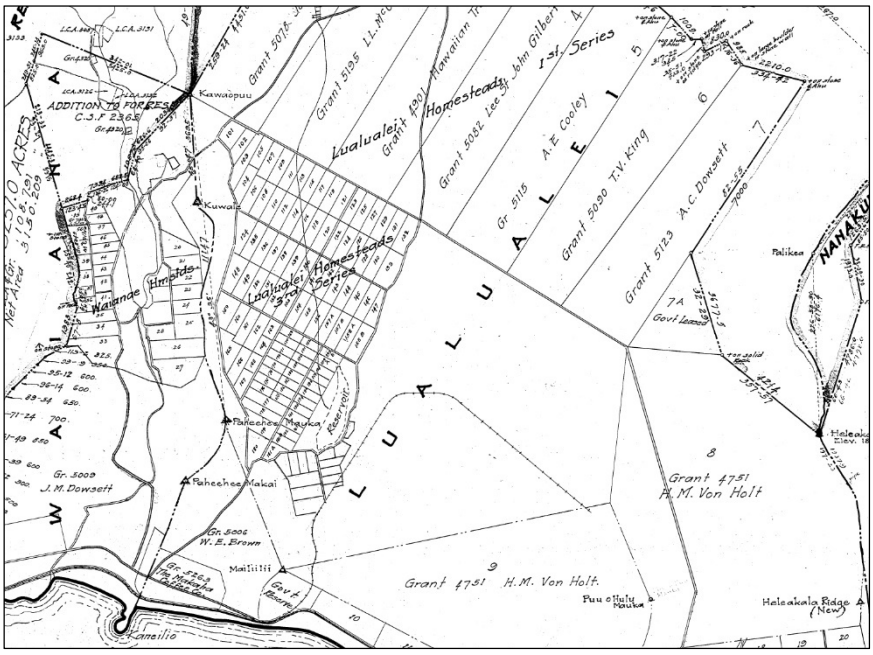
FINAL—Archaeological Assessment for the Proposed Hale Makana O Māʻili Residential Complex, Lualualei Ahupuaʻa, Waiʻanae District, Island of Oʻahu

TMK: (1) 8-7-001:016 (por.)



Prepared For:

Hawaiian Community Development Board
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February 2017

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MANAGEMENT SUMMARY

An archaeological inventory survey was conducted at TMK: (1) 8-7-001:016 (por.) in Lualualei Ahupua‘a, Wai‘anae District, on the island of O‘ahu in anticipation of a new residential complex proposed for the property. The archaeological work included a pedestrian survey that covered 100% of the project area, as well as test excavations consisting of eight trenches. The subject property has been extensively disturbed by modern use, and no archaeological remains were found on the surface. Likewise, no subsurface cultural features or deposits were encountered during trenching. In most parts of the project area, fill deposits were generally shallow, occurring above a basal coral shelf. No further archaeological work is recommended.

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INTRODUCTION

At the request of the Hawaiian Community Development Board, Keala Pono Archaeological Consulting conducted an archaeological inventory survey (AIS) of TMK: (1) 8-7-001:016 (por.) in Lualualei Ahupuaʻa, Waiʻanae District, on the island of Oʻahu. A new residential complex is proposed for the property.

This report meets the requirements and standards of state historic preservation law, specifically Chapter 6E of the Hawaiʻi Revised Statutes, and the State Historic Preservation Division's *Rules Governing Standards for Archaeological Inventory Surveys and Reports* (Hawaii Administrative Rules [HAR] §13-276). Due to negative findings, the AIS results are presented as an archaeological assessment (AA) per HAR §13–275.

The report begins with a description of the project area and a historical overview of land use and archaeology in the area. The next section presents methods used in the fieldwork, followed by the results of the archaeological inventory survey. Project results are summarized and recommendations are made in the final section. Hawaiian words, flora and fauna, and technical terms are defined in a glossary at the end of the document.

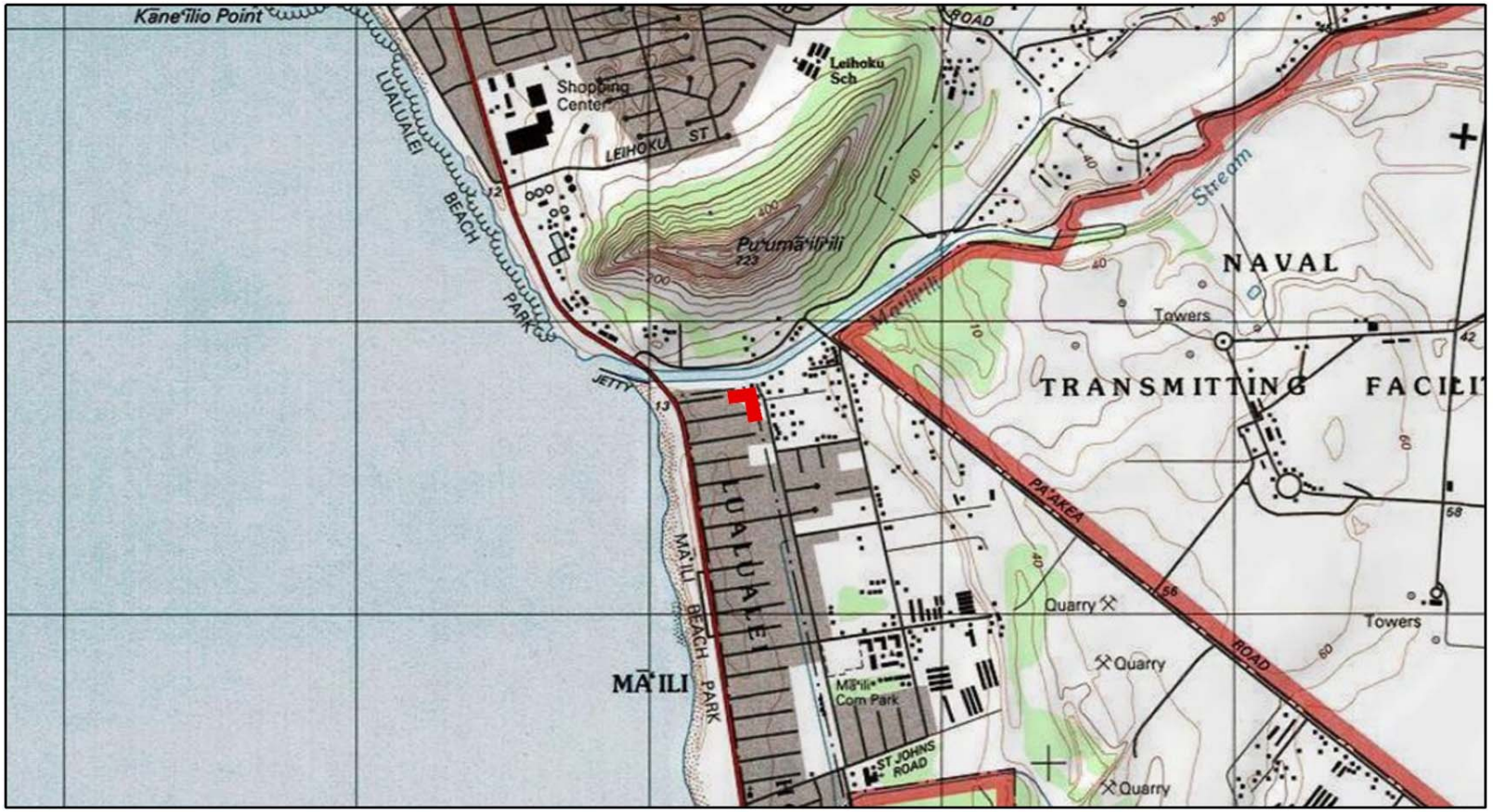
Project Location

The project area is within TMK: (1) 8-7-001:016 in Lualualei Ahupuaʻa, Waiʻanae District, on the island of Oʻahu (Figure 1). TMK: (1) 8-7-001:016 is a 1.29 ha (3.20 ac.) property, of which .789 ha (1.95 ac.) will be developed into the Hale Makana O Māʻili complex (Figure 2). The specific project area is at TMK: (1) 8-7-001:016, Unit 8. The parcel is owned by Hale Maili and is situated at less than 3 m (10 ft.) above mean sea level (amsl). The property is bounded by undeveloped land to the north, and residential lots to the south and west. Kulaʻaupuni Street is to the east but the property is accessed by Kakalena Street, which extends from Farrington Highway to the central portion of the parcel. There are currently five single family homes on the property, all of which have fenced yards. Four of the homes lie within the project area. An unpaved driveway and turnaround area extends from Kakalena Street into the parcel.

Physical Environment

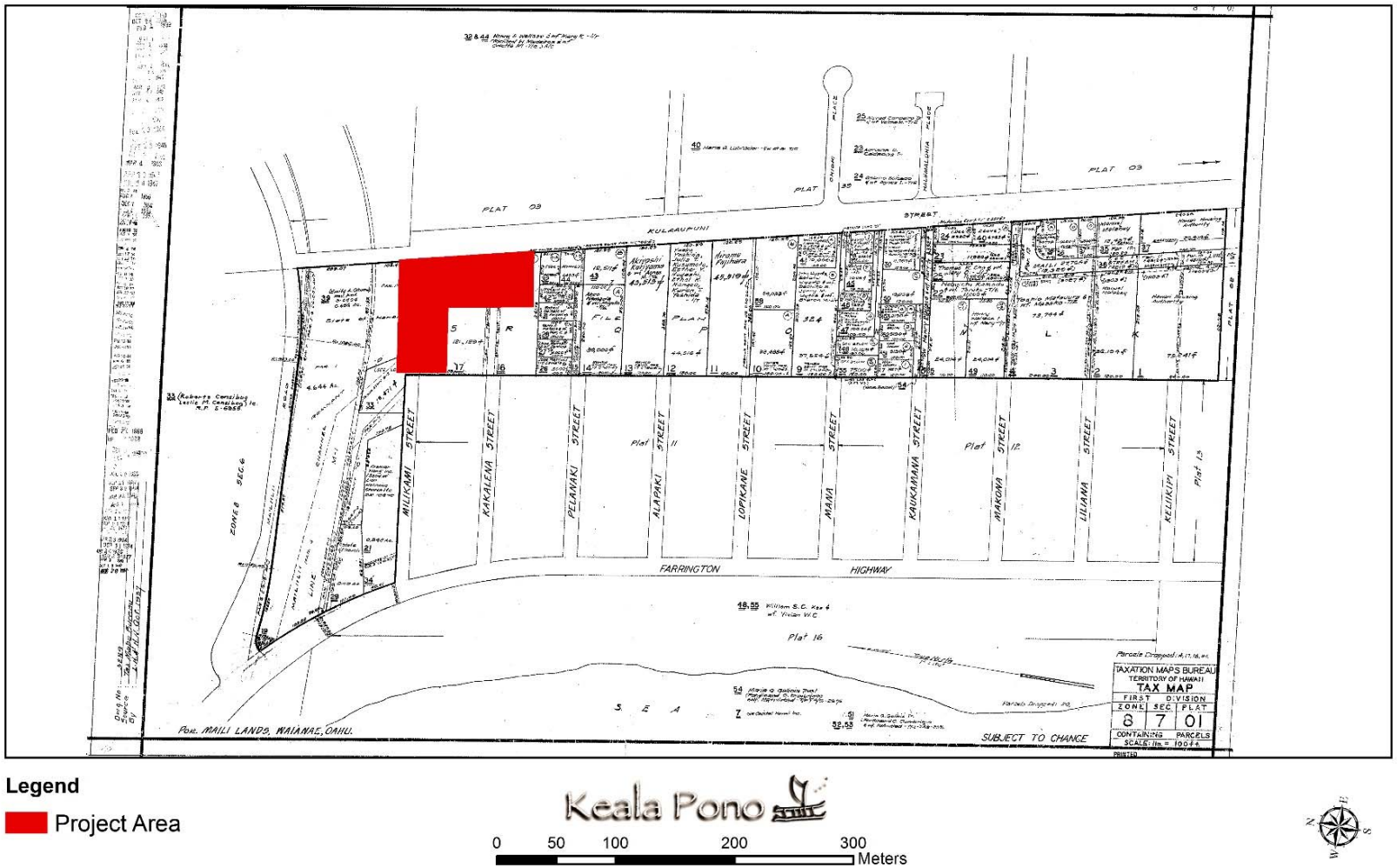
The island of Oʻahu is a "volcanic doublet," formed when the younger Koʻolau volcano banked against the older Waiʻanae volcano, which had already eroded into the Waiʻanae Range. After a long period of quiet, during which the Koʻolau volcano eroded into the Koʻolau range, volcanic activity resumed, forming a series of lava flows, cinder cones and tuff cones on the leeward coast of Oʻahu. The western (leeward) side of the Waiʻanae Range has been subject to a great amount of erosion, leaving behind valleys "chocked with enormous accumulations of alluvium and colluvium" (Macdonald et al. 1983:420, 426–429).

Throughout Oʻahu there is evidence that sea levels and ocean temperatures were higher in the geological past than they are today, given the fossil species and interbedded lava flows and reef deposits that underlie the southern plains of the island. On the leeward coast, reef limestone extends between 26.5–28.5 m (87–94 ft.) above sea level in the area from Waiʻanae to Nānākuli, overlain by a further 3 m (9.8 ft.) of "fossiliferous lithified beach sand" (fossil-rich beach sand that has since transformed into stone). Marine muds in the Lualualei Valley indicate an ancient sea level 45 m (148 ft.) above that of the present day (Macdonald et al 1983:420-424). The coast surrounding the current project area thus consists of, aside from beach sand, volcanic alluvial soils overlaying fossil coral beds and consolidated coral sands laid down when the sea level was higher.



Layer Credits: USGS Topographical Waianae Quadrangle Map 1998

Figure 1. Project area on a 1998 USGS Waianae quadrangle map.



Legend

Project Area

Keala Pono

0 50 100 200 300 Meters

Figure 2. Project area on TMK: (1) 8-7-001 plat.

