coral shelf. For instance, rather than assign discrete site numbers to various features, McAllister designated Site 146 (see Figure 4) as follows:

Site 146. Ewa coral plains, throughout which are remains of many sites. The great extent of old stone walls, particularly near the Puuloa Salt Works, belongs to the ranching period of about 75 years ago [ca. 1855]. It is probable that the holes and pits in the coral were formerly used by the Hawaiians. Frequently the soil on the floor of larger pits was used for cultivation, and even today one comes upon bananas and Hawaiian sugar cane still growing in them. They afford shelter and protection, but I doubt if previous to the time of Cook there was ever a large population here. (ibid.:109)

Although the current project area vicinity appears to have been only sparsely inhabited, a sizeable population once thrived along the edge of the West Loch of Pearl Harbor to the northeast of the project area in an *‘ili* called Honouliuli. The extent of this early settlement is depicted on a map prepared in 1878 and reproduced as Figure 5 below titled “Taro Lands of Honouliuli.” In addition to the coastal settlement, a legendary inland settlement is believed to have existed at the aforementioned *wahi pana* of Pu‘uku‘ua (see Figure 4). McAllister also assigned Pu‘uku‘ua a site designation (Site 137) as the location of a former *heiau*:

The heiau was located on the ridge overlooking Nanakuli, as well as Honouliuli, at the approximate height of 1800 feet. Most of the stones of the heiau were used for a cattle pen located on the sea side of the site. That portion of the heiau which has not been cleared for pineapple has been planted in ironwoods. (1933:108)

However, Hammatt et al. reported that “there is no direct archaeological evidence available to the authors’ knowledge that Hawaiian settlement occurred” at Pu‘uku‘ua (1991:37). Per legendary sources, Pu‘uku‘ua was home to *ali‘i* in ancient times and was also the site of a battle field (Beckwith 1970; Sterling and Summers 1978). According to a Hawaiian language newspaper article published in 1899 and translated for inclusion in *Sites of Oahu*, although the ancient chiefs were descended from the gods, they lived alongside commoners, “the inhabitants of Puu-Kuua were so mixed, like taro beside an imu” (*Ka Loea Kalaiaina* July 8, 1899 in Sterling and Summers 1978:33). The article continues as follows, “there were two important things concerning” Pu‘uku‘ua:

- (1) This place is entirely deserted and left uninhabited and it seems that this happened before the coming of righteousness to Hawaii Nei. Not an inhabitant is left.
- (2) The descendants of the people of this place were so mixed that they were all of one class. Here the gods became tired of working and returned to Kahiki. (ibid.)

Another *wahi pana* of Honouliuli known as Ko‘olina appears in the following paragraphs from part one of a legend titled “Kaaoo Hooniua Puuwai No Kalealuaka” (The Heart-stirring Story of Kalealuaka), which was published in 1910 as part of a series in *Ke Au Hou*, a Hawaiian language newspaper. Ko‘olina, located on the coast of Honouliuli to the northwest of the project area (see Figure 4), was a favorite place for chief Kakuhihewa to visit. The excerpt reads as follows:

Haalele iho la ke kukini ia Kapuaiakaula a hele aku la ma ke ala no ke kii ana i ka makemake o ke alii, e hele ana keia i Koolina, aia ia wahi i Waimanalo, e kokoke ana e pili me ka mokuna o Ewa ame Waianae, he wahi hooluolu ia no ke alii Kakuhihewa, a o ke kahuna o Napuaikamao ke kiai oia wahi.

The runner departed from Kapuaiakaula and took the trail to fetch what the chief wanted and the trail was heading to Ko‘olina. Ko‘olina is in Waimanalo that which is near the district of ‘Ewa and Wai‘anae, it is a place where the chief Kakuhihewa would retreat. And the kahuna Napuaikamao was the steward of that place.

... E hoomanao ia e ka mea heluhelu, o keia wahii i kii ia aku ai o Napuaikamao ilalo o Koolina, e pili pu ala me Waimanalo, aole ia o ko Koolau Waimanalo; aka, o ko Ewa nei no; he mamao no nae hoi e maopa maoli ai no ke kuo mai. Ua alahula ia mau hulaana ame ia mau alualua i kou mea kakau, he wahi maikai a he nohona oluolu, a oia home aloha no ia o ua alii Kakuhihewa nei. (Ke Au Hou July 13, 1910:10)

. . . Dear reader, remember that the place where Napuakaimao was gotten is below Ko'olina, adjoining Waimanalo, it is not the Waimanalo on the Ko'olau side; but the one here in 'Ewa, there is a great distance between them. In my opinion, the path to Ko'olina is a hard fought but well-traveled trail over land and through the water. Ko'olina is a fine place that provides for comfortable living, which is why Koolina is chief Kakuhihewa's beloved home. (In-house translation provided by Lokelani Brandt, M.A. and Teresa Gotay, M.A. March 15, 2018)

Despite the legendary references to coastal Honouliuli as a locale favored by the chiefs of ancient Hawai'i, no direct archaeological evidence of large residential structures from the Precontact Period that would befit high-status individuals has been recorded in Honouliuli (Hammatt et al. 1991). However, other Precontact land use in Honouliuli Ahupua'a includes a renowned salt-making area that was formerly located along the shores of the West Loch and continued to provide salt well into the twentieth century. According to Maly's interview with Thelma Genevieve Parish, a resident of Honouliuli Ahupua'a and descendant of James Dowsett, some of the salt was bought by Alaskan fishing fleets and to salt the salmon catch (Maly n.d.:23). Additionally, she recalled that during her childhood many types of *limu*, as well as lobsters, and fish were plentiful in the coastal waters of Honouliuli, prior to the residential development of Ewa Beach, the marina, and military facilities (ibid.).

The project area vicinity within the coral plains of coastal Honouliuli known by most as Barbers Point was formerly known as Kalaeloa, which translates literally as "the long point" (Pūku'i and et al. 1974:72). Although some sources claim that Kalaeloa was a legendary birthplace and burial ground of Hawaiian Kings, the search for legendary references to Kalaeloa or Laeloa did not reveal any specific mention of this place or an association with royalty. However, the etymology of Barbers Point is less shrouded in mystery—the landform is named after Henry Barber, who was shipwrecked there on October 31, 1796. According to Kamakau, Barber's ship the *Arthur* "had visited the island on several occasions during the rule of Ka-lani-ku-pule" but "this was the first time a foreign ship had grounded on these shores" (1992:174). Barber made the tragic decision to set off for China despite "a vicious tropical depression" that battered the southwest coast of O'ahu (Sekigawa and Hayes 2015:6). As a result, Barber and his 22-man crew ran aground on a reef to the west of Pearl Harbor and the *Arthur* broke apart—six men lost their lives that night; while the survivors managed to get to land safely at Kalaeloa (Sekigawa and Hayes 2015). Kamakau's account of the incident continues thusly,

Kamehameha was on Hawaii, but Young remained on Oahu. All the men on the ship came ashore at night in their boats. At daylight when the ship was seen ashore Ku-i-helani placed a ban on the property of the ship and took care of the foreigners. Hawaiian divers recovered the valuables and they were given over to the care of Ku-i-helani, but part were given by Captain Barber to the men who had recovered them. (1992:174)

Historical accounts penned by visitors and residents in the time since Barber shipwrecked at Kalaeloa are another means to reconstruct life in Precontact and early Historic Hawai'i. For instance, in his memoir Hawaiian historian Ioane (John) Kaneiakama Papa 'Ī'Ī mentions a network of trails that extended across Honouliuli to neighboring lands. A portion of this trail network appears to correspond with the current alignment known as Farrington Highway. 'Ī'Ī also spoke of many places in 'Ewa, including Honouliuli as in the following excerpt:

There, patches of taro were grown, draw nets made, and houses built. The fishing was done in the sea of Honouliuli. Because the people of the place did not like Waikele's farm overseer, and for other reasons too, perhaps, they would say, "We are of Honouliuli." If the farm overseer went to Honouliuli, they would say, "We belong to Waikele." It was true that their homes were in Waikele, but all of their fishing was done in Honouliuli. It was laziness and dislike of the overseer that made them point one way and then another. (1959:32)

