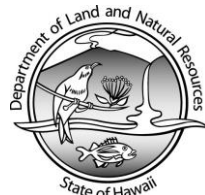




APPENDIX F-1

SHPD Acceptance Letter dated January 6, 2016

DAVID Y. IGE
GOVERNOR OF HAWAII



**STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES**

STATE HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING
601 KAMOKILA BLVD, STE 555
KAPOLEI, HAWAII 96707

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

KEKOA KALUHIWA
FIRST DEPUTY

JEFFREY T. PEARSON
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

January 6, 2016

Jordan E. Hart, President
Chris Hart & Partners, Inc.
115 N. Market Street
Wailuku, Hawaii 96793
Via email to: JHart@chpmaui.com

Log No: 2015.03310
Doc No: 1601MD08
Archaeology

Aloha Mr. Hart:

**SUBJECT: Chapter 6E-42 Historic Preservation Review – Maui County
Draft Archaeological Inventory Survey for the Piilani Promenade Project
Ka‘ono‘ulu Ahupua‘a, Wailuku and Makawao Districts, Island of Maui
TMK (2) 2-2-002:016, 077 and 082 and 3-9-001:016, 148, 169-174 and 3-9-048:122**

Thank you for the opportunity to review the draft report titled *An Archaeological Inventory Survey for On- and Off-Site Improvements Associated with the Proposed Piilani Promenade Project, and Updated Recommendations for Sites Identified in a 1994 Archaeological Inventory Survey, Ka‘ono‘ulu Ahupua‘a, Wailuku and Makawao Districts, Island of Maui (On-site TMK (2) 3-9-001: 16, 169-174, and off-site TMK (2) 2-2-002: 016, 077 and 082, (2) 3-9-001: 148, (2) 3-9-048: 122)* by Fredericksen (Revised August 2015). We received the draft plan submittal on September 2, 2015 and apologize for the delayed review. We requested revisions to an earlier draft of this report on May 2015 (*Log No. 2014.04433, Doc No. 1505MD54*).

This report was prepared for Mr. Robert Poynor of Sarofim Realty Advisors in advance of planned construction of commercial development of 74.871 acres (including off-site effected areas the total acreage for this survey was 101.658 acres) located mauka of Piilani Highway in North Kihei on Maui Island. An archaeological inventory survey (AIS) was originally conducted for this project in the early 1990s; however, following changes both to the land and to the project's anticipated area of potential effect a revised survey report has been prepared as part of the environmental impact statement pursuant to the Hawai'i Revised Statutes § 343 requirements following the recommendation of SHPD.

Fieldwork for the subject AIS was initially conducted in January and February of 2014 by three archaeologists with Erik M. Fredericksen, M.A. as the principal investigator. Three shovel-test pits were manually excavated. Twenty historic properties were identified in the earlier 1994 AIS associated with this project; all were re-identified during the current survey following a second period of fieldwork in July and August 2015. Results of consultation and information previously requested by SHPD regarding required changes to County utilities have been included as Appendices.

One new site was identified, State Inventory of Historic Places (SIHP) 50-50-10-8266. SIHP 8266 has been identified as a pre-Contact temporary habitation area, significant under criterion "d" for its information content. We concur with that assessment. Data recovery has been recommended as mitigation and we concur with that recommendation.

The original 1994 AIS identified 20 SIHPs; two of those, SIHP 3734 and 3739, have since been destroyed/lost. For the remaining SIHPs 3727-3733, 3735-3738 and 3740-3745 were all previously determined eligible for their information content under criterion "d." Of these 18 sites, one was removed in late 1994 (SIHP 3746); seven (7) are recommended for no further work (SIHPs 3730, 3731, 3733, 3737, 3738 and 3740); while the remaining 12 (SIHPs 3727-3729, 3732, 3735, 3736 and 3741-3745) have been recommended for data recovery. We concur with these recommendations and look forward to reviewing an archaeological data recovery plan which will also include the newly-identified SIHP 8266 for a total of thirteen (13) historic properties.

Revisions we previously requested, including results from additional fieldwork recommended in consultation with concerned citizen groups, have been adequately addressed. The draft AIS meets the requirements specified in Hawai'i Administrative Rule §13-276 and is accepted as final. Please send one hardcopy of the document, clearly marked **FINAL**, along with a copy of this review letter and a text-searchable PDF version on CD to the Kapolei SHPD office, attention SHPD Library. Please contact me at (808) 243-4641 or Morgan.E.Davis@hawaii.gov if you have any questions or concerns about this letter.

Mahalo,



Morgan E. Davis
Lead Archaeologist, Maui Section

cc:	County of Maui Department of Planning Planning@co.maui.hi.us	County of Maui Department of Public Works – DSA Renee.Segundo@co.maui.hi.us	County of Maui Cultural Resources Commission Annalise.Kehler@co.maui.hi.us
	Robert Poynor, V.P. Sarofim Realty Advisor cjenks@pacificrimland.com	Erik M. Fredericksen, M.A. Xamanek Researches, LLC xamanekresearchesllc@gmail.com	



APPENDIX G
Archaeological Impact Survey of Kulanihakoi Gulch
dated August 2008

**AN ARCHAEOLOGICAL INVENTORY SURVEY
ON A 516.32-ACRE PARCEL LOCATED IN
KĪHEI, KA`ONO`ULU AHUPUA`A, MAKAWAO DISTRICT,
MAUI ISLAND, HAWAII
[TMK (2) 2-2-002:015 por.]**

Prepared By:
**Donna Shefcheck, B.A.,
Shayna Cordle, B.A.
and
Michael Dega, Ph.D.**
Revised August 2008

Prepared For:
**Mr. Henry Rice
Ka`ono`ulu Ranch
Kula, Hawaii 96790**

ABSTRACT

From January to April, 2007, Scientific Consultant Services, Inc. (SCS) conducted an Archaeological Inventory Survey on a large parcel of open land located in Kīhei, Kaʻonoʻulu Ahupuaʻa, Makawao District, Maui Island, Hawaiʻi [TMK: 2-2-02: 015 por.]. Forty new archaeological sites were identified and recorded during this work. Of the forty sites recorded during this work, eight are associated with pre-Contact activities. These pre-Contact sites consisted of temporary rock shelters with petroglyph components, enclosures, platforms, a mound and a wall. Historic sites found during this work pertained to agriculture and military training activities.

Data Recovery is recommended for Sites 6405 and 6412. These sites consist of mixed pre-Contact and historic military components, representing adaptive re-use of pre-existing sites in the area.

Preservation is recommended for Sites 6390, 6413, 6414, 6415, 6416, 6419, and 6420. These sites represent Hawaiian traditional structures in the barren zone, where habitation is understood to have been limited and extremely temporary.

Under the circumstances owing to the nature and intended preservation of these sites, Archeological Monitoring is recommended during any ground altering work planned for the parcel. With the exception of Monitoring, no further work is recommended for any of the agricultural mounds or miscellaneous historic sites, as these have very little potential for providing further data.

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INTRODUCTION

At the request of Mr. Henry Rice of Ka`ono`ulu Ranch, Scientific Consultant Services, Inc. (SCS) conducted an Archaeological Inventory Survey, on a large parcel of open land located in Kīhei, Ka`ono`ulu Ahupua`a, Makawao District, Maui Island, Hawai`i [TMK: 2-2-02: 015 por.] (Figures 1, 2 and 3). Proposed development on this lot consists of a master planned project district with an integrated concept, whereby land use will be organized around a commercial and mixed-use village center to serve these planned neighborhoods. A combination of commercial, light industrial, residential, recreational and public/quasi-public uses is anticipated as part of the project area's land use.

SCS personnel Tomasi Patolo, B.A., Dea Funka, B.A., and Bryan Armstrong, B.A. conducted this work between January 24 and April 6, 2007 under the general supervision of Michael Dega, Ph.D. The Archaeological Inventory Survey was conducted to investigate the presence or absence of cultural remains in the form of archaeological structures and/or subsurface deposits.

This Archaeological Inventory Survey consisted of 100 percent systematic survey of the project area, site recording, and limited subsurface testing. The total area subject to this assessment was composed of over 516 acres of open land most recently used for cattle ranching. The results of this work were extensive. Forty new archaeological sites have been identified and recorded (Figure 4). These range in age from the late pre-Contact period to the modern era.

PROJECT AREA DESCRIPTION

The project area is located in Ka`ono`ulu Ahupua`a, east of the Wailuku-Makawao boundary that cuts across the *ahupua`a*. It is bordered on the north by Waiakoa Ahupua`a and to the south by Kōheo Ahupua`a. The southwestern boundary abuts Pi`ilani Highway for some distance and then jogs inland ending with its northwest corner on the Wailuku-Makawao boundary (see Figure 2). The entire parcel was part of the Kaonoulu Ranch lands and spans from a half mile to approximately two miles inland of the coastline within an area archaeologically known as the "barren zone".

The project area soils are dominated by Waiakoa Extremely Stony Silty Clay Loam (WID2). This soil type is generally associated with highly eroded landscapes with shallow, 3 to 25 percent slopes and low precipitation (Foote *et al.* 1972: 126). Kīhei gets less than ten inches of rainfall per year (Armstrong 1983). The elevation ranges from 40 to 600 feet above mean sea

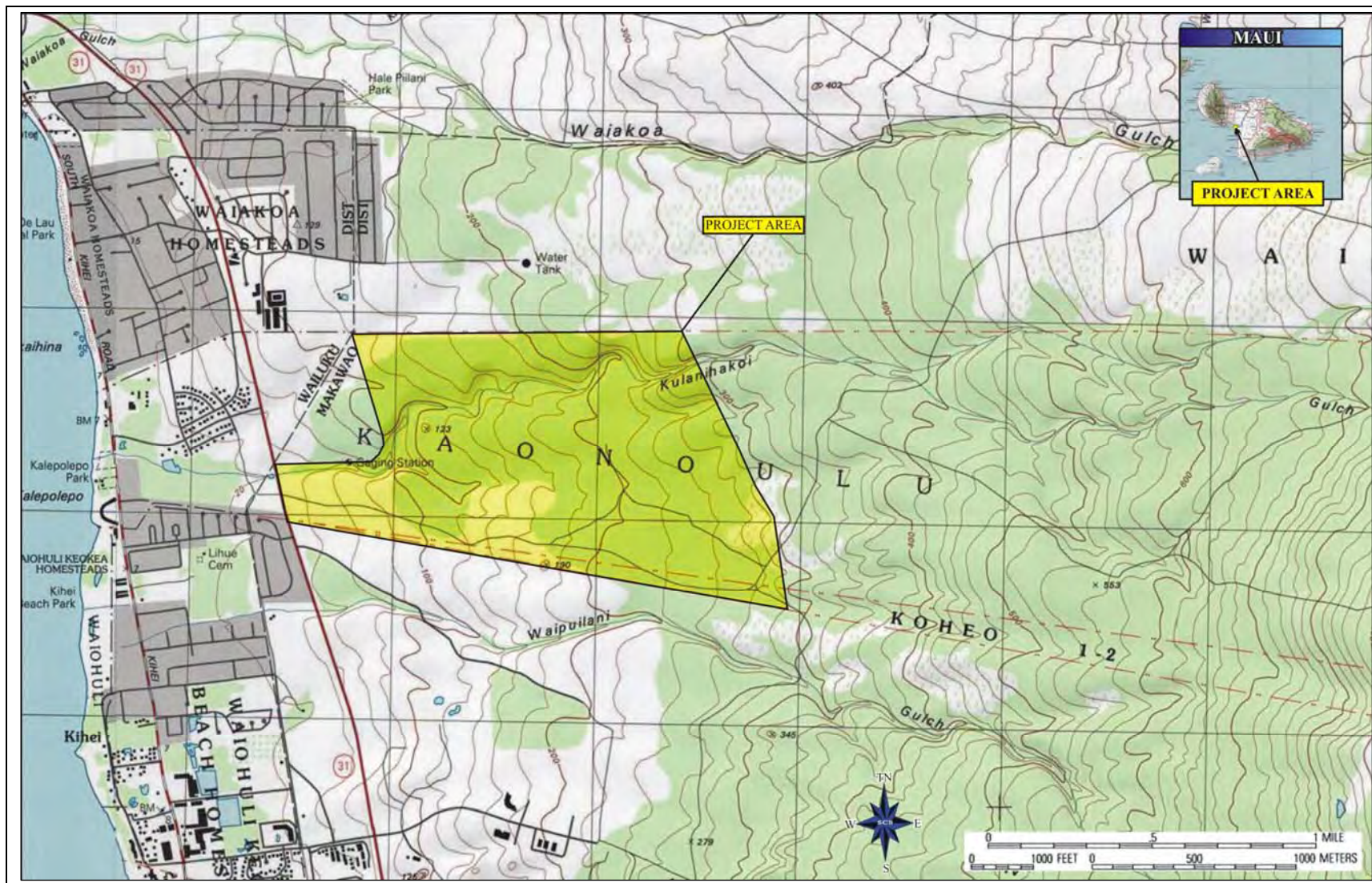


Figure 1: USGS Pu'u O Kali Quadrangle Showing the Project Area.

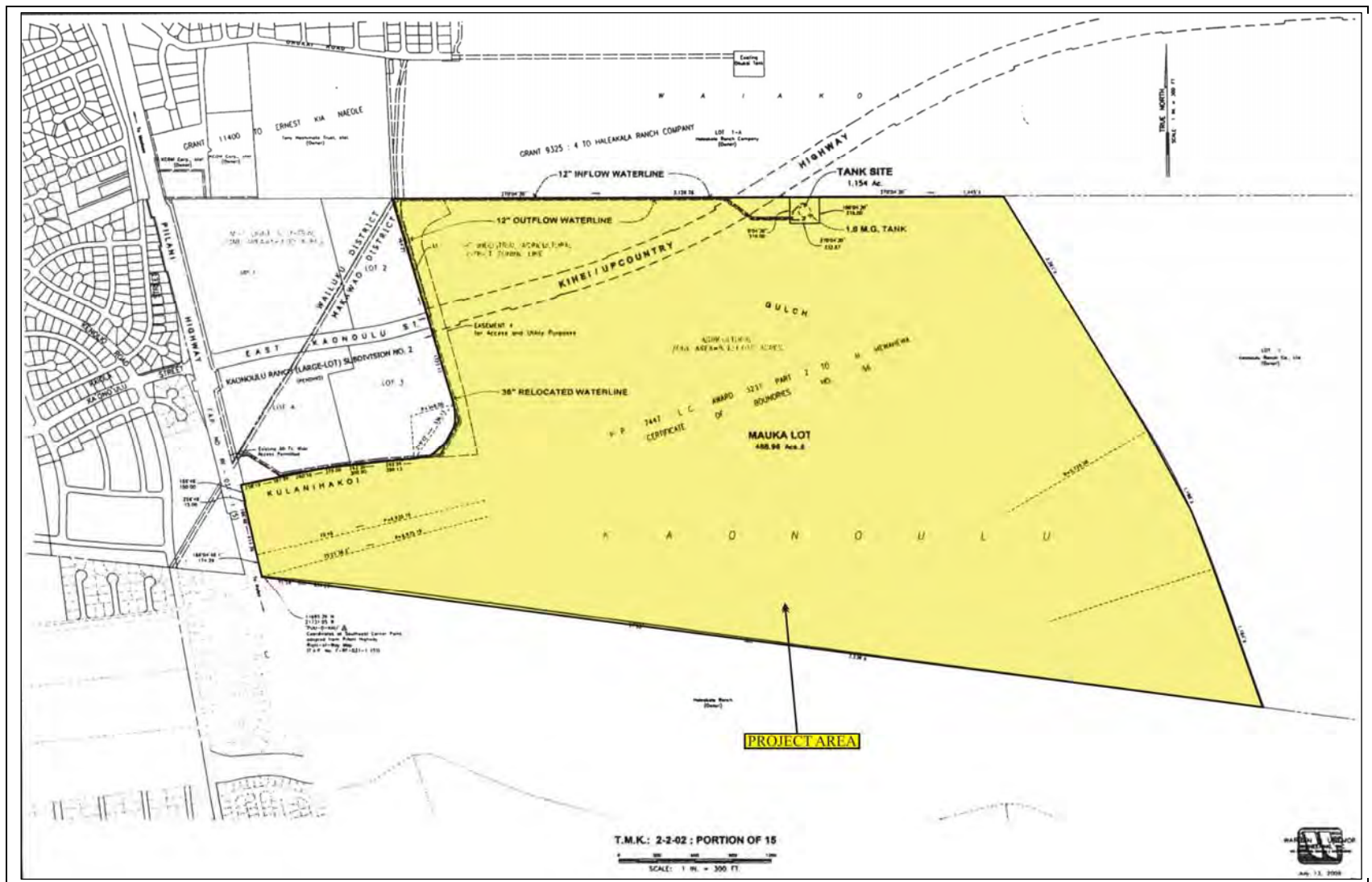


Figure 3: Tax Map Key [TMK] Showing the Project Area in Detail.

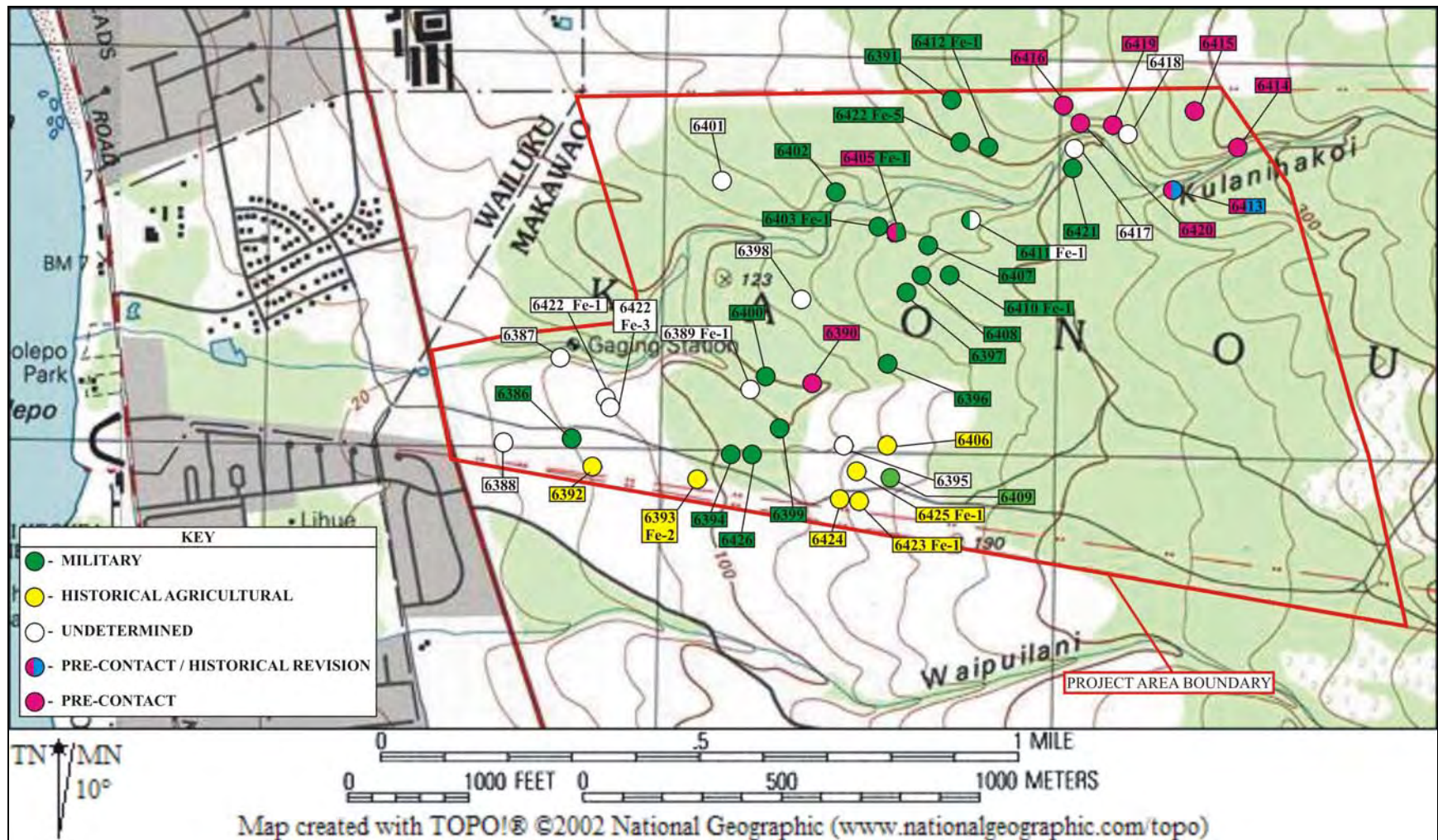


Figure 4: Plan View Map of the Project Area Showing GPS Points for the Sites Identified During Inventory Survey

level (amsl). The northeastern flank of the project area is marked with a steep natural gulch, called Kulanihakoi. While there is a general absence of perennial streams throughout the project area environs, Kulanihakoi Gulch does support a perennial stream during seasons of particularly heavy rainfall.

BARREN ZONE

In geographical and physiographical terms, the barren zone is an intermediary zone between direct coastline and back beach areas to upland forests and more montane environments. The barren zone is a medial zone that appears to have been almost exclusively transitory, or at best, intermittently occupied through time. Intermittent habitation loci, as defined by surface midden scatters or small architectural features (i.e., C-shapes, alignments) dominate the few documented traditional-period site types (pre-Contact) in the area through time. Post-Contact features are generally limited to walls and small alignments, respectively associated with ranching and military training in the area.

The barren zone was an intermediary region between verdant upland regions and the coastline. Apparently, agricultural endeavors were practically non-existent in the barren zone and tool procurement materials (basalt, wood) were selected from other locales as well. Sediment regimes in the area are shallow, most often overlying bedrock, and perennial water sources are virtually non-existent.

Cordy (1977) divided the Kīhei (inclusive of Kaonoulu) area into three environmental zones (or subzones when one considers the entire *ahupua`a*): coastal, transitional/barren, and inland. The current project location occurs in the transitional or barren zone: the slopes back of the coast with less than 30 inches of rainfall annually (Cordy 1977:4).

This barren zone is perceived as dry and antagonistic to permanent habitation. Use of the area would primarily have been intermittent or transitory, particularly as the zone could have contained coastal-inland trails and would have marked an intermediary point between the two more profitable ecozones. The region remains hostile to permanent habitation, only having been “conquered” in recent times through much modern adaptation (i.e., air conditioning, water feed systems, etc.).

Based on general archaeological and historic research, the barren zone was not subject to permanent or expansive population until recent times. This intimates that population pressure along the coast was minimal or non-existent in the Kīhei coastal area through time. As such, architectural structures associated with permanent habitation sites and/or ceremonial sites are not

often identified in the area. The prevailing model that temporary habitation-temporary use sites predominate in the barren zone has been authenticated further by recent research.

CULTURAL HISTORICAL CONTEXT

The island of Maui ranks second in size of the eight main islands in the Hawaiian Archipelago. The island was formed by two volcanoes, Mount Kukui in the west and Haleakalā in the east. The younger of the two volcanoes, Haleakalā, soars 2,727 m (10,023 feet) above sea level and embodies the largest section of the island. Unlike the amphitheater valleys of West Maui, the flanks of Haleakalā are distinguished by gentle slopes. Although it receives more rain than its counterpart in the east, the permeable lava flows of the Honomanū and Kula Volcanic Series prevent the formation of rain-fed perennial streams. The few perennial streams found on the windward side of Haleakalā originate from springs located at low elevations. Valleys and gulches were formed by intermittent water run-off. The environment factors and resource availability heavily influenced pre-Contact settlement patterns. Although an extensive population was found occupying the uplands above the 30-inch rainfall line where crops could easily be grown, coastal settlement was also common (Kolb *et al.* 1997). The existence of three fishponds at Kalepolepo, north of the project area, and at least two *heiau* (shrine, temple, place of worship) identified near the shore confirm the presence of a stable population relying mainly on coastal and marine resources.

Agriculture may have been practiced behind the dune berms in low-lying marshland or in the vicinity of Keālia pond. It is suggested that permanent habitation and their associated activities occurred from A.D. 1200 to the present in both the uplands and coastal region (*Ibid.*).

PAST POLITICAL BOUNDARIES

Traditionally, the division of Maui's lands into districts (*moku*) and sub-districts was performed by a *kahuna* (priest, expert) named Kalaiha`ōhia, during the time of the *ali`i* Kaka`alaneo (Beckwith 1979:383; Fornander places Kaka`alaneo at the end of the fifteenth century or the beginning of the sixteenth century [Fornander 1919-20, Vol. 6:248]). Land was considered the property of the king or *ali`i`ai moku* (the *ali`i* who eats the island/district), which he held in trust for the gods. The title of *ali`i`ai moku* ensured rights and responsibilities to the land, but did not confer absolute ownership. The king kept the parcels he wanted; his higher chiefs received large parcels from him and, in turn, distributed smaller parcels to lesser chiefs. The *maka`āinana* (commoners) worked the individual plots of land.

In general, several terms were used to delineate various land sections. A district (*moku*) contained smaller land divisions (*ahupua`a*), which customarily continued inland from the ocean

and upland into the mountains. Extended household groups living within the *ahupua`a* were able to harvest from both the land and the sea. Ideally, this situation allowed each *ahupua`a* to be self-sufficient by supplying needed resources from different environmental zones (Lyons 1875:111). The *`ili`āina* or *`ili* were smaller land divisions next to importance to the *ahupua`a* and were administered by the chief who controlled the *ahupua`a* in which it was located (*ibid*:33; Lucas 1995:40). The *mo`o`āina* were narrow strips of land within an *`ili*. The land holding of a tenant or *hoa`āina* residing in an *ahupua`a* was called a *kuleana* (Lucas 1995:61). The project area is located in the *ahupua`a* of Ka`ono`ulu, which translated means literally “the desire for breadfruit” (Pukui *et al.*:86).

TRADITIONAL SETTLEMENT PATTERNS

The Hawaiian economy was based on agricultural production and marine exploitation, as well as raising livestock and collecting wild plants and birds. Extended household groups settled in various *ahupua`a*. Within the *ahupua`a*, residents were able to harvest from both the land and the sea. Ideally, this situation allowed each *ahupua`a* to be self-sufficient by supplying needed resources from different environmental zones (Lyons 1875:111).

During pre-Contact times, there were primarily two types of agriculture, wetland and dry land, both of which were dependent upon geography and physiography. River valleys provided ideal conditions for wetland *kalo* (*Colocasia esculenta*) agriculture that incorporated pond fields and irrigation canals. Other cultigens, such as *kō* (sugarcane, *Saccharum officinarum*), *mai`a* (banana, *Musa* sp.), and *`uala* (sweet potato, *Ipomoea batatas*) were also grown. This was the typical agricultural pattern seen during traditional times on all the Hawaiian Islands (Kirch and Sahlins 1992, Vol. 1:5, 119; Kirch 1985). Agricultural development on the leeward side of Maui was likely to have begun early in what is known as the Expansion Period (AD 1200–1400, Kirch 1985). According to Handy (1940: 159), there was “continuous cultivation on the coastal region along the northwest coast” of Maui . He writes:

On the south side of western Maui the flat coastal plain all the way from Kihei and Ma`alaea to Honokahua, in old Hawaiian times, must have supported many fishing settlements and isolated fishermen’s houses, where sweet potatoes were grown in the sandy soil or red lepo [soil] near the shore. For fishing, this coast is the most favorable on Maui, and, although a considerable amount of taro was grown, I think it is reasonable to suppose that the large fishing population, which presumably inhabited this leeward coast, ate more sweet potatoes than taro with their fish.... [*ibid*]

There is little specific information pertaining directly to Kīhei, which was originally a small area adjacent to a landing built in the 1890s (Clark 1980). Presently, Kīhei consists of a six-mile section along the coast from the town of Kīhei to Keawakapu. Scattered amongst the agricultural and habitation sites were places of cultural significance to the *kama`āina* of the district including at least two *heiau*. In ancient times, there was a small village at Kalepolepo based primarily on marine resources. It was recorded that occasionally the blustery Kaumuku Winds would arrive with amazing intensity along the coast (Wilcox 1921).

There were several fishponds in the vicinity of Kīhei; Waiohuli, Ka`ono`ulu-kai, and Kalepolepo Pond (Site 50-50-09-1288), which is also known by the ancient name of Kō`ie`ie Pond (Kolb *et al.* 1997). Constructed on the boundary between Ka`ono`ulu and Waiohuli Ahupua`a, these three ponds were some of the most important royal fishponds on Maui. The builder of Kalepolepo and two other ponds (Waiohuli and Ka`ono`ulu-kai) has been lost in antiquity, but they were reportedly rebuilt at least three times through history, beginning during the reign of Pi`ilani (1500s) (*ibid*; Cordy 2000).

Oral tradition recounts the repairing of the fishponds during the reign of Kiha-Pi`ilani, the son of the great chief Pi`ilani, who had bequeathed the ponds to Umi, ruler of Hawai`i Island. Umi's *konohiki* (land manager) ordered all the people from Maui to help repair the walls of Kalepolepo's fishponds. A man named Kikau protested that the repairs couldn't be done without the assistance of the *menehune* who were master builders (Wilcox 1921:66-67). The *konohiki* was furious and Kikau was told he would die once the repairs had been made. Ka`ono`ulu-kai was the first to be repaired. When the capstone was carried on a litter to the site, the *konohiki* rode proudly on top of the rock as it was being placed in the northeast corner of the pond. When it was time for repairs on Waiohuli-kai, the *konohiki* did the same. As the last pond, then known as Ka`ono`ulu-kai, was completed, the *konohiki* once again rode the capstone to its resting place. Before it could be put into position, the capstone broke throwing both the rock and *konohiki* into the dirt. The workers reportedly said “*Ua konohiki Kalepolepo, ua eku i ka lepo*,” or, “the manager of Kalepolepo, one who roots in the dirt” (*ibid*:66). That night a tremendous storm threw down the walls of the fishponds. The *konohiki* implored Kikau to help him repair the damage. Kikau called the *menehune* who rebuilt the walls in one night. Umi sent for Kikau who lived in the court of Waipi`o Valley from then on. The region of Ka`ono`ulu-kai and Ka`ono`ulu-kai fishpond became known as Kalepolepo fishpond (*ibid*).

The Kalepolepo fishponds were rebuilt by Kekaulike, chief of Maui in the 1700s, at which time it supplied `ama`ama (mullet) to Kahekili II. Again, it was restored by Kamehameha I when he ruled as governing chief over Maui, and for the last time in the 1840s, when prisoners

from Kaho`olawe penal colony were sent to do repairs (Kamakau 1961; Wilcox 1921). At this time, stones were taken from Waiohuli-kai pond for the reconstruction of Kalepolepo. It was here at Kalepolepo that Kamehameha I reportedly beached his victorious canoes after subduing the Maui chiefs. The stream draining into Keālia pond (north of the project area) became sacred to royalty and *kapu* to commoners (Stoddard 1894).