Rainfall is sparse in the vicinity, averaging roughly 56 cm (22 in.) per year (Giambelluca et al. 2013). Māʻiliʻili Stream is the closest watercourse, situated only 60 m (200 ft.) to the north of the project area. Vegetation in the project area consists of grass, koa haole, and mature kiawe trees in the north, no vegetation in the central part of the survey area where there is a driveway and turnaround, and landscaped lawns elsewhere.

The project area lies approximately 300 m (.19 mi.) from the coast, and topography is flat. Generally, soils in the area are of the Lualualei-Fill Land-Ewa Association, described by Foote et al. (1972) as follows:

> Deep, nearly level to moderately sloping, well-drained soils that have a fine-textured or moderately fine-textured subsoil or underlying material, and areas of fill land; on coastal plains.

Specifically, soils within the project area consist almost entirely of Pulehu clay loam 0–3% slopes (PsA) with Mokuleia clay (Mtb) on the southern project boundary (Figure 3). Pulehu soils are well drained and found on alluvial fans and near streams. These soils are often used for truck crops, sugarcane, habitation, wildlife habitats, and pastures (Foote et al. 1972:115). Mokuleia soils are also usually well drained. They are found along coastal plains and are used for truck crops, sugarcane, and pastures (Foote et al. 1972:95).

The Project

The Hale Makana O Māʻili Affordable Housing Project will consist of six residential buildings, a community resource room, 76 parking stalls and a central courtyard/park area with a playground (Figure 4). The project will also include installation of Solar PV and Thermal systems to provide hot water for the units and reduce the overall cost of electricity for the project. The resource room, which will be located in the central courtyard, will serve as a community gathering place for tenant association meetings, social functions and special events, as well as provide space for various support services and cultural programs that will benefit project residents.

All units will be maintained as affordable rental housing units targeting households earning 50% or less of Area Median Income (AMI) for perpetuity. The project has been designed to be for singles or small families and each unit will include granite countertops in the kitchen and bathrooms, ceiling fans and modern, energy efficient appliances and fixtures. Based on the occupancy for Hale Makana O Nanakuli, a similar rental housing project recently developed by the Hawaiian Community Development Board in Nānākuli, it is anticipated that a majority of the residents at Hale Makana O Māʻili will be predominately families with roots in the Leeward Coast where the demand for affordable rentals are strong.

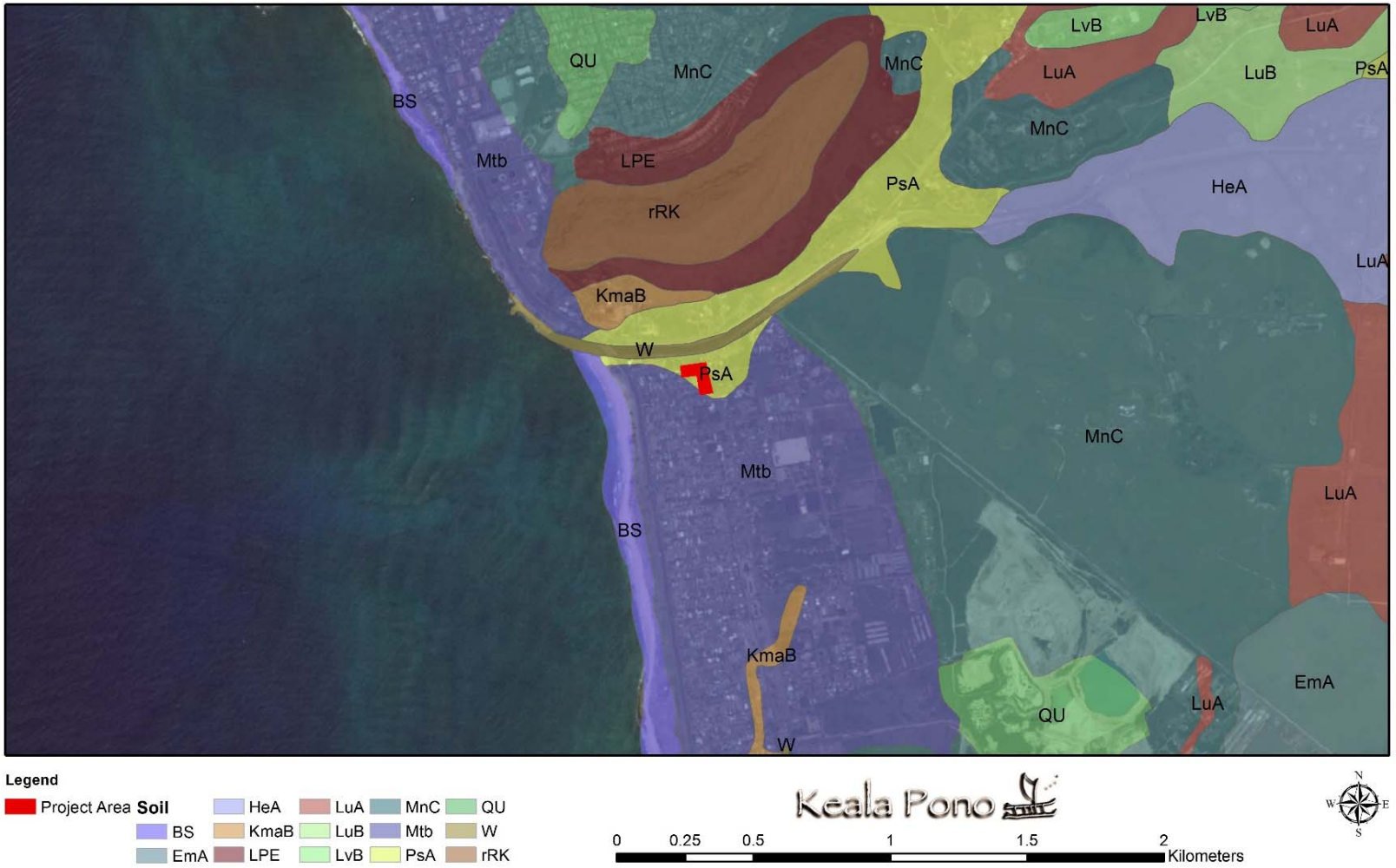


Figure 3. Soils in the vicinity of the project area (data from Foote et al. 1972).

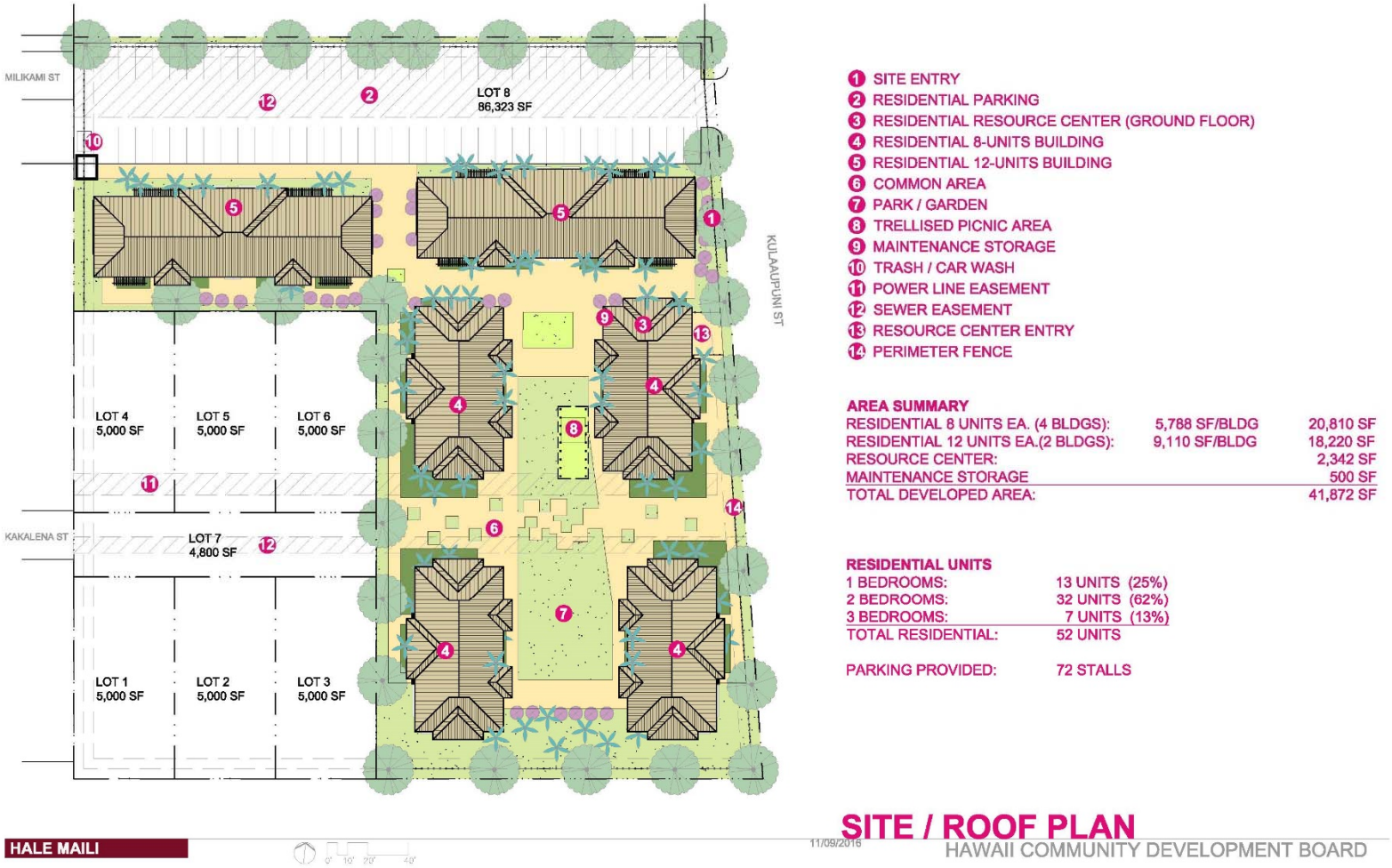


Figure 4. Site concept plan for Hale Makana O Māʻili (courtesy of the Hawaiian Community Development Board).

BACKGROUND

This section of the report presents background information as a means to provide a context through which one can examine the cultural and historical significance of the project lands. In the attempt to record and preserve both the tangible (i.e., traditional and historic archaeological sites) and intangible (i.e., moʻolelo, ʻōlelo noʻeau) culture, this research assists in the discussion of anticipated finds. Research was conducted at the Hawaiʻi State Library, the University of Hawaiʻi at Mānoa libraries, the SHPD library, and online on the Waihona ʻAina database and the State of Hawaiʻi Department of Accounting and General Services (DAGS) website. Historical maps, archaeological reports, Māhele data, and historical reference books were among the materials examined.

Lualualei in the Pre-Contact Era

> Native traditions describe the formation (literally the birth) of the Hawaiian Islands and the presence of life on and around them, in the context of genealogical accounts… As this Hawaiian genealogical account continues, we find that these same god-beings, or creative forces of nature who gave birth to the islands, were also the parents of the first man (Hāloa), and from this ancestor, all Hawaiian people are descended. It was in this context of kinship, that the ancient Hawaiians addressed their environment. (Maly and Maly 2003)

The history of Lualualei begins with the history of Oʻahu Island:

> Oʻahu is also a new name, given in memory of an ancestor of the people of Oʻahu. Lolo-i-mehani, Lalo-waia, and Lalo-oho-aniani were the ancient names of Oʻahu. Oʻahu was the child of Papa and Lua… and because Oʻahu was a good chief and the people lived harmoniously after the time of Wākea *mā*, Oʻahu's descendants gave the name of their good chief to the island --- Oʻahu-a-Lua. (Kamakau 1991:129)

Inoa ʻĀina: Place Names

Place names often reflect traditional views and uses of an area, thus providing important contextual information. Waiʻanae literally translates to 'mullet water', which refers to the abundant fishing in the area. Wai translates specifically to "fresh water of any kind, stream or river" while ʻanae refers to mullet. It might be named for an inland lake called Pūhā where a moʻo named Pūhā-wai (water hollow) was said to have lived. Pūhā-wai was noted for stealing a woman's husband who was later returned by the wind god Makani-ke-oe (Pukui et. al. 1974:220).

Lualualei is a word composed of Lualua, which translates to "relaxed or let down," and lei, which translates to "beloved one or wreath." One possible meaning of the name is "flexible wreath", however the more likely translation is "beloved one spared," which was the name given to a child born to a man who had been spared by the king (Sterling and Summers 1978:63–64).

Māʻili and Māʻiliʻili literally translate to "pebbly" or "lots of little pebbles," which appears to be descriptive of the terrain (Pukui et. al. 1974:139). This land section lies between the hills of Puʻu o Hulu and Puʻu Māʻiliʻili. Puʻu Māʻiliʻili translates to "pebbly hills," while Puʻu o Hulu is named after the chief who was turned into the hill. This chief was in love with a woman but was unable to distinguish between his love, Māʻiliʻili, and her twin sister. A moʻo changed them all into mountains, with the chief still trying to distinguish his beloved from her twin (Sterling and Summers 1978:67).

ʻUlehawa is thought to be the birthplace of Maui, at least in Oʻahu localizations of the legends surrounding the demigod. It was named for a famous chief, whose name literally translates to "filthy penis" (Pukui et al. 1974:214–215).

ʻŌlelo Noʻeau

ʻŌlelo Noʻeau, or Hawaiian proverbs and poetical sayings, provide insight into traditional beliefs and practices related to a given area. There are several ʻōlelo noʻeau for Waiʻanae.

> E nui ke aho, e kuʻu keki, a moe i ke kai, no ke kai la hoʻi ka ʻāina.
>
> *Take a deep breath, my son, and lay yourself in the sea, for then the land shall belong to the sea.*
>
> Uttered by the priest Kaʻopulupulu at Waiʻanae. Weary with the cruelty and injustice of Kahāhana, chief of Oʻahu, Kaʻopulupulu walked with his son to Waiʻanae, where he told his son to throw himself into the sea. The boy obeyed, and there he died. Kaʻopulupulu was later slain and taken to Waikīkī, where he was laid on a sacrificial altar at Helumoa (Pukui 1983:363).