In 1820, American Missionary Hiram Bingham described the view from atop Punchbowl looking towards Barber's Point and the project area vicinity in 'Ewa as follows:

. . . Below us, on the south and west, spread the plain of Honolulu, having its fish-ponds and salt making pools along the sea-shore. . . From Diamond Hill [Diamondhead], on the east, to Barber's Point and the mountains of Waianae, on the west, lay the sea-board plain, some twenty-five miles in length, which embraces the volcanic hills of Moanalua, two or three hundred feet high, and among them. . . the lagoon of Ewa [Pearl Harbor/ Pu'uloa], and numerous little plantations and hamlets, scattered trees, and cocoanut groves. . . (1848:93)

Between 1815 and 1830, the landscape of Honouliuli suffered from the over-harvesting of sandalwood, which also had an adverse effect on the economy of O'ahu and the Hawaiian Islands as a whole. A historical account penned by ship surgeon and natural historian F.D. Bennett after an 1834 visit to O'ahu and published in his book titled *Narrative of a Whaling Voyage Round the Globe* provides a succinct summary of land use practices and the economy at that time:

The staple commodities of the [island] group are at present very few. Sandal-wood is the principal of these but the demands for it have been so urgent, and so much beyond the resources of the country, that nearly all the large trees have been destroyed, and for some time past the government has very prudently prohibited the cutting of young wood. The fossil salt of Oahu, and some hides, chiefly afforded by the wild cattle of Hawaii, are therefore the only available exports that remain; but the cultivation of sugar has been lately commenced under favourable auspices, and promises well for the commercial interests of the people. (1840:237)

A little more than a decade after Bennett's visit, the land division known as the *Māhele 'Āina* ushered in widespread change in land ownership across the archipelago. Kepā and Onaona Maly conducted a review of all the *Māhele* records for Honouliuli Ahupua'a recorded from 1847 through 1855 (Maly and Maly 2012). The following discussion is taken from the paper in which they presented the results of their research, which included over 400 documents. According to Maly and Maly, "of the 106 native tenant claims and one chiefly claim identified from Honouliuli, 74 were awarded to the claimants or their heirs, and 33 were denied" (2012:1). The sole chiefly or *ali'i* claim (Land Commission Award No. 11216:8; Royal Patent No. 6971) was awarded to Mikahela Kekauonohi, (Kamehameha III's niece and Kamehameha I's granddaughter) who had inherited the *ahupua'a* from her late husband High Chief Aaronā Kali'iahonui after his death in 1849 (ibid.:7). The current project area falls within a portion of this *ali'i* award that comprises 43,250 acres of Honouliuli and originally included 2,610 acres of Pu'uloa, an *'ili* which Kekauonohi eventually separated from Honouliuli and conveyed to foreigners (Kelly 1991:160). There were no *kuleana* awards granted within the subject parcel or its immediate vicinity as a result of the *Māhele*.

Maly and Maly go on to report that "at least two hundred eight (208) resident names were found" in *Māhele* documents and that these names "often transitioned into modern 'surnames'" (2012:7) adopted by the people living on the land and sustaining themselves from it. They also discovered references to over 280 place names of Honouliuli, which often described of the following: terrain, a historic event, resources a place was known for, land-use specific to that place; or commemorated an individual who resided there. Despite the broad spectrum of place names that included specific places as well as larger swaths of land, "the exact locations of many places [such as One'ula and Ko'olina] which are found in traditions and historical accounts cannot be accurately identified in historic surveys [*sic*] mapping work" (ibid.:11). Maly and Maly attributed the omission of such locational data to the detrimental impact of western contact on the Native Hawaiian people and their environment.

Among the detrimental impacts of western contact on the Native residents of Honouliuli and their environment was the rapid spread of exotic plant species and the unchecked grazing of domesticated animals, which had been introduced in the late eighteenth century shortly after foreign contact. By the 1840s, ranching operations began to develop in Honouliuli; soon foreigners such as John Meek, Isaac and

Daniel Montgomery, James Dowsett, and James Campbell would control most of the acreage therein. In 1857, chief Levi Haalelea deeded roughly 40,000 acres of Honouliuli Ahupua'a, except for lands awarded to native tenants and the roughly 2,500 acres of Pu'uloa previously conveyed to Isaac Montgomery, as a mortgage to Benjamin F. Snow. Upon his death, Haalelea's widow (Anaderia Amoe Haalelea) conveyed Honouliuli, including "all the goods, lands and chattels" (Bureau of Conveyances Liber 23 May 11, 1867: 319) to John H. Coney in 1867. Shortly thereafter, Coney leased the lands to James Dowsett and John Meek for grazing. During the early to mid-twentieth century, ranching continued across most of Honouliuli. Lifelong resident, Thelma Parish recalled that the *makai* flats of Honouliuli were used as rotating pasture for cattle by her ancestors and others, which may be the origin of the street name of Papipi Road (*Pā* [corral] *pipi* [cow]) in Ewa Beach, located to the southeast of the project area (Maly n.d.).

In 1877, James Campbell purchased Honouliuli Ahupua'a (roughly 43,640 acres) including the current project area, for a total of \$95,000 from John H. Coney and his wife Ami (Bureau of Conveyances Liber 52 September 11, 1877: 201-201). In a "Statistical Directory of the Island of O'ahu" published in 1880, James Campbell's occupation is listed as "Landed Proprietor" and he appears as the owner of 43,250 acres of land cultivated for pasture; Campbell is also listed as the "Landowner of Kahuku Ranch" owning another 28,608 acres in pasture in Kahuku (Bowser 1880:298). Another entry for someone named Kaehuokalani lists his occupation as "Farmer" owning 4 acres of pasture land in Honouliuli (ibid.:307). The third and final entry associated with Honouliuli is that of Lockgawk, a "Rice planter" by occupation who is listed as renting 140 acres in Honouliuli (ibid.:314). Bowser states in a later entry found in the sugar plantations section of the same volume under the title "Honouliuli Estate" that the pasture land not only "affords grazing for much valuable stock," but that its soils are "suitable for agriculture," for "It is on this estate that Mr. Campbell's successful artesian boring has been made" (ibid.:409). He also adds "There are valuable fisheries attached to this estate," the area of which he qualifies as follows "the length of this estate is no less than 18 miles. It extends to within less than a mile of the sea coast, to the westward of the Pearl River inlet" (ibid.).

In a section titled "An Account of the Sugar Plantations and the Principal Stock Ranches on the Hawaiian Islands," Bowser provides additional details regarding Campbell's Honouliuli estate. Bowser admits that the following account "has been based upon materials supplied in each case to the publisher of this Directory by the proprietors or by their agents" (1880:401). The account, reproduced below, emphasizes the installation of the first successful artesian well in the islands and concludes with a brief description of a village in Honouliuli:

The Honouliuli Ranch is an extensive property. The main road runs through it for about twelve miles, and the general breadth is seldom less than four miles. One large tract of this land is perfectly level, with the exception of a few acres near the centre, where there is a knoll of rising ground.

... The soil at Honouliuli is good, and, with the aid of irrigation, will grow anything. In the mean time, it is wholly pasture land, but the means of irrigation have recently been secured by Mr. Campbell, who has sunk an artesian well to the depth of 273 feet. This well has delivered a continuous stream of water equal to 2,400 gallons per hour, ever since the supply from which the present flow comes, was struck on the 22d of September, 1879. Besides Mr. Campbell's residence, which is pleasantly situated and surrounded with ornamental and shade trees, there are at Honouliuli two churches and a school house, with a little village of native huts. (1880:495)

Shortly after Campbell sank his first artesian wells, in 1884, King David Kalakaua and President Grover Cleveland negotiated a treaty (referred to as the Pearl Harbor Treaty) through which the United States acquired Pearl Harbor. According to a newspaper article titled "Honolulu and Pearl Harbor Vital Centers of America's Power in Pacific," beginning in the 1840s, members of the U.S. government made it clear to all European countries who showed any interest in occupying the Hawaiian Islands that the U.S. would not allow it (*Evening Bulletin* July 16, 1908:II:1). Then, as countries in Asia began to show interest, the U.S. shifted their focus to the east. As the Spanish-American war unfolded, the US found it necessary "to

acquire the sovereignty of the Hawaiian Islands, both for the protection of the [U.S.] Pacific coast and in order to make it possible to maintain any naval base in the Far East” (ibid.). The same article states that Pearl Harbor was a position that offered “strategically and otherwise, the finest site for a naval and coaling station to be found in the whole Pacific” (ibid.). To that end, over 600 acres had been acquired for the construction of a naval station and that almost ten years had passed since the annexation of Hawai‘i in 1898 without breaking ground. In 1908, an appropriation of \$3,000,000.00 was made by Congress to straighten the channel and establish the extant Naval Base at Pearl Harbor (ibid.).