Trails extended from the coast to the mountains, linking the two for both economic and social reasons. A trail known as the *alanui* or “King’s trail” built by Kihapi`ilani, extended along the coast passing through all the major communities between Lāhainā and Mākena, including Kīhei. Kolb noted that two traditional trails extended through Ka`ono`ulu. One trail, named “*Kekuawaha`ula`ula*” or the “red-mouthed god”, went from Kīhei inland to Ka`ono`ulu. Another, the Kalepolepo trail, began at the Kalepolepo fishpond and continued to upland Waiohuli. These trails were not only used in the pre-Contact era, but were expanded to accommodate wagons bringing produce to the coast in the 1850s (Kolb *et al.* 1997:61).

WESTERN CONTACT

Early records, such as journals kept by explorers, travelers and missionaries, Hawaiian traditions that survived long enough to be written down, and archaeological investigations, have assisted in the understanding of past cultural activities. Unfortunately, early descriptions of this portion of the Maui coast are brief and infrequent. Captain King, Second Lieutenant on the *Revolution* during Cook’s third voyage briefly described what he saw from a vantage point of “eight or ten leagues” (approximately 24 miles) out to sea as his ship departed the islands in 1779 (Beaglehole 1967). He mentions Pu`u Ōla`i, south of Kīhei, and enumerates the observed animals, thriving groves of breadfruit, the excellence of the *taro*, and describes the sugarcane as being of an unusual height. Seen from this distance and the mention of breadfruit suggest the uplands of Kīpahulu-Kaupo and `Ulupalakua were his focus.

In the ensuing years, LaPérouse (1786), Nathaniel Portlock and George Dixon, (also in 1786), sailed along the western coast, but added little to our direct knowledge of Kīhei. During the second visit of Vancouver in 1793, his expedition becalmed in the Ma`alaea Bay close to the project area. (A marker commemorating this visit is located across from the Maui Lu Hotel). He reported:

The appearance of this side of Mowee was scarcely less forbidding than that of its southern parts, which we had passed the preceding day. The shores, however, were not so steep and rocky, and were mostly composed of a sandy beach; the land did not rise so very abruptly from the sea towards the mountains, nor was its surface so

much broken with hills and deep chasms; yet the soil had little appearance of fertility, and no cultivation was to be seen. A few habitations were promiscuously scattered near the waterside, and the inhabitants who came off to us, like those seen the day before, had little to dispose of. [Vancouver 1984:852]

Archibald Menzies, a naturalist accompanying Vancouver stated, "...we had some canoes off from the latter island [Maui], but they brought no refreshments. Indeed, this part of the island appeared to be very barren and thinly inhabited" (Menzies 1920:102). According to Kahekili, then chief of Maui, the extreme poverty in the area was the result of the continuous wars between Maui and Hawai'i Island causing the land to be neglected and human resources wasted (Vancouver 1984:856).

THE MĀHELE

In the 1840s a drastic change in traditional land tenure resulted in a division, or Māhele, of island lands. This system of private ownership was based on western law. While a complex issue, many scholars believe that in order to protect Hawaiian sovereignty from foreign powers, Kamehameha III was forced to establish laws changing the traditional Hawaiian economy to that of a market economy (Kuykendall Vol. I, 1938:145 footnote 47, 152, 165–6, 170; Daws 1968:111; Kelly 1983:45; Kame`eleihiwa 1992:169–70, 176).

Among other thing, foreigners demanded private ownership of land to insure their investments (Kuykendall Vol. I, 1938:138, 145, 178, 184, 202, 206, 271; Kame`eleihiwa 1992:178; Kelly 1998:4). Once lands were made available and private ownership was instituted the *maka`āinana* (commoners) were able to claim the plots on which they had been cultivating and living, if they had been made aware of the foreign procedures (*kuleana* lands, Land Commission Awards, LCA). These claims could not include any previously cultivated or presently fallow land, *`ōkipū* (on O`ahu), stream fisheries or many other resources necessary for traditional survival (Kelly 1983; Kame`eleihiwa 1992:295; Kirch and Sahlins 1992). The awarded parcels were called Land Commission Awards. If occupation could be established through the testimony of two witnesses, the petitioners were awarded the claimed LCA, issued a Royal Patent number, and could then take possession of the property (Chinen 1961: 16). Fifty-five LCA claims were made for land in Ka`ono`ulu.

As western influence grew, Kalepolepo, west of the project area became the important provisioning area. Europeans were now living or frequently visiting the coast and several churches and missionary stations were established. A Mr. Halstead left medical school on the East coast of the continent to become a whaler and after marrying the granddaughter of Issac

Davis, settled in Kalepolepo on land given him by Kamehameha III (Kolb *et al.* 1997). His residence and store situated at Kalepolepo landing was known as the Koa House having been constructed of *koa* logs brought from the uplands of Kula. The store flourished due to the whaling and potato industry and provided an accessible port for exported produce. Several of Hawai'i's ruling monarchs stayed at the Koa House, including Kauikeaouli (Kamehameha III), Kamehameha the IV, Lot Kamehameha (V), and Lunalilo. After viewing the surroundings, Wilcox stated, "...Kalepolepo was not so barren looking a place. Coconut trees grew beside pools of clear warm water along the banks of which grew taro and ape..." (1921:67). However, by 1887 this had changed. Wilcox continues:

...the Kula mountains had become denuded of their forests, torrential winter rains were washing down earth from the uplands, filling with silt the ponds at Kalepolepo...ruins of grass huts [were] partly covered by drifting sand, and a few weather-beaten houses perched on the broad top of the old fish pond wall at the edge of the sea, with the Halstead house looming over them dim and shadowy in the daily swirl of dust and flying sand..." [*ibid*]

As early as 1828, sugar cane was being grown commercially on Maui (Speakman 1981:114). Sugar was established in the Makawao area in the late 1800s and by 1899, the Kihei Plantation Company (KPC) was growing cane in the plains above Kīhei. In 1908, the Kihei Plantation was absorbed by the Hawaiian Commercial and Sugar Company (HC&SC); the new-formed company continued cultivating what had been the KPC fields into the 1960s. A 200-foot-long wharf was constructed in Kīhei at the request of Maui plantation owners and farmers and served inter-island boats for landing freight and shipping produce to Honolulu (Clark 1980). In 1927, Alexander and Baldwin became the agents for the plantation (Condé and Best 1973). A landing was built at Kīhei around 1890.

Kaonoulu Ranch lands have been in the Rice family since 1916. Previously, both the Haleakalā and Kaonoulu Ranches leased the then Crown lands for pasture and other ranching activities. The introduction of a dependable water supply in 1952 set a foundation for overseas investment and development, which has thrived along the coastal region of Kīhei.

PREVIOUS ARCHAEOLOGY

Archaeological studies in the greater Kīhei area began in the early twentieth century with T. Thrum (1909), J. Stokes (1909–1916), and W. M. Walker (1931). These surveys included areas of leeward Maui and inventoried both upland of the Kula District and coastal sites (Figure 5).

The barren zone areas of this study have recently been subject to a proliferation of archaeological studies as residential and business endeavors expand from the coastline into other reaches of the Kīhei area. Concomitant with modern expansion involves necessary historic preservation work. The following section provides a general overview of archaeological studies in the general Kīhei area, focused on the barren zone.

As noted by Hammatt and Shideler (1992:10), “what is particularly striking in the many archaeological reports on Kīhei is the general paucity of sites within the transitional or barren zone.” Cordy (1977) and Cox (1976) all conducted large-scale survey in this zone that led to the recordation of only small, temporary habitation or temporary use sites. Several other studies in this zone of Kama`ole Ahupua`a, including those conducted by Mayberry and Haun (1988) and Hammatt and Shideler (1990), also only revealed the presence of temporary habitation and temporary use loci.

McDermott (2001:100) states that site densities are typically quite low within the “barren zone” with multiple studies having been conducted on large parcels (Kennedy 1986, Watanabe 1987, Hammatt and Shideler 2000, Kikiloi *et al.* 2000) that did not lead to the identification any pre-Contact sites. However, military sites related to World War II (WWII) training exercises have been previously documented in the area (McGerty *et al.* 2000), these sites often consisting of low, short alignments or walls. The few radiocarbon dates acquired from the area indicate definitive use of the landscape in later prehistory c. A.D. 1500 to 1600+.

SCS, and others, have more recently conducted numerous projects in the vicinity of the present project area. Several studies have been conducted in association with development of the Maui Research and Technology Park and the Elleair Maui Golf Club (Kennedy 1986; Hibbard 1994; Chaffee *et al.* 1997; McGerty *et al.* 2000; Sinoto *et al.* 2001; Tome and Dega 2002; Monahan 2003).

Kennedy (1986) conducted an archaeological reconnaissance of the entire 150.032 acres of the then-proposed Maui Research and Technology Park (TMK:2-2-02, since changed to 2-2-24). Kennedy’s study, which did not include subsurface testing (excavation), concluded that no archaeological sites or features were located within the project area.

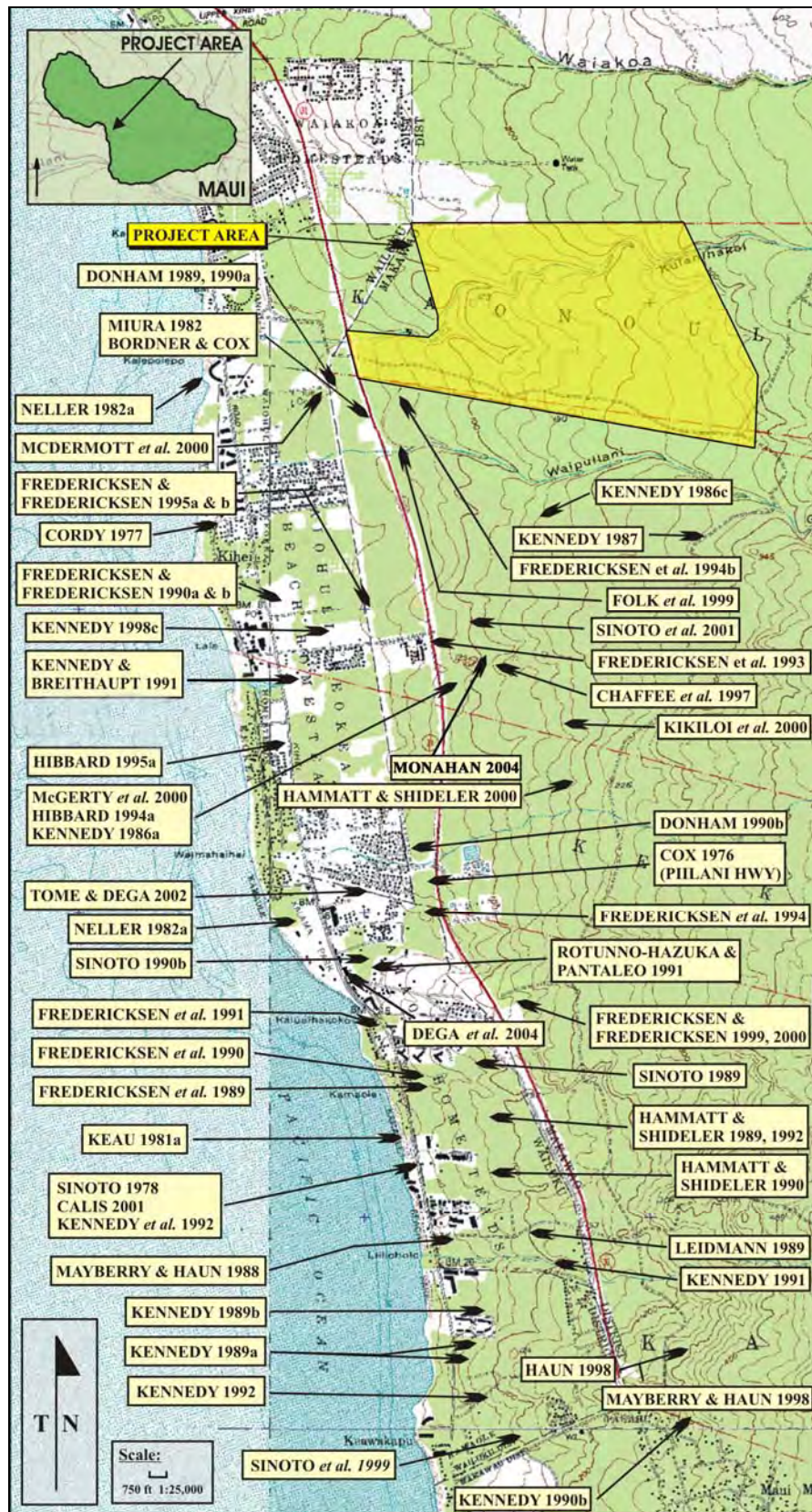


Figure 5: USGS Map Showing Locations of Previous Archaeological Investigations.

Chaffee *et al.* (1997) conducted an Archaeological Inventory Survey, including subsurface testing, of a portion of the Maui Research and Technology Park, within the area investigated by Kennedy (1986). Three sites consisting of ten archaeological features were identified. The features included remnant terraces, stone alignments, a mound, and a modified outcrop. All of the sites were interpreted as agricultural in function with the exception of a rock mound that may have functioned as a religious feature.

Monahan (2003) conducted an Archaeological Inventory Survey, including subsurface testing, of a 28.737-acre portion of the Maui Research and Technology Park, within the area investigated by Kennedy (1986). Other than one surface feature, a small arrangement of stacked boulders interpreted as a 'push pile,' this survey yielded no evidence of historic or prehistoric significance.

Theresa Donham conducted an Archaeological Reconnaissance Survey of the Haleakalā Greens Subdivision area (Hibbard 1994). She identified a low, circular rock mound, a historical site with multiple features on the crest of a prominent ridge, a linear rock mound or wall remnant, a rock-filled terrace outlined with a low, rock wall, and other modifications along a rock outcrop. Shell midden was observed on the surface inside an enclosure.

McGerty *et al.* (2000) surveyed 15 selected areas within the Elleair Maui Golf Club, and identified five archaeological sites (State Site Nos. 50-50-10-5043, -5044, -5045, -5046, and -5047) containing a total of seven surface features. The surface features were interpreted as agricultural terraces, perhaps dating from the pre-Contact period, and C-shaped rock formations (fighting positions) built during World War II training. Ten excavation units placed within these features yielded no cultural material.

Sinoto *et al.* (2001) conducted an Archaeological Inventory Survey of a parcel adjacent to the subject property. No archaeological or historical sites or features were identified.

Tome and Dega (2002) conducted an Archaeological Inventory Survey along the northeastern flank of the Elleair Maui Golf Club property. They identified a historical ranching corral and a short agricultural wall, collectively designated State Site No. 50-50-10-5233. No other structures or subsurface deposits were identified. No traditional Native Hawaiian sites or features were identified. Another Inventory Survey along the southern flank of the Elleair Maui Golf Course (Dega 2003) failed to yield any archaeological or historical features.

Scientific Consultant Services (SCS), Inc. conducted Archaeological Inventory Survey (Monahan 2004) on two undeveloped lots totaling approximately 56.647 acres near the Elleair Golf Course in Kīhei, Waiohuli and Kaʻonoʻulu Ahupuaʻa, Wailuku (Kula) District, Kīhei, Maui Island, Hawaiʻi [TMK: 2-2-24: Portion 12 and 13]. A pedestrian survey and subsurface testing was performed in advance of a proposed residential project near the Elleair Golf Course. Four surface features consisting of stacked basalt stones were located within the project area; each was assigned a separate state site number. Test excavations yielded buried cultural material consistent with traditional Native Hawaiian activities at three of the four sites (Sites 50-50-10-5506, -5507, and -5509). Excavation at the fourth site (-5508)—a C-shaped rock pile consistent with a World War II military training feature—did not yield any subsurface evidence. The discovery of three traditional Native Hawaiian sites in this area is significant, as previous studies have generally failed to document any such activity. One of these sites (-5509) yielded a modern radiocarbon date (0 ± 50 BP), but its context is questionable and it may not be associated with the buried artifacts. Two other sites (-5506 and -5507) did not yield charcoal, although both contained buried traditional artifacts and midden. No additional archaeological work was recommended in the project area (Monahan 2004).

As may be gleaned from this praxis of archaeological studies for the barren zone, site expectation and site density is low for the area. Even large-scale surveys at times have failed to document sites of any time period in this dry area. A majority of the pre-Contact population of Kīhei was settled along the coastline, nearer resources, while lands above 2,000 ft. amsl. were also heavily occupied from the c. A.D. 1400s. Thus, the ‘barren zone’ became a medial zone between a coastal and inland population. Coupling the lack of major water resources and the shallow depths of the soils, the barren zone became an infrequent occupation area. Given the paucity of significant sites in the barren zone, however, the sites that are identified in this zone become much more significant.

PROJECT AREA EXPECTATIONS

The current project area falls into the barren zone. Archaeological reconnaissance and inventory survey work in the barren zone have yielded only a modest amount of evidence for traditional and historic-period activity. Documented sites in the general area primarily include agricultural terraces and short walls, C-shaped structures (military period), and historic ranching features (walls, corrals).

As this project area is located within the barren zone, it was not expected to yield many, if any, traditional-type sites. Previous archaeology in the area (McGerty *et al.* 2000) attests to the likelihood for encountering numerous sites relating to military activity on the parcel. Historic agricultural sites, such as rock mounds, roads, and berms were also anticipated for this site, as it has long been a working ranch.

METHODOLOGY

This Inventory Survey consisted of full systematic pedestrian survey of the project area, thorough recordation of all sites and component features and limited test excavations. Survey was conducted in 10 to 15 meter transects throughout the project area. Site recordation consisted of thorough site description and assessment, GPS location and plan view mapping of most sites (see Results for exceptions), and site photography. Excavations were conducted in five sites. These excavations consisted of 0.5 by 0.5 m test units. These excavations were plotted on the plan view map for each corresponding site, and recorded in level-by-level subsurface documentation. Any recovered artifacts selected from this site were sent to the SCS Laboratory in Honolulu for analysis and curation. A single radiocarbon sample was collected and analyzed by Beta Analytic, Inc (Appendix A). The results of this work are described below.

RESULTS

A full, systematic pedestrian survey was conducted from January 24th to April 6th, 2007. This phase of the Inventory Survey yielded 40 previously undocumented archaeological sites pertaining to all phases of occupation of the subject parcel: pre-Contact, Historic, Military and Modern. These sites were thoroughly documented as they were discovered.

The following site descriptions are presented in numeric order and include site significance assessments according to the criteria established for the State Register of Historic Places, and details of corresponding excavations within each site section (details regarding the criteria established for SHIP follows in the DISCUSSION AND RECOMMENDATIONS section below).

50-50-10-6386

Site 6386 is a circular rock mound measuring approximately 1.6 m in diameter (Figure 6). Located in the western end of the project area, this single-feature site was a military structure. Unlike agricultural mounds, which are typically very close together and loosely stacked and piled, this feature displays orderly construction in which the boulders, though

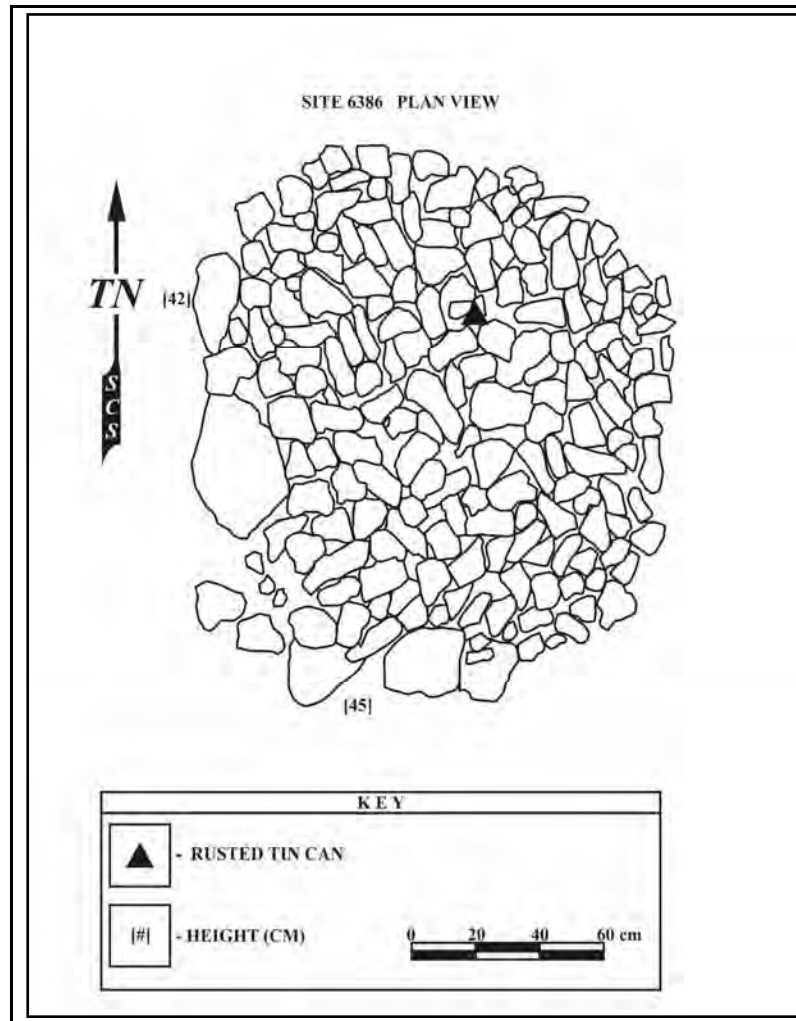


Figure 6: Plan View of Site 6386.

roughly broken and angular, are neatly stacked and faced up to two courses high (approximately 45 cm). Many single-feature sites similar to this one have been documented in this project area, though they are diffuse and distributed widely throughout the lot. Site 6386 is typical of the many other rock mounds found in the project area. Some boulders have bulldozer scars and the area around the site displays exposed bedrock, indicating that this feature was built with a machine. This site, as a possible World War II military training feature, is considered significant under Criterion D, which highlights its potential to yield information pertaining to the history and prehistory of the island of Maui, as well as the state of Hawai`i as a whole.

50-50-10-6387

Site 6387 is a dirt road following the southern edge of Kulanihakoi Gulch (Figure 7). The road, over 130.0 m long bears northwest-southeast with a neatly stacked retention terrace

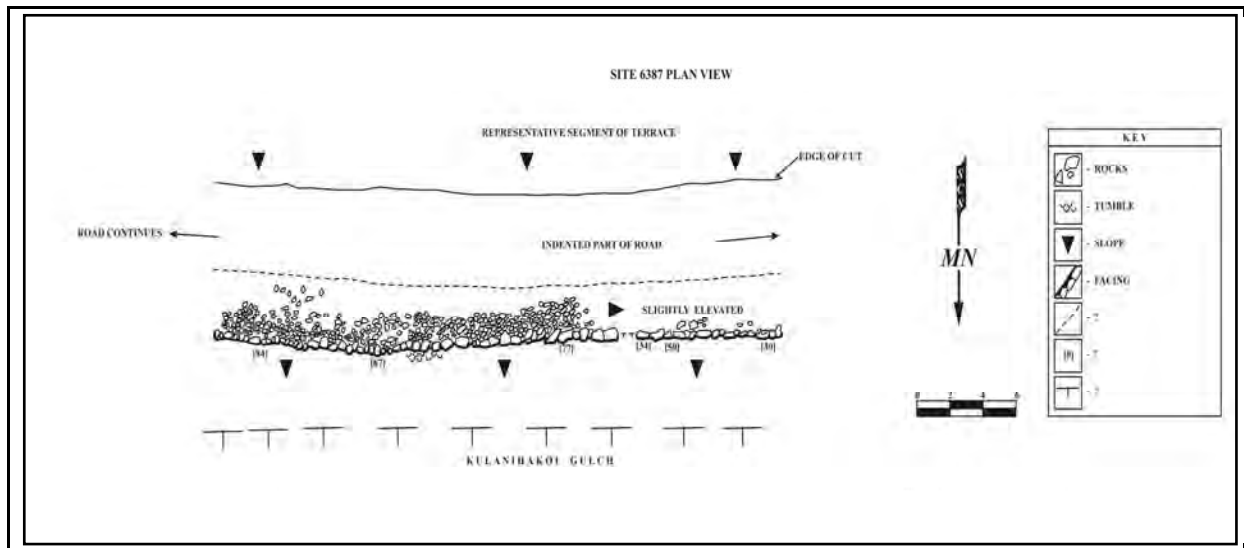


Figure 7: Plan View of Site 6387.

along its north side, facing the gulch. The terrace lines the gulch and is constructed of small- to medium-sized basalt boulders neatly stacked in three to eight courses. Intermittent, naturally occurring boulders are integrated into the construction as well. The road is Historic, though there is no evidence that further associates it with military or ranching activities this site has been evaluated as significant under criterion D for its potential to yield information pertaining to the history of Maui and the State of Hawai`i.

50-50-10-6388

Site 6388 is a single rock mound located in the southwest corner of the project area (Figure 8). Site 6388 is likely a remnant of the extensive bulldozing activities that once occurred in this part of the project area. The mound is oval-shaped, measuring 1.5 by 1.1 m, and consists of loosely piled stones of varying sizes. The cortex on the surface of these stones is discolored, indicating that they were once buried, giving evidence to the conclusion that the mound is related to bulldozing activities that once occurred extensively in this project area. There is also a notable portion of modern debris, especially plastic bags, intermingled in the stones that make up this feature. This site is considered significant under criterion D for its potential to yield information pertaining to the history of Maui and the state of Hawai`i.

50-50-10-6389

Site 6389 consists of four Historic features, all rock mounds, located on the south side of Kulanihakoi Gulch, in the center of the project area (Figure 9). These features are each

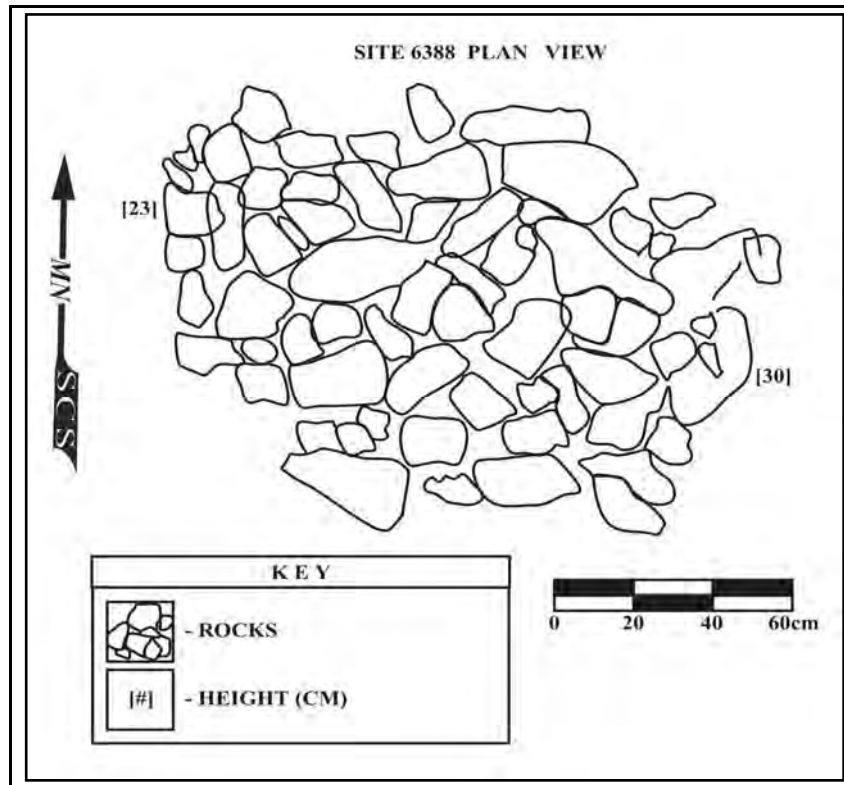


Figure 8: Plan View of Site 6388.



Figure 9: Photographic Overview of Site 6389.

constructed of angular, broken up basalt cobbles and boulders, indicating that these features were built using heavy equipment. Features 1 through 3 are clearing mounds, while Feature 4 is associated with road retention. Features 1 through 3 vary in size from 3.0 by 2.0 m to 5.0 by 1.6 m in diameter and up to 0.9 m high. Feature 4, which lies approximately 10.0 m to the northwest, measures 6.9 by 1.3 m and up to 0.8 m high. This feature is on a moderate slope and was likely constructed for erosion control. This Site is significant under criterion D due to its potential to yield information pertaining to the history and/or pre-history of the island of Maui and the state of Hawai'i.

50-50-10-6390

Site 6390 is a rock mound that differs from those previously discussed in morphology and construction material (Figure 10). This single-feature site, located approximately 150.0 m west of 6389, has been neatly stacked atop bedrock and measures 2.0 by 1.5 m. Unlike the mounds previously discussed, the basalt boulders and cobbles are unaltered, with sedimentary deposits visible in between the stones within the feature. This deposit indicates the feature's antiquity, as erosive processes have filled in the open-spaces in this feature, as opposed to others discussed herein. While there is no artifactual evidence to indicate the feature's function, it is safe to say that it predates the mechanically constructed sites, such as 6386, 6388, and 6389. It is associated with the pre-Contact period. As such, this site has potential to yield information pertaining to the pre-history of Maui and the state of Hawai'i and is therefore significant under criterion D.

50-50-10-6391

Site 6391 is a C-shaped structure that is located approximately 11.0 m from the north boundary of the project area along a segment of dirt road that is "curbed" on both sides by linear boulder piles (this road is described in 6401). The C-shape is constructed of small- to medium-sized subangular and subrounded boulders which measured 5.0 by 4.1 m, and also integrates naturally deposited rock (Figure 11). No facing is present, though the materials are neatly piled to form the architecture of the feature. The C-shape opens to the southwest, delineated by a semi-circular natural rock outcropping. The morphology of this site, particularly the lack of stacking and facing, implies that it was not for Traditional cultural use, but may have been constructed as part of a military training exercise. It's proximity to the uniquely "curbed" road (6401) further supports this conclusion. This site is as a possible military training structure and use as temporary habitation is considered significant under criterion D for its potential to yield information pertaining to the history and/or pre-history of Maui and the state of Hawai'i.