> Ka malu niu o Pōkāʻī.
>
> *The coco-palm shade of Pōkāʻī.*
>
> Refers to Waiʻanae, on Oʻahu. At Pōkāʻī was the largest and best known coconut grove on Oʻahu, famed in chants and songs (Pukui 1983:1476).

> Kapakahi ka lā ma Waiʻanae.
>
> *Lopsided is the sun at Waiʻanae*.
>
> Used to refer to anything lopsided, crooked, or not right. First uttered by Hiʻiaka in a rebuke to Lohiʻau and Wahineʻōmaʻo for talking when she warned them not to (Pukui 1983:1524).

> Malolo kai e! Malolo kai!
>
> *Tide is not high! Tide is not high!*
>
> Said of threatening disaster. Robbers once lived at a place in Waiʻanae now known as Malolo-kai. Their spies watched for travelers to kill and rob. When there were only a few that could be easily overcome, the spies cried "Low tide!" which meant disaster for the travelers. But if there were too many to attack, the cry was "High tide!" (Pukui 1983:2128).

> Ola Waiʻanae i ka makani Kaiaulu.
>
> *Waiʻanae is made comfortable by the Kaiaulu breeze.*
>
> Chanted by Hiʻiaka as she was leaving Kīlauea on her quest for Lokiʻau (Pukui 1983:2128).

Moʻolelo

Like ʻōlelo noʻeau, moʻolelo offer insights into what life may have been like in the project area in ancient Hawaiʻi. They preserve topics of interest relevant to particular areas that were meant to be passed down the generations living in that place.

Waiʻanae has several moʻolelo about fishing and fishermen, which is probably related to the fact that fishing was rich in an area with otherwise poor land and freshwater resources (Handy et al. 1991:277). In the Legend of Nihoʻoleki (Nihoalakai), there is a great fisherman and chief named Keahaikiaholeha. He is the owner of the renowned fishing hook called Pahuhu. Although he had

moved to Kauaʻi for a time, his body was brought back to a tomb in Kuʻukuʻua in Waiʻanae. His spirit was worshiped until he was strong enough to go about in the form of a live man again. Now known as Nihoʻoleki (his spirit-body name), he partook in one last epic days-long fishing trip, catching an enormous amount of fish (Fornander 1917 Vol 4: 488–497; Hodge 1919: 657–658).

Another famous fisherman of the area was Kawelo. Although born on Kauaʻi, he moved to Oʻahu and attained much fame there. While fishing off of Kaʻena Point, Kawelo netted the great fish Uhumakaikai, which pulled him out to sea for several days. The fish dragged Kawelo all the way to Kauaʻi and then back to Waiʻanae, where it finally died (Fornander 1917 Vol 5: 2–71; Pukui and Curtis 1994:93–117; Westervelt 1915b:173–188).

Uhumakaikai was originally a small fish of the pauhuhu variety. Taken home alive by a boy named Punuiakaia, he was fed and raised until he became a very large fish. Once the fish was fully grown, Punuiakaia named him Uhumakaikai and returned him to the sea. Punuiakaia was then able to call upon his friend to reach down deep into the sea and drive a great number of fish up onto the sand. While on a trip to Kauaʻi, Punuiakaia bet two men that, despite their miserable luck fishing, "I will be the one who will get you all you want, from the ocean to the land, from the bottom of the sea to the top and the people will not be able to carry away all the fish; they will salt some and the pigs and dogs will eat their full and a lot will be wasted." For this high stakes gamble, Punuiakaia bet his bones against four large pieces of land on Kauaʻi. Punuiakaia was allowed fifteen days to catch the amount of fish that he had boasted. He made no move, however, until the eleventh day, when he saw a canoe preparing to sail for Oʻahu. He asked the men to find his house in Kāneʻohe and tell his mother Halekou to call his fish Uhumakaikai and urge the fish to come to Kauaʻi. The great fish met Punuiakaia in Kauaʻi and soon fish covered the sand and extended some distance into the sea. The people of Wailua and the king who had made the wager saw all of these fish and agreed that Punuiakaia had won (Fornander 1917 Vol 5:154–163).

The death of a great prophet and kahuna took place in Waiʻanae, although there are varying accounts of the story. One source identifies Kaʻopulupulu as the famous high priest, prophet, chief councilor, and Prime Minister of the Oʻahu king Kahāhana. In this account, Kaʻopulupulu foresaw that Kahāhana and the King of Maui, Kahekili, were plotting to get rid of him. The priest and his family fled to Waiʻanae, a district beyond the bounds of Kahāhana's dominion, where they hoped to find refuge. The family was, however, pursued by Kahāhana's soldiers through Waiʻanae to the sea, where the priest was mortally wounded. The dying priest called out to his son, "I nui kea aho a moe I ke kai, no ke kai ka hoi ua aina," translated in this account as, "Be strong and strive to get to the sea, and die in the sea, when the land will then belong to the sea." The son fought his way to the sea and was able to wade in up to his armpits before he died. The accepted wisdom from this account is that the dying priest's words foretold Oʻahu's coming loss of sovereignty, after which the island would forever be ruled from across the seas. This account suggests that Oʻahu's sovereignty was lost immediately after these events, when the king of Maui invaded. Rule over Oʻahu then passed through the hands of a series of foreign rulers, including chiefly lineages from neighboring islands, until it was taken up by the United States (Nakuina 1904:52–4).

An account of the prophecy translated from Moke Manu identifies Kaʻopulupulu as being famed among the kahuna of Oʻahu, known as a leader among priests. His son is identified by name as Kahulupue, priest to Kumahana, the deposed governing chief (aliʻi ʻai moku) of Oʻahu. The subsequent governing chief of Oʻahu, Kahāhana, is described here as the foster-son of Kahekili, the King of Maui. Kahāhana had heard of Kaʻopulupulu's reputation and called the kahuna before him, by royal order, upon becoming aliʻi ʻai moku. At this meeting, Kaʻopulupulu conveyed to Kahāhana that the governing chief would eventually slay the priest and his son, but that the governing chief's death would follow soon after, leaving the land desolate. Despite this dire prophesy, Kahāhana took on Kaʻopulupulu as his kahuna, and in time they became intimate companions. After three years,

Kahāhana "attempted some wrong to certain of his subjects like unto that of his deposed predecessor," which led to Kaʻopulupulu leaving the governing chief's service. The father and son kahunas returned to their home in Waimea, but the governing chief sent messengers to seek them there and called both to his residence in Waiʻanae. Kaʻopulupulu had already seen the end that would befall Kahāhana, his court of chiefs, and retainers. On their way to Waiʻanae, the kahunas stopped near Puaʻakanoe temple to swim in the ocean. Here they were seized, bound, and taken to Kahāhana at Puʻukea, where they were tied to the upright posts of an unfinished grass hut. Kaʻopulupulu said, "Here I am with my son in this unfinished house; so will be unfinished the reign of the King that slays us." They first took Kahulupue outside, blinded him with spears, and stoned him before the eyes of his father. Kaʻopulupulu called out, "Be strong of breath, my son, till the body touch the water, for the land indeed is the sea's." The son then ran towards the sea and, despite being stabbed with a spear in the back, leapt into the sea and was drowned. A few days later, Kaʻopulupulu prophesied the imminent death of Kahāhana, after which the priest's spirit took flight and left his body behind for mockery and abuse. When Kahekili heard of the death of Kaʻopulupulu, he condemned the very governing chief he had established on Oʻahu. He subsequently traveled with an army from Maui to Oʻahu, where the chiefs and people all joined under him. This account also favors the interpretation of "this land is the sea's" which understands this prophecy in accord with the famous prophetic vision of Kekiopilo that "the foreigners will possess the land" (Thrum 1907:203–214).

Still another account suggests that Kaʻopulupulu was one of a pair of brother priests prominent on Oʻahu. On the death of the king his younger brother, Kaleopuʻupuʻu, served, Kaʻopulupulu rose in standing, which filled the younger brother with anger and jealousy. Kaleopuʻupuʻu became the high priest of Kahekili, the king of Maui, and advised creating a division between the new king of Oʻahu, Kahāhana, and Kaʻopulupulu. They made Kahāhana believe that his high priest was trying to take over Oʻahu. In this account, Kahāhana found himself in a precarious situation where he could not openly kill the priest. The king instead called Kaʻopulupulu to take part in public sacrifices, alongside his son. When the two arrived in Waiʻanae, Kaʻopulupulu was attacked by the servants of the king, and his son was forced back to the sea. Kaʻopulupulu made the same statements to his son, translated as "it is far better to sleep in the sea, for from the sea shall come the life of the land." Kaʻopulupulu then fled eastward towards Honolulu, but was overtaken at Pearl Harbor and killed. The King of Maui, Kahekili, then conquered Oʻahu. Although he escaped for several months, Kahāhana was eventually captured and killed. This account also draws various foreign rulers into its interpretation of Kaʻopulupulu's prophecy, with each bringing new life to Oʻahu "from the sea." Kahekili renewed life with his defeat of Kahāhana, as did Kamehameha from Hawaiʻi. The prophecy is also here understood to have drawn in the arrival of men from across the ocean, "filling the land with new ideas, and with the bustle of new and enlarged business, beautifying and enriching all the island life with new homes and new arts" (Westervelt 1923:143–148).

There are also legendary beings associated with Waiʻanae. One is Paliula, who was sent from Kāne and Kanaloa to be raised by the great priestess Waka. Paliula spent time living with "the people of the cold winds of Waianae." While there she met Hiʻilaniwai, who taught Paliula the art of hula, which she had never seen before (Westervelt 1915a:116–151).

Waiʻanae is also where Maui found fire. The stories of Maui — whether from the Marshall Islands in the west to the Society Islands in the east, New Zealand in the south to the Hawaiian Islands in the north — are usually localized (Westervelt 1910:56–77). The Oʻahu legends of Maui tell that Maui lived with his grandmother Hina in Kane-ana (Kane's cave) at Puʻu o Hulu in Waiʻanae. Originally, Maui and Hina had no fire, which meant they were often cold and cooked no food. One day Maui saw flames rising in the distance and went to investigate. He came to find that the fire had been made by a small duck, a Hawaiian mudhen, named Ka-Alae-huapi or "the stingy ʻalae." As Maui came upon them, the birds hurriedly put out the fire, but Maui was able to grab the bird and

threatened to kill the bird if it didn't tell him the secret of fire. The bird told him that the secret of fire was held in dry-land taro and that he should rub their branches together. Maui set the bird free and did as ʻAlae said, but only juice came out like water. Maui returned to kill the bird but, after he caught it, the bird screamed that if Maui were to kill him he would never learn the secret of fire. The bird told him to take dry branches and rub them together, which he did with one hand and held the bird in the other. After the fire started Maui took the fire stick and rubbed it on the head of the bird, making a place where red and white feathers have grown ever since (Westervelt 1910:119–127). In an alternate from of the story, Maui first came upon the birds in the form of two women toasting bananas. He was able to grab one of the sisters as they changed into their bird form and, again upon threat of death, he was able to get the birds to reveal that the secret of fire was in wood (Sterling and Summers 1978:64–65).

Traditional Land Use and Subsistence

Waiʻanae was home to ruling chiefs at different times in Oʻahu's history (Handy et al. 1972:287). The district of Waiʻanae is a dry leeward coastal area with poor soil and only four minor streams that reach the sea. It does, however, have especially rich deep-sea fishing just offshore and beyond Kaʻena Point. Despite the challenging conditions for agriculture, sweet potato plantations and coconut trees were common in the dry lowland area before western contact (Handy et al. 1972:468). This is captured in the ʻōlelo noʻeau that refers to the largest coconut grove in Oʻahu at Pōkaʻi, north along the coast from the project area (Pukui 1983:1476).

Given these conditions, this coast was likely never the most heavily populated area of the island before western contact. Nevertheless, once the population of an area, like Waiʻanae, had grown large enough, it became necessary to divide the land and portion it out equitably:

> The Hawaiians made the divisions of the lands…following a mountain ridge, the bottom of a ravine, or the center of a stream or river. But oftentimes only the line of growth of a certain type of tree or grass marked a boundary, and sometimes only a stone determined the corner of a division. (Sterling and Summers 1978:xi)

The largest divisions were the islands themselves. These were then divided into moku and smaller districts called kalana, neither of which had designated administrators. The next unit down in size was the ahupuaʻa, which was ruled over by a chief or a konohiki. Ahupuaʻa could, in turn, be subdivided into ʻili. These ʻili could either be a simple subdivision of the ahupuaʻa, where a konohiki acted as agent to the ahupuaʻa chief, or could operate with greater autonomy as ʻili kūpono, where a chief paid tribute directly to the mōʻī (Joerger 1974:1–4).

After the conquest of an area, a chief would generally take the choicest lands, allotting those that remained to chiefs who had assisted in the conquest. Those chiefs would, in turn, take the best of the lands allotted to them and distribute what remained to their followers. Any lands distributed were revocable, meaning that the chief or administrator at the level above could revoke the land of subordinates at will. This type of dispossession was often considered unjust, and therefore did not occur frequently. While this system was feudal in its top-down organization, the tenants on the land were not serfs tied to the soil. They could and did move freely from the land of one chief to another. Within this system, one's social superior could only lay claim to labor and the produce of the soil, not military service (Joerger 1974:5). The names of large districts and smaller divisions of land on each island were often named after a chief or famous person who lived in an area (Sterling and Summers 1978:xii).

Vancouver's 1798 voyage traveled up the Waiʻanae coast from Ewa, Oʻahu's southwest plain. He described the leeward coast as "one barren, rocky waste, nearly destitute of verdure, cultivation or

inhabitants," excepting a narrow valley in the middle, where "the bases of the mountains retire further from the seashore [winding] some distance through the hills." The only village they encountered in the area, or had encountered at all since passing Pearl Harbor, was one situated around a little bay near the promontory of Mauna Lahilahi, near Mākaha (Handy et al. 1972:467–468). That would mean that no habitation sites where observed in the project area at the cusp of western contact.