In 1888, a few years after the Pearl Harbor Treaty was negotiated and roughly half a century after Bennett first reported on the burgeoning commercial sugar enterprise in ‘Ewa, the Oahu Railway and Land Company (OR&L) was born. The fate of the (OR&L) would prove to be inexorably linked to that of commercial sugar in ‘Ewa and beyond. During the late 1880s, B.F. Dillingham promised investors that he would connect Honolulu with Pearl Harbor by means of a steam railroad. Although railroads, largely associated with the sugar industry, were already in operation around Hawai‘i Island, O‘ahu was undeveloped in comparison and the Pearl Harbor region was not yet known as a sugar production area (Yardley 1981). Furthermore, according to Dillingham biographer Paul T. Yardley, “the great dry plains of Ewa produced nothing but cattle and firewood” (1981:130). The main landholders of ‘Ewa, including James Campbell, were all amenable to the planned railroad and the promise of increasing the value of their holdings. On March 8, 1889, the formal groundbreaking for the railway took place at Moanalua near the intersection of Middle Street and Kamehameha Highway (Yardley 1981).

By July 1, 1890, the railroad reached Hō‘ae‘ae, to the east of the current project area (Yardley 1981:158). Later that same year, Dillingham shifted his focus to developing portions of Campbell’s 60,000 acres in ‘Ewa into sugar plantations and constructing a wharf in Honolulu Harbor that could accommodate ships loaded with sugar for export, as well as imports for transport by rail. Dillingham continued to run parts of the Campbell lands as ranches while renting out portions for other uses, which resulted in the establishment of Ewa Plantation Company in 1890 that included portions of Honouliuli. The Ewa mill was constructed in 1891 and the first crop was harvested in 1892 (Campbell 1994). Dillingham subleased all Honouliuli lands up to 200 feet in elevation to William Castle who then sublet the acreage to Ewa Plantation Company (Hammatt et al. 1991). The current project area location is depicted relative to the cane lots of Ewa Plantation Company’s land in Figure 6, below.

In 1895, the OR&L completed laying rail between Ewa Mill and Wai‘anae, which “made it possible to reach the remote Waianae coast in an hour and a half, instead of by a day’s ride on horseback, and ended the isolation of this remote corner of Oahu” (Yardley 1981:189). The following historical account titled “A Tramp Around Oahu” (Effinger 1895) and published in the July 1895 issue of *Paradise of the Pacific* provides a detailed depiction of the project area vicinity in the late nineteenth century. The author, John Effinger, was a merchant who settled in Honolulu in 1892 (Siddall 1917:97) and became a member of the Hawaii Tourist Bureau for O‘ahu (Thrum 1923:192). In the touristic account, Effinger (1895) tells of his 150-mile hike along the shoreline around the island over a six-day period. On the fifth day of his journey, Effinger crossed from Wai‘anae to the project area vicinity and made the following observations:

... At times I struck a hard and lonely coral strand for quite a distance. Before reaching Barber’s Point the road deflected inland and across the lands of Honouliuli, and was boarded on each side by beautiful algarobas. It was dry and fine for walking, and for miles there is velvety sward for the pedestrian. Beyond the coral plain which stretches out to the right towards Puuloa there was a glimpse at times of the waters of Pearl Harbor. A higher point was reached and the big smokestack of Ewa Plantation split the horizon. Along a rising crest [in/of] the road lay the rest of the day’s journey, and turning to the right I entered into the tassled ocean of the big Ewa cane field. . . (1895:88)

In another historical account published in the same periodical titled “Trip on Oahu Railroad” (Cameron 1898), the author describes the scenery a passenger would see from the train as they travelled the thirty-three miles from Honolulu to Wai‘anae on the OR&L railway. Of particular interest is Cameron’s statement about the vegetation in Ewa, primarily *kiawe* trees, which he states were “the most valuable tree on the

islands,” for “stock feed on the beans, and it is the principal wood used for fuel in Honolulu” (Cameron 1898:99).

In 1908, the OR&L hooked up with the naval railway and constructed branches that extended off the Wahiawa line to reach pineapple fields in Waipi‘o, Schofield Barracks, and Kunia. The completed railway is shown in Figure 7 below; remnant portions of the OR&L right-of-way were designated SIHP Site 50-80-12-9714. Without the OR&L, it is likely that leeward O‘ahu would not be as it is today, nor would it have been possible to plant the parched ‘Ewa plains with commercially cultivated sugar cane. In the early 1900s, Dillingham summarized his feelings regarding the link between his railway and the sugar industry in his report to the directors of the railroad thusly, “It is not too much to say that the development of the sugar industry on this Island [O‘ahu] since 1890, is directly due to the presence of . . . railway transportation” (Yardley 1981:212). By 1910, Ewa Plantation Company supported a community of 2,500 people and became the first sugar company in the world to raise ten tons of sugar per acre in 1923 (Campbell 1994:1).

In late 1939 or early 1940, the United States Navy leased over 3,500 acres of Campbell Estate lands, upon which the Navy established the Marine Corps Air Station at Ewa, and later Naval Air Station Barbers Point (NASBP) (Collins 1977:33). The following discussion is drawn largely from an article by Helen Collins titled “Pacific Crossroads” that appeared in the January 1977 edition of *Naval Aviation News* (1977:32-38). Prior to July of 1940, 400-foot sections of *kiawe* growth were cleared in preparation for land survey for the development of NASBP; and ground clearing and layout of the runways began in October 1941 (Collins 1977:33). According to Collins, the location of NASBP was initially chosen as a peacetime aviation training facility; however, the attack on Pearl Harbor kicked construction of the NASBP into overdrive:

The pressing needs of the Pacific carrier fleet for more land space to train its pilots and service its planes required not only the immediate construction of planned facilities but also the doubling of the base capacity. NAS Barbers Point, only partially completed, was commissioned on April 15, 1942, with a complement of 14 officers and 242 enlisted men under the command of Commander H. F. MacComsey.

Little more than a few cuts had been made by the contractor in the extensive undergrowth at the station. And so, all men who could be spared formed brush-cutting gangs to hasten the job of building the air station. Air operations were conducted under primitive conditions. Until the control tower was completed, two mechanics using flare pistols from a 2 x 4-foot structure at the runway intersection served as the traffic control center. (1977:33-34)

When the United States entered World War II, “the Army took possession of over 500,000 acres of Ewa Plantation land” (Campbell 1994:2). Shortly after, NASBP was operating in full swing as “part of the huge maintenance, supply and training effort which kept the war machine in operating condition” (ibid.:34). By the end of the war in 1945, the initial complement of 266 officers and enlisted men had grown to over 4,000 souls (ibid.). Honouliuli is also known for another landmark that emerged from the U.S. involvement in World War II, which serves as a reminder of an unfortunate part of U.S. history. During World War II, Honouliuli Gulch was the site of a Japanese Internment camp, which was “the largest and longest-used confinement site in the Hawaiian Islands for US citizens and residents of Japanese and European ancestry arbitrarily suspected of disloyalty following the attacks on Pearl Harbor” (<https://www.nps.gov/hono/learn/index.htm>, Internet resource accessed February 2, 2019). The camp opened in March of 1943 and was able to accommodate up to 4,000 prisoners of war before it was abandoned in 1948 (ibid.). In 2015, President Obama established the Honouliuli National Monument; however, it is still not open to the public.