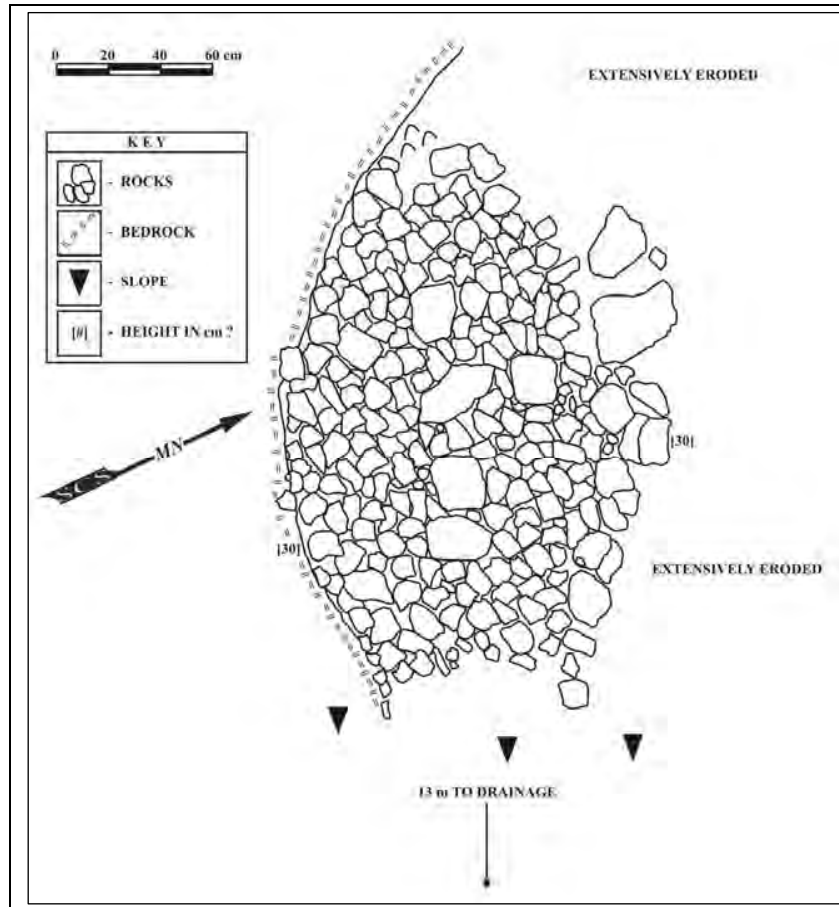


Figure 10: Plan View of Site 6390.

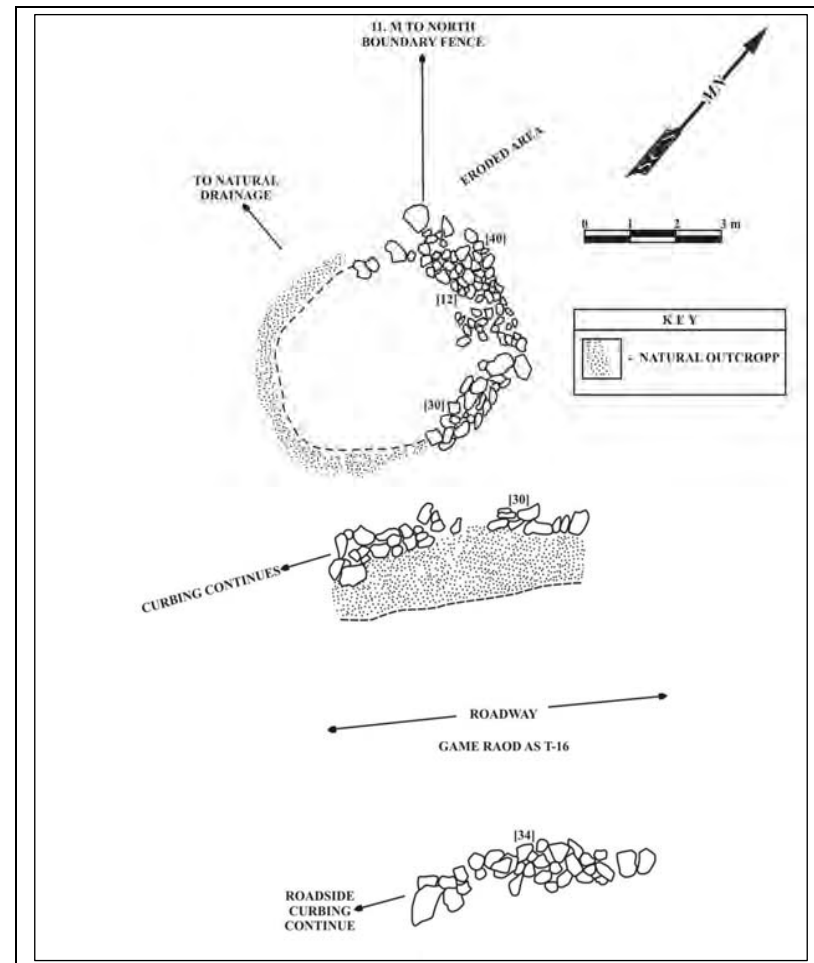


Figure 11: Plan View of Site 6391.

50-50-10-6392

Located approximately 50.0 m southeast of 6386, Site 6392 is a neatly stacked, oval-shaped rock mound that was likely built during the Historic Period using heavy equipment (Figure 12). Similar to 6386, the area around Site 6392 has been grubbed and bedrock is exposed in numerous places around the site. The site is constructed with angular, broken up cobbles and small boulders, though these are neatly stacked so that the top of the feature is relatively flat. The mound measures 1.7 by 1.3 m. Site 6392 is significant under criterion D for its potential to yield information pertinent to the history of Maui and the state of Hawai'i.



Figure 12: Photographic Overview of Site 6392.

50-50-10-6393

Site 6393 consists of three features, all of which are rock mounds that were likely constructed during bulldozer activities on the lot, due to the angular, broken up condition of stones in the features and the presence of a bulldozed area (possibly an old road) just north of Feature 3 (Figure 13). The site is situated along the southern border of the project area, approximately 250.0 m east of 6392. There is a linear area of exposed bedrock just north of Feature 1. The feature dimensions are as follows: Feature 1 measures 2.6 by 1.6 m and 0.55 m



Figure 13: Photographic Overview of Site 6393.

high; Feature 2 measures 3.5 by 2.0 m and up to 0.8 m high; and Feature 3 measures 2.3 by 2.0 m and 0.46 high. These features are similar in construction style. Each is built with similarly angular and broken up basalt boulders and cobbles piled haphazardly onto the mounds. The exception is some evidence of facing on the southwest side of Feature 2, where coursing appears to be up to four levels high. This is significant under criterion D for its potential to yield information important to the history of Maui and the state of Hawai`i.

50-50-10-6394

Site 6394 is a single-feature site, located approximately 100.0 m northeast of 6393, consisting of a somewhat scattered boulder terrace or C-shaped structure (Figure 14). This feature has been heavily disturbed by grubbing activities to its north, south, east and west, with exposed bedrock immediately to the south and west sides of the feature. This site is constructed of small- to large-sized basalt boulders piled in a semi-circle or half-moon shape, measuring approximately four meters long on its long axis (northwest-southeast). Although this feature is heavily disturbed, its morphology relates it to military C-shapes on the project area. This site is

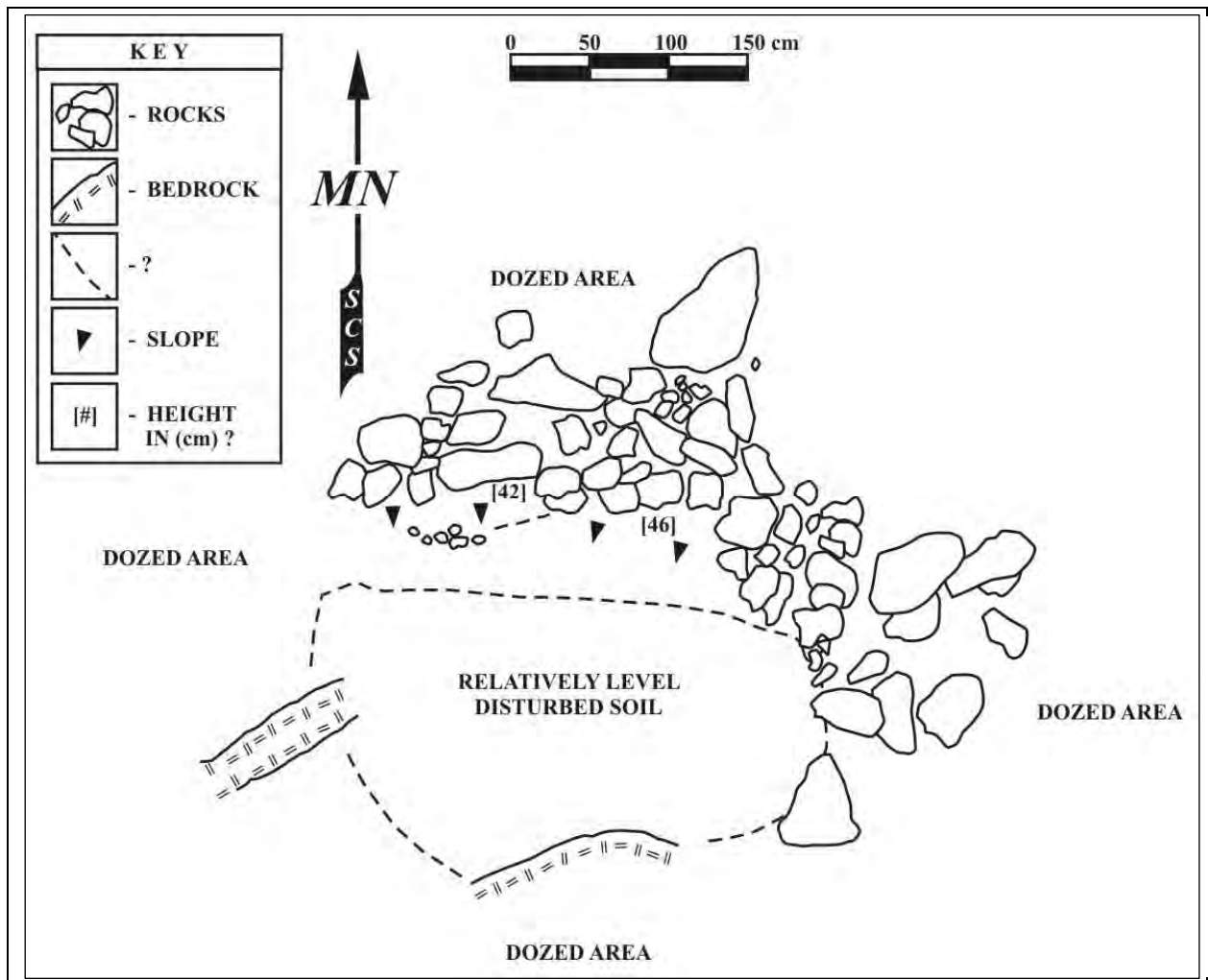


Figure 14: Plan View of Site 6394.

significant under criterion D for its potential to yield information important to the history of Maui and the state of Hawai'i.

50-50-10-6395

Site 6395 is a unique, single-feature site that lies on a steep escarpment along the south edge of an existing road in the south-central portion of the project area). This feature is a Historic terrace that measured 11.0 by 1.4 m and stood 0.67 to 1.47 m in height, but it comprises several components, including a stacked and faced basalt wall of three to four courses, a segment of soil and gravel fill, and a segment of cement fill (Figure 15, Figure 16). The stacked wall stands approximately 1.5 m tall, incorporating small basalt boulders in the exterior facing with cement mortar, and crushed (quarried) basalt cobble and soil fill on the western half of the terrace fill. The eastern half, conversely, is a cement paddock that is level with the top of the.

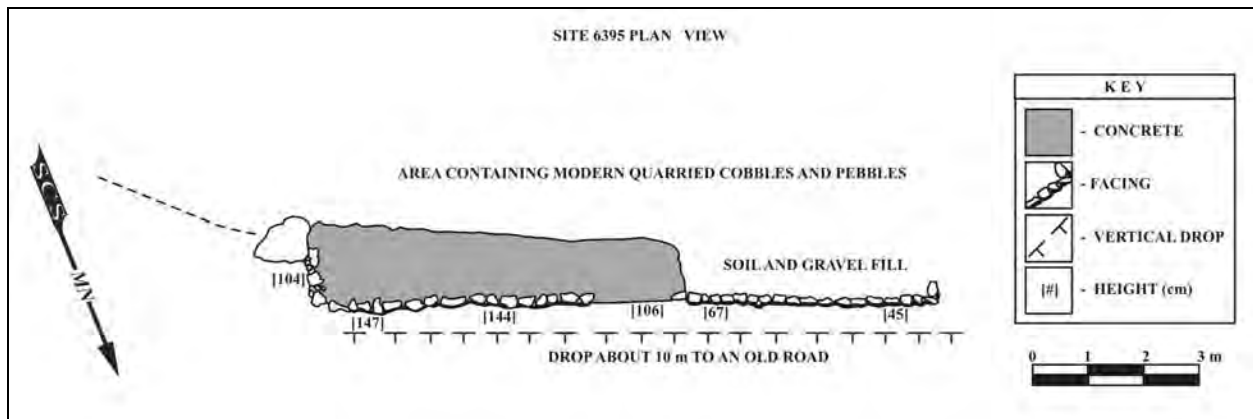


Figure 15: Plan View of Site 6395.



Figure 16: Photographic Overview of Site 6395.

terrace wall. This structure may have been the platform for a tank or a staging/storage area during the ranching or military periods of occupation. The site is significant under criterion D due to its potential to yield information pertinent to the history of Maui and the state of Hawaii.

50-50-10-6396

Located near the center of the subject parcel, Site 6396 is a U-shaped terrace constructed of large, angular basalt boulders and cobbles, and measured 1.69 by 1.54 m (Figure 17). The site consists of a single course of stones that are loosely aligned (some stacking in the south corner) in a rectangular shape with a level soil area in the center. The morphology of this single-feature site suggests military use, rather than Traditional. The site is significant under criterion D due to its potential to yield information pertinent to the history of Maui and the state of Hawaii.

50-50-10-6397

Site 6397, a low rock terrace, lies approximately 200.0 m north of Site 6396 (Figure 18). This single-feature site consists of a loosely stacked, angular basalt boulders and cobbles. The feature is semi-circular in shape, measuring approximately 2.2 m along its long axis (northeast-southwest) with walls ranging in thickness from 0.4 to 0.6 m and in height from 0.16 to 0.3 m. The interior of the feature is slightly depressed, with a lot of loose stones on the surface. This terrace is associated with military training activities and thus considered significant under criterion D due to its potential to yield information pertinent to the history of Maui and the state of Hawaii.

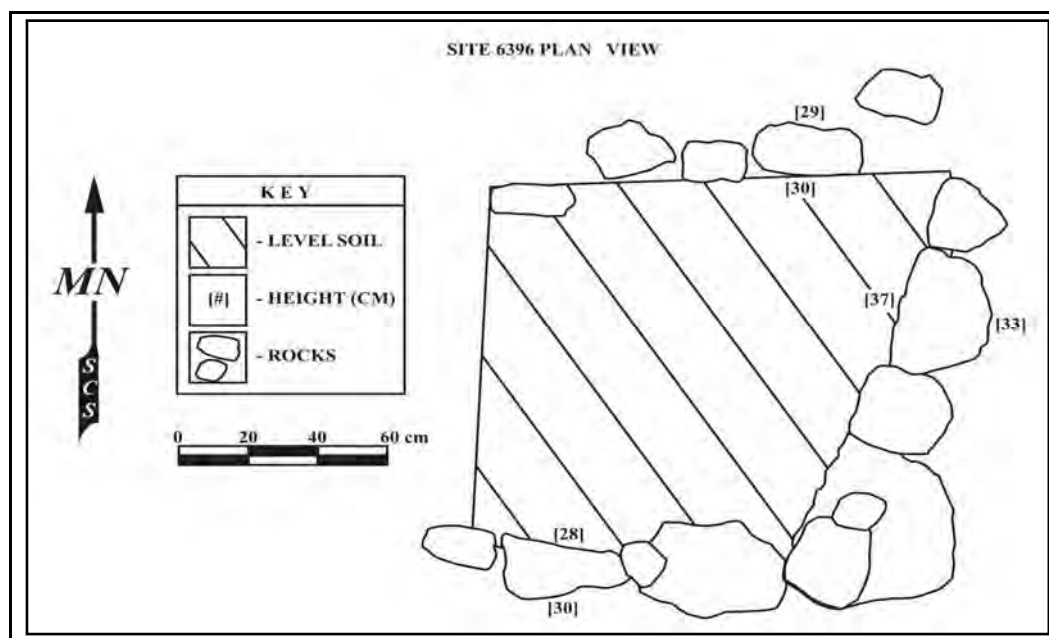


Figure 17: Plan View of Site 6396.

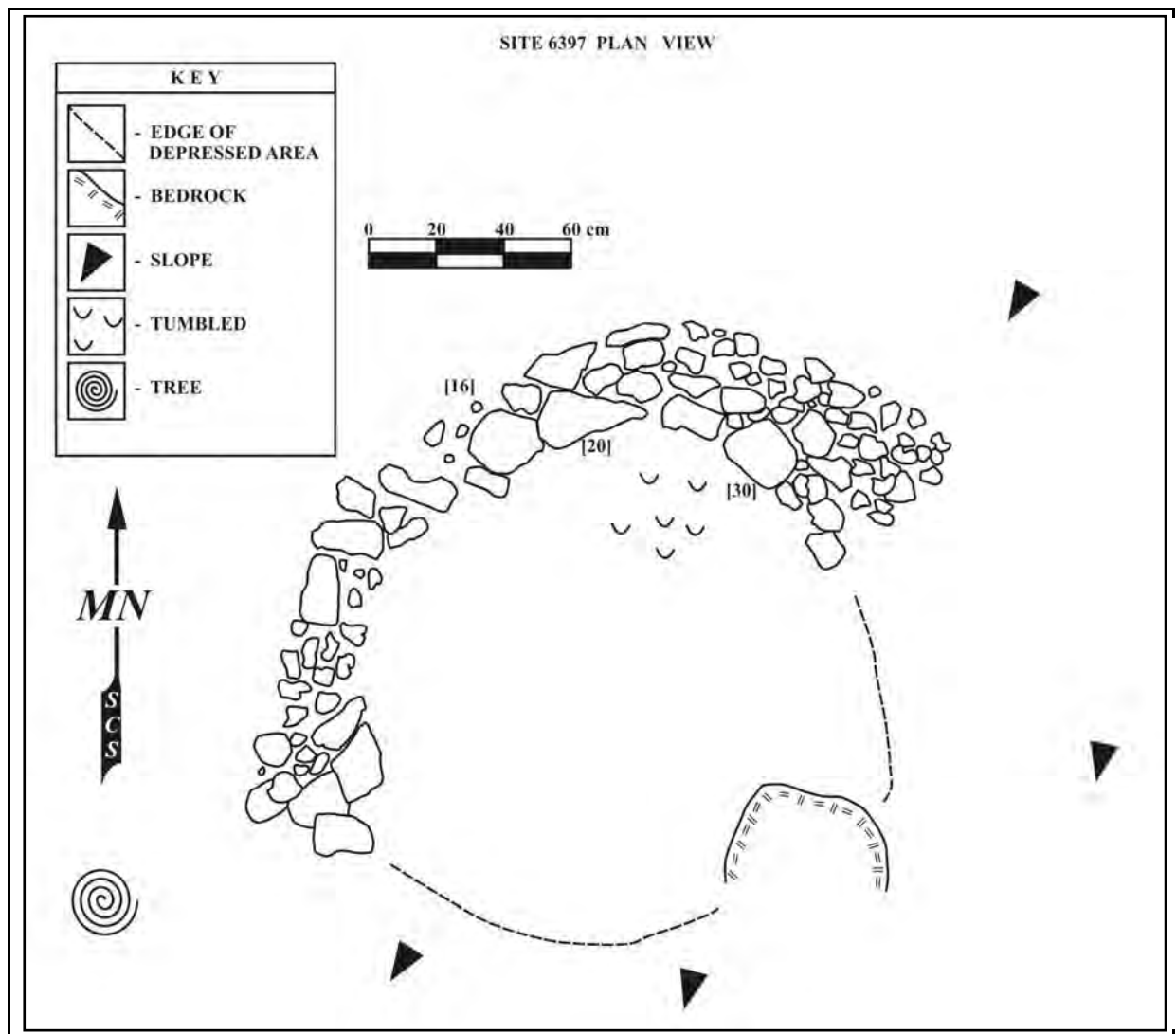


Figure 18: Plan View of Site 6397.

50-50-10-6398

Uniquely, site 6398 appears to be a modern pet burial. The single-feature site, a rectangular rock mound measuring 2.0 by 1.6m, is located in the center of the project area, approximately 300 m west of Site 6397. There is a small depression in the center of the feature, indicating a pit that has recently sunken in (as would be expected when a corpse collapses from decay) and an engraved marker made of treated wood at the southeast end of the feature. The word engraved on this marker is indiscernible. Due to the size and shape of the feature, the size of the depression and the modern grave marker, the site is most likely a modern pet burial. The site is considered significant under criterion D due to its potential to yield information pertinent to the history of Maui and the state of Hawaii.

50-50-10-6399

Site 6399, a single-feature site located approximately 150.0 m northeast of Site 6394, is a linear mound consisting of angular, broken up basalt boulders and cobbles piled indiscriminately in a rectangular shape measuring 2.9 by 0.56 m and up to 0.32 m high (Figure 19). Angular broken rocks are included in the construction of this site, indicating that this mound is Historic in age, though its specific function is indeterminate. This site is significant under criterion D due to its potential to yield information pertinent to the history of Maui and the state of Hawaii.



Figure 19: Photographic Overview of Site 6399.

50-50-10-6400

Site 6400 is a single-feature site consisting of a U-shaped alignment, similar in construction style to 6396; site dimensions measured 2.3 by 2.1 m (see Figure 17). The site is located just northeast of Site 6389 on the northern edge of Kulanihakoi Gulch. The feature is constructed with small- and medium-sized subrounded, basalt boulders stacked up to three courses high, with a deep excavated depression in the center of the feature, reaching 0.3 m below the base of the architecture. The feature, morphologically similar to 6396, is associated with military activities on the parcel. The site is significant under criterion D due to its potential to yield information pertinent to the history of Maui and the state of Hawaii.

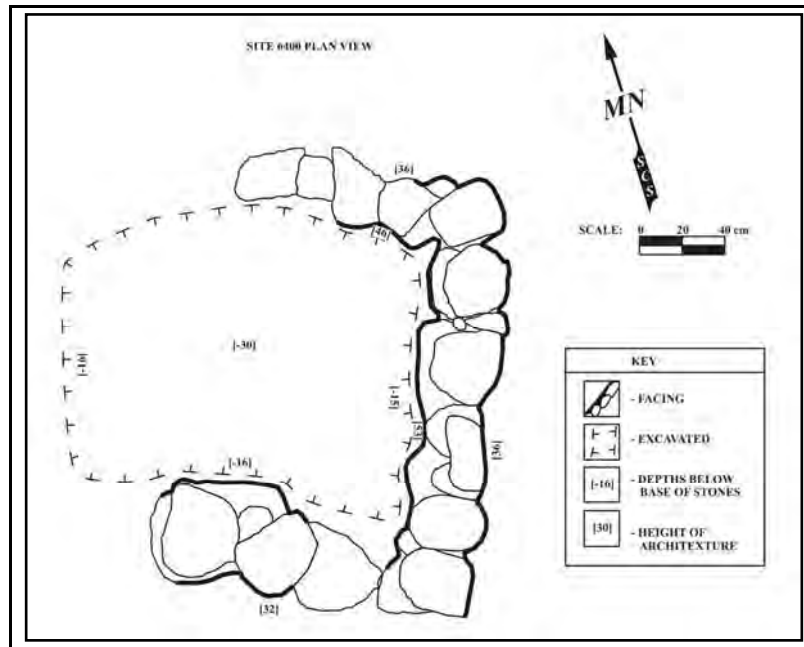


Figure 20: Plan View of Site 6400.

50-50-10-6401

Site 6401 is a road flanked on both sides by basalt boulder and cobble alignments and piles (Figure 21). These basalt rock “curbs” extend continuously along the road on both sides for its entire length as it bears northeast-southwest through the project area. Figure 4 shows the location of the GPS point for this road. The age and function of this site are undetermined. The length of the road is undetermined, though this it does extend at least as far as Site 6391, some 600.0 m northeast of the GPS location for this site. Erosion has heavily impacted this site; thus boundaries and exact dimensions were indiscernible in some areas. The mapped portion of 6401 shows a deposit of gravel and small cobbles that may represent the original road surface. The site is significant under criterion D.

50-50-10-6402

Site 6402 consists of a single, low, crude wall that extends along the northern rim of Kulanihakoi Gulch for approximately 20.0 m; site dimensions were measured at 20.2 by 0.2 by 0.8 m (Figure 22). The wall is constructed of subangular and subrounded cobbles and boulders. The feature is in poor condition, with entire sections of the wall missing, likely due to erosion. The construction of this wall is very rough and is likely related to military training activities. Unlike ranch walls, which are thick and sturdily constructed, this wall is primarily piled and stacked, with some portions being merely boulder alignments. This site is significant under

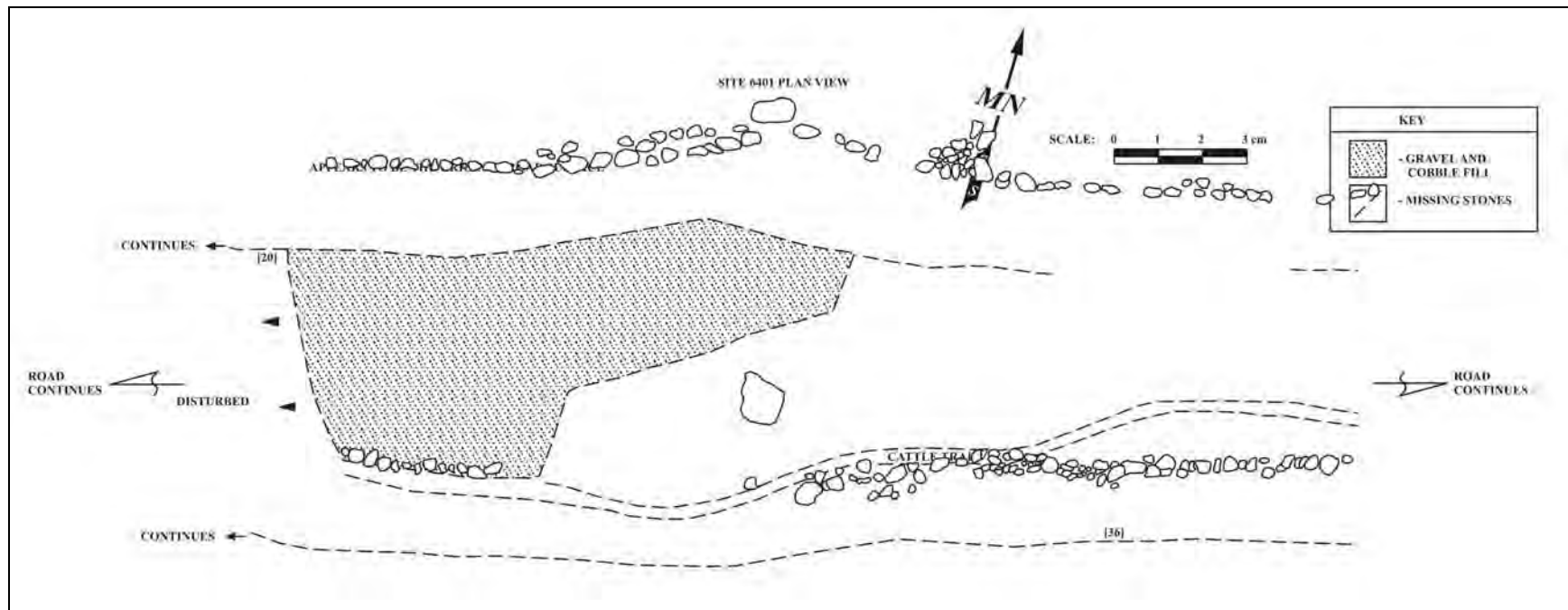


Figure 21: Plan View of Site 6401.

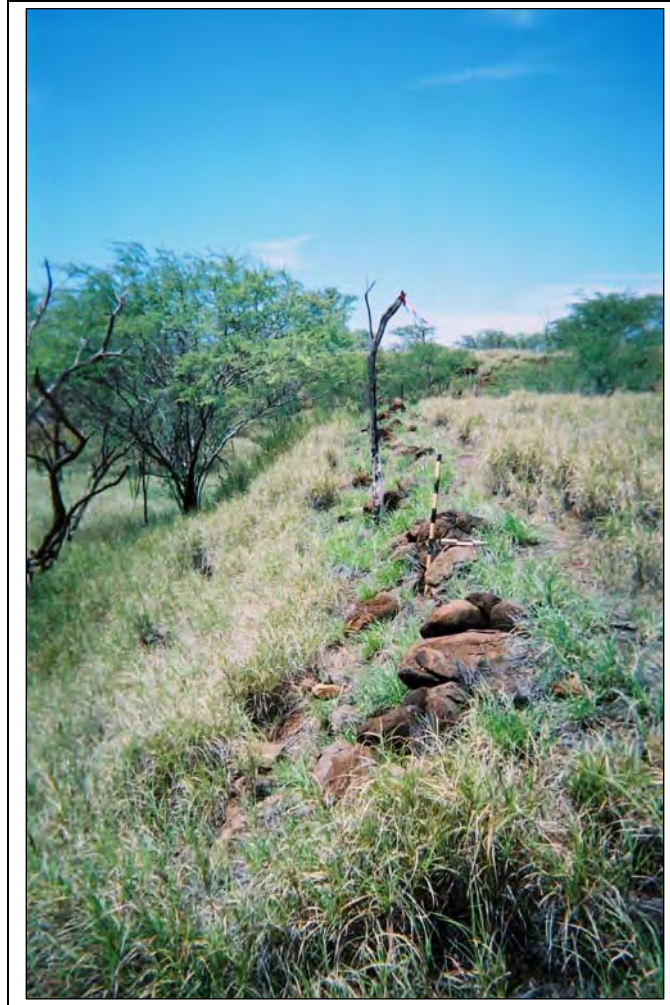


Figure 22: Photographic Overview of Site 6402.

criterion D due to its potential to yield information pertinent to the history of Maui and the state of Hawaii.

50-50-10-6403

Site 6403 consists of four features: three C-shapes and a linear mound (Figure 23). These features are interpreted as being related to military activities in the area, as evidenced by the informal architectural construction. Each feature consists of piled basalt boulders and cobbles, though some areas show evidence of stacking. The terrain around these features exhibits extensive exposure of basalt bedrock, and each feature lies on a bedrock outcrop. Some scattered basalt flakes were observed on the ground surface between these features, implying that this site may predate military use, having been modified during the military period; the site is significant under criterion D due to its potential to yield information pertinent to the history of Maui and the state of Hawaii.