The Region in the Historic Period

Waiʻanae was a part of larger historical processes shaping politics and the control of resources across Oʻahu and the greater Hawaiian archipelago long before Europeans appeared. Over the course of the 16th and 17th centuries rule in the islands was increasingly consolidated into fewer hands. Single aliʻi eventually ruled entire islands that had once been divided up, although lesser chiefs retained a degree of local power. Before this consolidation, the Koʻolau, ʻEwa-Waiʻanae-Waialua, and Kona districts of Oʻahu were ruled by independent chiefs. By the mid-18th century the great island-wide kings of Hawaiʻi Island and Maui began extending their rule between islands. Kahekili of Maui was the first to extend his influence over Oʻahu, initially through the encouragement of an Oʻahu aliʻi whom he had fostered as a son on Maui, and then through all-out military conquest. Many of the local aliʻi who had previously ruled the Waiʻanae district were tortured and killed defending their independence from the rule of Maui. By the 1790s, Europeans and their technology had become a critical factor in the contest for interisland dominion being waged between the aliʻi of Maui, Oʻahu, and Hawaiʻi Island. In 1795, Kamehameha the Great defeated Kalanikūpule at the battle of Nuʻuanu to politically unify all of the inhabited Hawaiian islands, except Kauaʻi, under a single kingship (Daws 2006:4–6, 9–13, 15–16).

The conquering king set governors over each island. Boki was tasked with insuring the continued loyalty of Oʻahu to its new paramount ruler Kamehameha, whose attention was now spread over the whole island chain (Daws 2006:36). As governor of Oʻahu, Boki and his wife Liliha lived at Haliʻimaile, on the grounds of what is now Iolani Palace and the Hawaiʻi State Public Library (Kamakau 1992:272). Boki's governorship was tumultuous in the years following Kamehameha I's death. Many of his efforts—including enthusiasm for the English, sporadic nativist revivals, support for Catholic missionaries, and the establishment of a sugar plantation and distillery in Mānoa Valley—came into direct conflict with the Protestant-backed influence of Queen Kaʻahumanu (Daws 2006:68-87; Kuykendall 1965, 172-3). With Boki's disappearance at sea and the removal of Liliha from the Oʻahu governorship in 1830, power fell to Protestant chiefs who promoted cultural reforms in line with the desires of the New England missionaries in Honolulu. This was the situation when Kamehameha III, or rather his kuhina nui Kīnaʻu, began to consider formalizing land ownership at the close of the 1830s (Daws 2006:85, 96–101, 111).

Māhele Land Tenure

When Kamehameha united the islands under his single rule at the beginning of the 19th century, he continued to use the existing system for dividing and allotting land. Allotments were still on a revocable basis, and tenure was still non-military in nature. Taxes to Kamehameha I were owed by all, from aliʻi nui down to tenant-commoners, in the form of land taxes and services that could be called on at the king's discretion. Everyone also owed obedience to the king at all times. After his death, Kamehameha's son Liholiho was recognized as Kamehameha II. He inherited his father's absolute sovereign power over the islands. He made few changes in the distribution of lands, however, mostly maintaining the status quo until his death and the ascension of Kamehameha III (Joerger 1974:5–6).

Kamehameha III was faced with serious pressures from the growing presence of foreigners on the islands who were used to possessing land titles outright, without the threat of dispossession by local

rulers. To address these issues, and under pressure from the navies of those countries from which resident foreigners had come, Kamehameha III and his chiefs reviewed their national policy. This led to the enactment of the Bill of Rights of 1839. In defining and protecting the rights of Hawaiians, this bill led to many important changes, not the least of which was explicitly prohibiting landlords from dispossessing a tenant without sufficient cause. The Bill of Rights was followed by the first constitution of the Hawaiian Kingdom, granted by King Kamehameha III on October 8, 1840. This constitution changed the government from an absolute monarchy to a constitutional monarchy. Many changes followed suit, most importantly for land tenure was the declaration that, although all the land belonged to the king, it was not considered his private property. This ushered in the possibility of some form of land ownership on the part of common Hawaiians (Joerger 1974:5–7).

The creation of the Board of Commissioners to Quiet Land Titles, or Land Commission, was the first major step in the process of land tenure reform. They were responsible for validating or rejecting the claims of both native and foreign individuals to previously acquired lands, not create new interests in land. The rulings of this commission were binding, barring appeal to the Hawaiian Supreme Court. Upon having a claim confirmed by the commission, and paying a commutation to the government, an awardee was issued a Royal Patent on the Award by the minister of the interior. The Land Commission was hindered in rendering awards to claimants in the greater portion of cases because they were not empowered to define or separate out the intertwined interests of king, chiefs, konohiki, and tenant-commoners in relation to land divisions, as inherited from the ancient feudal system that had held up until then (Joerger 1974:8–9).

The Māhele of 1848 addressed many of these problems. As early as 1846 the Land Commission had suggested that Hawaiian lands should be divided into three parts. One third would be retained by the king, one third would go to the chiefs and konohiki, and the final third would go to common tenants. This required, first, the identification and separation of the relative rights and interest of the king, chiefs, and konohiki in the lands of the kingdom. The matter was discussed for a year before the Privy Council, in December 1847, created a committee to assist in determining the relative rights and interests that these ruling classes had in the land of Hawai‘i (Joerger 1974:14–16).

The divisions, or māhele, that followed were recorded in the Māhele Book. Due to a lack of surveyors in the islands during that period, the Māhele was made without survey. All the lands were divided according to their ancient names and boundaries. The Māhele itself also did not convey any title to land. Chiefs and konohiki who participated were still required to present their claims before the Land Commission to receive awards of Konohiki Land (the portion of all lands to be divided up among this ruling class) quitclaimed to them by Kamehameha III. Until awards were issued, titles to such lands remained with the government (Joerger 1974:20–21). Upon completion of the Great Māhele, the King further subdivided his third into a smaller portion that was deemed his private property, the Crown Lands, and a larger portion that would be reserved as Government Lands (Joerger 1974:25).

In *Palapala‘aina: Surveying the Mahele*, Moffat and Fitzpatrick (1995) state that “Several legislative acts during the period 1845–1855 codified a sweeping transformation from the centuries-old Hawaiian traditions of royal land tenure to the western practice of private land ownership.” Most prominent of these enactments was the Māhele of 1848 which was immediately followed by the Kuleana Act of 1850.

> The Mahele was an instrument that began to settle the undefined rights of three groups with vested rights in the dominion of the Kingdom --- the government, the chiefs, and the hoa‘āina. These needed to be settled because it had been codified in law through the Declaration of Rights and laws of 1839 and the Constitution of 1840, that the lands of the Kingdom were owned by these three groups… Following the Mahele, the only group with an undefined interest in all the lands of the Kingdom were the native tenants, and this would be later addressed in the Kuleana Act of 1850. (Beamer 2008:194,195)

Until its dissolution in 1853, the Land Commission handled over 12,000 individual land claims. The Land Commission was, in effect, a judicial court that issued a Land Commission award (LCA) when it found in favor of a land claim. A Royal Patent was also issued, but it did not confer or confirm title to land. Rather, it served to quitclaim the government's (king's) interest in the land (Joerger 1974:8–12).

From time to time, Crown, Government, and Konohiki Lands might be sold to create revenue for the government. It was not necessary for recipients of these grants to obtain an award (LCA) from the Land Commission. After laws passed in 1849 that clarified the rights of native tenants, the Land Commission was empowered to award fee simple titles to all native tenants who occupied and improved any portion of Crown, Government, or Konohiki Lands. Although 1,500,000 acres of land were set aside for the government and the people in the Great Māhele, fewer than 30,000 acres were awarded to native tenants as Kuleana Lands, even after an act clarified this process in 1850 (Joerger 1974:27–30). No LCAs were awarded in the vicinity of the project area.

Historic Land Use and Maps

Shortly after the Great Māhele, an 1853 census by John Wesley Coulter recorded the project area vicinity as having a population of less than 50 people (Moffat and Fitzpatrick 1995:18). Historic land use is difficult to reconstruct because no LCAs have been found in relation to the project area. Nevertheless, several historic maps were found that show the project area in the early 20th century.

A 1901 map of a portion of Lualualei, produced by J.S. Emerson, shows the project area in the location of Māʻiliʻili Stream before it was diverted (Figure 5). Also in this location, a 1 ½ inch pipe is labeled on the map. Just to the west along the coast was a U.S. Military Reservation. A road and OR&L railroad track are shown where Farrington Highway currently runs.

A 1902 map by E.E. Harvey still shows the project area at Māʻiliʻili Stream and illustrates a pipe at the project area (Figure 6). The Waianae Plantation Railroad is now depicted, extending inland to the north of Māʻiliʻili Stream, in a parcel labeled as "Govt. Reserve."

A 1914 map compiled by J. Iao also shows the two railroads and the stream (Figure 7). Cultivated areas, flumes, and ditches are now illustrated to the north and east of the project area. A large reservoir is also depicted to the north of the project area.

The time frame that Māʻiliʻili Stream was diverted can be determined through examination of a series of USGS maps. A 1963 map shows the stream with a large bend in it (Figure 8), while a 1975 map does not show the bend (Figure 9). This means that Māʻiliʻili Stream was diverted sometime between 1963 and 1975. A 1977 aerial photo also shows the diverted stream (Figure 10).

Previous Archaeology

Numerous archaeological studies have been conducted in Lualualei. The following discussion provides information on archaeological investigations that have been carried out within a 1.5 km radius of the project area, based on reports found in the SHPD library in Kapolei, Hawaiʻi (Figure 11 and Table 1). State Inventory of Historic Places (SIHP) site numbers are prefixed by 50-80-07 (Figure 12).

Nine human burials were recorded at Liopolo Street (Kawachi 1990; Shideler 1990; Hammatt and Shideler 1991). They were assigned as SIHP 4244. Five of the burials were removed, while two were left in place. Two more burials were encountered while excavating the reinterment area, and these were left in place. The burials are all thought to be pre-Contact Polynesians.

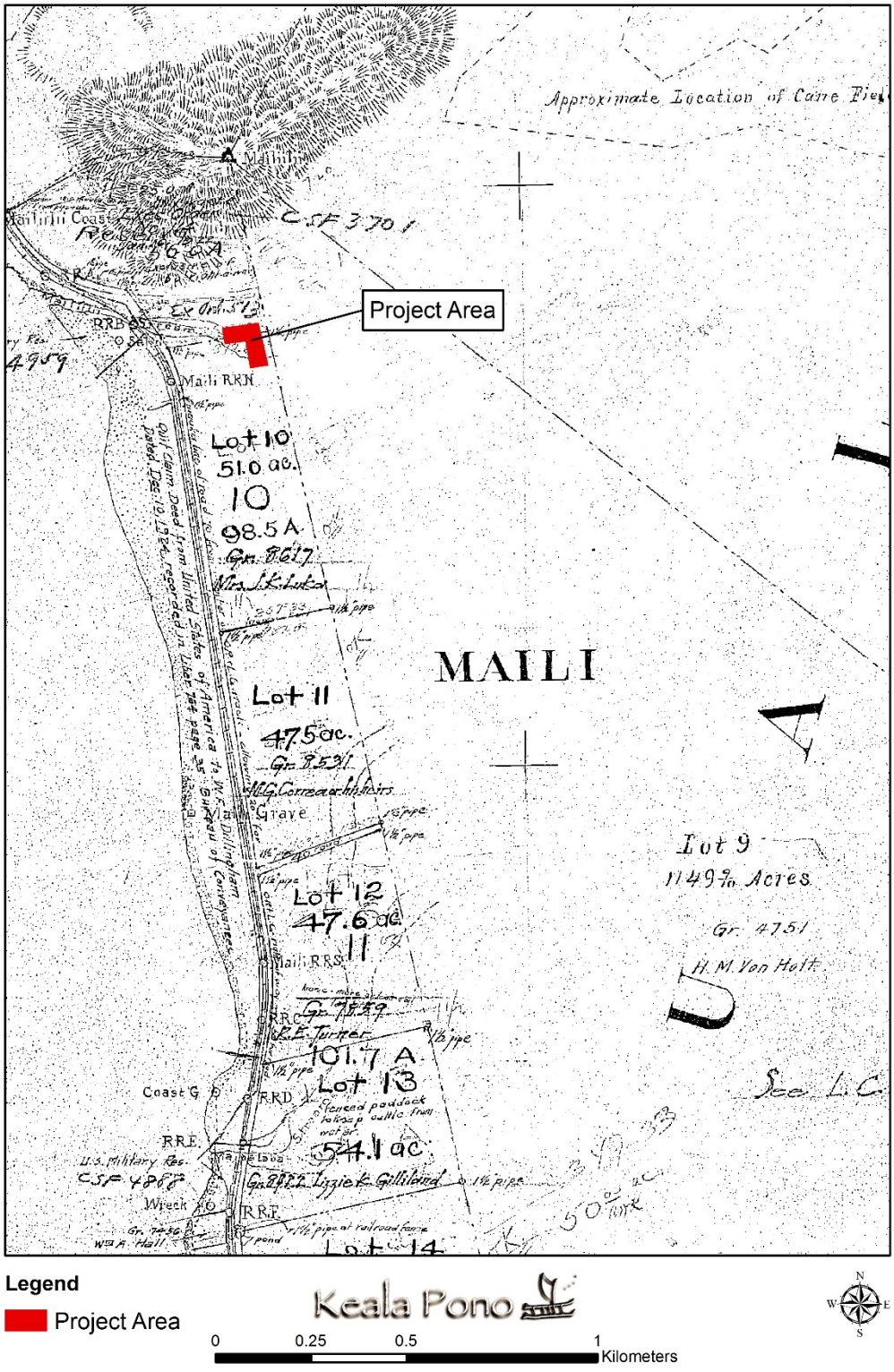


Figure 5. Portion of an early map of Lualualei (Emerson 1901).