The OR&L continued to flourish through the end of World War II and provided transport for millions of passengers and freight during the war, proving itself indispensable to the U.S. Army and Navy. However, after the war as infrastructure improvements to O‘ahu roadways were implemented and a shift to automobiles, trucks, and buses for the transport of people and goods was underway, the OR&L could not compete. The year 1947 marked the close of the main line while limited operations between the docks and pineapple canneries continued before complete abandonment of the railway a few years later. In contrast,

“a good sugar crop and substantial investment in new equipment and development” (Campbell 1994:2) were able to mitigate the effects of World War II on the sugar industry, ten years after the attack on Pearl Harbor. In 1962, Castle and Cooke Ltd. became the majority shareholder of Ewa Plantation Company stock; but in 1970, Ewa Plantation was unable to renew its lease for the Campbell Estate lands and was forced to merge with Oahu Sugar Company (OSC), which had been acquired by AMFAC, Inc. roughly a decade prior to the merger (Yardley 1981). As a result of the merger, OSC became “the second largest sugar plantation in Hawaii and the third largest in the U.S.” (Yamamoto et al. 2005:43). By 1982, OSC covered fifty-five square miles of land with 15,488 cultivated acreage (ibid.). OSC continued to produce high yields well into the 1980s.

Regarding NASBP, the end of World War II brought about mass demobilization of the facility and the number of personnel dropped to 378 by the fall of 1947 (Collins 1977:35). Per Collins, in 1950, the boundaries of NASBP were expanded to include the Marine Corps Air Station at Ewa (ibid.). During the Korean war, “from 1951 to 1953, as housing units were built, there was an influx of dependents and an expansion of recreation and exchange facilities to accommodate the station’s increased population” (ibid.). Collins states that from the end of the Korean War and into the early 1960s, construction continued to surge as NASBP became the primary support facility for “operational and training missions of the VP [Navy Patrol Squadron] community” (ibid.:36). Additional development included the establishment of the aircraft maintenance department and the following: “a new bachelor officers quarters, enlisted barracks, 1,140 housing units, AEC facility, survival equipment shop, a special weapons target, a jet engine test facility and many other facilities” (ibid.). Archival documents, records, and maps indicate that the easternmost portion of the subject parcel was formerly an extension of the adjacent Naval Air Station runway. This can be seen on the Tax Map Key map (see Figure 2) as an easement area. A comparison of historical maps drawn in 1953 and 1962 (Figure 8) and aerial photographs taken February 6, 1968 and February 12, 1977 (Figure 9), shows that the runway formerly extended into the eastern portion of the project area, beginning sometime after 1962 and prior to 1968. The 1953 USGS map also depicts a former unimproved dirt road crossing the subject property (northwest to southeast) connecting Malakole Road with Midway Road; this road is no longer visible in the 1962 map (see Figure 8). An increased number of structures within NASBP, to the northeast of the project area, is also noticeable in the 1962 USGS map, as well as a golf course where multiple structures formerly appeared in the eastern portion of NASBP, along the north side of South Hanson Road (see Figure 8).

NASBP also provided training and supply-based support during the Vietnam conflict. Collins reports that Barber’s Point was one of the largest naval air stations in the Pacific at the time of her writing, in 1977, and that “there is constantly changing assortment of transient groups and all branches of the service are represented in the activities supported by the station” (ibid.). Such activities at NASBP in the late 1970s included National Guard and Coast Guard operations, the Naval Weather Service Environmental Detachment, a Helicopter Antisubmarine Squadron, and the avionics division of the maintenance department. Per Collins, the official mission of NASBP had not changed since 1967, which was “to maintain and operate facilities and provide service and material to support operations of aviation activities and units of operating forces of the Navy and other activities and units, as designated by the Chief of Naval Operations” (ibid.:38).

During the 1980s, the U.S. military’s focus shifted to the Middle East and even though NASBP “was no longer at the forefront of the world’s conflicts, it still played an important role with daily antisubmarine flight operations and its P-3s [4-engine maritime patrol aircraft]” (Sekigawa and Hayes 2015:10). The end of the first Gulf War brought about reductions to the facilities and personnel of the U.S. military. Thus, in 1993, NASBP was recommended and approved for closure and the State of Hawai‘i established the Barbers Point NAS Redevelopment Commission as the local redevelopment authority for planning the reuse of the former NASBP (United States Department of the Navy 2011:1-2). However, according to the U.S. Navy, the station did not close until July 2, 1999; since then, roughly 1,900 acres of NASBP property has been repurposed and distributed as follows: 804 acres through public benefit conveyance to schools, homeless assistance, and Kalaeloa Airport; 197 acres sold for roadways and drainage; 256 acres in fed-to-fed transfer

to U.S. Fish and Wildlife Service, Federal Aviation Administration, U.S. Coast Guard, U.S. Postal Service, and the Hawai'i National Guard; in addition to 556 acres to the Department of Hawaiian Homelands and 87 acres to Hawai'i Community Development Authority as a result of special legislation, which includes the subject parcel (*ibid.*).

The land modification associated with the sandalwood trade, ranching, commercial sugar cultivation, the expansion of the OR&L railway, and the development of Pearl Harbor and NASBP has had lasting impact on the landscape and demographics of the project area vicinity. As the naval base at Pearl Harbor expanded, residents' access to marine resources diminished, which displaced the native tenants of Honouliuli Ahupua'a and their descendants; with time, the ranching and plantation families were also be displaced as residential and commercial development would favor military personnel and their families.

A review of the records on file at the Department of Land and Natural Resources-State Historic Preservation Division (DLNR-SHPD) revealed that numerous archaeological studies have been conducted in the project area vicinity since 1970 (Figure 10). As a result of these prior archaeological investigations, more than 100 sites from the Precontact and Historic periods have been recorded within the coral plains. These sites comprise habitation and agricultural complexes that include mounds, *ahu*, modified pits, stone enclosures, cave and sinkhole burials, and stone pavements. The reader is referred to McElroy and Elison 2013 and Kingsbury and Spear 2017 for a more detailed discussion of prior archaeological studies in Honouliuli.

Some of these studies (Sinoto 1979, Hammatt and Folk 1981, Hammatt et al. 1994, and McDermott et al. 2000 and 2006, among others) have focused on the coral plains to the west of Kalaeloa Boulevard (see Figure 10). In the late 1970s, the Barbers Point Archaeological District (SIHP 50-80-12-2888) was established within the coastal lands of Honouliuli near Ko'olina Beach Park. The conservation area was established to facilitate the mitigate the impact upon Precontact and Historic sites of construction activities associated with the development, and subsequent expansion, of Kalaeloa Barbers Point Harbor (Parsons Brinckerhoff Quade & Douglas, Inc. 2000). Many modified sinkholes, common within the 'Ewa plain, have been recorded at elevations similar to those within the current project area (Lewis 1970; Sinoto 1976; McDermott et al. 2000, and others). Some of these naturally occurring sinkholes were modified for agricultural use; while others were found to contain the bones of extinct avian species (Tuggle 1997). Storrs Olsen, Associate Curator of Birds at the Smithsonian Institution conducted a field inspection and concluded that the limestone sinks:

... probably contain the most extensive fossil avifauna in Hawaii with many new species endemic to the island. Such fossils have not and probably cannot be found anywhere else on the island. Furthermore, the nature of preservation is such as to insure that virtually complete skeletons can probably be assembled for most species. Thus there is much highly significant and totally new biological and paleontological information that can be obtained at the Barbers Point site. (Olson in Sinoto 1976:74)

Many of these prior archaeological studies focused on study areas located within and adjacent to the former NASBP, such as the following: Haun 1991, Burgett and Rosendahl 1992, Tuggle 1997, Tuggle and Tomonari-Tuggle 1997; McElroy and Elison 2013, Medrano et al. 2014, Kingsbury and Spear 2017, among others. The current project area does not appear to have been subject to prior archaeological study, except for "low intensity survey" within the southwestern corner of the parcel as part of the Bishop Museum's Applied Research Group's study (Haun 1991). This tiny section of the subject parcel was included in the Haun (1991) study as part of the 121-acre Survey Area E8, for which he reported the following types of prior disturbance: quarrying, dumping of refuse, filling, bulldozer cuts or cleared areas, and military-related constructions (Haun 1991:23). Haun (1991) did not identify any features within the current project area as a result of their survey. Thus, no archaeological resources are known to exist on the subject parcel.