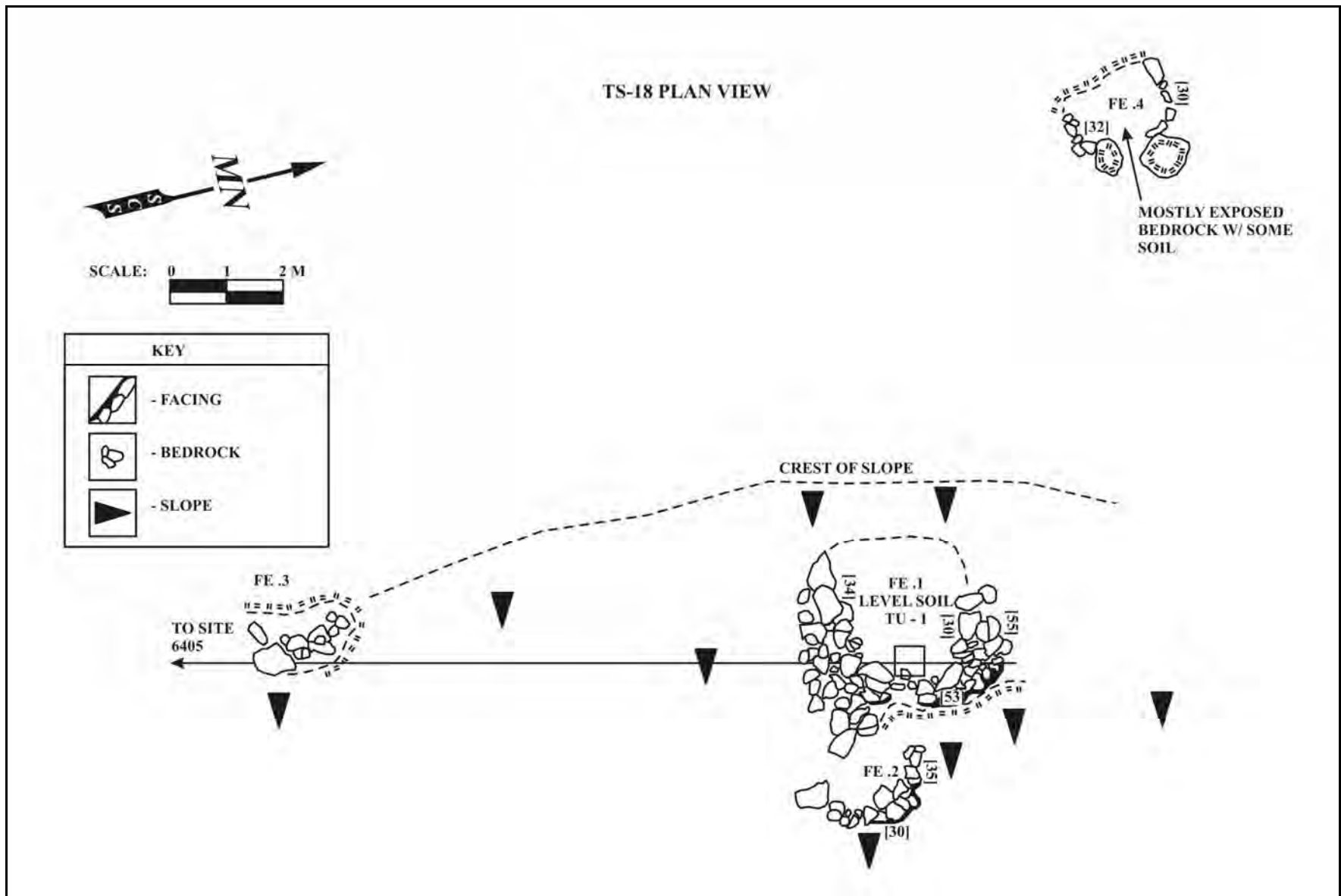


Figure 23: Plan View of Site 6403.

Feature 1, the largest of the three C-shapes, measures 3.8 by 3.2 m on the exterior, and 2.0 by 2.4 m on the interior; the wall stands up to 0.55 m high. This feature displays some stacking on its north (downslope) side, up to four courses high. This feature received the first excavation of the project

TU-1 was a 0.5 by 0.5 m unit excavated against the central interior architecture of Feature 1. The datum for this unit was set at 5 cm above ground level in the southeast corner of the unit. The unit yielded three stratigraphic layers (Figure 24). Layer I (5–19 cmbd) consisted of hard-packed, brown (10 YR 3/4 to 4/4) silt. Layer II (17–36 cmbd) was made up of loose, dark brown (10 YR 3/3 to 3/4) silt. Layer III (22–42 cmbd) consisted of grayish brown (10 YR 5/2) compacted silt. No cultural materials were observed in this unit.

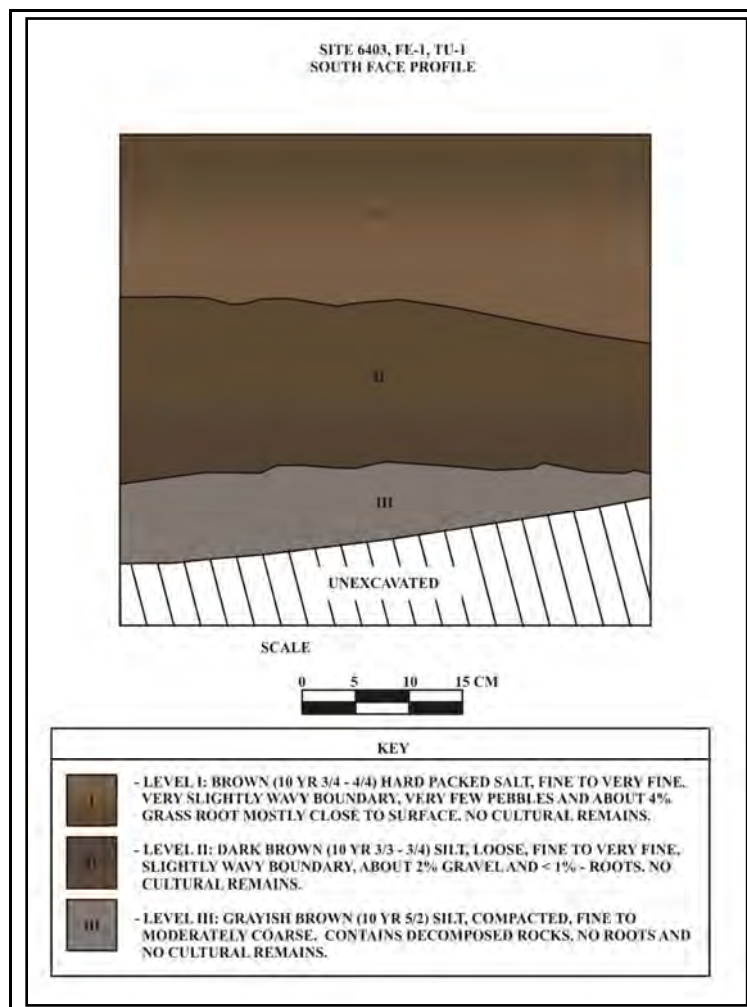


Figure 24: South Profile of Site 6403, TU-1.

Feature 2, lying immediately north of Feature 1, is a second, smaller C-shape, measuring 1.8 by 1.8 m on the exterior, 1.3 by 1.3 m on the interior, with the wall height measuring up to 0.35 m. The feature, though smaller, is constructed similarly to Feature 1.

Feature 3 is a linear mound measuring 1.6 by 0.8 m and up to 0.34 m high. This feature, resting atop a bedrock outcrop, lies approximately 16.0 m to the east of Feature 1.

Feature 4, located 12.0 m southwest of Feature 1, consists of several bedrock outcrops modified with basalt cobbles forming the third, and final C-shape of this site. The feature measures 2.0 by 1.4 m on the exterior, and 1.5 by 1.2 m on the interior, with a wall height of up to 0.3 m.

50-50-10-6405

Site 6405, which lies directly east of and adjacent to Site 6403 on the northern edge of the Kulanihakoi Gulch, displays characteristics of pre-Contact and military occupation. Features in this site may have been constructed during the pre-Contact Period and modified during military occupation in the Historic Period. The site consists of four features including a C-shape, two enclosures and a severely eroded wall (Figure 25). This site, with its temporal duality, is significant under criterion D due to its potential to yield information pertinent to the history and prehistory of Maui and the state of Hawaii. Excavation at this site consisted of two 0.5 by 0.5 m test units excavated within Features 2 and 3.

Feature 1 is a C-shaped structure located on the eastern extremity of the site. This feature is constructed of large, subangular and subrounded basalt boulders and cobbles crudely piled around a large boulder forming an informal curved wall. The feature measures 3.5 m long by 3.0 m wide and up to 0.25 m in height. This feature is interpreted as relating to military activities, due to its proximity to other Historic military features, and its similarity in construction to other, crudely constructed features. A large area to the northwest of the feature may have been modified in stone pavement. This modification, if cultural, was highly informal (unlike traditional Hawaiian pavements) and is likely related to military activities as well.

Feature 2 is a large boulder and cobble enclosure in the shape of an irregular rectangle. This enclosure, measuring 4.3 by 3.5 m with walls up to 0.3 m high, is located approximately 11.0 m west of Feature 1 along the northern edge of Kulanihakoi Gulch. While stacking is not evident in this feature, the alignment of boulders and cobbles, surrounded by displaced rocks of a

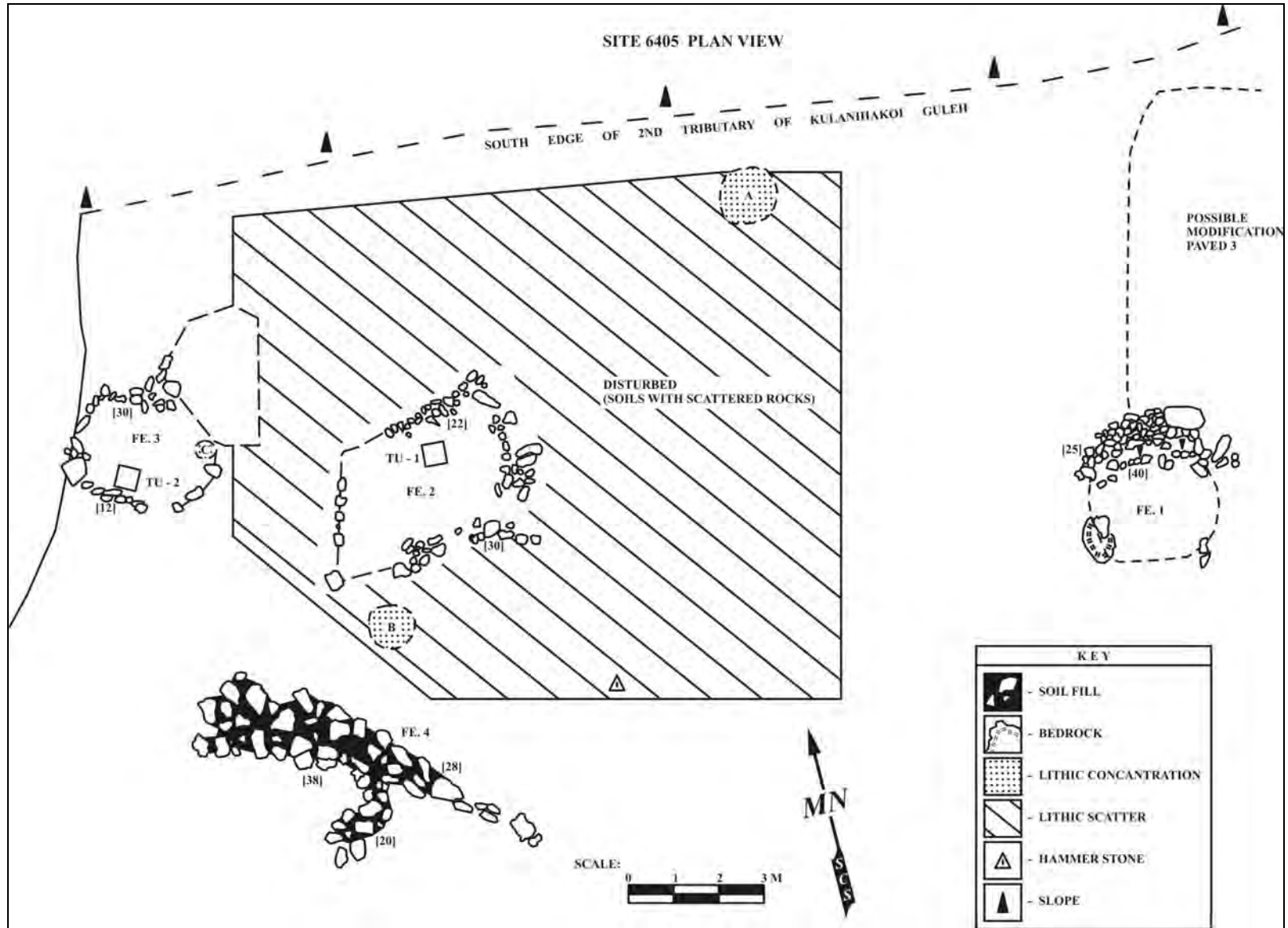


Figure 25: Plan View of Site 6405.

similar size and shape, suggest that this feature was once more heavily constructed, and that it has been severely impacted by time, erosion, animal and military activity. Artifactual evidence

TU-1, a single, 0.5 by 0.5 m test unit, was excavated within Feature 2 in order to determine whether the feature is associated functionally and chronologically with the lithic scatter in which it sits. The unit was placed on the northern central interior of Feature 2, adjacent to, but not abutting, the northern interior wall. The unit yielded two stratigraphic layers (Figure 26). Layer I (0–6 cmbs) consisted of dark brown (7.5 YR 3/4) silt. Some basalt debitage was observed in this layer. While it was evident that erosion has washed away much of the soil in the area, the presence of lithic materials in the subsurface matrix indicates that this feature is temporally and functionally associated with the lithic scatter in which it rests. Layer II (6–8 cmbs) consisted of brown (7.5 YR 4/4) silt loam. This layer contained no cultural material and terminated on bedrock.

Feature 3 is a circular enclosure, similar in construction style to Feature 2. Based on the shape and close proximity to Feature 2, Feature 3 is also probably related to pre-Contact times. Feature 3, measuring 3.5 by 3.0 m on the exterior, consists of aligned and piled basalt boulders and cobbles showing severe damage due to time, erosion and animal activity. It lies on the western extremity of the site, approximately 3.0 m west of Feature 2.

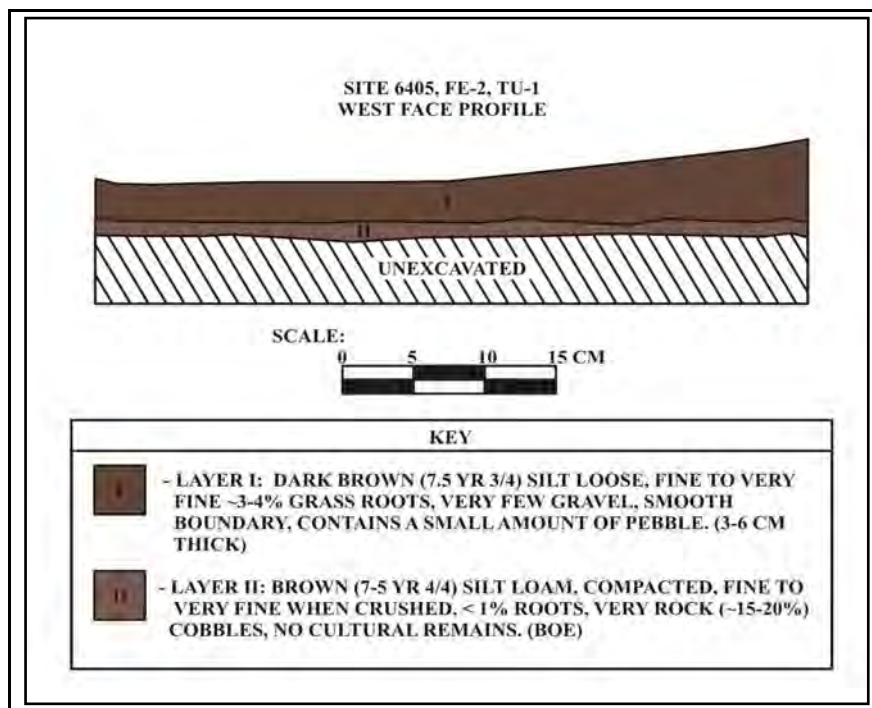


Figure 26: West Profile, Site 6405, TU-1.

TU-2 is a single, 0.5 by 0.5 m test unit that was excavated on the southern interior side of Feature 3, abutting the enclosure wall. The purpose of this unit was to recover cultural materials useful in identifying the feature's function and age. The unit yielded four stratigraphic layers (Figure 27). Layer I (0–3 cmbs) consisted of brown (10 YR 4/3) silt. Layer II (3–8 cmbs) was strong brown (7.5 YR 4/6) silt. Layer III (8–25 cmbs) was made up of loose, brown (7.5 YR 5/4) silt. Layer IV (25–32 cmbs) consisted of brown (7.5 YR 4/4) silt loam similar to that found at the bottom of TU-1. No cultural material was covered from this excavation. As shown in Figure 27, the soil deposit was much deeper in TU-2 than that of TU-1, indicating that erosion has not been as active in this area as in the area of Feature 2.

The fourth and final feature of Site 6405 is an irregular basalt boulder and cobble wall that, at an earlier time, may have been part of a larger, more complex feature. Feature 4 stands at the site's southwestern corner, approximately 2.0 m south of Feature 2. The wall is extensively disturbed, with dimensions of 7.4 by 3.0 m and standing up to 0.38 m high and collapse evident throughout. A short section of wall extends to the south from the main construction, forming what may be a second wall of a more complex feature. However, the original shape of this feature is difficult to ascertain due to the nature of disturbance at this site. Feature 4 may be related to pre-Contact habitation activities.

50-50-10-6406

Site 6406 consists of two features located less than 100 m east of 6395. These features are both rock mounds relating to Historic Period agriculture. These features are constructed of machine-fractured basalt boulders and cobbles piled loosely in two amorphous mounds located on the south side of an unnamed drainage. Feature 1, which is located closest to the unnamed drainage, measures approximately 5.5 by 2.5 m and up to 0.7 m in height. Feature 2, located just south of Feature 1, measures 1.5 by 2.0 m and up to 0.5 m in height. The site is considered significant under criterion D due to its potential to yield information pertinent to the history of Maui and the state of Hawaii.

50-50-10-6407

Site 6407 consists of a single, historic, linear rock mound constructed with subangular cobbles and small- to medium-sized boulders (Figure 28). This single-feature site is associated with military activities in the area. No stacking is evident in this site. The site measures 9.0 by 0.3 to 0.8 m and up to 0.5 m in height. The eastern half of this feature is on top of bedrock. Land alterations are apparent throughout the area adjacent to the site. The site is located approximately 75.0 m southeast of Site 6405. The site is significant under criterion D for its potential to yield information pertinent to the history of Maui and the state of Hawaii.

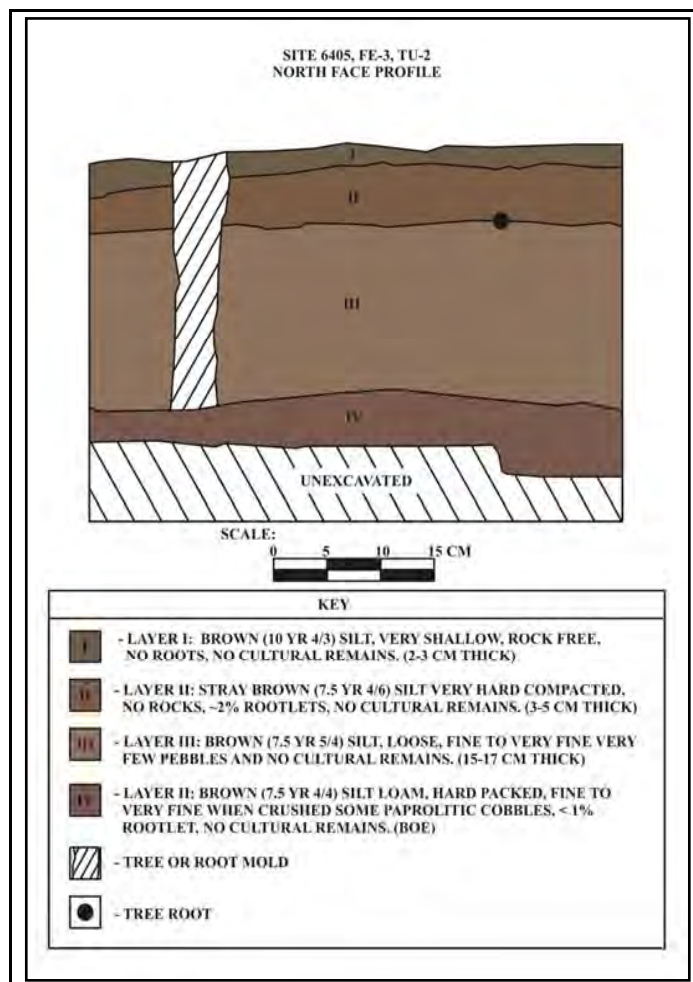


Figure 27: North Profile, Site 6405, TU-2.

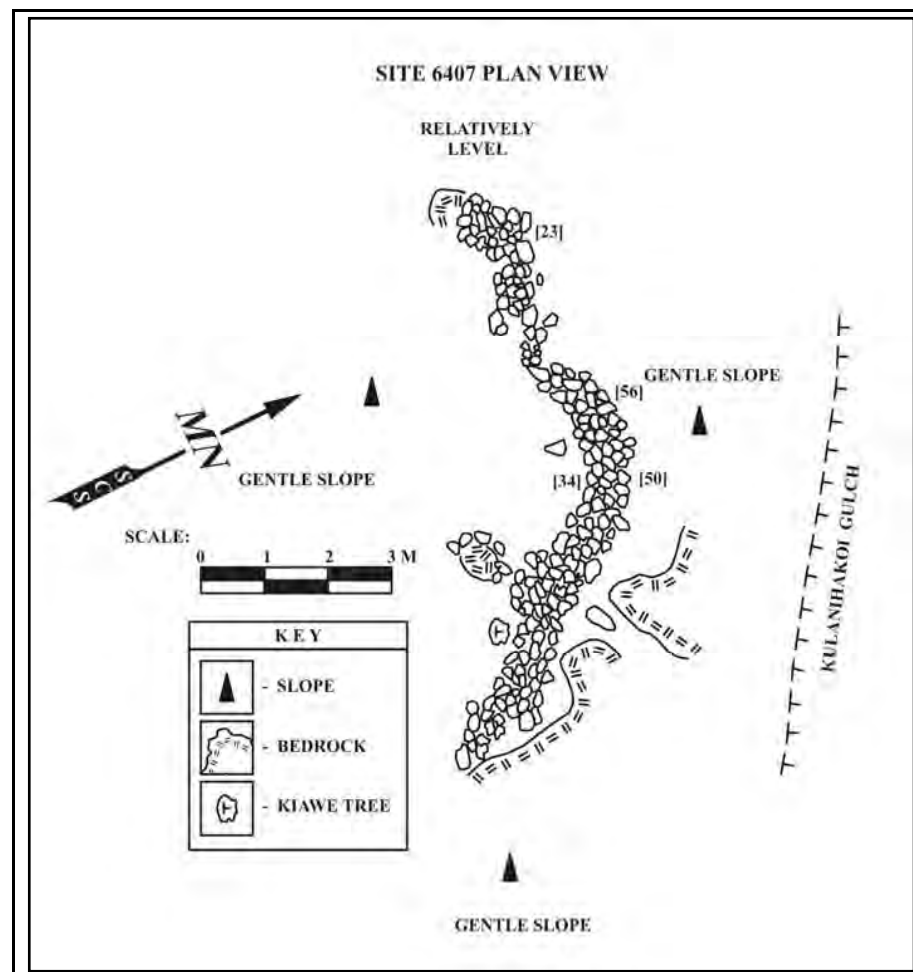


Figure 28: Plan View of Site 6407.

50-50-10-6408

Site 6408 consists of five features relating to military activity in the Historic Period (Figure 29). The site is located approximately 100.0 m west of 6395, in the south-central portion of the project area. Excavation at this site was limited to a single 0.5 by 0.5 m test unit in Feature 1. The site is significant under criterion D for its potential to yield information pertinent to the history of Maui and the state of Hawaii.

Feature 1 is a small enclosure, measuring 3.0 by 3.0 m and up to 0.3 m high. The feature walls show some stacking on the northeast and southeast sides (up to 3 courses high), but the majority of the feature is constructed of crudely piled basalt boulders and cobbles. The crude construction of the feature indicates that it was built for military purposes.

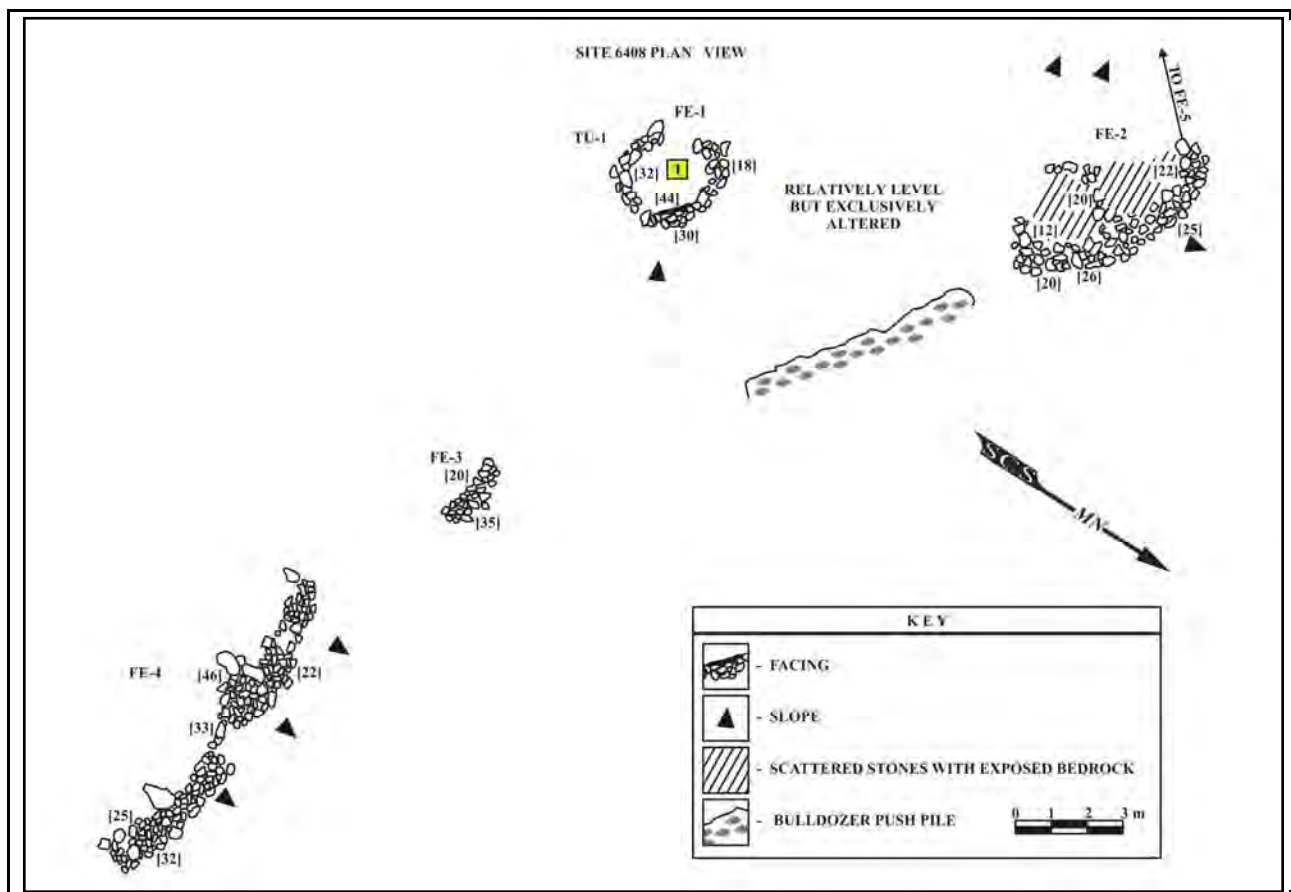


Figure 29: Plan View of Site 6408.

TU-1 was excavated in the center of Feature 1. This unit, measuring 0.5 by 0.5 m, was excavated to bedrock, at a total depth of 18 cmbs. The unit yielded two stratigraphic layers (Figure 30). Layer I (0–12 cmbs) consisted of dark brown (7.5 YR 3/4) silt. Layer II (12–18 cmbs) was made up of slightly compacted, brown (7.5 YR 4/4) silt. No cultural material was observed or collected from this unit.

Feature 2 is a unique feature consisting of two adjoining C-shaped structures. The feature, located approximately 8.0 m to the northwest of Feature 1, measures 6.0 m long by 3.2 m wide on the exterior. The interior of each C-shape is approximately 1.5 m long. This is unique to the project area and is related to military activity on the lot, due to the construction style, which consists of subangular and subrounded basalt boulders and cobbles crudely piled to form walls, rather than neatly stacked.

Feature 3 is a small linear mound located approximately 7.0 m northeast of Feature 1. The feature is constructed of piled boulders and cobbles, measuring 2.0 m long by 0.6 m wide and up to 0.35 m high. This feature has been interpreted as relating to Historic military activity due to its geographical association with other military features in the site and general area.

Feature 4 is a second, larger mound located approximately 4.0 m northeast of Feature 3. This feature measures 9.5 by 1.6 m and up to 0.46 m in height. This feature has been interpreted as relating to Historic military activity due to its geographical association with other military features in the site and general area.

Feature 5 is a C-shaped structure that is located on the gentle slope just west of Feature 1 (Feature not shown in Figure 29). The feature consists of neatly piled, subrounded basalt boulders and cobbles forming a C-shape that measures 3.6 by 2.6 m on the exterior, with wall thickness at approximately 1.0 m, standing approximately 0.3 m in height.