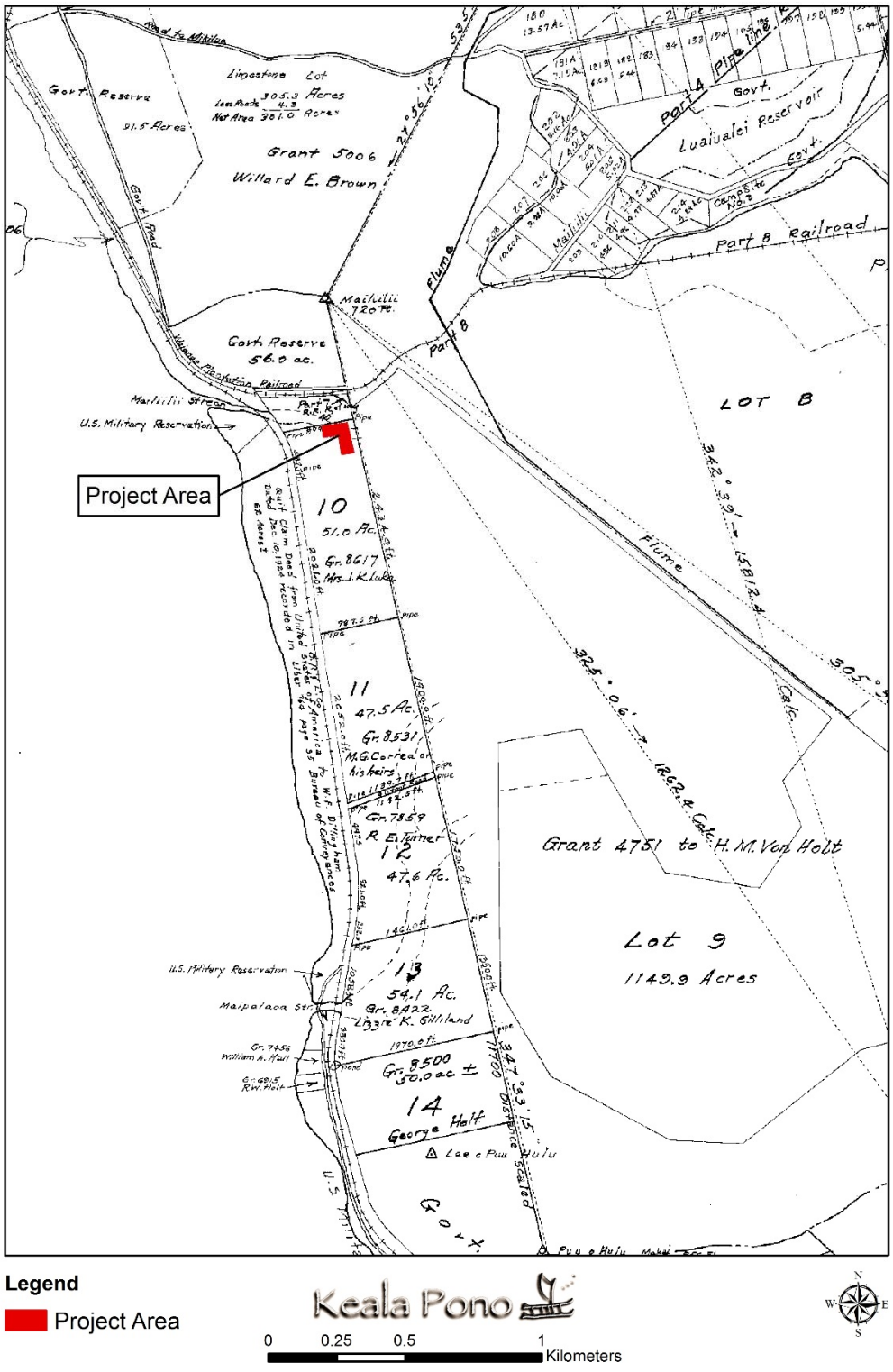


Figure 6. Portion of a Lualualei Homestead map (Harvey 1902).

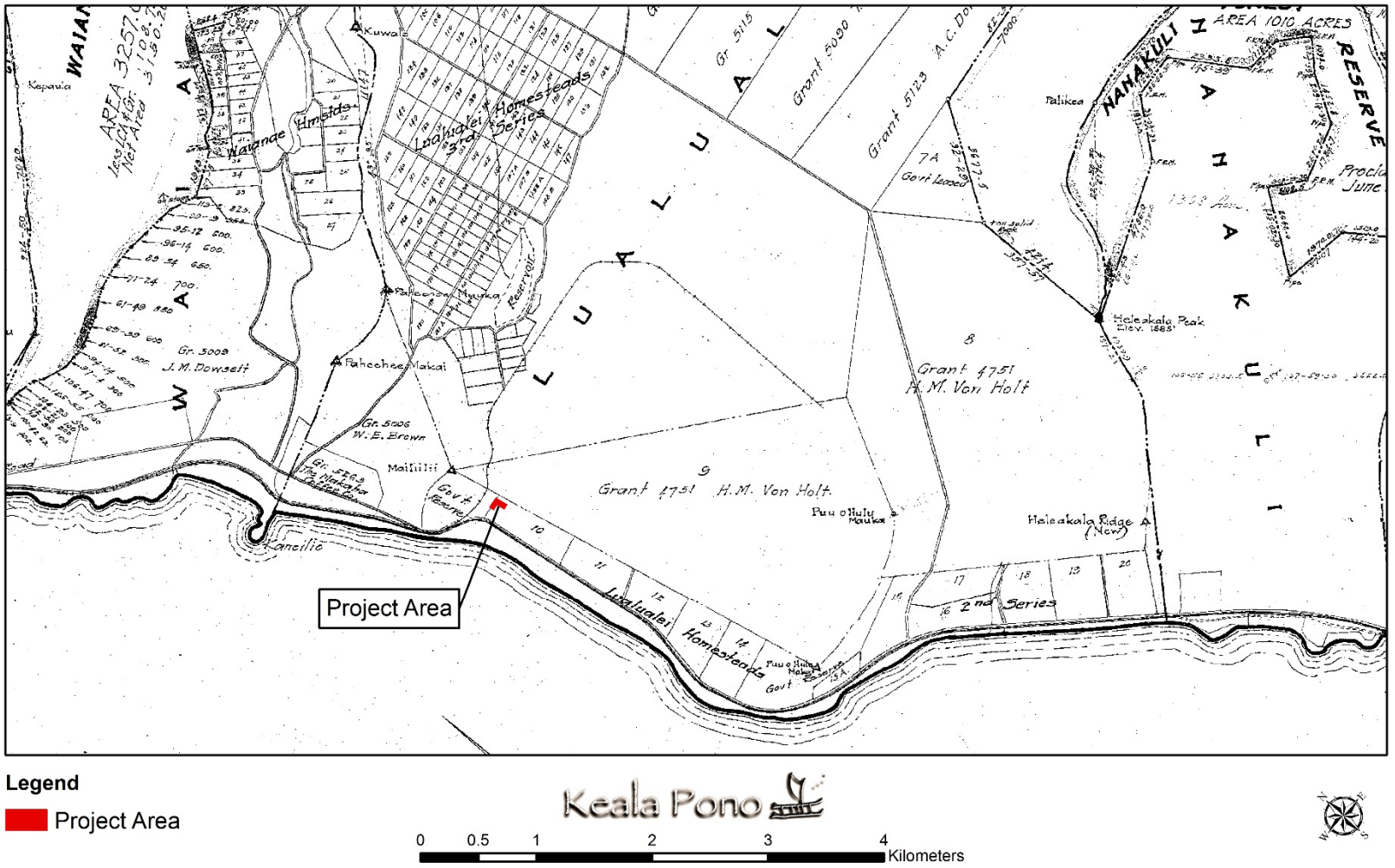


Figure 7. Portion of a Lualualei Homestead Map (Iao 1914).

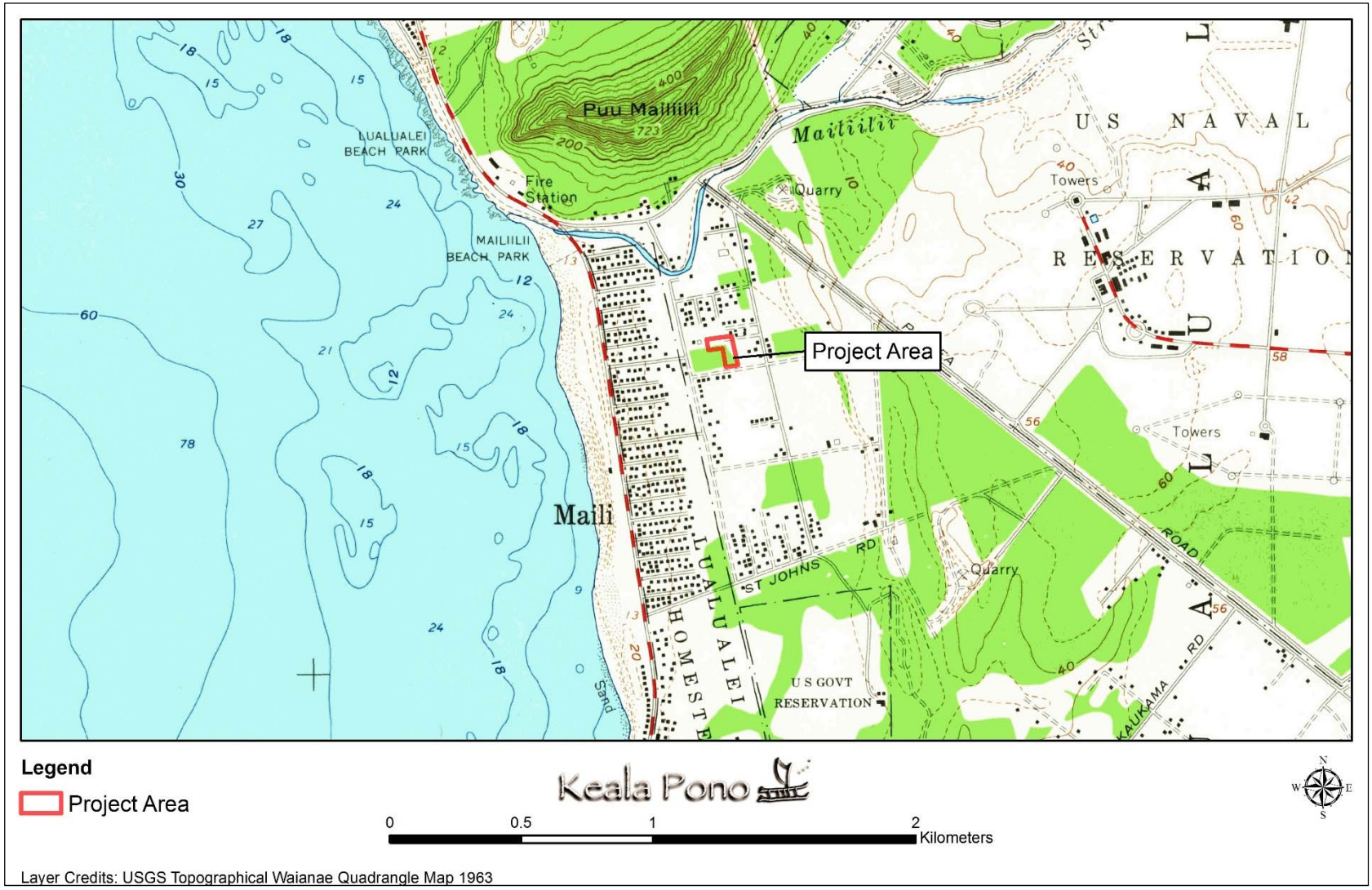


Figure 8. Portion of a 1963 Wai‘anae topographic map (USGS 1963).

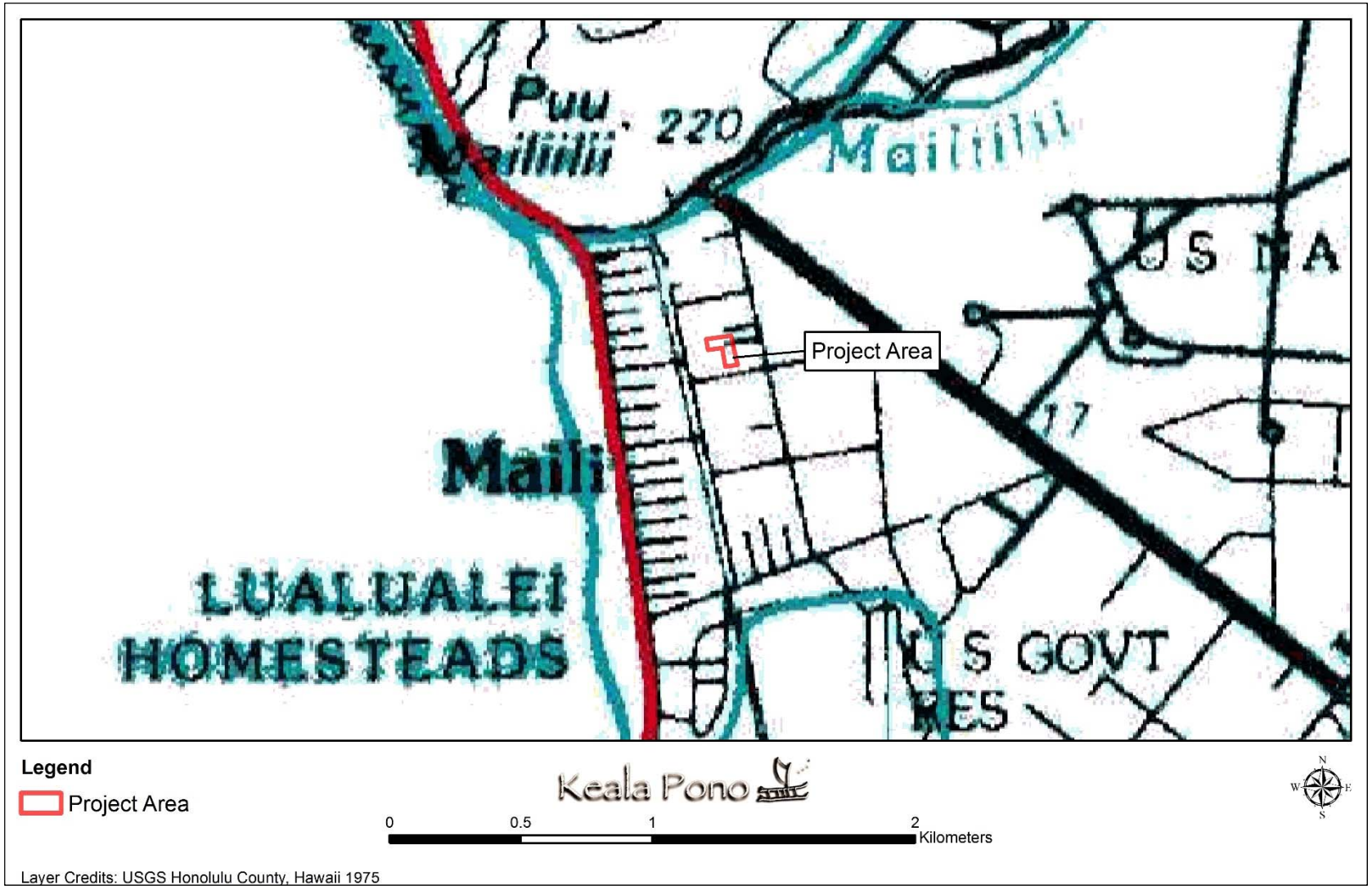


Figure 9. Portion of a 1975 O‘ahu topographic map (USGS 1975).