In some cases, archeological features such as modified sinks and remnants of sugar plantation infrastructure were encountered within the less disturbed areas of properties that exhibited extensive ground disturbance. However, the construction of NASBP resulted in the destruction of many Precontact and early Historic Period sites; while it produced numerous Historic military features (Tuggle 1997). In 2000, the year after NASBP officially closed, the U.S. Board on Geographic Names approved the Redevelopment Commission's application to change the name of the area back to Kalaeloa (Townscape, Inc. 2014:32). In 2010, community members established Kalaeloa Heritage and Legacy Foundation and created a Heritage Park located on the east side of the former NASBP where Coral Sea Road and Long Island Street meet. This Native Hawaiian Organization is dedicated to "preserving and protecting Native Hawaiian Cultural and historical sites of Kalaeloa" (<https://www.khlfoundation.org/about> internet resource accessed February 11, 2019).

On January 18, 2019, Teresa Gotay, M.A. and Ryan Gross, M.A. under the supervision of Robert R. Rechtman, Ph.D., conducted a field inspection of the subject parcel, the boundaries of which were clearly identifiable in the field. The project area is currently undeveloped and classified for industrial use. The subject property is covered with grasses, weeds, and *koa haole* (*Leucaena leucocephala*) with an occasional *kiawe* (*Prosopis pallida*) (Figure 11). The project area comprises a completely modified environment, which shows evidence of prior ground disturbing activity—primarily grading and clearing of vegetation (Figures 12 and 13), as well as remnants of the former runway as evidenced by a graded area with scattered gravels upon it (Figure 14). No surface archaeological resources were observed during the field inspection, and given the extensive grading that has occurred, no such resources are expected to remain intact in a subsurface context, if any were ever present. However slight, there is the possibility for remnant subsurface deposits within concealed limestone sinkholes. As revealed from prior investigations such features could potentially contain fossil evidence or traditional Hawaiian cultural material.

In sum, the results of archival research and prior archaeological investigations indicate that the project area vicinity appears to have been only sparsely inhabited throughout the Precontact and early Historic Period. Settlements in Kalaeloa were likely temporary and seasonal in nature—dependent entirely on resource availability. Taro cultivation was concentrated along the West Loch of Pearl Harbor, as was salt gathering for private and later commercial use. The ongoing residential and commercial development of Honouliuli and the greater Ewa District that began with the expansion of the OR&L railroad, commercial sugar cultivations, and military installations continues with the expansion of nearby Kapolei today. Thus, this knowledge combined with the extensive land alteration across the project area and the negative results of our field inspection, leads to the conclusion that the proposed Arion Solar Kalaeloa project on TMK: (1) 9-1-013:029 will have no effect on historic properties. However, in the unlikely event that archaeological resources are encountered during grading activities, such activities will be halted and DLNR-SHPD contacted. Should you have any questions, or if you would like further information please feel free to contact us directly.

Sincerely,



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Senior Archaeologist



Robert B. Rechtman

Principal Archaeologist

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Figure 1. Portion of 1998 U.S.G.S. 7.5 minute 'Ewa quadrangle showing project area location.

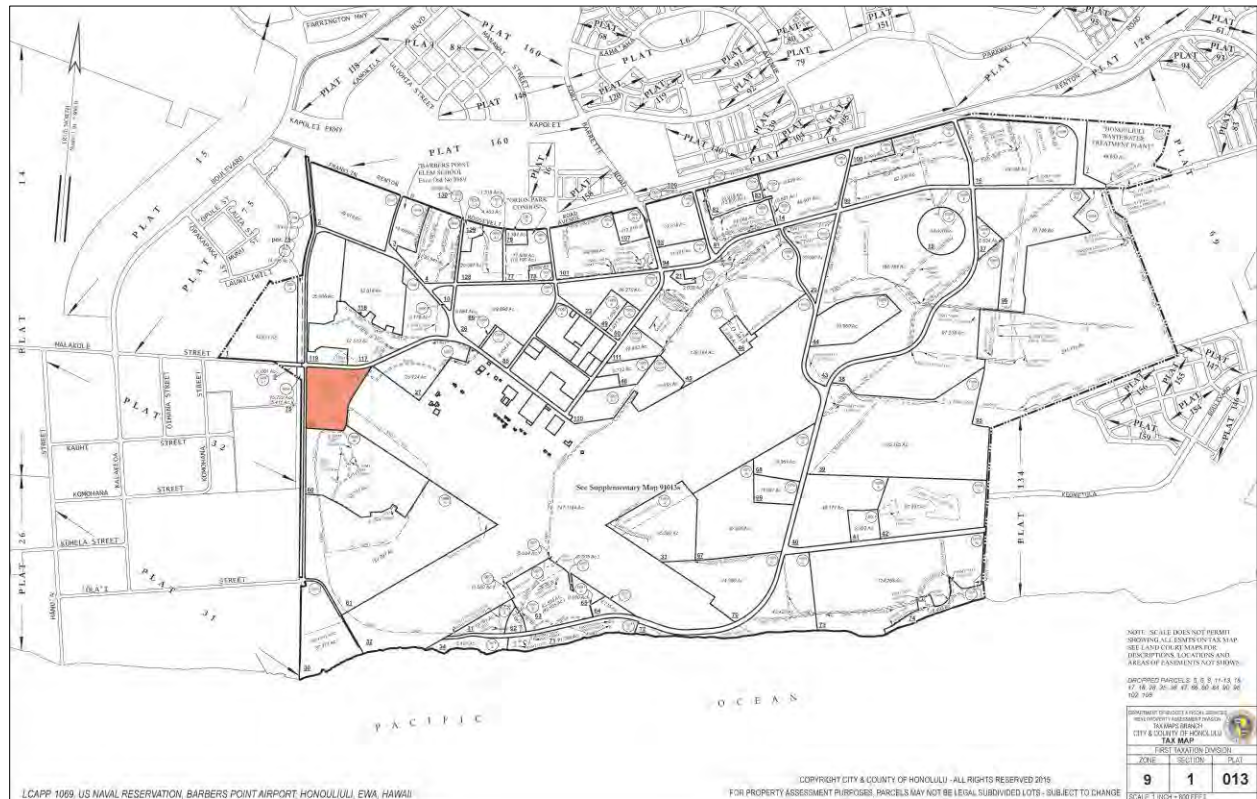


Figure 2. Tax Map Key (3) 9-1-013 map with current subject parcel (Parcel 029) shaded red.



Figure 3. Subject parcel location outlined in red, satellite image captured January 29, 2013.