50-50-10-6409

Site 6409 is an L-shaped alignment with a rectangular depression extending northeast from the alignment (Figure 31). The location of this site was recorded as being south of site 6406. The feature is constructed of large basalt cobbles and small boulders, with more piling on the eastern end. This single-feature site measures approximately 1.6 by 1.8 m and up to 27 cm in height. The depression is approximately 0.15 m below the base of construction of the alignment. This type of feature is typologically similar to 6396 and 6400. Such features are associated with

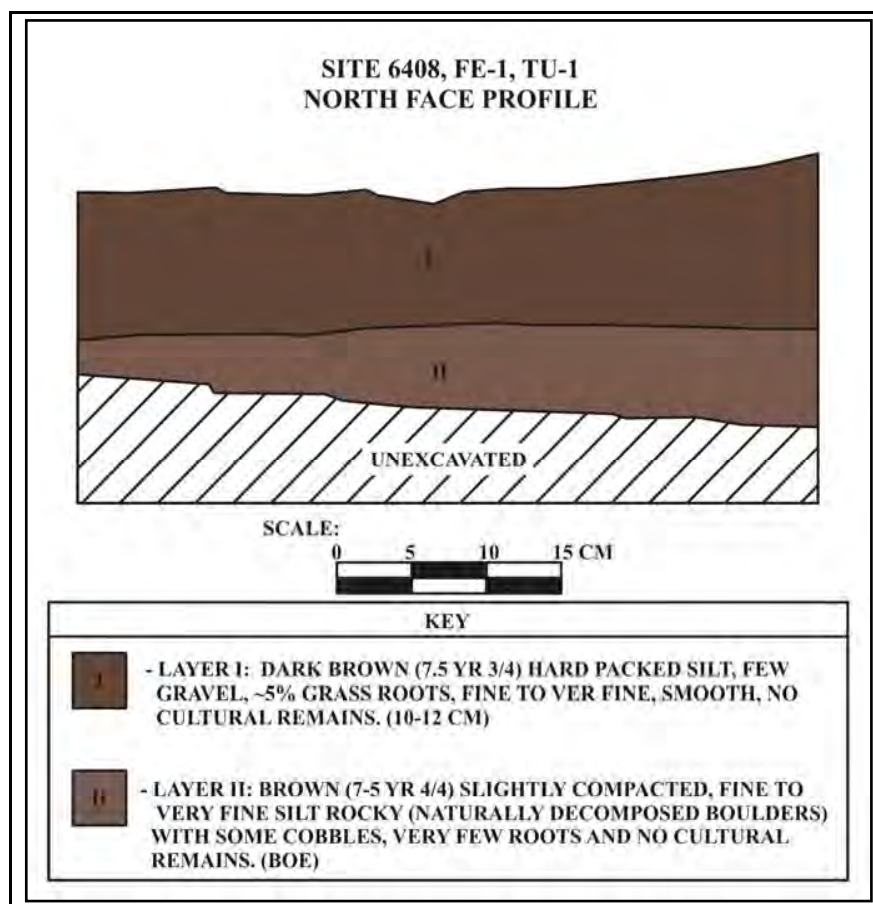


Figure 30: North Profile, Site 6408, TU-1.

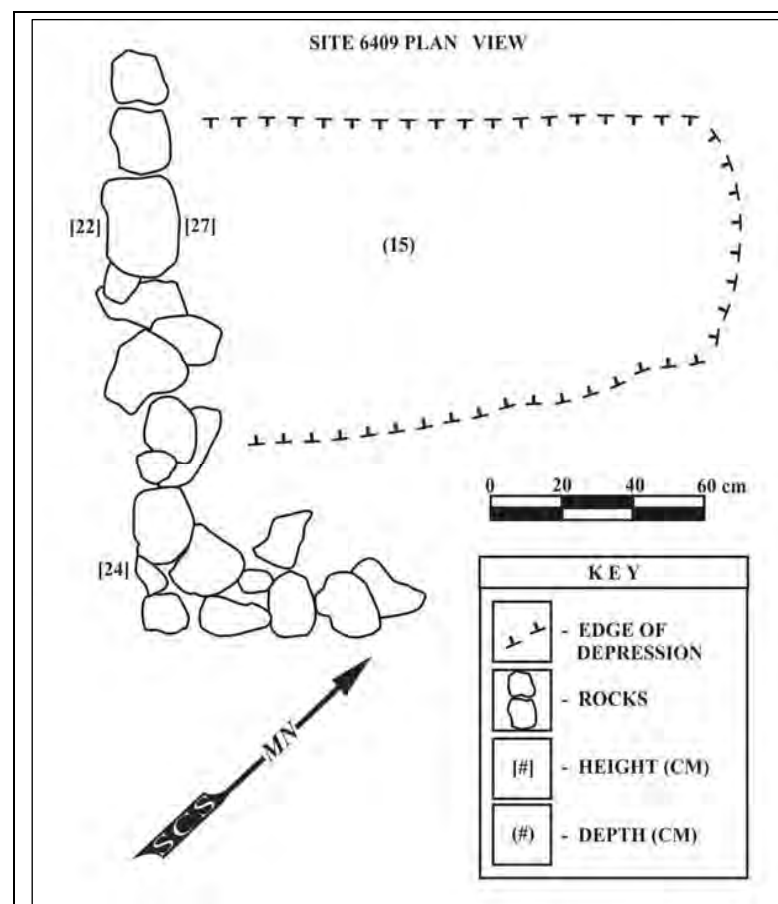


Figure 31: Plan View of Site 6409.

military training activities. The site is significant under criterion D for its potential to yield information pertinent to the history of Maui and the state of Hawai'i.

50-50-10-6410

Site 6410, which is located approximately 75.0 m southeast of Site 6407, consists of two basalt cobble and boulder C-shaped structure related to military activities (Figure 32). Features 1 and 2 are located in a mechanically altered area where the ground is nearly level and bedrock is exposed in most of the surrounding area. Both features are constructed with angular and subangular basalt cobbles and boulders that are neatly piled forming low, C-shaped structures. Feature 1 measures 3.8 m long, up to 2.0 m wide and 0.24 m high on the exterior. The interior of this feature, a relatively smooth, level area, measures approximately 2.0 by 1.0 m. Feature 2 measures 4.0 m long, up to 2.6 m wide and 0.3 m high. The interior measures approximately 2.1 by 1.6 m and consists primarily of exposed bedrock, producing a very rough, rugged surface. The site is significant under criterion D for its potential to yield information pertinent to the history of Maui and the state of Hawaii.

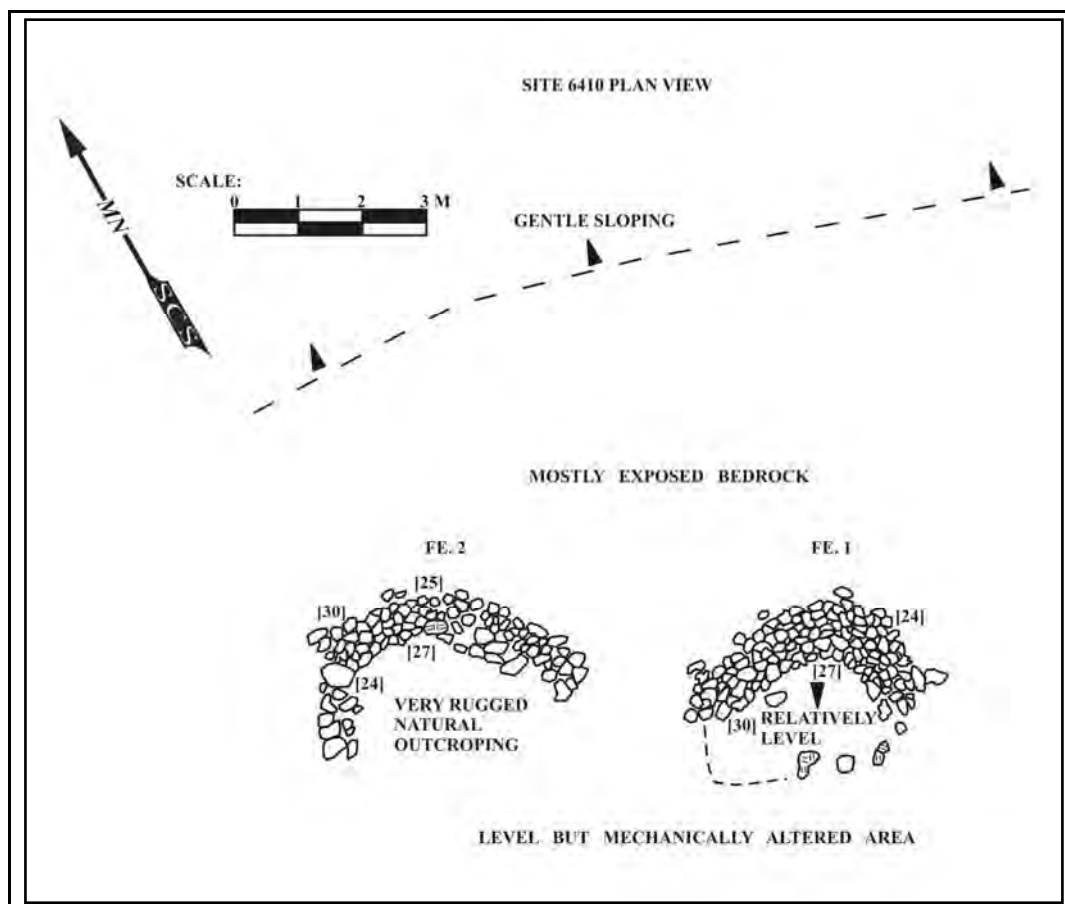


Figure 32: Plan View of Site 6410.

50-50-10-6411

Located on the northern ridge of Kulanihakoi Gulch toward the center of the project area, Site 6411 consists of two features that date to the Historic Period (Figure 33). These features, a mound and a wall, are located on the south ridge of Kulanihakoi Gulch. The site is significant under criterion D for its potential to yield information important to the history and prehistory of Maui and the state of Hawai'i.

Feature 1 is an indiscriminately piled mound of subangular to subrounded cobbles and medium-sized boulders that sits on the top of a west-facing crest, between the existing waterway in Kulanihakoi Gulch and the second tributary to the south. This feature measures 2.1 by 2.0 m and up to 0.34 m in height. While the similarity of this structure to others found on the parcel imply that it is Historic in age, a more precise temporal affiliation is impossible to determine with a dearth of artifactual evidence.

Feature 2 is a wall that extends from the same ridge (approximately 20.0 m east of Feature 1), northward, down the gulch slope for a distance of 35.0 m. Feature 2 measured 35.0 by 0.2 by 0.58 m and is constructed of subangular and subrounded basalt boulders and cobbles. This wall is roughly stacked and piled, with very little evidence of facing. Portions of the wall resemble nothing more than an alignment of boulders; intermittently, there are entire sections of the wall missing. Due to its morphological similarity to Site 6402, the wall has been interpreted as related to military activity.

50-50-10-6412

Site 6412 is a multi-feature site located on a gentle slope on the north side of Kulanihakoi Gulch, approximately 150.0 m south of the northern boundary of the project area. The site consists of seven features in total: 3 C-shapes, 2 L-shapes, an alignment, and an enclosure (Figure 34). These features are spread over an area of approximately 1,000 square meters. A lack of artifactual evidence coupled with similarity between features here and at other sites, suggests that this site is related to military use during the Historic Period. However, Feature 7 is most likely related to the pre-Contact period, later being re-used by military personnel in the Historic period. Two test units were excavated in this site: TU-1 at Feature 5 and TU-2 at Feature 7. This site, with its several components and dual nature in time and function, is significant under criterion D for its potential to yield information important to the history and prehistory of Maui and the state of Hawai'i.

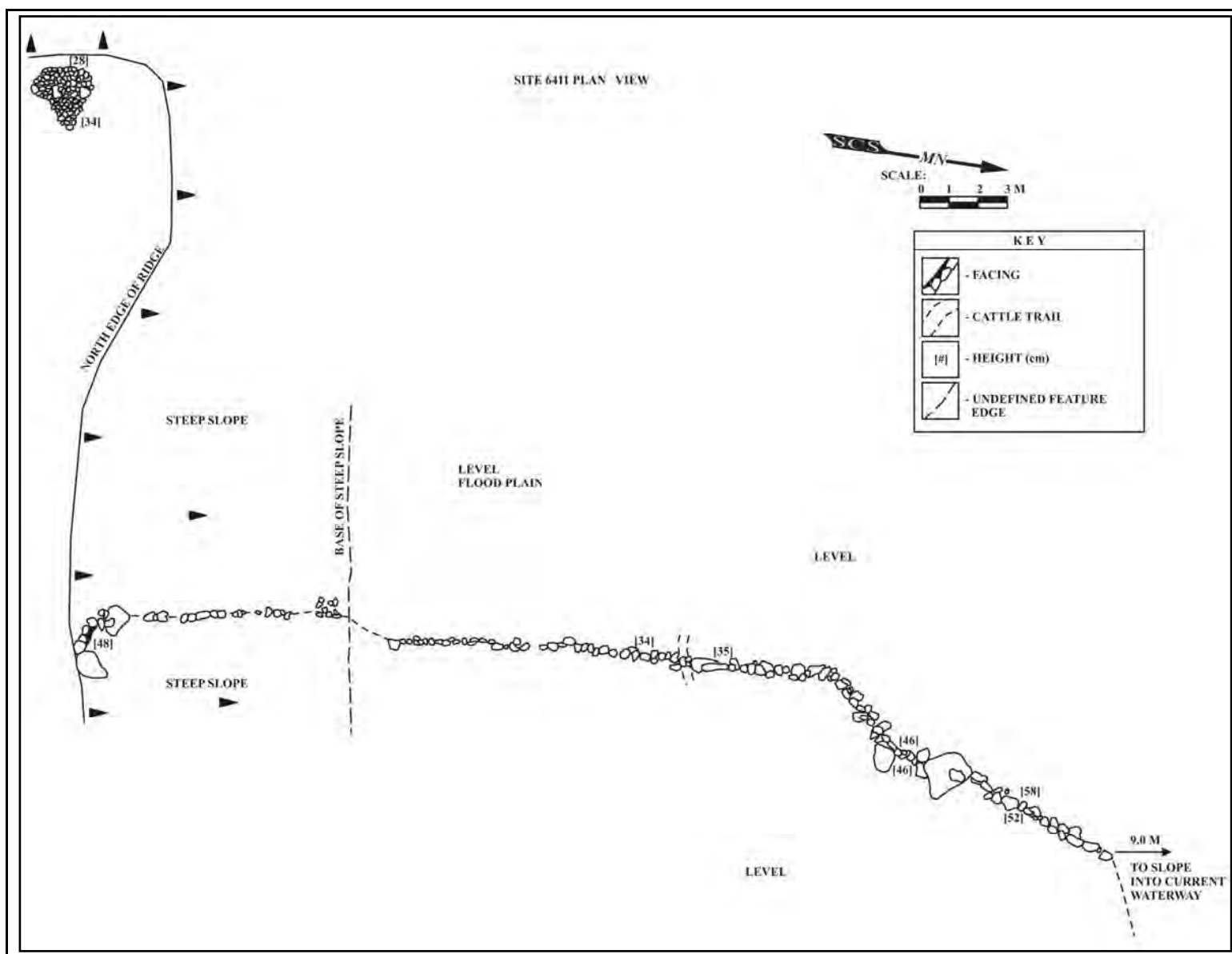


Figure 33: Plan View of Site 6411.

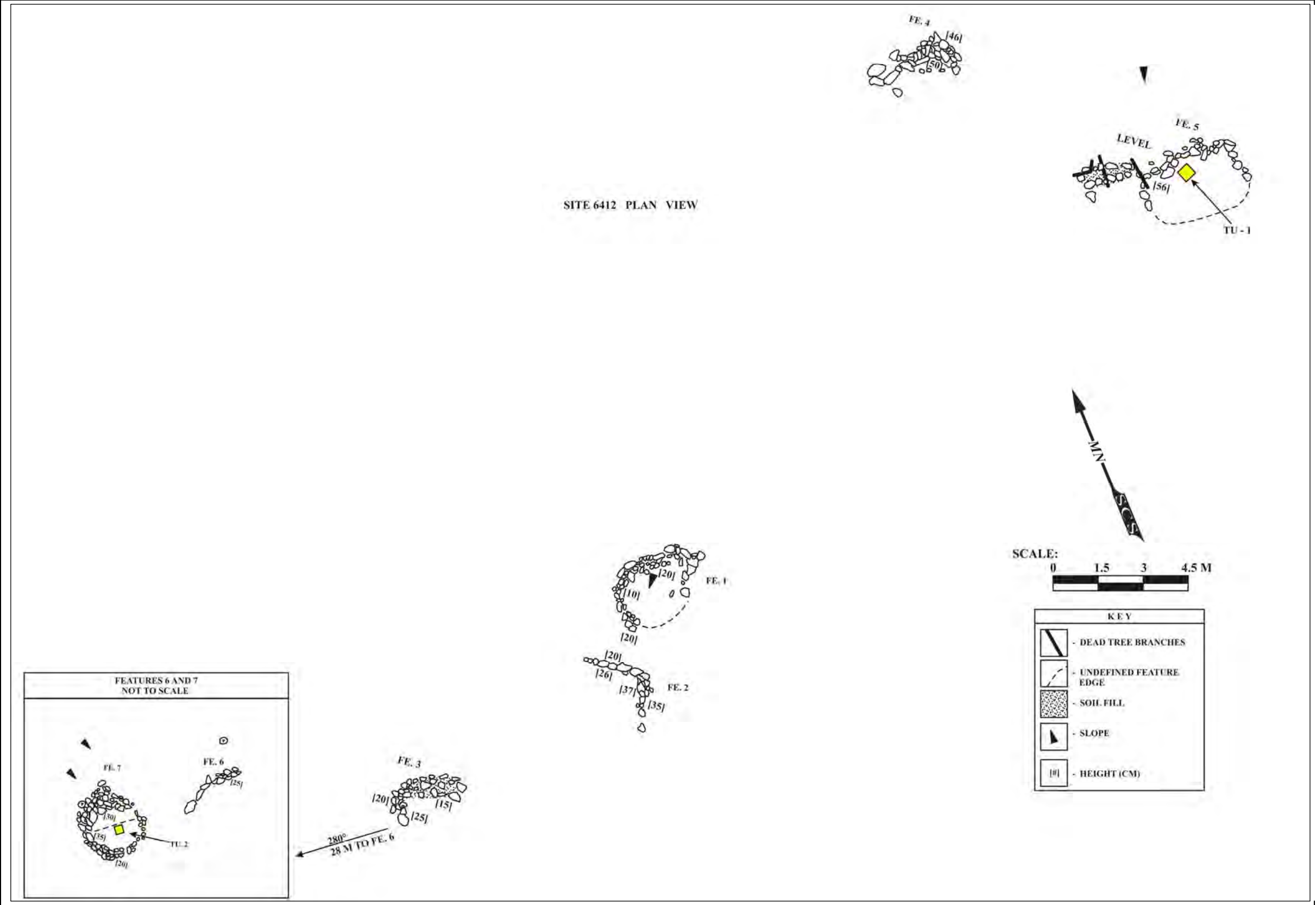


Figure 34: Plan View of Site 6412.

Feature 1 is a C-shape measuring 3.7 by 3.0 m on the exterior, with the wall measuring 0.5 to 1.0 m thick and up to 0.2 m in height. The feature is constructed of small to medium basalt boulders and cobbles aligned, but not stacked, in a semi-circular pattern.

Located just southwest of Feature 1, Feature 2 is an L-shaped structure measuring 3.2 by 2.3 m with walls 0.26 to 0.37 m thick and up to 0.2 m in height. Similar to Feature 1, the subrounded boulders used to form this feature are aligned, not stacked, on the ground to form an L-shape. Soil around this feature is severely eroded, exposing the vertical axis of the feature, making it unclear whether or not the feature had buried architecture.

Feature 3, the second of three C-shapes in this site, measures 3.0 by 1.7 m on the exterior, with walls standing up to 0.2 m in height. It is located approximately 6.0 m west of Feature 2. This feature is similar in construction style and condition to Feature 1, with small- to medium-sized basalt boulders and cobbles piled to form the feature shape. The interior of the feature is severely eroded.

Feature 4 is the second of two L-shaped structures. This feature, located approximately 20.0 m northwest of Feature 1, is a heavily constructed feature that consists of piled subrounded basalt cobbles and small boulders. Feature 4 measures 3.5 by 1.5 m and has a maximum height of 0.5 m. The interior of the feature is relatively level, but there is some exposed bedrock on the surface, suggesting a strong impact of erosion at this site.

Feature 5 measured 6.5 by 3.0 by 0.56 m and consists of subangular small and medium basalt boulders piled to form a linear structure that extends approximately east-west for 6.5 m. From this central component, three arms of aligned boulders extend southward creating two adjoining C-shapes. The interior of this double-C-shape is relatively level; however, erosion and extensive disturbance is evident, especially due to the presence of several fallen tree branches in the site that may have obscured the feature.

TU-1, a single, 0.5 by 0.5 m test unit, was excavated in the center of the eastern-most C-shape in Feature 5. This unit yielded two stratigraphic layers (Figure 35). Layer I (0–26 cmbs) consisted of brown (10 YR 4/3) silty loam. Layer II (26–36 cmbs) was brown (7.5 YR 4/4) compacted silt. No cultural materials were, observed or collected, in this unit.

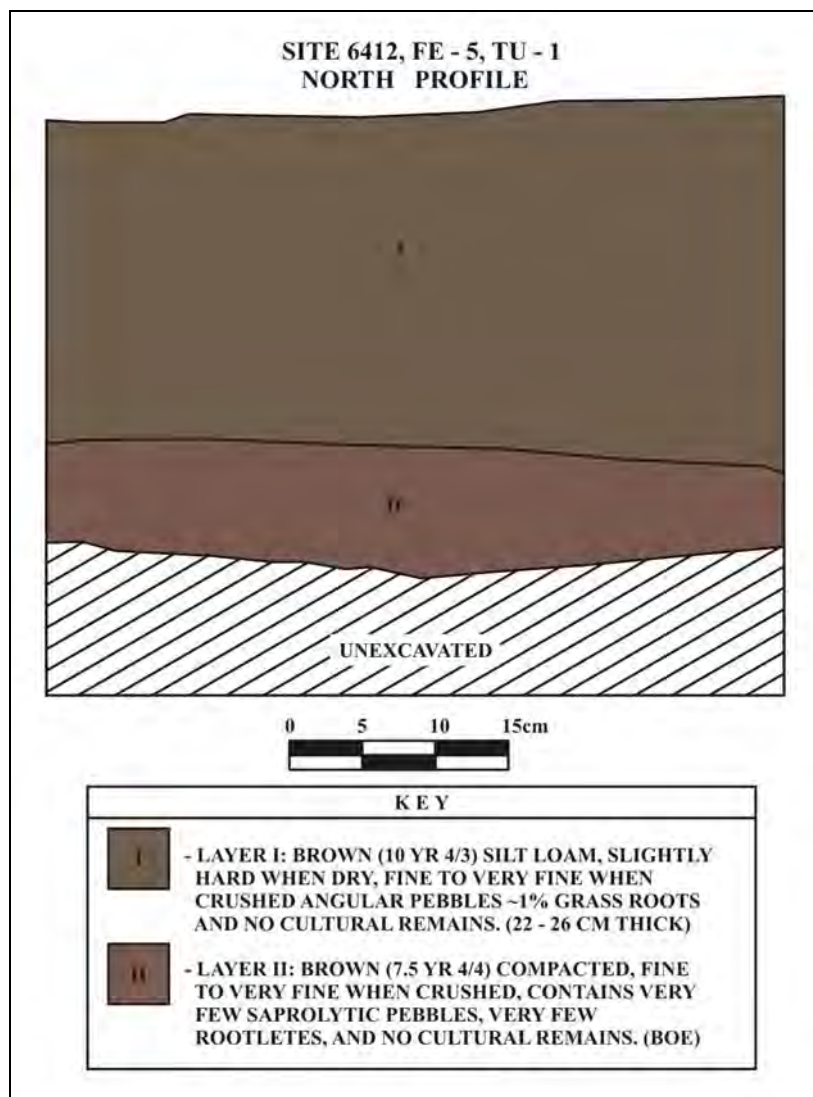


Figure 35: North Profile, 6412, TU-1.

Feature 6 is a boulder alignment located 28.0 m west of Feature 3. This crudely constructed feature measures 4.0 m long and up to 0.25 m high. The function of this feature is undetermined

Feature 7 is a small, circular enclosure lying 3.0 m west of feature 6. This feature measures 2.5 by 3.7 m, with walls ranging from 0.5 to 1.2 m in thickness and up to 0.2 m in height. This feature is slightly more formal in construction than the previous features described in this site, implying that it may have been a structure that predated military occupation at the site and has been modified in the historic period. Feature 7 is constructed of subangular basalt boulders and cobbles piled on the north and west sides, with double-alignments (two stones

wide) on the south and east sides of the feature. Feature 7 is severely collapsed, especially on its north side, suggesting that the walls of this feature were once quite tall.

Tu-2 was excavated at the center of feature 7. This 0.5 by 0.5 m unit yielded three stratigraphic layers (figure 36). Layer i (0–11 cmbs) consisted of dark brown (7.5 yr 3/4) silt loam. Layer II (11–20 cmbs) consisted of brown (7.5 yr 4/4) silt. Layer iii (20–26 cmbs) consisted of moderately compacted, fine brown (7.5 yr 4/4) loam. The unit yielded some basalt flakes in layer ii, supporting the idea that this feature predates the historic period.50-50-10-6413

50-50-10-6413

A pre-Contact rock shelter with four petroglyphs on a cliff face at the bottom of Kulanihakoi Gulch comprises Site -6413(Figure 37). The site is located approximately 100.0 m west of Site 6414, on the south side of the Kulanihakoi drainage, abutting a high basalt escarpment. This site is considered significant under criterion D.

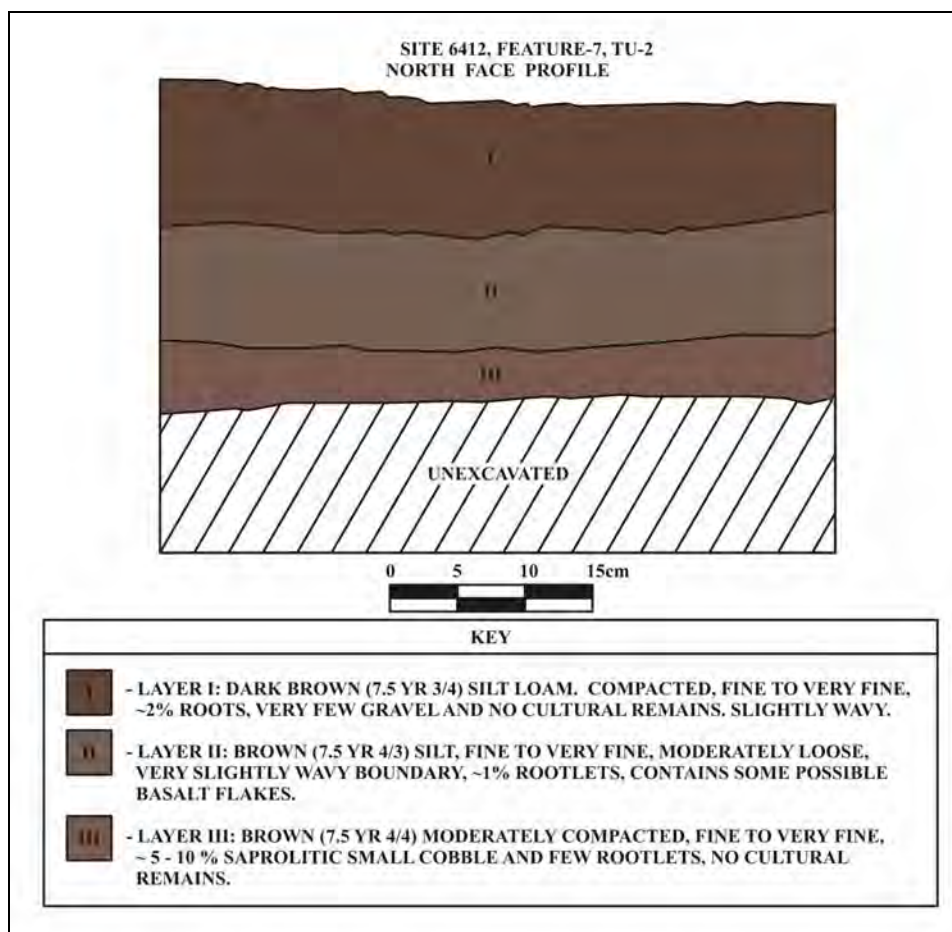


Figure 36: North Profile, 6412, TU-2.

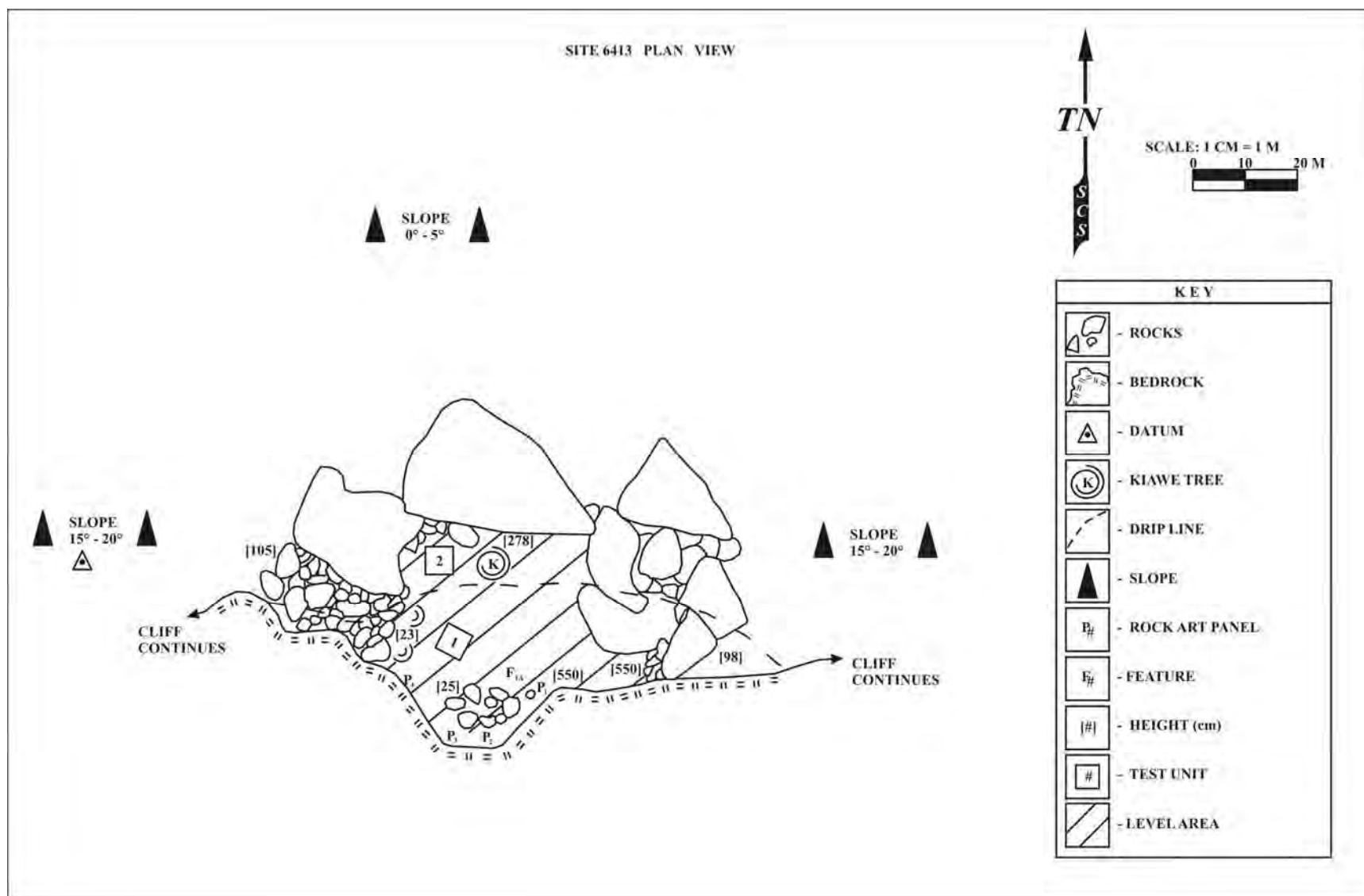


Figure 37: Plan View of Site 6413.