Figure 10. Portion of a 1977 Waiʻanae aerial photo (USGS 1977).

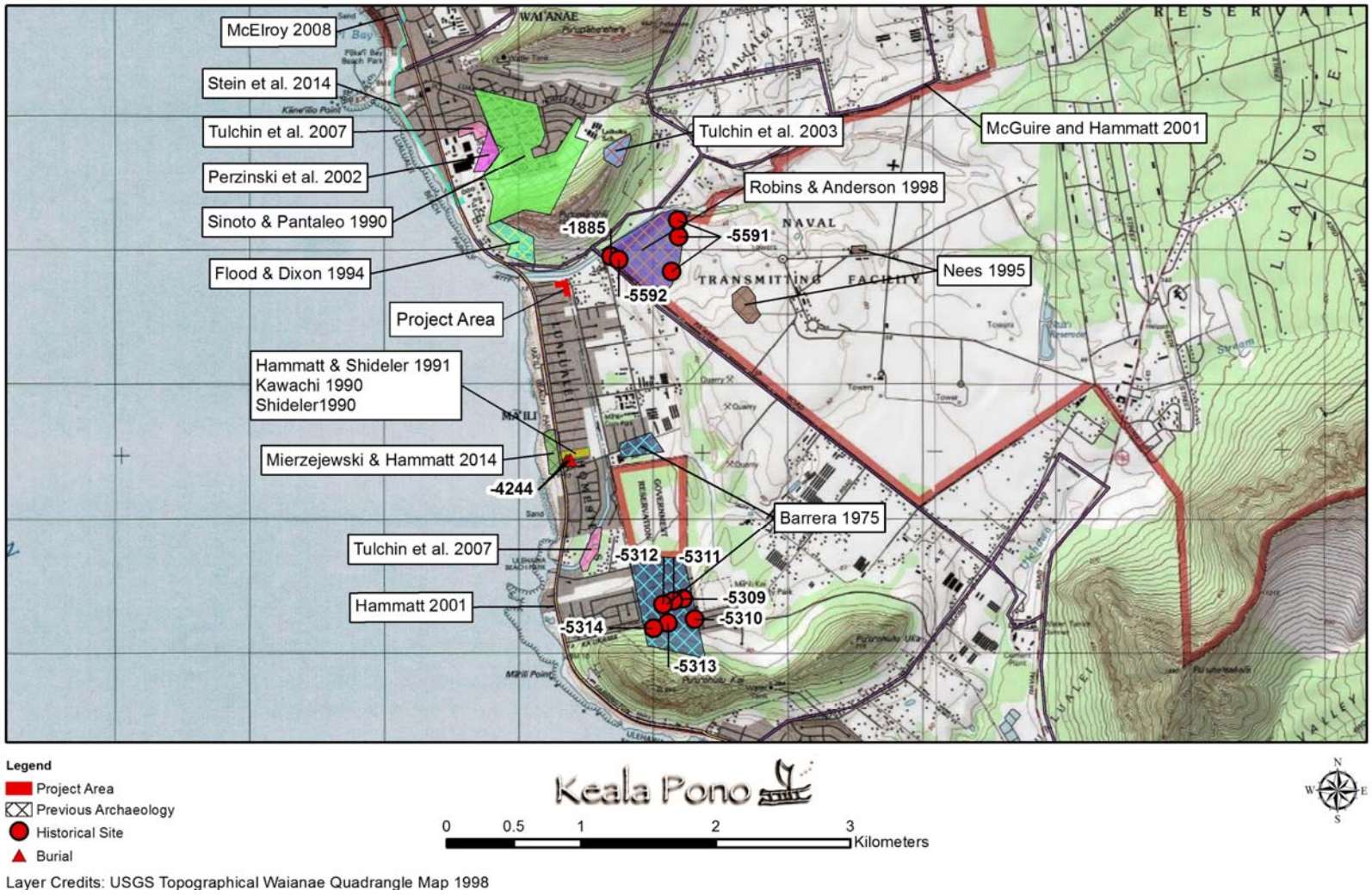
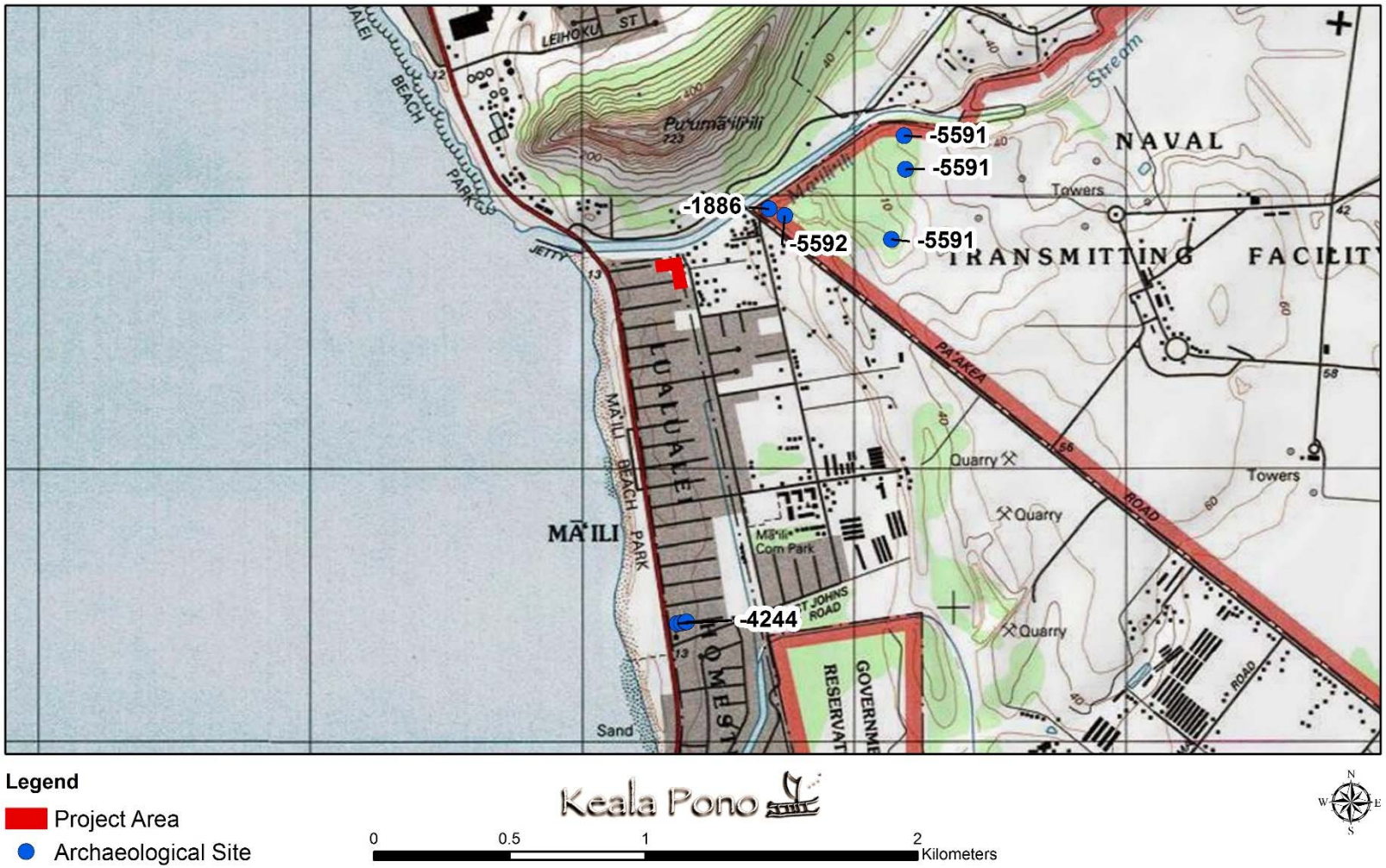


Figure 11. Previous archaeological studies within 1.5 km of the project area.

Table 1. Previous Archaeological Studies Near the Project Area

Author & Year	Location	Type of Study	Findings
Barrera 1975	Adjacent to Māʻili Stream and Hoʻokele St.	Reconnaissance Survey	No sites identified in the vicinity of the project area, although three sites recorded elsewhere.
Kawachi 1990; Shideler 1990; Hammatt & Shideler 1991	Liopolo St.	Burial Report	Identified nine human burials (SIHP 4244).
Sinoto & Pantaleo 1990	Mauka of Waiʻanae Mall	Reconnaissance Survey	None.
Flood & Dixon 1994	Waiʻanae Coast Comprehensive Health Center	Reconnaissance Survey	None.
Nees 1995	Small portions of NRTF Lualualei	Reconnaissance Survey	None.
Robins & Anderson 1998	Lualualei Radio Transmission Facility	Reconnaissance Survey	Identified 3 sites: historic sugarcane features (SIHP 5591); a habitation site (SIHP 1886); and a rock mound (SIHP 5592).
Hammatt 2001	Farrington Hwy.	Literature Review & Field Inspection	Assessed the Lualualei portion of Farrington Hwy. as high probability for encountering archaeological remains.
McGuire & Hammatt 2001	Portions of Nānākuli through Mākaha Ahupuaʻa	Traditional Practices Assessment	Historic land use includes ranching and military recreation; community concerns were raised regarding disturbance of burials and other cultural sites.
Perzinski et al. 2002	Proposed Waiʻanae Community Transit Center	Archaeological and Cultural Impact Evaluation	None.
Tulchin et al. 2003	Proposed Waiʻanae 242 Reservoir and Access Rd.	Archaeological Inventory Survey	Recorded two possible shelters and a cave; site numbers were not assigned.
Tulchin et al. 2007	Near Waiʻanae Comprehensive Health Center	Archaeological Inventory Survey	None.
McElroy 2008	Lualualei-Mākaha	Archaeological Monitoring	None.
Mierzejewski and Hammatt 2014	Māʻili Beach Park	Archaeological Monitoring	None.
Stine et al. 2014	Lualualei to Waiʻanae	Archaeological Monitoring	No sites identified in the vicinity of the project area, although three sites recorded elsewhere.



Layer Credits: USGS Topographical Waianae Quadrangle Map 1998

Figure 12. Archaeological sites in the vicinity of the project area.

A reconnaissance survey at the Lualualei Radio Transmission Facility identified three sites (Robins and Anderson 1998). These consist of post-Contact sugarcane features (SIHP 5591); a habitation site (SIHP 1886); and a rock mound (SIHP 5592). Site 5591 includes an earthen ditch, a concrete ditch, an earthen and stone-faced possible ditch, sluice gates, and a possible railroad bed. Site 1886 is a roughly rectangular, partially-faced mound of pre-Contact age and undetermined function. Site 5592 is a roughly rectangular terraced enclosure, interpreted as a permanent pre-Contact habitation.

A literature review and field inspection were conducted to identify areas of high probability for encountering archaeological remains within a series of road corridors (Hammatt 2001). The Lualualei portion of Farrington Hwy. was assessed as high probability for encountering archaeological remains. This determination was made because of the presence of sand deposits along the highway (Hammatt 2001:18).

A Traditional Cultural Practices Assessment was conducted for a proposed emergency access road that extends through Nānākuli, Lualualei, Waiʻanae, and Mākaha (McGuire and Hammatt 2001). Historical records did not yield much information on the Lualualei area, but Waiʻanae was a focus of population, particularly at Pōkaʻi Bay.

An archaeological inventory survey Near Waiʻanae Comprehensive Health Center recorded three sites (Tulchin et al. 2003). These consist of two possible shelters and a cave, although site numbers were not assigned.

Several other projects were conducted that yielded no findings in the vicinity of the project area. These consist of surveys (Barrera 1975; Sinoto and Pantaleo 1990; Flood and Dixon 1994; Nees 1995; Tulchin et al. 2007), archaeological monitoring (McElroy 2008; Mierzejewski and Hammatt 2014; Stine et al. 2014), and a cultural and archaeological impact evaluation (Perzinski et al. 2002).

Summary of Background Research

Land and freshwater resources have historically been unreliable in the Waiʻanae District, while it has long boasted plentiful offshore fishing. Sweet potato and coconut were grown where conditions were favorable. Despite having been rather sparsely populated, Waiʻanae held a significant place in the life and lore of pre-Contact Oʻahu. Fishing has always played a prominent role in moʻolelo. The district was also home to ruling chiefs and their retainers, including prophetic kahuna.