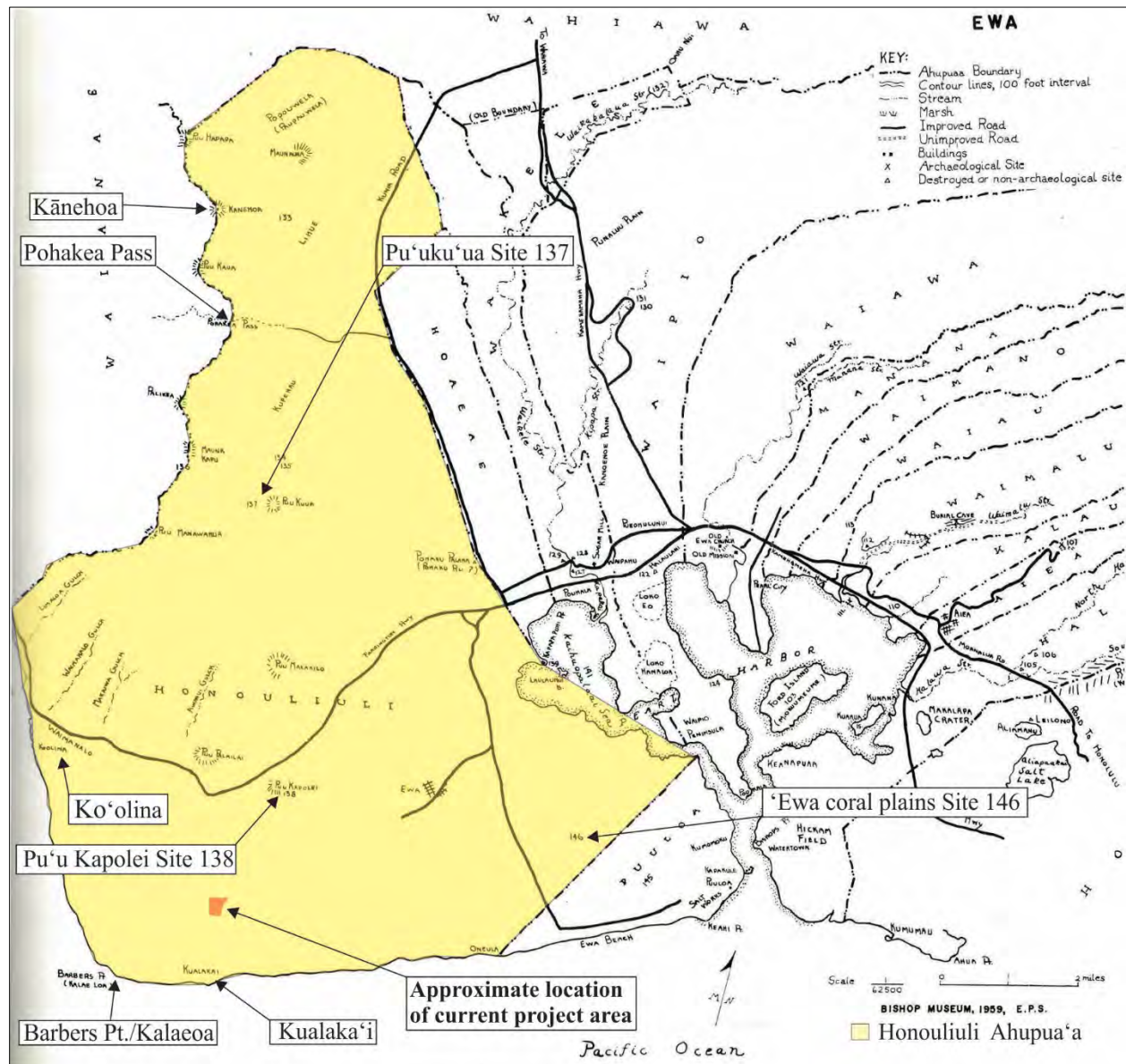


Figure 4. Annotated map from Sterling and Summers (1978:57) showing some of the *wahi pana* of 'Ewa referenced in the text.

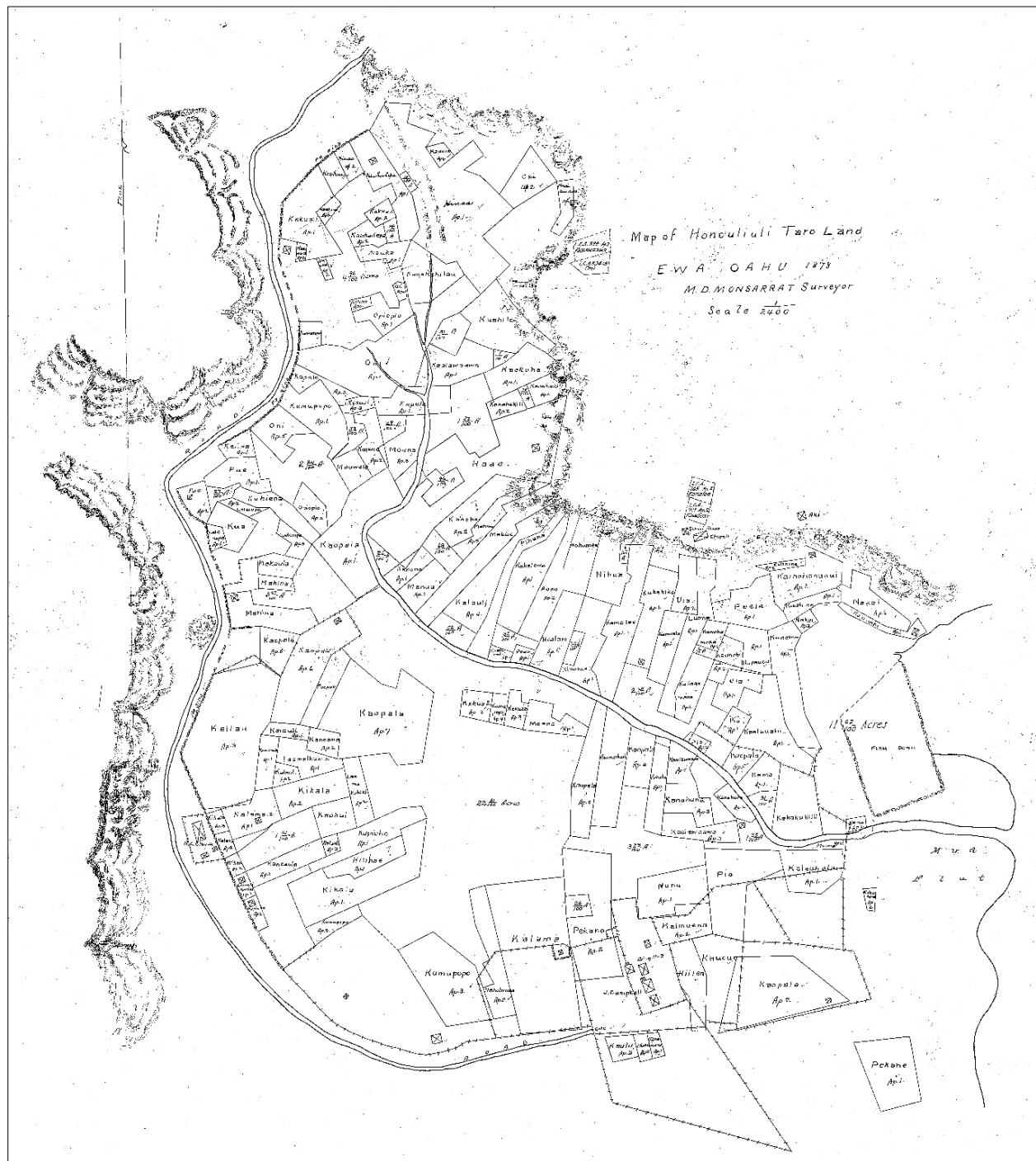


Figure 5. Map of *kuleana* parcels in the 'ili of Honouliuli, located to the east of the project area along the shores of the West Loch of Pearl Harbor ca. 1878.