Feature 1 is a rock shelter measuring approximately 9.0 m long by 4.0 m wide, with the interior height up to 0.98 m. At the center of this rock shelter, just under the drip-line, Feature 1a is a ring of boulders resembling a hearth; however there was no sign of charring on the ground surface within the feature. Two 0.5 by 0.5 m test units were excavated on the interior of this rock shelter.

TU-1 was excavated in the central-western portion of the rock shelter, adjacent to Feature 1. The excavation yielded two stratigraphic layers (Figure 38). Layer I (0–15 cmbs) consisted of very dark brown (7.5 YR 2.5/3) loosely compacted silt with a high concentration of gravel throughout. A small amount of charcoal flecking was recovered from this layer. Layer II (4–17 cmbs) consisted of saphrolytic, reddish yellow (5 YR 6/8) silt. No cultural material was recovered from this layer.

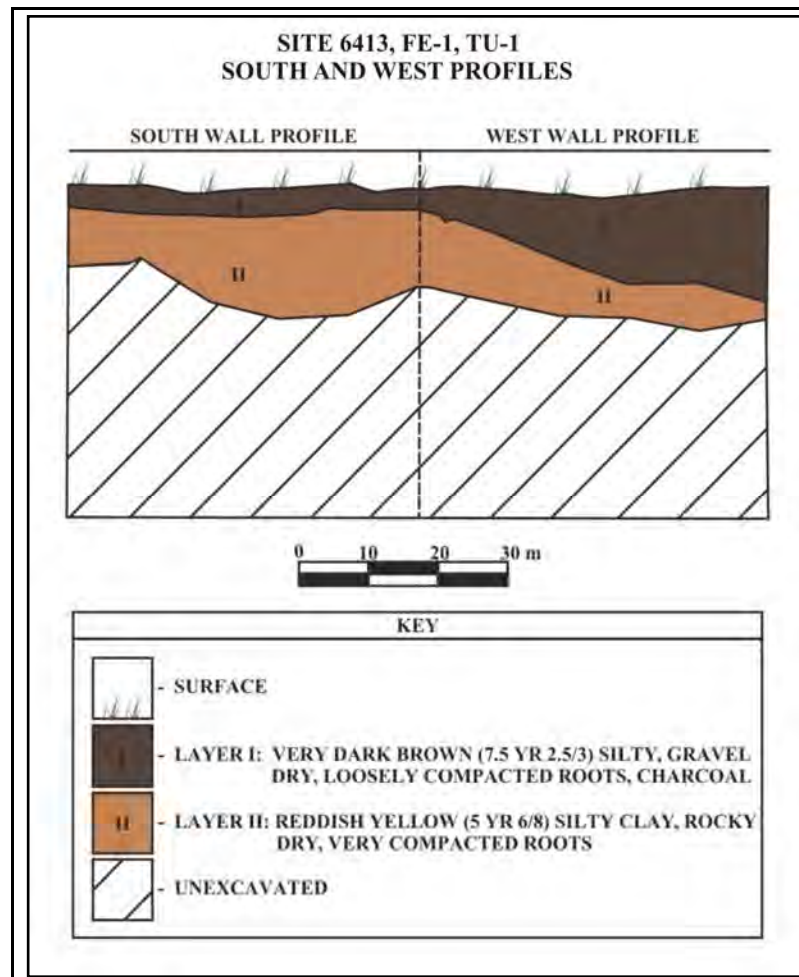


Figure 38: South and West Profiles, 6413, TU-1.

TU-2 was excavated in the northwest corner of the rock shelter. Excavation of this unit yielded a single stratigraphic layer consisting of loose, moist, very dark brown (10 YR 2/2) silt and a high concentration of basalt boulders and cobbles (Figure 39). Upon termination of this unit, it became apparent that the boulders in this unit were stacked in between two, much larger boulders, as to fill the gap and create a level floor within the rock shelter. A small amount of charcoal was collected *in situ* at 35 cmbd. This charcoal sample was radiocarbon tested, yielding a conventional radiocarbon age of 280±40 years before present (see Appendix A).

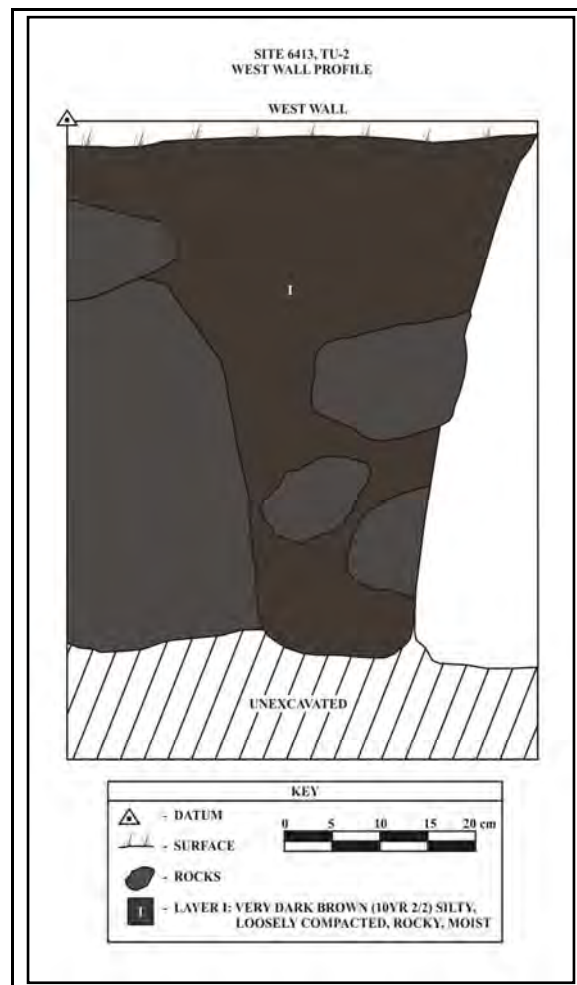


Figure 39: West Profile, 6413, TU-2.

Four panels of anthropomorphic petroglyphs have been consolidated under Feature 2. These panels (sample shown in Figure 40) consist of ten distinct anthropomorphic figures, as well as several additional non-diagnostic images, peckings and scratches. The anthropomorphic figures range in height from 15 to 30 cm and consist of both pecked and scratched components.

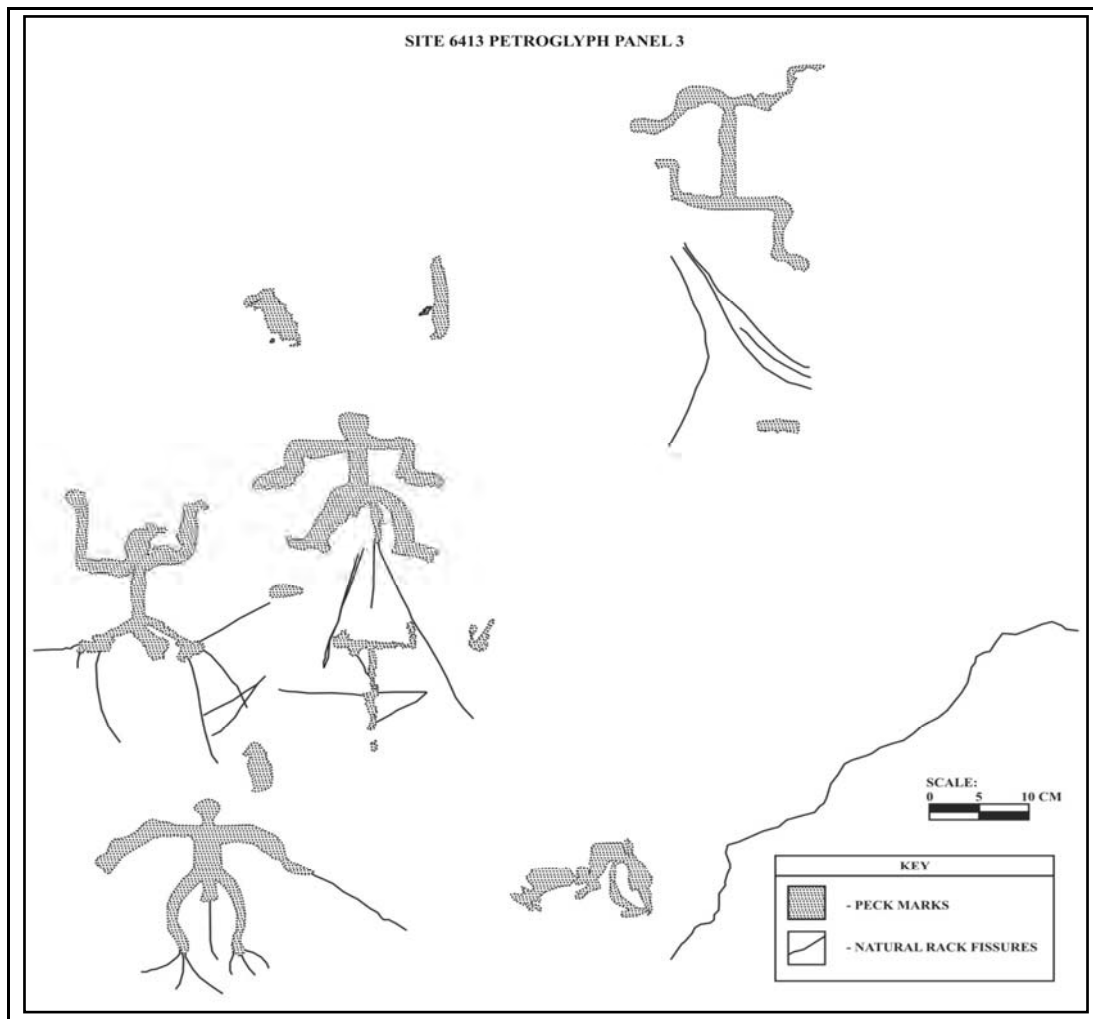


Figure 40: Site 6413, Feature 2, Petroglyph Panel 3.

50-50-10-6414

Located in the bottom of Kulanihakoi Gulch in the northeast corner of the project area is Site 6414, a rock shelter (Feature 1) with two petroglyphs (Feature 2). The rock shelter measured approximately 9 m wide by 16 m long. As there was no surface cultural material, no subsurface excavation was conducted in this feature. Two petroglyphs were consolidated under Feature 2. These are anthropomorphic figures positioned on the eastern and western extremes of a rock shelter at the base of the escarpment of Kulanihakoi Gulch (Figure 41). These figures measure 0.2 and 0.25 m high, respectively and both are pecked, rather than scratched, into the smooth basalt surfaces (Figure 42 and 43). The site typology indicates that it dates to the pre-Contact Period, and, being that no surface artifacts or midden were observed, it was likely a temporary use site. The site is significant under criterion D for its potential to yield information pertinent to the prehistory and history of Maui and the State of Hawai'i.

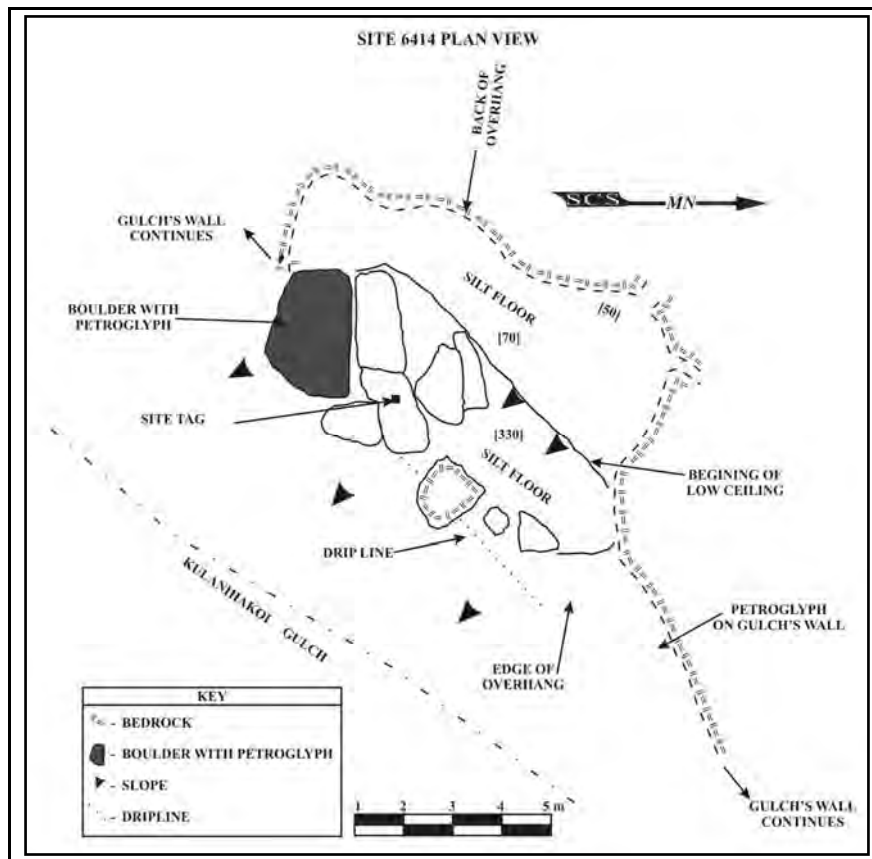


Figure 41: Plan View of Site 6414

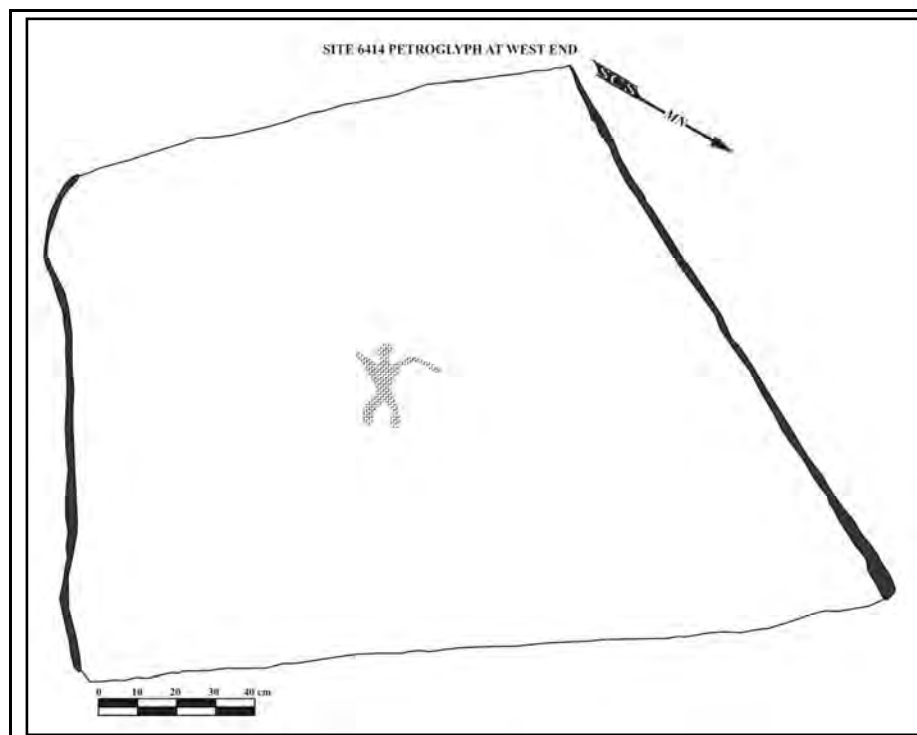


Figure 42: Petroglyph at the West End of 6414 (Feature 1).

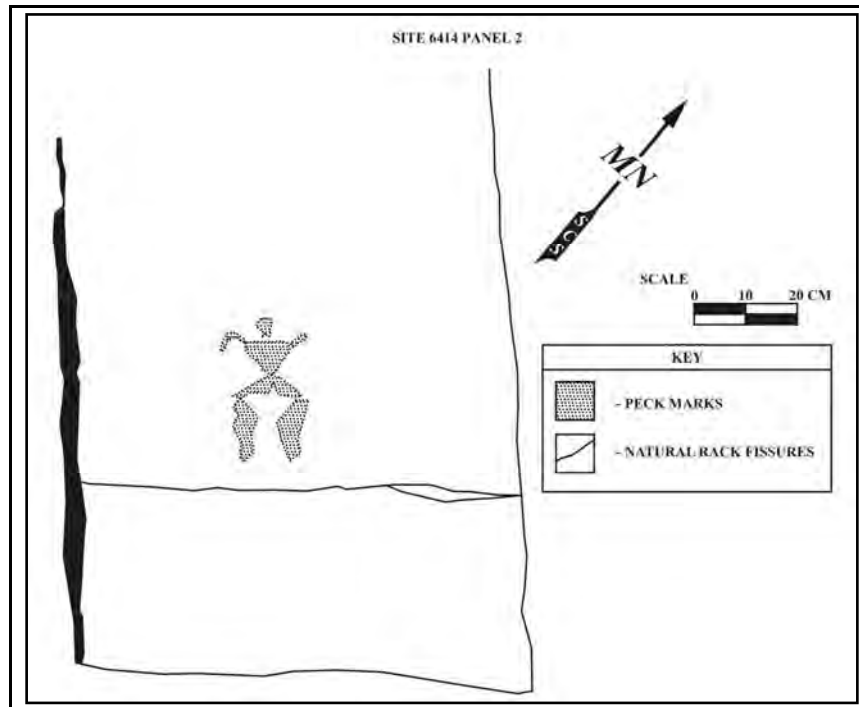


Figure 43: Petroglyph at the East End of 6414 (Feature 2)

50-50-10-6415

Approximately 100.0 m north of 6414 is Site 6415; a low stone wall that likely dates to the pre-Contact period (Figure 44). This single-feature site measures approximately 42.0 m long, 0.5–1.0 m wide and up to 0.2 m high. The wall meanders on an east-west bearing, showing signs of having been severely damaged by erosion and cattle disturbances. This wall terminates abruptly on the east end, where it has likely been wiped out by erosive and animal activities. Site 6415 is morphologically traditional, with a very short, but stout stacked and faced construction. This type of wall differs from a ranch wall in that it is not core-cobble-filled, but built using medium-sized boulders and large-sized cobbles throughout the wall. Its shape, meandering rather than straight, also indicates that this wall did not relate to ranching activities, and it's apparently heavy-duty (though very short) construction separates it from the roughly-constructed walls associated with military activities in the parcel. The site is significant under criterion D for its potential to yield information pertinent to the prehistory and history of Maui and the State of Hawai'i as a whole.

50-50-10-6416

Site 6416, on the northern edge of Kulanihakoi Gulch in the northeast quadrant of the project area, is a low, circular, basalt rock platform that is interpreted as dating to the pre-Contact Period (Figure 45). The platform, measuring 3.1 by 3.3 m and up to 0.5 m in height, is roughly



Figure 44: Photographic Overview of Site 6415.

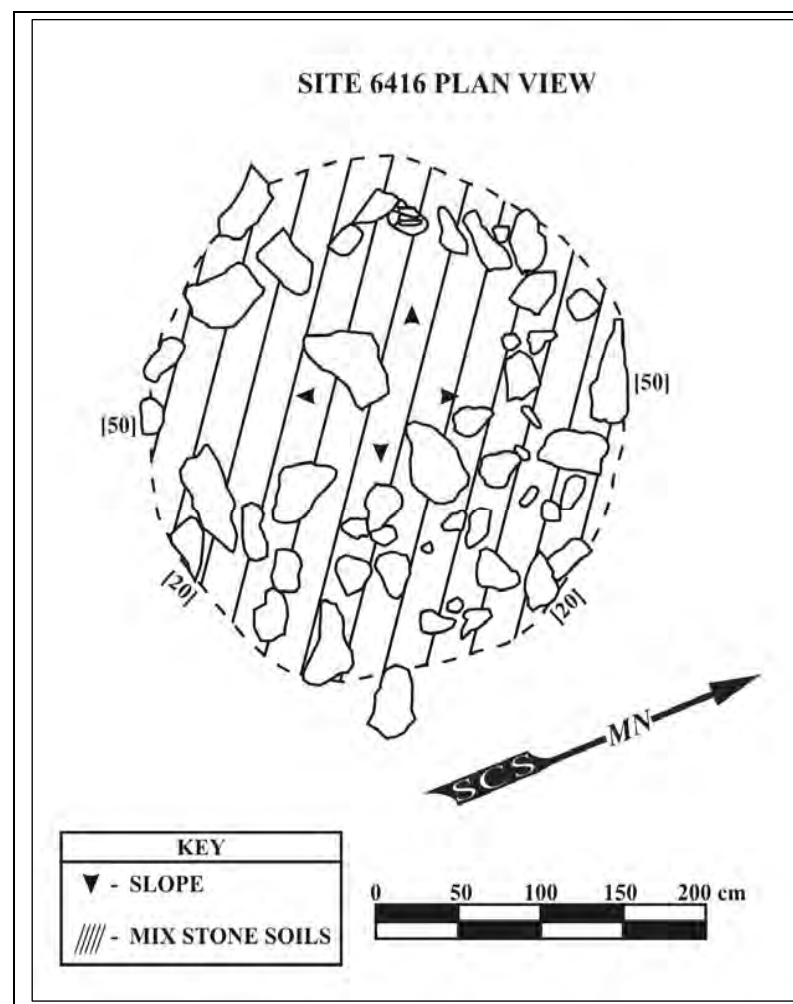


Figure 45: Plan View of Site6416

constructed of subangular cobbles and boulders. It has been heavily impacted by erosion and animal activity. It is further obscured by an accumulation of soil and grasses, indicating the site's antiquity. The heavily damaged condition of this feature renders it impossible to ascertain the function without conducting subsurface excavation. The site is significant under criterion D for its potential to yield information important to the history and prehistory of the island of Maui and the state of Hawai'i.

50-50-10-6417

Site 6417 is a single-feature site consisting of a low, L-shaped rock wall (Figure 46). The site, which is located on the northern edge of Kulanihakoi Gulch, approximately 100.0 m south of 6416, may have functioned as a garden enclosure. The wall measured 17.1 by 7.2 m and is constructed of small, subangular and subrounded basalt boulders with intermittent large boulders included in the construction. The interior is made up of level silt with few rocks. It has been severely affected by erosion and animal activities, as evidenced by the intermittent breaks and collapsed sections of the wall. With no artifactual evidence to support a temporal affiliation, the feature's age is undetermined. The site is considered significant under criterion D.

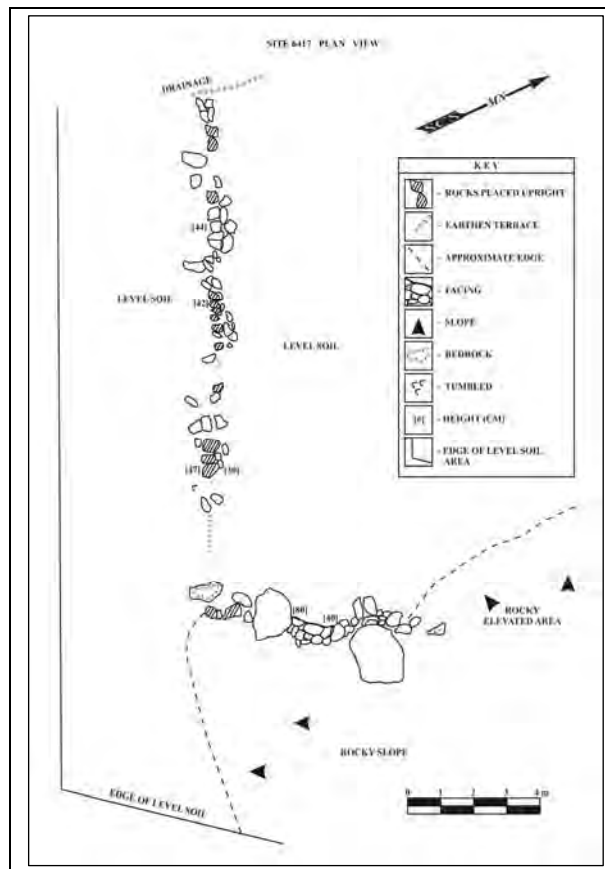


Figure 46: Plan View of Site 6417.

50-50-10-6418

Approximately 125.0 m west of 6417 lies Site 6418, a multi-feature site that is, like 6417, associated with agricultural activities (Figure 47). Site 6418 consists of two features. Feature 1 is a low wall, partially faced, with portions consisting of single, small and medium boulders that have been placed upright. This feature measures approximately 56.0 m long with walls standing up to 0.5 m high and 0.8 m thick. It bears northwest-southeast along the northern edge of Kulanihakoi Gulch. The function of this feature is unknown, but it may have been a garden wall. The area upslope of the wall is very rocky and appears to have been significantly altered, both mechanically and by erosion. The site is significant under criterion D for its potential to yield information pertinent to the history or prehistory of Maui and the state of Hawai'i.

Feature 2 is a terrace in a narrow drainage that functions for water flow control. It measures 2.2 m long, approximately 0.2 m wide and up to 0.64 m in height.



Figure 47: Photographic Overview of Site 6419.

50-50-10-6419

Site 6419 is a pre-Contact rock shelter in a large basalt outcrop on the northern edge of Kulanihakoi Gulch, adjacent to 6418 (Figure 48). This rock shelter functioned as a temporary habitation, as evidenced by scattered charcoal throughout the surface of the cave floor. This rock

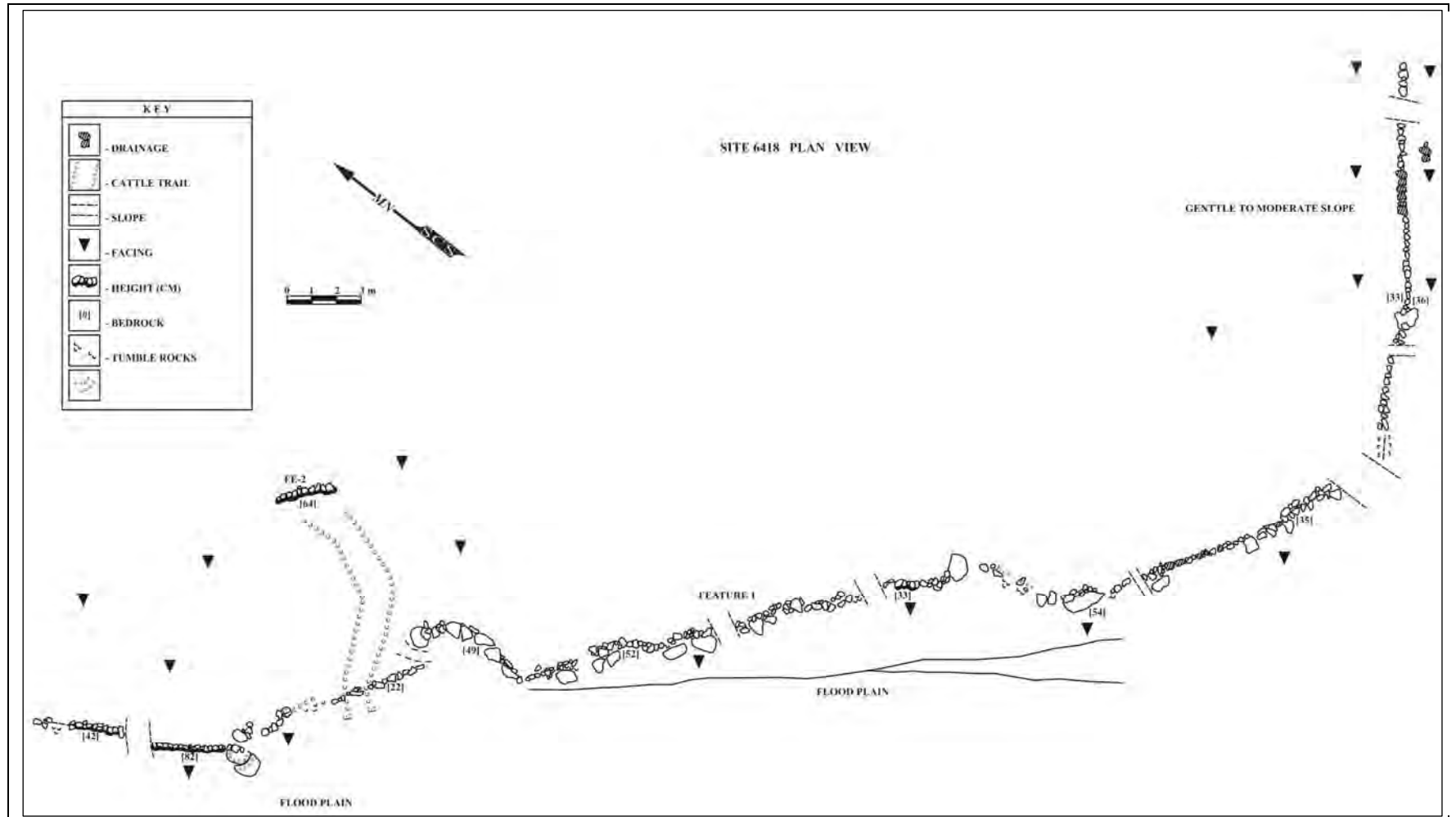


Figure 48: Plan View of Site 6418.

shelter measures approximately 3.0 m long, 5.0 m deep and up to 0.6 m high on the interior. Extensive recording was not conducted at this site due to a heavy infestation of bees. This site is significant under criterion D for its potential to yield information important to the prehistory and history of the island of Maui and the state of Hawai`i as a whole

50-50-10-6420

Site 6420 is a pre-Contact rock shelter located on the northern interior edge of Kulanihakoi Gulch, just south of 6416 (Figure 49). The site consists of a rock shelter (Feature 1) with a modified outcrop (Feature 2) and a petroglyph panel (Feature 3). Site is assessed as

significant under criterion D for its potential to yield information important to the prehistory and history of the island of Maui and the state of Hawai`i as a whole.