Not long after Western contact, the project area was relatively devoid of habitation, according to Vancouver's voyage up the leeward coast of Oʻahu. Things had not changed drastically around the time of the Māhele, when the ahupuaʻa housed less than 50 residents. No LCA claims were from near the project area. The earliest historical map found (1901) shows Māʻiliʻili Stream in the current project location, and the OR&L railroad running along the coast. USGS maps indicate that the stream was diverted between 1963 and 1975, and it now runs approximately 60 m north of the project area.

A variety of archaeological features and finds — from pre-Contact through the historic period — have been recorded in Lualualei. No archaeological remains were found in the immediate vicinity of the project area, although traditional surface architecture, human burials, and historic sugarcane features are located within 1.5 km of the project parcel. Although historic maps show the OR&L railroad extending along the coast near the project area, previous archaeological studies have not documented the railroad there. It has been identified in other areas of the Leeward Coast, however, particularly in Nānākuli and further south.

Anticipated Finds and Research Questions

Although no previous archaeological fieldwork has been done within the project area itself, studies conducted nearby can help inform on the kinds of surface and subsurface archaeological resources that may be found. Research questions will broadly address the identification of the archaeological resources noted above, and may become more narrowly focused based on the kinds of resources that are found. Initial research questions are as follows:

1. Are there subsurface cultural deposits or evidence of human burial areas within the survey area? Where are they located and what time period do they belong to?
2. Is there any evidence of agriculture or habitation in the survey area, particularly along the banks of the former course of Māʻiliʻili Stream?
3. Are there any vestiges of historic-era use of the project area, particularly surface remains or subsurface deposits associated with sugarcane agriculture?

Once these basic questions are answered, additional research questions may be developed in consultation with SHPD, tailored to the specific kinds of archaeological resources that occur in the project area.

METHODS

Pedestrian survey and subsurface testing were conducted on September 29, 2016 by Windy McElroy, PhD and Jeffrey Lapinad. McElroy served as Principal Investigator, overseeing all aspects of the project.

For the pedestrian survey, the ground surface was visually inspected for surface archaeological remains, with transects walked for the entire area. Archaeologists were spaced approximately 5 m apart. Of the .789 ha (1.95 ac.) survey area, 100% was covered on foot. Vegetation was light, consisting of grass, koa haole, and mature kiawe trees on the north side of the property (Figure 13), an open dirt road in the center of the property, and landscaped lawns in other areas. The vegetation did not affect visibility of the ground surface.

Test trenches (TR) were excavated in eight locations across the project area. The excavation strategy was approved by SHPD beforehand via email. A mini excavator was used for excavation of the trenches (Figure 14). Vertical provenience was measured from the surface, and trenches were excavated to the basal coral shelf where possible. Profiles were drawn and photographed, and sediments were described using Munsell soil color charts, a sediment texture flowchart (Thien 1979), and the U.S. Department of Agriculture soil manual. Trench locations were recorded with a 3 m-accurate Garmin GPSmap 62st, and all trenches were backfilled after excavation.

The scale in all field photographs is marked in 10 cm increments. The north arrow on all maps points to magnetic north. Throughout this report rock sizes follow the conventions outlined in *Field Book for Describing and Sampling Soils*: Gravel <7 cm; Cobble 7–25 cm; Stone 25–60 cm; Boulder >60 cm (Schoeneberger et al. 2002:2–35). No materials were collected and no laboratory analyses were conducted.

Figure 13. Survey conditions on the north side of the property, showing sparse grass and kiawe trees. Orientation is to the southwest.

Figure 14. Excavation of TR 4 with mini excavator. Orientation is to the southwest.

RESULTS

Pedestrian survey and subsurface testing were conducted in the .789 ha (1.95 ac.) project area. No archaeological resources were found. Excavation of eight test trenches did not yield any evidence of subsurface archaeological deposits or features.

Community Consultation

The planned community consultation includes engaging relevant federal, state, and local agencies in early and formal consultation efforts through written requests for input, public notices, and follow-up discussions, as necessary. Early consultation with neighboring property-owners will also occur in writing, and at their request, in person. Additionally, a cultural impact assessment will engage local community experts and formal research to identify and account for culturally-significant resources and considerations within the ahupua‘a, neighborhood and project site.

Pedestrian Survey

The surface survey included 100% of the .789 ha (1.95 ac.) project area. No surface archaeological remains were observed within any part of the project area; any archaeological features that may have once been present are no longer there because of the extensive modern use of these lands. The entire project area has been disturbed by the development of homes, landscaping, and associated infrastructure, as well as recent filling and dumping (e.g., Figure 15).

Figure 15. North-central portion of the project area, facing northeast. Note the evidence of recent dumping on the surface.

Subsurface Testing

A subsurface testing plan was approved by SHPD before trenching began. The eight trenches were excavated within the project area to determine the presence or absence of subsurface archaeological deposits or material (Figures 16 and 17 and Table 2). No archaeological resources were found, and stratigraphy generally consisted of fill above a coral shelf. The coral shelf was not encountered in the southern portion of the project area, however, where alluvial deposits extended deeper.

TR 1 was located near the northwest corner of the property (see Figure 16). The trench measured 8.2 m long and 75 cm wide. It was excavated to 137 cm below surface (cmbs), where a coral shelf was encountered. Above the coral shelf, stratigraphy consisted of a layer of detritus mixed with topsoil above two layers of fill and a basal alluvial deposit (Figures 18 and 19, see Table 2). No archaeological deposits or materials were identified.

TR 2 was placed in the northern portion of the project area (see Figure 16). The trench measured 8.6 m long and 75 cm wide. It was excavated to 100 cmbs, where the coral shelf was encountered. Above the coral shelf, stratigraphy consisted of a layer of fill interrupted by two modern pits (Figure 20, see Table 2). The pit on the east end of the trench was filled with crushed coral and modern debris (Figure 21), while the pit on the west end had an ashy fill with abundant modern debris (Figure 22). No archaeological deposits or material were identified.

TR 3 was excavated in the north-central portion of the project area (see Figure 16). The trench measured 8.8 m long and 75 cm wide. It was excavated to 62 cmbs, where the coral shelf was encountered. Above the coral shelf, stratigraphy consisted of detritus at the surface with various layers of fill below (Figures 23 and 24, see Table 2). No archaeological deposits or material were identified.

TR 4 was located to the east of TR 3 (see Figure 16). The trench measured 8.4 m long and 75 cm wide. It was excavated to 70 cmbs, where the coral shelf was encountered. A live copper water line was uncovered in the east end of the trench at 25 cmbs and further excavation was halted in the immediate area. Above the coral shelf, stratigraphy consisted of a layer of fill with part of a modern pit exposed on the west end of the trench (Figures 25 and 26, see Table 2). The pit was composed of an ashy fill with modern debris. No archaeological deposits or material were identified.

TR 5 was located in the central portion of the project area (see Figure 16). The trench measured 6.5 m long and 75 cm wide. It was excavated to 67 cmbs. This trench was abandoned before the coral shelf was encountered due to the presence of several utility lines observed in the trench profile, as well as fiber optics at the base of the trench. Stratigraphy consisted of a single layer of fill (Figures 27 and 28, see Table 2). No archaeological deposits or material were identified.

TR 6 was placed on the east side of the project area (see Figure 16). The trench measured 6 m long and 75 cm wide. It was excavated to 160 cmbs, into sterile soil. Stratigraphy consisted of a natural alluvial deposit, disturbed in the upper 1 m and containing a 20 cm-thick sandy intrusion (Figures 29 and 30, see Table 2). No archaeological deposits or material were identified.

TR 7 was excavated in the southwest portion of the project area (see Figure 16). The trench measured 5 m long and 75 cm wide. It was excavated to 120 cmbs, into sterile soil. Stratigraphy consisted of a single layer of natural alluvium, disturbed in the upper 1 m (Figures 31 and 32, see Table 2). No archaeological deposits or material were identified.

Figure 16. Location of trenches on aerial imagery.

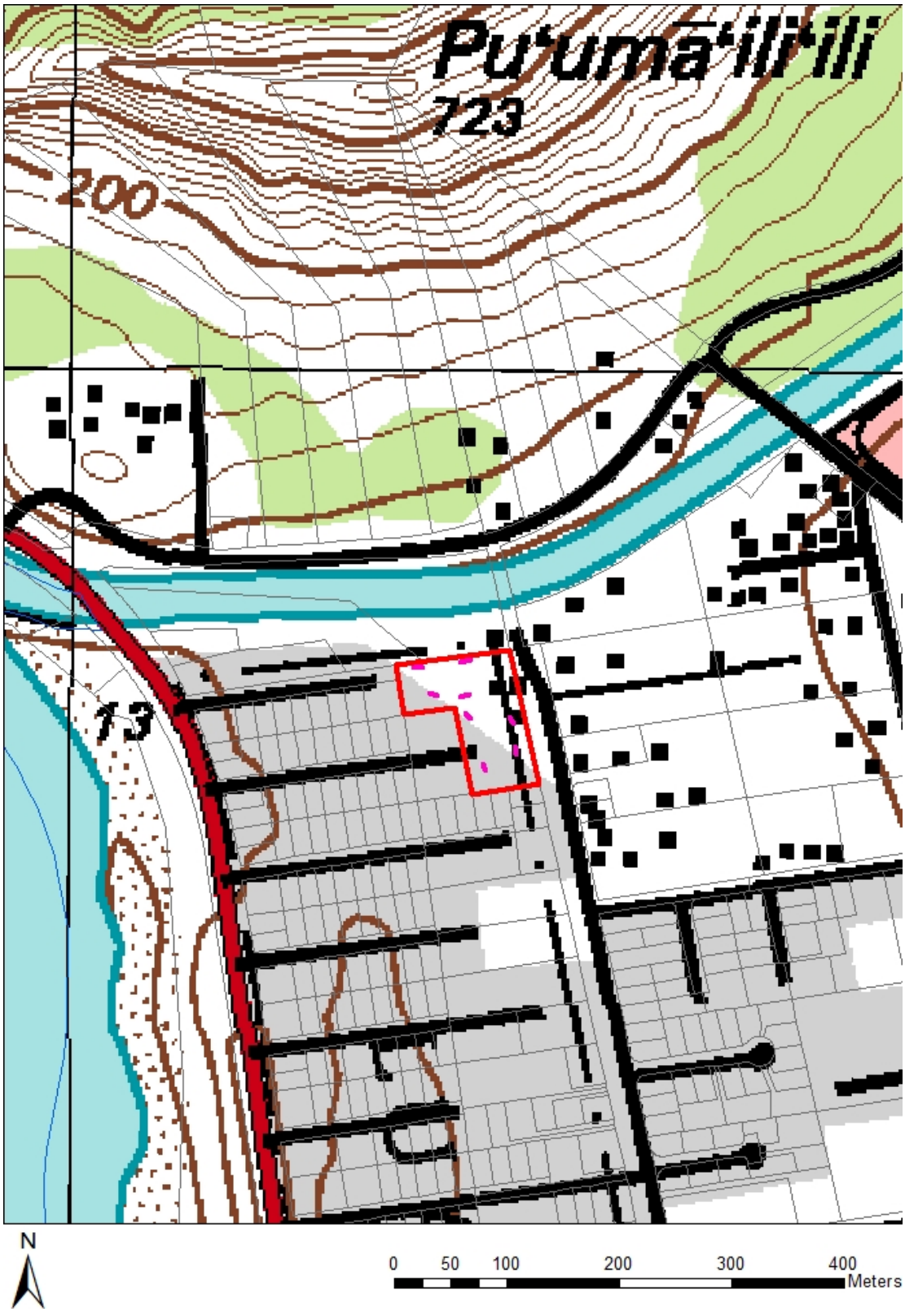


Figure 17. Wider view of trench locations (in pink) on a 1998 Waianae quadrangle. The project area is outlined in red.

Table 2. Sediment Descriptions

Location	Layer	Depth (cmbs)	Color	Description	Interpretation
TR 1	I	0–10	10YR 3/2	Sandy loam; modern debris; 7% roots, 10% basalt and coral cobbles; smooth, very abrupt boundary.	Detritus/Topsoil Mix
	II	10–40	10YR 4/2	Sandy clay loam; modern debris; 5% roots, 7% coral and basalt cobbles; smooth, very abrupt boundary.	Fill
	III	40–52	10YR 4/3, Mottled	Loamy sand; modern debris; 10% coral and basalt cobbles; smooth, clear boundary.	Fill
	IV	52–137+	10YR 3/2	Silty clay; base of excavation.	Natural Alluvial Deposit
TR 2	Ia	0–80	5Y 8/1	Crushed coral; modern debris; 10% roots, 75% coral cobbles; broken, very abrupt boundary.	Modern Pit
	Ib	0–50	10YR 5/1	Loam; abundant modern debris; 10% roots, 15% basalt and coral cobbles; smooth, very abrupt boundary.	Modern Pit
	II	0–100+	10YR 3/2	Silty clay; base of excavation.	Natural Alluvial Deposit
TR 3	I	0–10	10YR 2/1	Detritus; modern debris; 5% roots, 5% basalt and coral cobbles; smooth, very abrupt boundary.	Detritus
	II	10–20	10YR 3/3	Loam; modern debris; 5% roots, 5% coral and basalt cobbles; broken, very abrupt boundary.	Fill
	III	20–32	10YR 5/7	Sandy clay loam; modern debris; 5% roots, 20% coral and basalt cobbles; base of excavation.	Fill
	IV	32–60+	10YR 6/2	Sandy clay loam; modern debris; 2% roots, 5% basalt and coral cobbles; base of excavation.	Fill
TR 4	I	0–70+	10YR 4/3	Silty clay loam; modern debris, utility line; 10% roots, 10% basalt and coral cobbles; base of excavation.	Fill
	Ia	0–25+	10YR 8/1	Silty clay loam; 10% roots; 10% coral cobbles; base of excavation.	Modern Pit
TR 5	I	0–67+	10YR 5/2	Silty clay loam; modern debris, utility lines; 10% roots, 20% basalt and coral cobbles; base of excavation.	Fill
TR 6	I	0–160+	10YR 2/2	Sandy clay loam; modern debris in upper 1 m; 5% roots, 15% basalt and coral cobbles; base of excavation.	Natural Alluvial Deposit, Disturbed in Upper 1 m
	II	40–60	10YR 5/3	Coarse sand; 1% roots; broken, very abrupt boundary.	Fill

Table 2. (continued)

TR 7	I	0–120+	10YR 2/2	Sandy clay loam; modern debris in upper 1 m; 20% roots, 10% basalt and coral cobbles; base of excavation.	Natural Alluvial Deposit, Disturbed in Upper 1 m
TR 8	I	0–42	10YR 4/3	Coarse sand with detritus; modern debris; 5% roots, 25% basalt and coral cobbles; smooth, very abrupt boundary.	Detritus/Fill Mix
	II	42–68	10YR 6/2	Coarse sand; modern debris; 2% roots, 20% coral cobbles; smooth, very abrupt boundary.	Fill
	III	68–104	10YR 7/1	Coarse sand; modern debris; 2% roots, 20% coral cobbles; smooth, abrupt boundary.	Fill
	IV	104–160+	10YR 2/2	Clay; 1% roots, 5% basalt and coral cobbles; base of excavation.	Natural Alluvial Deposit

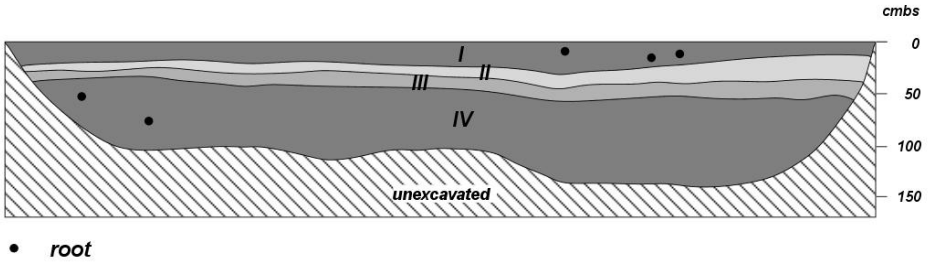


Figure 18. TR 1 south face profile drawing.