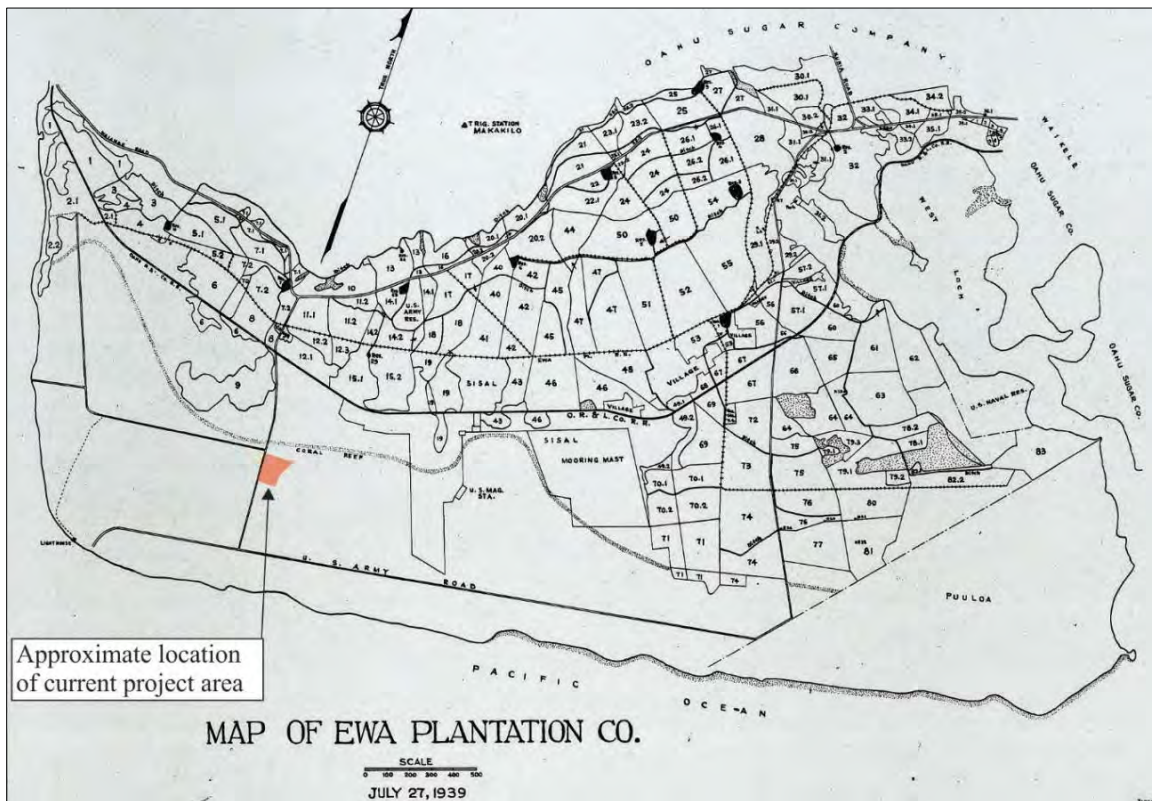


Figure 6. Ewa Plantation Map showing project area within the unplanted coral plain, ca. 1939.

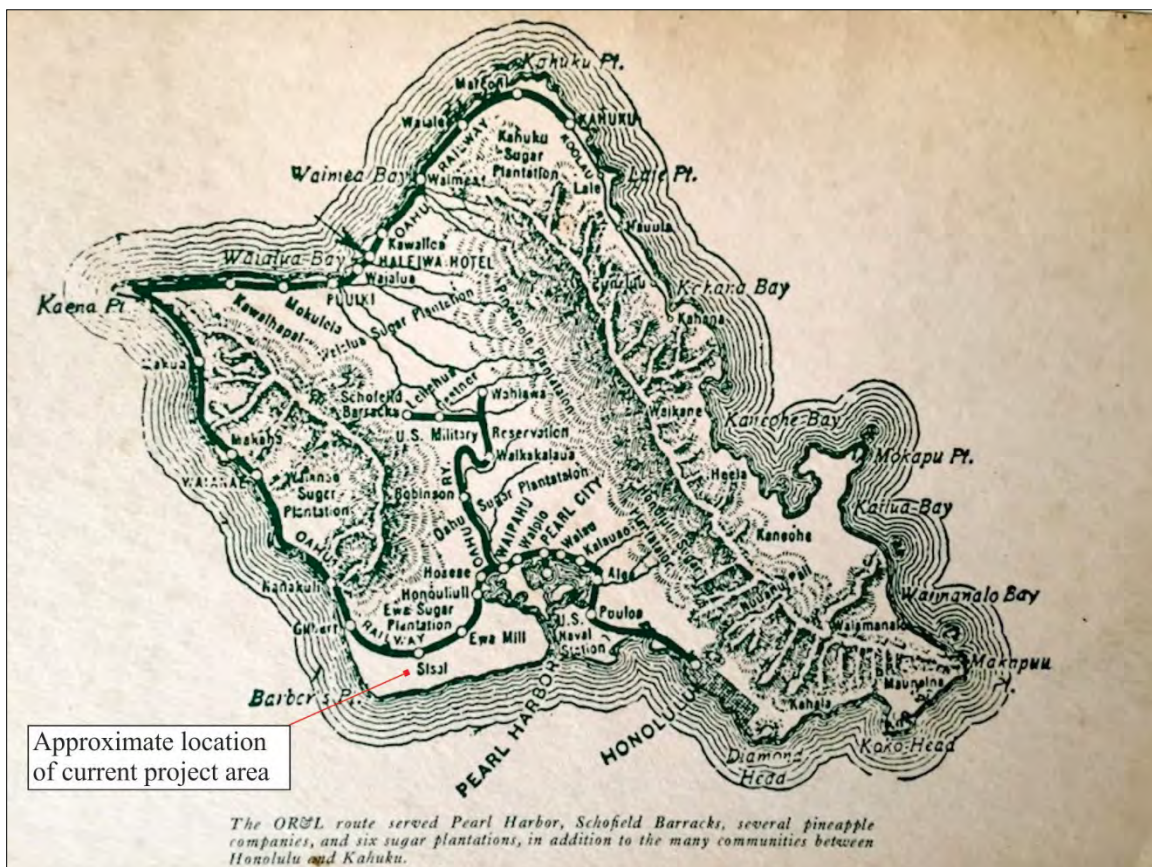


Figure 7. Map of completed OR&L railroad.