Feature 1, a rock shelter, measures approximately 11 m long and up to 6 m high on the interior.

Feature 2, an additional component of the rock shelter, is a modified outcrop located on the west end of the rock shelter. This feature consists of small- and medium-sized basalt boulders, aligned and stacked along an outcrop measuring 1.4 m long by 0.4 m wide. Stacking is up to three courses high. The feature bears generally northwest-southeast. The interior side of Feature 2 is filled in with silt and stones that have fallen from the rock shelter roof. This feature is the location of TU-1.

Feature 3 consists of two anthropomorphic petroglyphs that were scratched and pecked into the escarpment at the eastern extremity of the rock shelter. These images measure 7 by 3 cm and 9 by 7 cm, respectively.

TU-1 is a 0.5 by 0.5 m test unit placed on the interior side of Feature 2. The purpose of this excavation was to determine the presence or absence of cultural material and to assess the function and approximate age of the feature. The unit yielded two sterile, stratigraphic layers (Figure 50). Layer I (0–5 cmbs) consisted of dry, lightly compacted dark reddish brown (5 YR 3/3) silt. Layer II (5–34 cmbs) was made up of brown (10 YR 4/3) silt of a similar texture and compaction to Layer I. No cultural material was observed, or collected, from this unit.

50-50-10-6421

Site 6421 consists of a single, historic wall just south of Site 6417 in the bottom of Kulanihakoi Gulch (Figure 51). This single-feature site measures approximately 7.0 m long

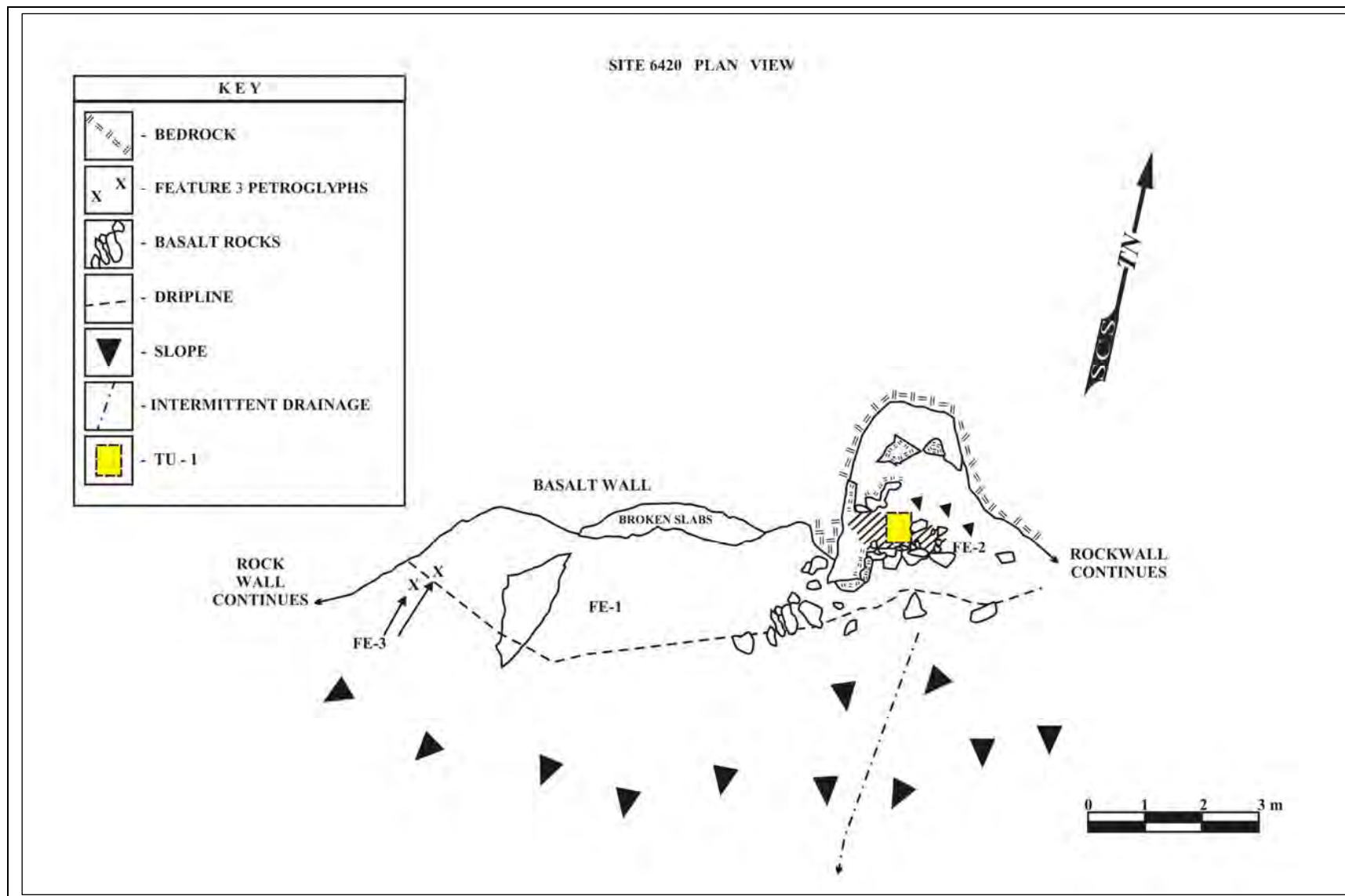


Figure 49: Plan View of Site 6420.

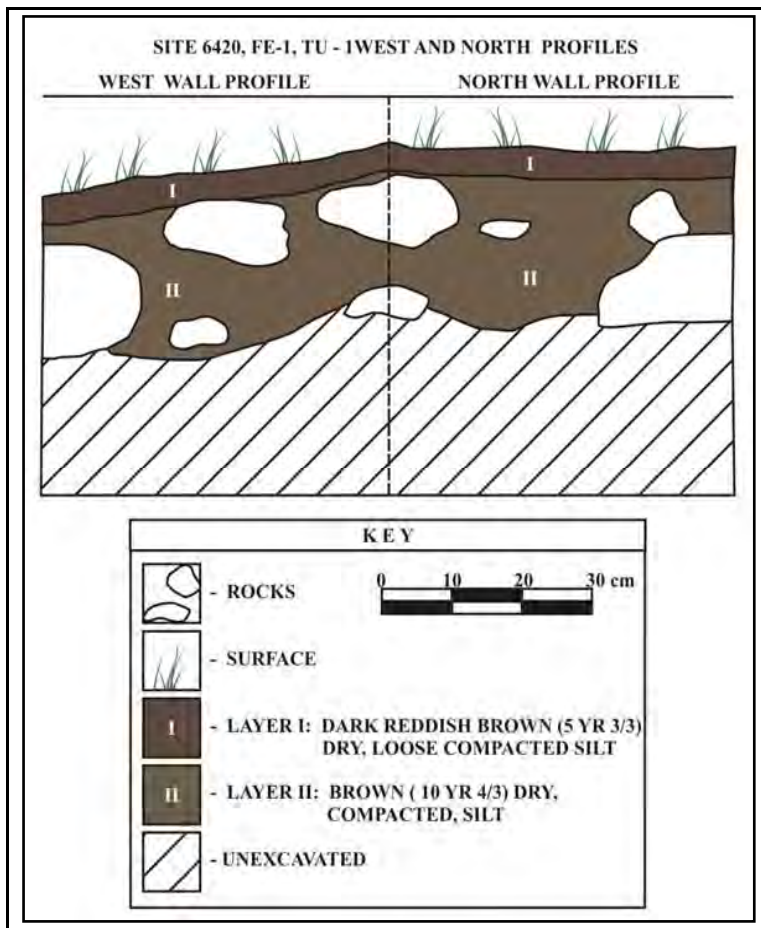


Figure 50: Plan View of Site 6421.

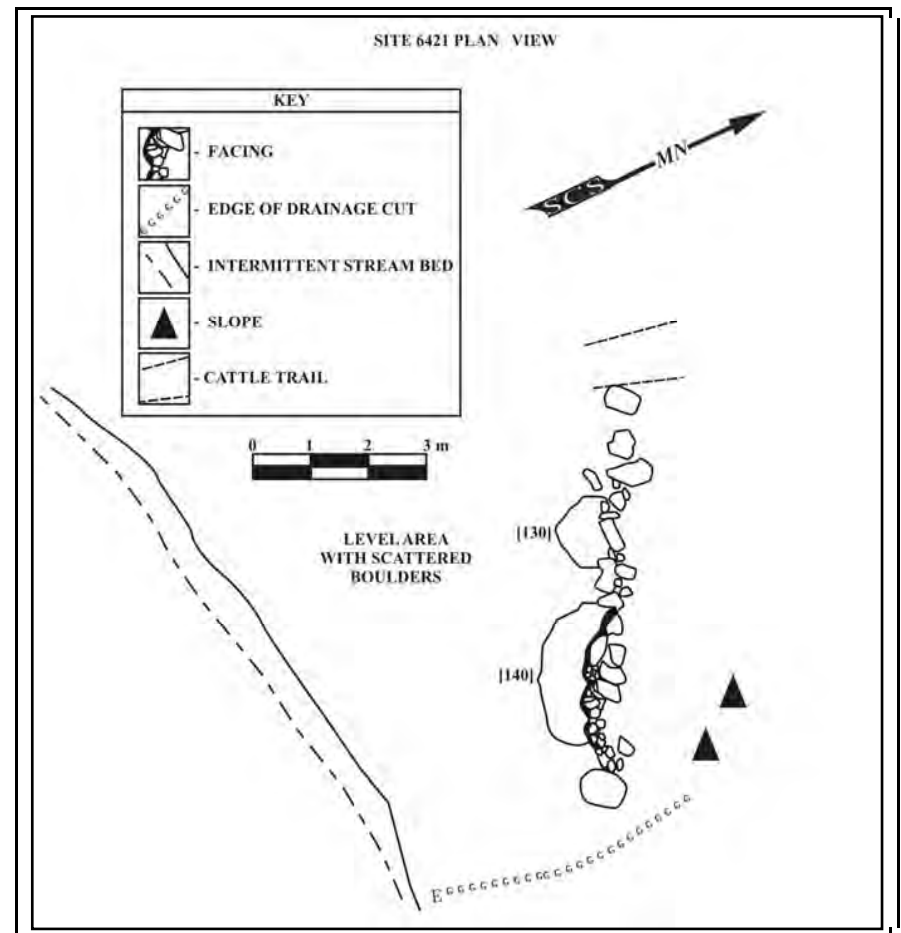


Figure 51: North and West Profiles, 6420, TU-1.

bearing northwest-southeast adjacent to a natural waterway. The feature has been severely damaged by water erosion and animal activity. The wall consists of medium- and large-sized basalt boulders stacked and faced up to four courses high, incorporating very large boulders into the construction. The feature is likely associated with military activity. An old road crosses the gulch just to the northeast of the site. The site is significant under criterion D for its potential to yield information pertinent to the history and/or prehistory of Maui and the state of Hawai'i.

50-50-10-6422

Site 6422 consists of five mounds located on land that has been extensively altered by mechanical activity (Figure 52). As such, each feature is interpreted to be associated with the most recent land clearing activities on the lot. These features are situated in a 625.0 square meter area on the southern flank of lower Kulanihakoi Gulch. As these mounds are amorphous and similar to other mound features described previously for this project area, Site 6422 was not mapped. Feature 1 is a circular mound measuring 1.2 m in diameter and approximately 0.4 m high. Feature 2 measures 1.8 by 1.1 m and 0.37 m high. Feature 3 measures 1.3 by 0.9 m and 0.4 m in height. Feature 4 measures 1.1 by 0.7 m and 0.26 m high. Feature 5 measures 1.7 by 0.8 m and 0.3 m high. The site is significant under criterion D for its potential to yield information important to the history and/or prehistory of Maui and the state of Hawai'i.



Figure 52: Photographic Overview of Site 6422.

50-50-10-6423

Site 6423 consists of three Historic mounds located between the southern entry road and the southern boundary of the project area (Figure 53). Each of these features is comprised of mechanically scarred boulders, implying late Historic or Modern agricultural activity. The features were not mapped, as they are morphologically similar to other, more extensively recorded features throughout the project area. Feature 1 measured 2.6 by 1.4 m and 0.4 m high. Feature 2 measures 2.0 by 1.3 m and 0.24 m high. Finally, Feature 3 measures 2.26 by 0.9 m and 0.3 m high. The site is significant under criterion D for its potential to yield information pertinent to the history of Maui and the state of Hawai'i.



Figure 53: Photographic Overview of Site 6423.

50-50-10-6424

Site 6424 is a single, Historic, linear mound located approximately 4.0 m northwest of Site 6423 (Figure 54). This single-feature site consists of broken up, angular basalt boulders and cobbles mounded mechanically, as evidenced by bulldozer scars on several stones in the feature. The site measures 1.8 by 1.0 and 0.4 m high. Site 6424 was not mapped due to its morphological similarity to other sites in the area. The site's morphology and geographic proximity to 6423 call



Figure 54: Photographic Overview of Site 6424.

for a similar temporal and functional interpretation. The site is significant under criterion D or its potential to yield information important to the history of Maui and the state of Hawai'i.

50-50-10-6425

Site 6425 consists of two low rock mounds located about 70.0 m north of the existing access road (Figure 55). These features were constructed of large, subround and subangular basalt cobbles and small boulders loosely piled into low, disorderly mounds. They are interpreted to be agricultural clearing mounds dating to the Historic Period. Water channels around the features and the general area of Site 6425 indicate that the area has been extensively impacted by erosion. The site is significant under criterion D for its potential to yield information pertinent to the history and/or prehistory of Maui and the state of Hawai'i as a whole.

Feature 1 measured 1.8 by 1.2 m and 0.2 m in height. Feature 2 measures 1.7 by 1.4 m and 0.21 m high. The distance between Features 1 and 2 is approximately 9.5 m at a bearing of 142/322°.



Figure 55: Photographic Overview of Site 6425.

50-50-10-6426

Site 6426 consists of a single, Historic C-shaped structure relating to military activity in the area. This feature, measuring 2.6 by 2.5 m on the exterior, has a single-course width wall constructed of small, subangular basalt boulders, with some bedrock inclusions in the north end. The wall of this feature stands only 0.24 m in height. The interior of this feature measures 1.4 by 1.7 m. The opening, which faces southwest, is flanked by a boulder alignment and a small boulder pile. While the feature is in fair condition, it appears to have been affected by erosion and animal activity. The site is significant under criterion D due to its potential to yield information important to the history of Maui and the state of Hawai`i.

DISCUSSION

Archaeological Inventory Survey for this 516.32-acre lot yielded forty previously undocumented archaeological sites. These sites represent pre-Contact, historic agricultural and military features. Pre-Contact features predominantly consist of temporary use and habitation sites in the northeast corner of the project area, clustered in the upper reaches of Kulanihakoi Gulch. Military and historic agricultural sites are dispersed throughout the project area. These include roads, walls, military C-shapes (used in training exercises), and many rock mounds associated with clearing and/or military activities. The summary table (Table 1) illustrates both

the temporal nature and function of all identified sites and their constituent features as depicted in Figure 4 above.

Of the forty sites recorded during this work, eight are associated with pre-Contact activities. These sites are: 6390, 6405, 6413, 6414, 6415, 6416, 6419, and 6420. These pre-Contact sites consisted of temporary rock shelters with petroglyph components, enclosures, platforms, a mound and a wall. Sites 6413, 6414, and 6420 are interpreted as temporary habitation sites bearing anthropomorphic petroglyph features. When compared to findings from other archaeological research in the area (see Previous Archaeology), the results of this work are not inconsistent with the expectations for the site as a whole. However, these sites are geographically isolated from the barren zone, as it is formally described. As discussed, the barren zone has poor soils, nearly no fresh water, and extremely hot and exposed environs. With only two exceptions, all traditional habitations found here were located in the northeast corner of the project area, within the upper reaches of Kulanihakoi Gulch, where a perennial stream would have supported temporary habitation and allowed shady trees and shrubs, as well as needed cultigens to support habitation.

Two pre-Contact sites, 6390 and 6405, are positioned toward the center of the project area, where the banks of Kulanihakoi Gulch become shallower and perennial waterways more diffuse. This area, unlike the northeast corner, is more congruent with the barren zone as it is defined. These sites give evidence to pre-Contact activity outside of the shelter of the gulch. While Historic and Modern disturbances have damaged these sites (and probably obliterated others like them), there is a suggestion here that the barren zone supported traditional activities despite the extreme hostility of the landscape. In the case of 6405, historic activities (including military training) impacted the site by adding Historic component features (as with Feature 1) and extensively damaging pre-existing features (especially Feature 4)

It is generally agreed that pre-Contact sites within the barren zone relate to travel between upland and coastal villages. However, Site 6405 (Feature 2) is interpreted as a lithic workshop, as evidenced by the presence of basalt lithics on the surface and in subsurface contexts. Such a site implies that the barren zone was utilized culturally—if not continuously—at least intermittently over the course of time.

Table 1: Temporal Summary of Identified Sites and Associated Function.

Historic: Military Training Activities					
Site No.	Fe	Feature Construction	Form	Area/Dimensions (m)	Function
6386	1	Nearly circular shape, constructed of mostly angular small to medium sized boulders	Rock Mound	1.7 X 1.5 m, 0.45 m tall; west side is 2 courses high	Gun fire cover
6391	1	C-shape located 11 m from North boundary. Constructed of small to medium subangular to subrounded boulders, also has naturally deposited rock inclusions. Neatly piled to form architecture along N and E sides. W and S sides are open	C-shape	5.0 X 4.1 m	Gunner position; temp. habitation
6394	1	Small- to large-sized basalt boulders piled in a semi-circle or half-moon shape	Linear Mound	4.5 X 4.0 m	Gun fire cover
6396	1	Constructed with small to medium boulders. Single stone high; the interior is level soil	U-shape	1.69 X 1.54 m	Gunner position
6397	1	Construction materials range from small cobbles to small boulders. Interior is slightly depressed. A lot of exposed bedrock in the surrounding area	C-shape	2.4 X 1.8 m	Gunner position; temp. habitation
6399	1	A rather short linear mound resembles a short wall segment, but no facing. Broken cobbles from bulldozing are present at the northeast side of the feature. Angular broken rocks are included on the construction	Linear Mound	2.9 X 0.56 m; all stones are piled 1-2 stones high	Gunner position; temp. habitation
6400	1	A U-shaped feature constructed with subrounded small and medium sized boulders. Stacked along the east and portions of north and south, the west end is open. The interior is excavated to 30 cm below the base of the architectural stones. Similar to other sites; located to the northeast of T-4 on the north side of the first branch of Kulanihakoi Gulch	U-shape possible fox hole	2.3 X 2.1 m	Gunner position; temp. habitation
6402	1	Low crude wall extending along the south edge of the ridge for 19.0 m, constructed with subangular to subrounded cobbles and small boulders. Constructed very rough with most stones crudely piled and certain portions consisted of stone alignments.	Wall	20.2 X 0.2-0.8 m	Gunner position; gun fire protection

Historic: Military Training Activities					
Site No.	Fe	Feature Construction	Form	Area/Dimensions (m)	Function
6403	1	Mostly piled along the east and west. Some stacking along the north (downslope) side. The south end is open and the interior is level soil; constructed of subangular to subrounded small to medium sized basalt boulders.	C-shape	exterior 3.8 X 3.2 m height: 0.55 m ; interior: 2.0 X 2.4 m height: 0.34 m; stacked 2-4 courses high on downslope (north) portion	Gunner position; temp. habitation
6403	2	Alignment to 2 stones high constructed of subangular to subrounded basalt boulders	C-shape	exterior: 1.8 X 1.8 X 0.35 m; interior: 1.3 X 1.3 (stacked 2 courses high	Gunner position; temp. habitation
6403	3	Small to medium sized boulders piled to form a linear mound, pile is on top of exposed bedrock, constructed of subangular to subrounded basalt	Linear Mound	1.6 X 0.8 X 0.34; interior: 0.2 m	Gun fire cover
6403	4	Small boulders alignment with bedrock inclusions. Stones are arranged to form C-shape. The interior is mostly exposed bedrock with some soil, constructed of angular to subrounded small basalt boulders	C-shape	2.0 X 1.4 X 0.3 m; interior: 1.5 X 1.2 X 0.32 m	Gun placement/ Protection
6405	1	Piled large cobbles and small boulders with 1 large boulder inclusion near the northeastern corner of the feature; composed of subangular and subrounded basalt cobbles and boulders	C-shape	3.5 X 3.0 X 0.25; interior: 2.8 X 2.0 X 0.4 m	Gun placement/ Protection
6408		Located on west edge of very low ridge, approximately 100 m south of Kulanihakoi gulch	(See below)	22.5 X 17.0 m	-
6408	1	Constructed of small to medium size subangular and subrounded basalt boulders. some stacking along the northeast and southeast sides, the rest is mostly piled. Small opening on the west side	Enclosure	3.0 X 3.0 height: 0.18 - 0.30 interior: 0.32 - 0.44m diameter: 2.0 m; where stacking 2-3 courses high	Gunner position; temp. habitation
6408	2	Constructed of small to medium subangular and subrounded basalt boulders, all piled into concentration, most of the interior is exposed bedrock	C-shape	6.0 X 3.2 m; height: 0.2-0.26 m interior: 0.12 - 0.22 m	Gunner position; temp. habitation
6408	3	Constructed of subangular and subrounded small and medium basalt boulders piled	Linear Rock Mound	2.0 X 0.6 m; height: 0.2-0.35 m	Gun fire cover
6408	4	Constructed of subangular and subrounded, small to medium size basalt boulders piled to form linear concentration	Linear Rock Mound	9.5 X 1.6 m; height: 0.2-0.46 m	Gun fire cover

Historic: Military Training Activities					
Site No.	Fe	Feature Construction	Form	Area/Dimensions (m)	Function
6408	5	Constructed of small to medium subangular and subrounded basalt boulders. The interior contains scattered cobbles but otherwise relatively level. Stones are piled neatly to form a C-Shape structure and it is open to the southwest	C-shape	exterior: 3.6 X 2.3 X 0.1-0.3 m, interior: 2.3 X 1.7 m X 0.5-0.3 m	Gunner position; temp. habitation
6409	1	L-shape alignment with a rectangular depression extending northeasterly from the alignment. This feature is constructed with large cobbles and small boulders. An alignment at the west end with more piling towards the east. The depression is eastern	L-shape	1.6 X 1.8 m	Gunner position; gun fire cover; temp. habitation
6410	-	(See below)	(See below)	9.8 X 2.6 m	-
6410	1	Constructed of angular and subangular cobbles and small basalt boulder that are neatly piled to form a C-shape; south boundary is not defined therefore the interior dimensions are estimated based on the extent of the architecture	C-shape	3.8 X ~2.0 X 0.24 m; interior: ~2.0 X ~1.0 X 0.30 m	Gunner position; temp. habitation
6410	2	Constructed of angular to subrounded cobbles and small basalt boulders piled to form a C-shape. The interior is mostly exposed bedrock and is very rugged. South boundary is not defined therefore the interior dimensions are estimated based on the extent of the architecture	C-shape	exterior: 4.0 X 2.6 X 0.3 m; interior: ~2.1 X 1.6 X 0.24 m	Gunner position; temp. habitation
6411	2	Mostly alignment, portions of piled small boulders and also portions that are 2-3 stones high; this feature extends from the top of the north facing slope of the edge on which Fe-1 is located. It extends north along the flood plain between the ridge and Kulanihakoi gulch. It ends about 9 m south of the existing waterway of the gulch	Wall	35.0 X 0.2 - 0.6 m height: 0.58 m where coursing: 2-3 stones	Gunner position/ gun fire protection
6412	-	The area around Features 1-3 had been greatly affected by erosion. Grass cover in this area is rather sparse and contains lots of gravel	(See below)	(See below)	-
6412	1	Constructed of basalt subangular to subrounded cobbles and small to medium size boulders are piled to form a C-shape	C-shape	Exterior: 3.7 X 3.0 X 0.2 m; interior: 2.7 X 2.4 X 0.2 m	Gunner position; temp. habitation

Historic: Military Training Activities					
Site No.	Fe	Feature Construction	Form	Area/Dimensions (m)	Function
6412	2	Constructed of alignments of small subangular to subrounded basalt boulders; the interior of the feature had been extensively eroded. All sediments had been eroded out to a point where the vertical extent of the architecture is completely exposed, no cultural materials were associated with eroded portion	L-shape	exterior: 3.2 X 2.3 X 0.2 m; interior: undetermined; interior height: 0.26-0.37 m	Gunner position; gun fire cover; temp. habitation
6412	3	Composed of subangular and subrounded cobbles and small basalt boulders piled to form a C-shape; the interior has been eroded, culturally sterile	C-shape	3.0 X 1.7 X 0.2 m interior height: 0.15 m	Gunner position; temp. habitation
6412	4	Constructed of small to medium sized subangular to subrounded basalt boulders piled to form the architectural feature; the interior is relatively level, however, there are some exposed bedrock	L-shape	3.5 X 1.5 X 0.5 m	Gunner position; gun fire cover; temp. habitation
6412	5	Constructed of subangular to subrounded small to medium size basalt boulders piled to form a linear structure along the north with three boulder alignments extending south off of the main structure to form 2 adjoining c-shapes	C-shape	6.5 X 3.0 X 0.56 m	Gunner position; temp. habitation
6421	1	Constructed of subrounded cobbles and small boulders as well as large naturally deposited boulders. Abuts the south bank of an old natural waterway. An old road crosses the gulch just to the northeast of the site	Wall	7.0 X 1.5 m; ranges from 1 - 4 courses high	Gunner position/ gun fire protection
6426	1	Constructed of subangular and subrounded small boulders with some bedrock inclusion at the north end. The feature opens to the southwest which consisted of a boulder alignment and boulder pile (2 stones wide) along the east side. Interior is level soil with some exposed bedrock	C-shape	2.6 X 2.5 and 0.24 m high; interior: level soil	Gunner position; temp. habitation

Historic: Agriculture					
Site No.	Fe	Feature Construction	Form	Area/Dimensions (m)	Function
6392	1	Constructed with large cobbles to small boulders. Top of feature is relatively flat. Most stones had been broken up and are now mostly angular with some subrounded. Feature is oval shaped	Rock Mound	1.7 X 1.3 m	Clearing mound
6393		It appears an old road extends along the north side of Fe-3 and extends northwesterly between Fe-1 and Fe-2. A dried channel extends southwesterly about 5 meters north and west of Fe-1	Rock Mound	40 X 30 m	Clearing mound
6393	1	Angular (mechanically altered) basalt piled	Rock Mound	2.6 X 1.6 height: 0.55 m	Clearing mound
6393	2	Angular (mechanically altered) basalt mostly piled; but its faced at southwest side	Rock Mound	3.5 X 2.0 height: 0.55-0.8 m; 3-4 courses high	Clearing mound
6393	3	Angular (mechanically altered) basalt piled	Rock Mound	2.3 X 2.0 height: 0.46 m	Clearing mound
6406	1 & 2	All material used in the construction involve mechanically split stones	Rock Mounds	6.75 X 5.0 m	Clearing mound
6423		Consisted of 3 historic rock mounds located on a low ridge between the existing road and the south boundary fence. Comprised of mechanically altered small boulders. Purposefully piled mounds; but purpose is unknown	Rock Mounds	(See below)	Clearing mound
6423	1	"	Rock mound	2.6 X 1.4 m and 0.4 m high	Clearing mound
6423	2	"	Rock mound	2.0 X 1.3 m and 0.24 m high	Clearing mound
6423	3	"	Rock mound	2.26 X 0.9 m and 0.3 m high	Clearing mound
6424	1	Single historic linear mound located about 40 m northwest of site T-37 Both are on the same northwest ridge between the access road and the south boundary fence consists of broken up stones (angular)	Rock Mound	1.8 X 1.0 m and 0.4 m high	Clearing mound
6425	-	Consisted of two rock mounds located about 70 m north of the existing access road. Consisted of subrounded to subangular large cobbles and small boulders;	Rock Mounds	(See below)	Clearing mound

Historic: Agriculture					
Site No.	Fe	Feature Construction	Form	Area/Dimensions (m)	Function
6425	1	Piled, basalt subrounded to subangular cobbles and small boulders; the water channels probably started off as cattle trails	Rock mound	1.8 X 1.2 m and 0.24 m high	Clearing mound
6425	2	Piled basalt, subrounded to subangular cobbles and small boulders	Rock mound	1.7 X 1.4 m and 0.24 m high	Clearing mound
Historic: Undetermined					
Site No.	Fe	Feature Construction	Form	Area/Dimensions (m)	Function
6387	1	Road with retention terrace along the north edge fronting Kulanihakoi Gulch. Terrace consisted of nicely stacked small boulders with isolated naturally deposited boulder inclusions	Road	134 X 4 m; Stacking ranges from 3-8 stones high.	Transport
6388	1	Angular (mechanically broken up) rocks with discolored cortex suggest these rocks were buried prior to bulldozing of the area.	Rock Mound	1.5 X 1.1 m; stone piled 2-4 stones high	Clearing mound
6389	1	Most rocks have been mechanically altered; mounds constructed with angular (split) cobble to medium boulders	Rock Mound	5.0 X 1.6, height: 0.5 - 0.8 m	Clearing mound
6389	2	Most rocks have been mechanically altered; mounds constructed with angular (split) cobble to medium boulders	Rock Mound	3.0 X 2.0 m, height: 0.4-0.75 m	Clearing mound
6389	3	Most rocks have been mechanically altered; mounds constructed with angular (split) cobble to medium boulders	Rock Mound	3.0 X 2.0 m, height: 0.42-0.9 m	Clearing mound
6389	4	Part of road retention. Most rocks have been mechanically altered; mounds constructed with angular (split) cobble to medium boulders	Rock Mound	6.9 X 1.3 m, height: 0.7-0.8 m	Soil retention
Pre-Contact: Historic Reuse					
Site No.	Fe	Feature Construction	Form	Area/Dimensions (m)	Function
6412	7	Constructed of subangular to subrounded cobbles to small basalt boulders piles along the north and west and alignments to 2 stones wide along the south and east; This feature might have an earlier component but later used during military training	Enclosure	exterior: 2.5 X 3.7 X 0.2 m; interior: 2.0 X 2.5 X 0.3 m	Habitation / Gunner position; temp. habitation