Figure 19. TR 1 south face photo.

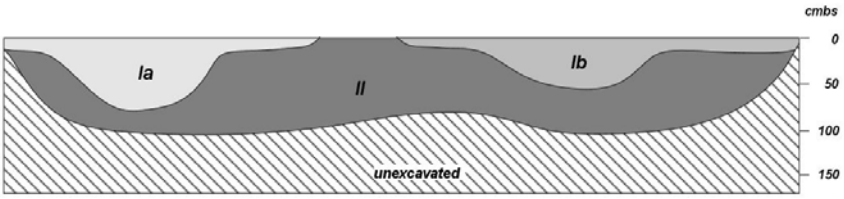


Figure 20. TR 2 south face profile drawing.

Figure 21. TR 2 south face photo, east end of trench.

Figure 22. TR 2 south face photo, west end of trench.

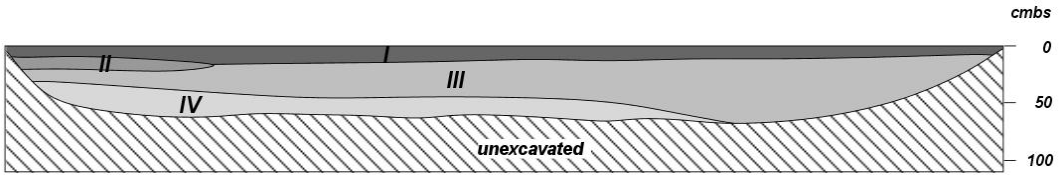


Figure 23. TR 3 northeast face profile drawing.

Figure 24. TR 3 northeast face photo.

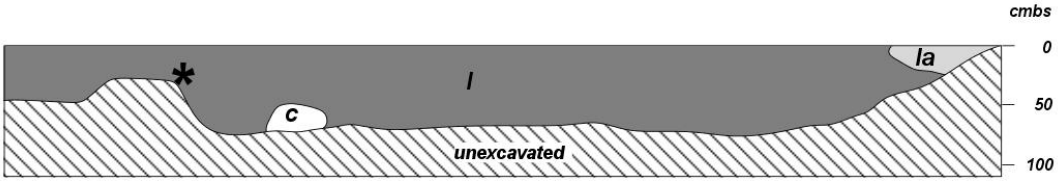


Figure 25. TR 4 south face profile drawing.

Figure 26. TR 4 south face photo.

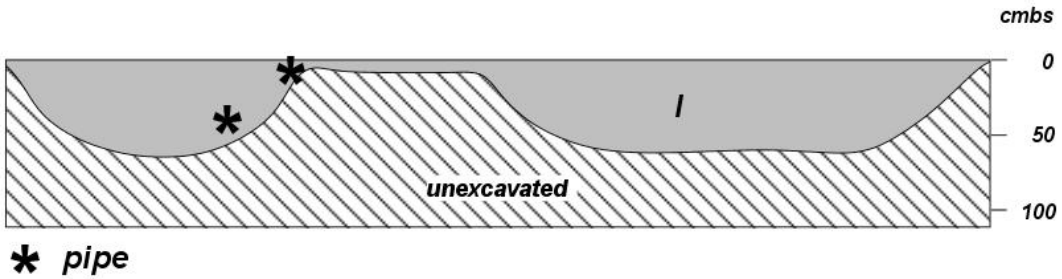


Figure 27. TR 5 northeast face profile drawing.

Figure 28. TR 5 northeast face photo.

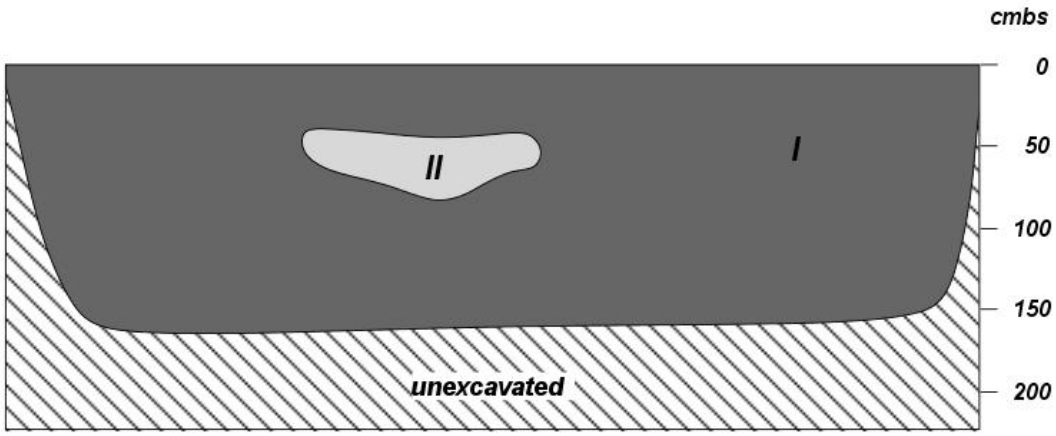


Figure 29. TR 6 east face profile drawing.

Figure 30. TR 6 east face photo.

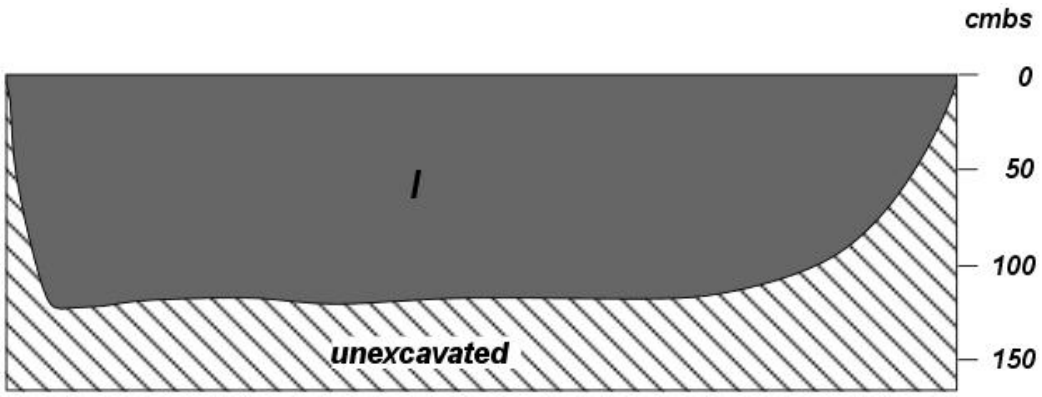


Figure 31. TR 7 west face profile drawing.

Figure 32. TR 7 west face photo, east end of trench.

TR 8 was located in the southeast portion of the project area (see Figure 16). The trench measured 6 m long and 75 cm wide. It was excavated to 160 cmbs, into sterile soil. Stratigraphy consisted of several layers of fill above a natural alluvial deposit (Figures 33 and 34, see Table 2). No archaeological deposits or material were identified.

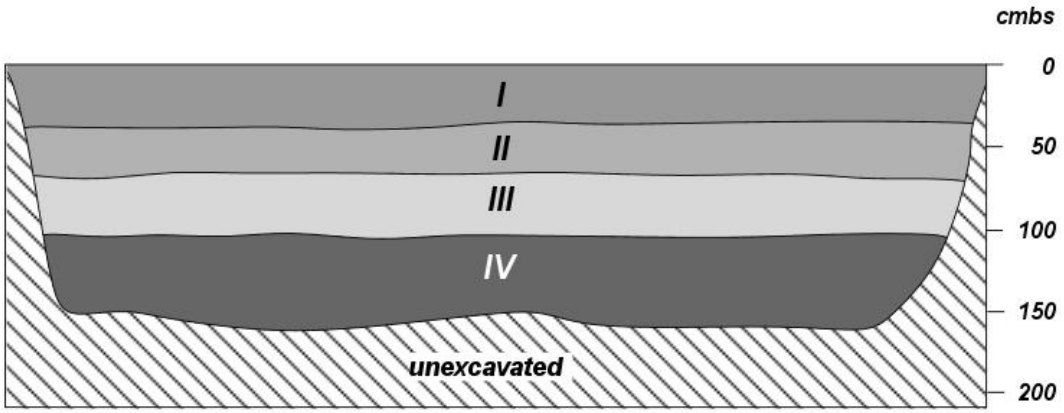


Figure 33. TR 8 northeast face profile drawing.

Figure 34. TR 8 northeast face photo, east end of trench.

Summary of Findings

Pedestrian survey of .789 ha (1.95 ac.) in Lualualei yielded no findings. The entire project area has been disturbed by modern development and dumping. Subsurface testing, consisting of eight trenches, did not identify any subsurface cultural deposits or features. Stratigraphy generally consisted of fill above a coral shelf, although the coral shelf was not encountered in the southern portion of the project area where alluvial deposits extended deeper.

CONCLUSION AND RECOMMENDATIONS

An archaeological inventory survey was conducted at TMK: (1) 8-7-001:016 in Lualualei Ahupua‘a, Wai‘anae District, on the island of O‘ahu. A new residential complex is proposed for the property. The archaeological work included pedestrian survey that covered 100% of the .789 ha (1.95 ac.) project area, as well as test excavations consisting of eight trenches. Due to negative findings, the AIS results are presented as an archaeological assessment per HAR §13–275.

No surface archaeological remains were found during pedestrian survey of the project area. The entire area has been disturbed by modern activity, such as the development of homes, landscaping, and associated infrastructure, as well as recent filling and dumping. Likewise, subsurface testing did not yield any evidence of subsurface archaeological features or deposits. Stratigraphy generally consisted of fill above a coral shelf, although the coral shelf was not encountered in the southern portion of the project area.

Given the lack of findings, extensive modern disturbance, and the shallow depth of the coral shelf in most areas, no further work is recommended. Non-burial inadvertent finds will be handled in accordance with HAR §13-280 and SHPD directives. In the event of inadvertent discovery of human skeletal remains or burials, work in the area should cease, the find should be secured, and the SHPD and the HPD should be immediately contacted. Burial treatment will occur in accordance with HRS 43.6, HAR §13-300-4, and SHPD directives.

GLOSSARY

ahupuaʻa	Traditional Hawaiian land division usually extending from the uplands to the sea.
ʻāina	Land.
ʻalae, ʻalae ula	The endangered mudhen or Hawaiian gallinule *Gallinula chloropus sandvicensis*, the cry of which is believed to be a bad omen.
aliʻi	Chief, chiefess, monarch.
aliʻi ʻai moku	Chief of a district.
aliʻi nui	High chief.
ʻanae	Full-sized ʻamaʻama mullet fish.
ʻili	Traditional land division, usually a subdivision of an ahupuaʻa.
ʻili kūpono	An ʻili within an ahupuaʻa that was nearly independent. Tribute was paid to the ruling chief rather than the chief of the ahupuaʻa, and when an ahupuaʻa changed hands, the ʻili kūpono were not transferred to the new ruler.
inoa	Name, title, or namesake.
kalana	A division of land smaller in size than a moku, or district.
Kanaloa	A major god, typically associated with Kāne.
Kāne	The leading of the traditional Hawaiian deities.
kiawe	The algarroba tree, *Prosopis* sp., a legume from tropical America, first planted in 1828 in Hawaiʻi.
koa haole	The small tree *Leucaena glauca*, historically-introduced to Hawaiʻi.
konohiki	The overseer of an ahupuaʻa ranked below a chief; land or fishing rights under control of the konohiki; such rights are sometimes called konohiki rights.
kuleana	Right, title, property, portion, responsibility, jurisdiction, authority, interest, claim, ownership.
Māhele	The 1848 division of land.
mauka	Inland, upland, toward the mountain.
mōʻī	King.
moku	District, island.
moʻo	Lizard, dragon, water spirit.
moʻolelo	A story, myth, history, tradition, legend, or record.
ʻōlelo noʻeau	Proverb, wise saying, traditional saying.
pahuhu	Young uhu (parrotfish, *Scaridae*) fish.
post-Contact	After A.D. 1778 and the first written records of the Hawaiian Islands made by Captain James Cook and his crew.
pre-Contact	Prior to A.D. 1778 and the first written records of the Hawaiian Islands made by Captain James Cook and his crew.

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