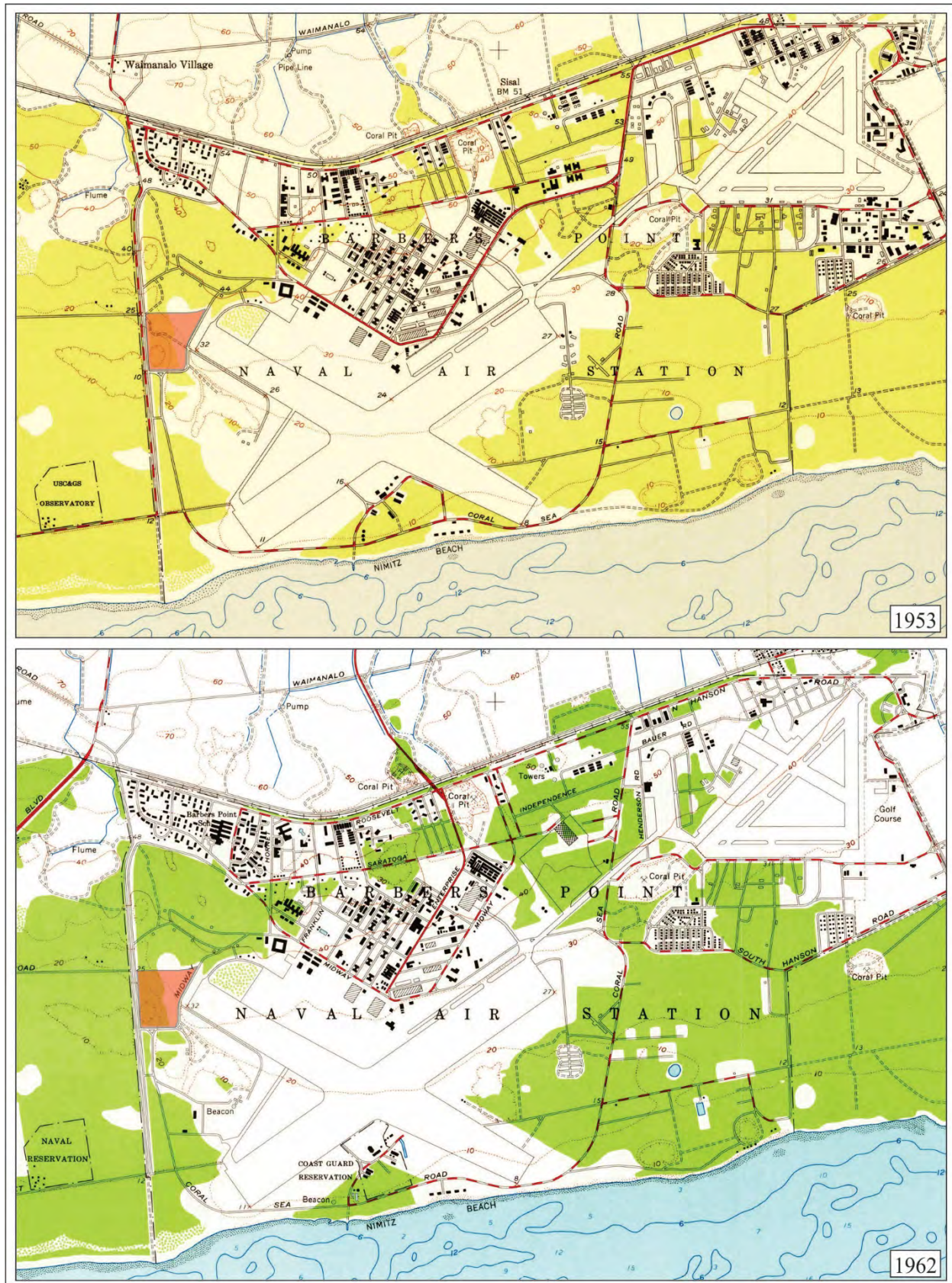


Figure 8. Comparison of USGS 7.5 minute series 'Ewa quadrangles showing the project area in 1953 and 1962.

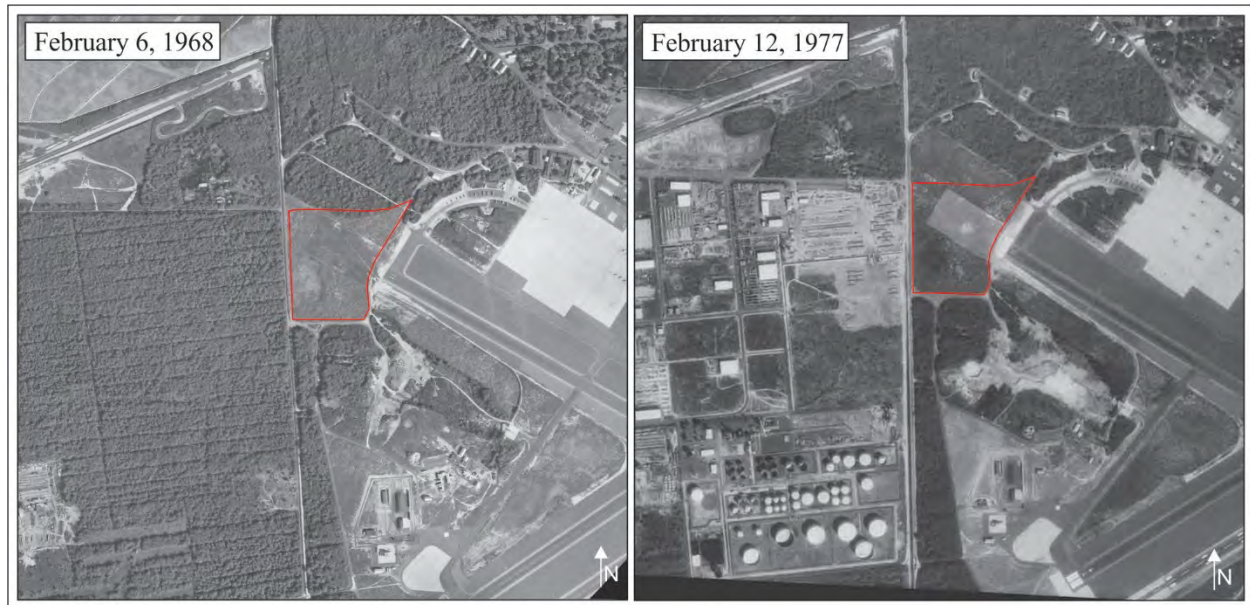


Figure 9. Comparison of USGS aerial photographs showing the project area in 1968 and 1977.

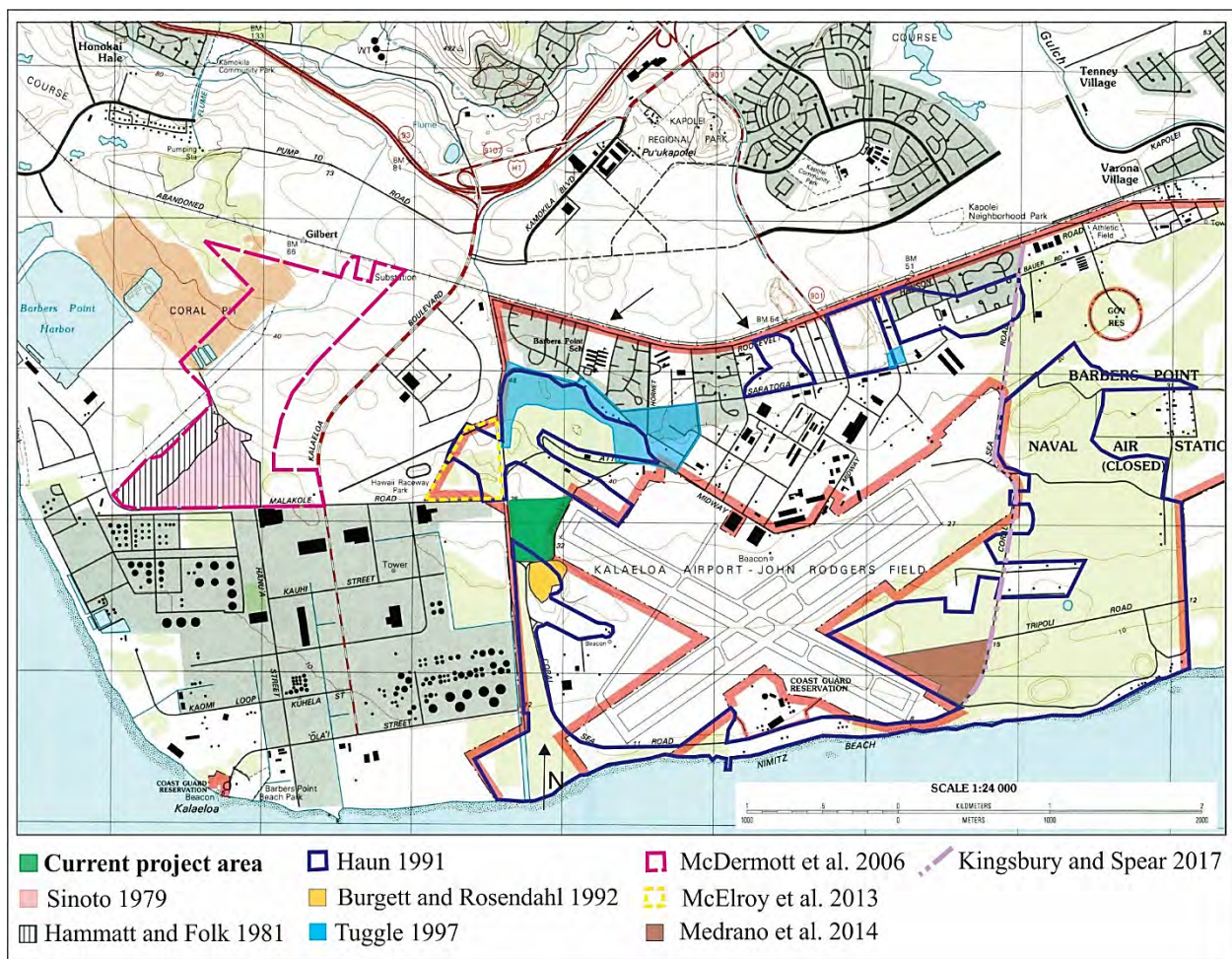


Figure 10. Locations of prior archaeological studies conducted in the project area vicinity.



Figure 11. Representative photo of vegetation and terrain within the southern portion of the project area, view to the northeast.



Figure 13. Northern portion of project area showing evidence of prior grading and clearing, with extant solar farm beyond, view to the northwest.



Figure 14. Bulldozer push pile within northwestern part of project area, view to the south.



Figure 15. Portion of former runway—graded area with gravels, view to the east.