Pre-Contact					
Site No.	Fe	Feature Construction	Form	Area/Dimensions (m)	Function
6389	1	Feature located on top of bedrock. Constructed with altered cobbles and small boulders with sediments within, possibly a clearing mound however this cannot be determined due to absence of other features; oddity compared to other mounds on project area	Rock Mound	2.0 X 1.5 m	Possible clearing mound
6405	2	Original construction is not known, currently the architecture consisted of crude piling and alignments; constructed of subrounded to subangular basalt cobbles and small boulders	Enclosure	4.3 X 3.5 X 0.3 m; interior: 3.7 X 2.5 X 0.22 m	Habitation
6405	3	Mostly disturbed, alignment with some crude piling; constructed of basalt cobbles and small to medium size basalt boulders	Enclosure	3.5 X 3.0 m; interior: 3.0 X 2.0 m	Habitation
6405	4	Appears to be a remnant of a low wall forming the south boundary of the site; a linear small to medium boulder concentration, a short section extends southward from the mid-section of the primary concentration to form a C-shape; constructed of subangular to subrounded small to medium sized basalt boulders	Wall	7.4 X 3.0, thickness: 0.4-1.8 m, height: 0.2-0.38 m	Boundary
6413	-	Basalt boulders and cobbles have been stacked to connect the cliff face with boulders that have fallen, forming a simple enclosure. Including a possible hearth, there are four petroglyph panels on the cliff face.	Rock shelter and modified outcrop with 4 petroglyph panels	(See below)	(See below)
6413	1	Fe-1 is a small ring of small basalt boulders in the center of Fe-1 under the drip line. It looks similar to a hearth however there is no charring or any other signs of fire. Shelter and modified outcrop; construction method is stacked basalt boulders and cobbles (0.50 - 1.5 m) the stacking connects the bedrock cliff face with large boulders that have fallen from the cliff making an enclosure; basalt cobbles and boulders, angular to subangular in shape	Rock shelter	exterior: 9.5 X 4.0 m height: 0.15 - 0.98m; interior: 4.0 X 4.0 m height: 0.23 - 2.78 m; 5 courses high in the eastern portion of the feature	Habitation

Pre-Contact					
Site No.	Fe	Feature Construction	Form	Area/Dimensions (m)	Function
6413	2	Consists of four panels of pre-historic rock art with petroglyphs (majority are pecked with some scratching) majority appear original, although some of the scratches (modifications) appear to have been added; pecked onto a north facing basalt wall	Possibly workshop, ceremonial, or communication	Panel 1: 1.20 X 2.0. Panel 2: 1.38 X 0.8 m, Panel 3: 1.95 X 2.0 m, Panel 4: 1.10 X 1.5 m	Ceremonial
6414		Overhang measures 9.5 X 5.7. The ceiling is low starting 2.5 m from the drip line. It measures 70 cm high towards the opening and about 50cm at the back. The area between the low ceiling and the drip line measures 3.3 m at the highest point. The interior is level silt in the back and slopes southeasterly where the ceiling is highest. Two petroglyphs are present. One on a boulder at the west end of the overhang and the other on the gulch's wall 3.3 m from the east edge of the overhang.	Rock shelter; Rock art	see feature description	Habitation
6414	1	Overhang measures. The ceiling is low starting 2.5 m from the drip line. It measures 70 cm high towards the opening and about 50cm at the back. The area between the low ceiling and the drip line measures 3.3 m at the highest point. The interior is level silt in the back and slopes southeasterly where the ceiling is highest. The slope continues for 4.0 m before dropping into the base of the gulch.	Overhang	9.5 X 5.7 X 0.50 - 0.70	Habitation
6414	2	Two petroglyphs are present, one is on a boulder at the west end of the overhang and the other is on the gulch's wall 3.3 m from the east edge of the overhang	Rock Art	Petroglyph 1: 0.28 X 0.22 m; Petroglyph 2: 0.28 X 0.16 m	Decorative; ceremonial
6415	1	Constructed of large cobbles to medium size boulders. The width ranges from two to several stones (3-5) depending on rock sizes. Several short segments are in good conditions	Trail	41.8 m long; 0.5-1.0 wide and 0.17-0.20 m high	Transport
6416	1	Mounded cobbles to small boulders. Most of the rocks covered with soils and plant remains; possibly a clearing	Rock Mound	3.3 X 3.1 m	Ag. Clearing
6419	1	Overhang with the entryway. Some charcoal scatter was observed on the surface, no detail recording due to	Overhang	Entryway: 3 m long, 0.60 m high and is about 5.0 m	Habitation

Pre-Contact					
Site No.	Fe	Feature Construction	Form	Area/Dimensions (m)	Function
		bee hives		deep	
6420		Fe-1 is a rockwall, Fe-2 petroglyphs; rock shelter part of basalt rock outcropping. The chamber also includes Fe-1 small basalt rock wall alignment built into the existing bedrock.	Rock shelter	Shelter: 11.0 X 6.0 and 4 m deep	Habitation
6420	1	Constructed of stacked rock along edge of existing natural bedrock, consisted of basalt small (less than 20 cm) to medium (20 - 40 cm) basalt boulders, several large (greater than 40 cm) basalt rocks	Alignment	1.41 X 0.90, thickness: 0.40 m; 3 courses high from existing rock wall for 1.3 m	Possible planting area
6420	2	2 petroglyphs were scratched and pecked on a basalt rock wall outcropping, angle of wall is generally east-facing.; Petroglyph 2 (stick figure) was pecked onto the rock panel and is not very deep or obvious without a close look, triangular figure scratched on rock with other small scratched lines nearby.	Rock Art	Petroglyph 1: 7 X 3 cm; petroglyph 2: 2-9cm X 7 cm	Decorative; ceremonial

For the most part, historic sites found during this work pertained to agriculture and military training activities. Overwhelmingly, the majority of Historic sites and features found during this work were rock mounds. Thirty-three features, distributed between 16 sites, were rock mounds. These mounds are typologically distinguished between agricultural mounds (i.e., field and pasture clearing) and military mounds. With few exceptions, agricultural mounds are distinguished by scars on boulders made by heavy equipment. In the absence of such markers, these mounds are also assumed agricultural due to their geographic proximity to other Historic agricultural features. Military mounds were interpreted based on their geographic proximity to other military features. For a complete list of mounds found during this work, refer to Appendix B.

Two mounds, Sites 6390 and 6416, were determined to relate to pre-Contact times. These sites were evaluated based on their form (in the case of 6390) and their proximity to other pre-Contact sites (in the case of 6416). Site 6390 was more formal than other mounds. Unlike rock mounds that are indiscriminately piled, the cobbles and boulders that make up Site 6390 were stacked and faced in some places. This single-feature site also lies atop a bedrock outcrop, rather than atop the ground surface. Such a distinction is unique among the mounds in this area.

This mound is further distinguished by aeolian soil deposits that have filled the open spaces between stones, indicating the site's antiquity. As this feature is so unique among the others identified on this lot, there is a high probability that this feature may yield significant Traditional deposits, including human remains. While Site 6416 is severely disturbed, its form is similar to 6390, and its potential for yielding similarly significant deposits is equally as high. Therefore, these sites are recommended for Data Recovery.

Sites 6387 and 6401 are historic roads that traverse the project area, moving generally *mauka-makai*. Site 6387 follows Kulanihakoi Gulch and gives access from Pi'ilani Highway to the upper reaches of the project area. Site 6401 is a unique single-feature site, with basalt stone alignments, or "curbs," running along both sides of the road. While the purpose of this unique component is not known, it is presumed to relate to military training exercises.

One unique Historic site deserving note was found in this lot. Site 6395 is a possible staging area, loading dock, or water tank platform. The form of this feature is unique, with a level floor constructed with gravel on one half and poured cement on the other half.

Features relating to military training activity are present throughout the project area. A total of 17 sites relate to military training on the parcel. Among these, 14 C-shaped structures, 1 enclosure, 5 mounds, 2 U-shaped structures, and 3 walls were identified. These features were loosely constructed and seem to have been built for one-time use. Unlike traditional structures, military features are structurally weak. Traditional-style C-shapes are neatly stacked and faced to several courses high, whereas the C-shapes and U-shapes documented here are usually a single course of stones arranged in a curved alignment. Several of these C-shapes and U-shapes display a depression in the center of the feature, where a training soldier might have lain armed with a weapon. Walls and enclosures associated with military use tend to be piled indiscriminately, rather than neatly stacked and faced. These features, like the C-shapes and U-shapes, were not built to withstand time and the elements, but rather for one time use in a training exercise.

The findings reported herein were generally congruent with expectations for the project area. While very few, if any, traditional sites were anticipated, eight traditional sites were newly documented within the project area. Six of these, however, are located within Kulanihakoi Gulch, where the environmental makeup is more hospitable to temporary habitation. A high density of military-related sites was documented here, which was not unexpected. Also, many historic agricultural features were documented, as anticipated.

SITE SIGNIFICANCE ASSESSMENTS AND RECOMMENDATIONS

These sites have been evaluated for significance according to the criteria established for the Hawai'i State Register of Historic Places. The five criteria are presented below:

- Criterion A: Site is associated with events that have made a significant contribution to the broad patterns of our history
- Criterion B: Site is associated with the lives of persons significant to our past
- Criterion C: Site is an excellent site type; embodies distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components may lack individual construction
- Criterion D: Site has yielded or has the potential to yield information important in prehistory or history
- Criterion E: Site has cultural significance to an ethnic group; examples include religious structures, burials, major traditional trails, and traditional cultural places

All of the sites identified during Inventory Survey are significant under Criterion D. Most of the sites (except for a few rock mounds and roads) have been thoroughly mapped and recorded.

Data Recovery is recommended for sites 6405 and 6412. These sites consist of mixed pre-Contact and military components, representing adaptive re-use of pre-existing sites in the area. While features within these sites have been interpreted as both military and pre-Contact, these mixed component sites necessitate further work in order to confirm their temporal interpretations as well as establish the extent of adaptive re-use.

Preservation is recommended for Sites 6390, 6413, 6414, 6415, 6416, 6419, and 6420. These sites represent Hawaiian traditional structures in the barren zone, where habitation is understood to have been limited and extremely temporary. These sites, therefore, are relatively uncommon and warrant Preservation, the degree of which shall be established in a Preservation Plan following this AIS, as per the guidelines of SHPD (§13-284-12 HAR). Furthermore, Sites 6413, 6414 and 6420 also contain petroglyphs, a feature type that typically calls for Preservation in any context and is certainly recommended here.

No further work is recommended for any agricultural mounds or miscellaneous Historic sites, including 6386, 6389, 6391 – 6403, 6406 – 6411, 6417, 6418 and 6421 as these have little potential for providing further data. The limited excavations that have occurred at military Sites 6403 and 6408 demonstrate the absence of cultural material in these subsurface deposits, a finding that is consistent with previous work in similar sites (especially McGerty *et al.* 2000). Therefore, no further work is recommended for military sites, with the exception of 6405 and 6412, as discussed above.

Due to the density of sites within the project area, and the archaeological data yielded—and the future potential for this land to yield additional data—Archeological Monitoring is recommended during any ground altering work planned for the parcel.

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APPENDIX A: RADIOCARBON RESULTS

Ms. Donna Shefcheck

Report Date: 7/20/2007

Scientific Consultant Services, Inc.

Material Received: 6/25/2007

Sample Data	Measured Radiocarbon Age	$^{13}\text{C}/^{12}\text{C}$ Ratio	Conventional Radiocarbon Age(*)
Beta - 232006 SAMPLE : SCSRC541 ANALYSIS : AMS-Standard delivery MATERIAL/PRETREATMENT : (charred material): acid/alkali/acid 2 SIGMA CALIBRATION : Cal AD 1490 to 1670 (Cal BP 460 to 280) AND Cal AD 1780 to 1790 (Cal BP 160 to 160)	270 +/- 40 BP	-24.5 o/oo	280 +/- 40 BP

CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-24.5:lab.mult=1)

Laboratory number: **Beta-232006**

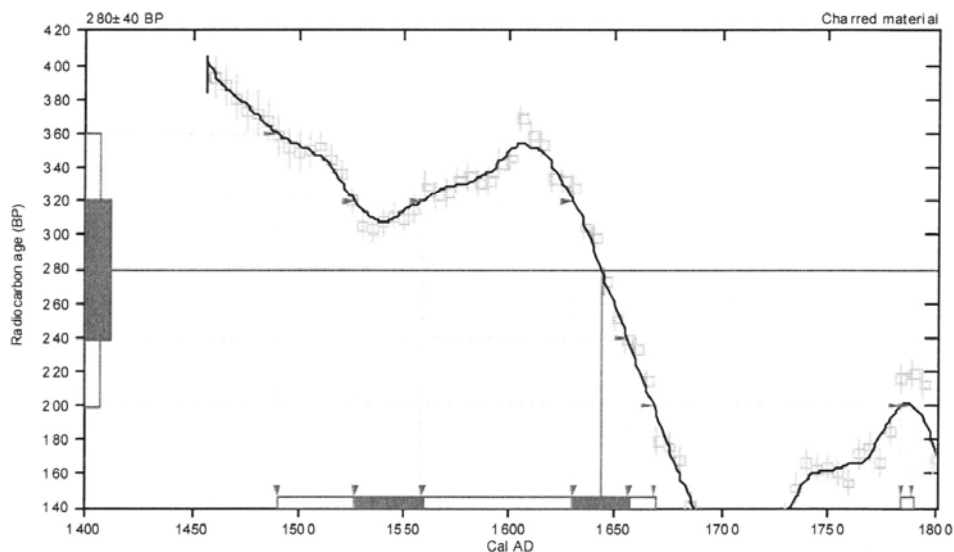
Conventional radiocarbon age: **280±40 BP**

2 Sigma calibrated results: Cal AD 1490 to 1670 (Cal BP 460 to 280) and
(95% probability) Cal AD 1780 to 1790 (Cal BP 160 to 160)

Intercept data

Intercept of radiocarbon age
with calibration curve: Cal AD 1640 (Cal BP 310)

1 Sigma calibrated results: Cal AD 1530 to 1560 (Cal BP 420 to 390) and
(68% probability) Cal AD 1630 to 1660 (Cal BP 320 to 290)



References:

Database used
INTCAL04

Calibration Database

INTCAL04 Radiocarbon Age Calibration

IntCal04: Calibration Issue of Radiocarbon (Volume 46, nr 3, 2004).

Mathematics

A Simplified Approach to Calibrating C14 Dates

Talma, A. S., Vogel, J. C., 1993, Radiocarbon 35 (2), p317-322

Beta Analytic Radiocarbon Dating Laboratory

4985 S.W. 74th Court, Miami, Florida 33155 • Tel: (305) 667-5167 • Fax: (305) 663-0964 • E-Mail: beta@radiocarbon.com

APPENDIX B: SITE DATA

Site No.	Fe	Feature Type	Feature Use	Feature Type	Possible Site Age	Feature Description	Feature Dimensions (m)	Recommendation
6386	1	Military	Agricultural; possibly Military Related	Rock Mound	Historic	Nearly circular shape, constructed of mostly angular small to medium sized boulders	1.7 X 1.5 m, 0.45 m tall; west side is 2 courses high	No further work
6387	1	Historic Misc.	Transportation	Road	Historic	Road with retention terrace along the north edge fronting Kulanihakoi Gulch. Terrace consisted of nicely stacked small boulders with isolated naturally deposited boulder inclusions	134 X 4 m; Stacking ranges from 3-8 stones high.	No further work
6388	1	Historic Misc.	Undetermined	Rock Mound	Historic	Angular (mechanically broken up) rocks with discolored cortex suggests these rocks were buried prior to bulldozing of the area.	1.5 X 1.1 m; stone piled 2-4 stones high	No further work
6389	1	Historic Misc.	Undetermined	Rock Mound	Historic	Most rocks have been mechanically altered; mounds constructed with angular (split) cobble to medium boulders	5.0 X 1.6, height: 0.5 - 0.8 m	No further work
6389	2	Historic Misc.	Undetermined	Rock Mound	Historic	Most rocks have been mechanically altered; mounds constructed with angular (split) cobble to medium boulders	3.0 X 2.0 m, height: 0.4-0.75 m	No further work
6389	3	Historic Misc.	Undetermined	Rock Mound	Historic	Most rocks have been mechanically altered; mounds constructed with angular (split) cobble to medium boulders	3.0 X 2.0 m, height: 0.42-0.9 m	No further work
6389	4	Historic Misc.	Undetermined	Rock Mound	Historic	Part of a road retention. Most rocks have been mechanically altered; mounds constructed with angular (split) cobble to medium boulders	6.9 X 1.3 m, height: 0.7-0.8 m	No further work

Site No.	Fe	Feature Type	Feature Use	Feature Type	Possible Site Age	Feature Description	Feature Dimensions (m)	Recommendation
6390	1	pre-Contact	Agricultural	Rock Mound	Possibly pre-Contact	Feature located on top of bedrock. Constructed with altered cobbles and small boulders with sediments within, possibly a clearing mound however this cannot be determined due to absence of other features; oddity compared to other mounds on project area	2.0 X 1.5 m	No further work
6391	1	Military	Military Training Related	C-shape	Historic	C-shape located 11 m from North boundary. Constructed of small to medium subangular to subrounded boulders, also has naturally deposited rock inclusions. Neatly piled to form architecture along N and E sides. W and S sides are open	5.0 X 4.1 m	No further work
6392	1	Historic Agriculture	Agricultural/Undetermined	Rock Mound	Historic	Constructed with large cobbles to small boulders. Top of feature is relatively flat. Most stones had been broken up and are now mostly angular with some subrounded. Feature is oval shaped	1.7 X 1.3 m	No further work
6393		Historic Agriculture	Agricultural/Undetermined	Rock Mound	Historic	It appears an old road extends along the north side of Fe-3 and extends northwesterly between Fe-1 and Fe-2. A dried channel extends southwesterly about 5 meters north and west of Fe-1	40 X 30 m	No further work
6393	1	Historic Agriculture	Agricultural/Undetermined	Rock Mound	Historic	Angular (mechanically altered) basalt piled	2.6 X 1.6 height: 0.55 m	"

Site No.	Fe	Feature Type	Feature Use	Feature Type	Possible Site Age	Feature Description	Feature Dimensions (m)	Recommendation
6393	2	Historic Agriculture	Agricultural/Undetermined	Rock Mound	Historic	Angular (mechanically altered) basalt mostly piled; but its faced at southwest side	3.5 X 2.0 height: 0.55-0.8 m; 3-4 courses high	"
6393	3	Historic Agriculture	Agricultural/Undetermined	Rock Mound	Historic	Angular (mechanically altered) basalt piled	2.3 X 2.0 height: 0.46 m	"
6394	1	Military	Possibly Military Related	Linear Mound	Historic	Roughly 30-40 m north of the existing dirt road	4.5 X 4.0 m	No further work
6395	1	Historic Misc.	Undetermined	Terrace/Retention Wall	Historic	Retention wall at east end is partially concrete paved. Terrace continues westerly, however, this portion is stacked and faced with small boulder, but no concrete is involved. Appears to be an area where gravel was stock piled.	11.0 X 1.4 m; height: 0.67-1.47 m; facing is 3-5 courses	No further work
6396	1	Military	Military Training Related	U-shape	Historic	Constructed with small to medium boulders. Single stone high; the interior is level soil	1.69 X 1.54 m	No further work
6397	1	Military	Military Training Related	C-shape	Historic	Construction materials range from small cobbles to small boulders. Interior is slightly depressed. A lot of exposed bedrock in the surrounding area	2.4 X 1.8 m	No further work
6398	1	Historic Misc.	Possible Pet Burial	Linear Mound with possible epitaph on wood marker	Historic	All stones are newly piled and the wooden marker is a piece treated wood; a small area measuring 80 X 50 cm is slightly depressed suggesting the presence of a pit; size suggestive of animal burial.	2.8 X 1.6	

Site No.	Fe	Feature Type	Feature Use	Feature Type	Possible Site Age	Feature Description	Feature Dimensions (m)	Recommendation
6399	1	Historic Misc.	Undetermined; Possibly Military Related	Linear short Mound	Historic	A rather short linear mound resembles a short wall segment, but no facing. Broken cobbles from bulldozing are present at the northeast side of the feature. Angular broken rocks are included on the construction	2.9 X 0.56 m; all stones area piled 1-2 stones high	No further work
6400	1	Military	Military Training Related	U-shape possible fox hole	Historic	A U-shaped feature consturced with subrounded small and medium sized boulders. Stacked along the east and portions of north and south, the west end is open. The interior is excavated to 30 cm below the base of the architectural stones. Similar to other sites; located to the northeast of T-4 on the north side of the first branch of Kulanihakoi Gulch	2.3 X 2.1 m	No further work
6401	1	Historic Misc.	Transportation	Road	Historic	An old road of undetermined length. Curbstone line both north and south sdies. Curbstones include single small to large boulder alighments, but portion also consisted of piled small to large boulders. A small poriton reveals some cobbles and gravel deposit, which probably represents the original road surface.	undetermined	No further work
6402	1	Military	Probably Associated with Military Training	Wall	Historic	Low crude wall extending along the south edge of the ridge for 19.0 m, constructed with subangular to subrounded cobbles and small boulders.	20.2 X 0.2-0.8 m	No further work

Site No.	Fe	Feature Type	Feature Use	Feature Type	Possible Site Age	Feature Description	Feature Dimensions (m)	Recommendation
						Constructed very rough with most stones crudely piled and certain portions consisted of stone alignments.		
6403		Military	Military Training Related	(See below)	Historic	(See below)	(See below)	(See below)
6403	1	Military	Military Training Related	C-shape	Historic	Mostly piled along the east and west. Some stacking along the north (downslope) side. The south end is open and the interior is level soil; constructed of subangular to subrounded small to medium sized basalt boulders.	exterior 3.8 X 3.2 m height: 0.55 m ; interior: 2.0 X 2.4 m height: 0.34 m; stacked 2-4 courses high on downslope (north) portion	No further work
6403	2	Military	Military Training Related	C-shape	Historic	Alignment to 2 stones high constructed of subangular to subrounded basalt boulders	exterior: 1.8 X 1.8 X 0.35 m; interior: 1.3 X 1.3 (stacked 2 courses high	No further work
6403	3	Military	Military Training Related	Linear Mound	Historic	Small to medium sized boulders piled to form a linear mound, pile is on top of exposed bedrock, constructed of subangular to subrounded basalt	1.6 X 0.8 X 0.34; interior: 0.2 m	No further work

Site No.	Fe	Feature Type	Feature Use	Feature Type	Possible Site Age	Feature Description	Feature Dimensions (m)	Recommendation
6403	4	Military	Military Training Related	C-shape	Historic	Small boulders alignment with bedrock inclusions. Stones are arranged to form C-shape. The interior is mostly exposed bedrock with some soil, constructed of angular to subrounded small basalt boulders	2.0 X 1.4 X 0.3 m; interior: 1.5 X 1.2 X 0.32 m	No further work
6405	-	Historic Misc.	Habitational/ Military Training Related	(See below)	Pre-Contact/ Historic	Basalt flakes are scattered within portion of the site; site consisted of 4 features as well as lithic scatter. Fe-1 is similar to a lot of features thought to be associated with military training	(See below)	(See below)
6405	1	Military	Military Training Related	C-shape	Historic	Piled large cobbles and small boulders with 1 large boulder inclusion near the northeastern corner of the feature; composed of subangular and subrounded basalt cobbles and boulders	3.5 X 3.0 X 0.25; interior: 2.8 X 2.0 X 0.4 m	No further work
6405	2	pre-Contact	Habitational	Enclosure	pre-Contact	Original construction is not known, currently the architecture consisted of crude piling and alignments; constructed of subrounded to subangular basalt cobbles and small boulders; Looks a lot earlier than possibly military Fe-1 and Features at T-18 just west of the site	4.3 X 3.5 X 0.3 m ; interior: 3.7 X 2.5 X 0.22 m	No further work

Site No.	Fe	Feature Type	Feature Use	Feature Type	Possible Site Age	Feature Description	Feature Dimensions (m)	Recommendation
6405	3	pre-Contact	Habitational	Enclosure	pre-Contact	Mostly disturbed, alignment with some crude piling; constructed of basalt cobbles and small to medium size basalt boulders	3.5 X 3.0; interior: 3.0 X 2.0 m	No further work
6405	4	pre-Contact	Habitational/ workshop	Wall	pre-Contact	appears to be a remnant of a low wall forming the south boundary of the site; a linear small to medium boulder concentraion, a short section extends southward from the mid-section of the primary concentration to form a C-shape. However the original shape is difficult to be certain due to extensive erosion; constructed of subangular to subrounded small to medium sized basalt boulders	7.4 X 3.0, thickness: 0.4-1.8 m, height: 0.2-0.38 m	No further work
6406	1 & 2	Historic Agriculture	Agricultural/ Clearing for the ranch	Rock Mounds	Historic	All material used in the construction invlove mechanically split stones	6.75 X 5.0 m	No further work
6407	1	Historic Misc.	Possibly Associated with Military	Rock Mound	Historic	Linear rock mound constructed with subangular cobbles and small to medium size boulders. No stacking, the eastern half of this feature is on top of bedrock.	9.0 X 0.3-0.8 m	No further work

Site No.	Fe	Feature Type	Feature Use	Feature Type	Possible Site Age	Feature Description	Feature Dimensions (m)	Recommendation
6408		Military	Possibly Associated with Military	(See below)	Historic	Located on west edge of very low ridge, approximately 100 m south of Kulanihakoi gulch	22.5 X 17.0 m	No further work
6408	1	Military	Undetermined; Possibly Military Related	Enclosure	Historic	Constructed of small to medium size subangular and subrounded basalt boulders. some stacking along the northeast and southeast sides, the rest is mostly piled. Small opening on the west side	3.0 X 3.0 height: 0.18 - 0.30 interior: 0.32 - 0.44m diameter: 2.0 m; where stacking 2-3 courses high	No further work
6408	2	Military	Military Training Related	C-shape	Historic	constructed of small to medium subangular and subrounded basalt boulders, all piled into concentration, most of the interior is exposed bedrock	6.0 X 3.2 m; height: 0.2-0.26 m interior: 0.12 - 0.22 m	No further work
6408	3	Military	Military Training Related	Linear Rock Mound	Historic	Constructed of subangular and subrounded small and medium basalt boulders piled	2.0 X 0.6 m; height: 0.2-0.35 m	No further work
6408	4	Military	Military Training Related	Linear Rock Mound	Historic	Constructed of subangular and subrounded, small to medium size basalt boulders piled to form linear concentration	9.5 X 1.6 m; height: 0.2-0.46 m	No further work
6408	5	Military	Military Training Related	C-shape	Historic	Constructed of small to medium subangular and subrounded basalt boulders. The interior contains scattered cobbles but otherwise relatively level. Stones are piled neatly to form a C-Shape	exterior: 3.6 X 2.3 X 0.1-0.3 m, interior: 2.3 X 1.7 m X 0.5-0.3 m	No further work

Site No.	Fe	Feature Type	Feature Use	Feature Type	Possible Site Age	Feature Description	Feature Dimensions (m)	Recommendation
						structrue and it is ope to the southwest		
6409	1	Military	Military Training Related	L-shape	Historic	L-hape alignment with a rectangular depression extending northeasterly from the alignment. This feature is constructed with large cobbles and small boulders. An alignment at the west end with more piling towards the east. The depression is eastern	1.6 X 1.8 m	No further work
6410		Military	Military Training Related	(See below)	Historic	(See below)	9.8 X 2.6 m	No further work
6410	1	Military	Military Training Related	C-shape	Historic	contructed of angular and subangular cobbles and small basalt boulder that are neatly piled to form a C-shape; south boundary is not defined therefore the interior dimensions are estimated based on the extent of the architecture	3.8 X ~2.0 X 0.24 m; interior: ~2.0 X ~1.0 X 0.30 m	No further work
6410	2	Military	Military Training Related	C-shape	Historic	constructed of angular to subrounded cobbles and small basalt boulders piled to form a C-shape. The interior is mostly exposed bedrock and is very rugged. South boundary is not definedtherefore the interior	exterior: 4.0 X 2.6 X 0.3 m; interior: ~2.1 X 1.6 X 0.24 m	No further work

Site No.	Fe	Feature Type	Feature Use	Feature Type	Possible Site Age	Feature Description	Feature Dimensions (m)	Recommendation
						dimensions are estimated based on the extent of the architecture		
6411		Historic Misc.	(See below)	(See below)	(See below)	(See below)	(See below)	(See below)
6411	1	Historic Misc.	Possibly Agricultural	Rock Mound	Undetermined	Constructed of basalt subangular to subrounded cobbles to medium size boulders piled. No stacking or facing	2.1 X 2.0 height: 0.26 - 0.34 m	No further work
6411	2	Military	Possibly Associated with Military Training	Wall	Historic	Mostly alignment, portions of piled small boulders and also portions that are 2-3 stones high; this feature extends from the top of the north facing slope of the edge on which Fe-1 is located. It extends north along the flood plain between the ridge and Kulanihakoi gulch. It ends about 9 m south of the existing waterway of the gulch	35.0 X 0.2 - 0.6 m height: 0.58 m where coarsing: 2-3 stones	No further work
6412		Military	Possibly Associated with Military Training	(See below)	Historic	The area around Features 1-3 had been greatly affected by erosion. Grass cover in this area is rather sparse and contains lots of gravel	(See below)	(See below)

Site No.	Fe	Feature Type	Feature Use	Feature Type	Possible Site Age	Feature Description	Feature Dimensions (m)	Recommendation
6412	1	Military	Possibly Associated with Military Training	C-shape	Undetermined; possibly historic	Constructed of basalt subangular to subrounded cobbles and small to medium size boulders are piled to form a C-shape	Exterior: 3.7 X 3.0 X 0.2 m; interior: 2.7 X 2.4 X 0.2 m	No further work
6412	2	Military	Possibly Associated with Military Training	L-shape	Undetermined; possibly historic	Constructed of alignments of small subangular to subrounded basalt boulders; the interior of the feature had been extensively eroded. All sediments had been eroded out to a point where the verticle extent of the architecture is completely exposed, no cultural materials were associated with eroded portion	exterior: 3.2 X 2.3 X 0.2 m; interior: undetermined; interior height: 0.26-0.37 m	No further work
6412	3	Military	Possibly Associated with Military Training	C-shape	Undetermined; possibly historic	Composed of subangular and subrounded cobbles and small basalt boulders piled to form a C-shape; the interior has been eroded, culturally sterile	3.0 X 1.7 X 0.2 m interior height: 0.15 m	No further work
6412	4	Military	Possibly Associated with Military Training	L-shape	Undetermined; possibly historic	Constructed of small to medium sized subangular to subrounded basalt boulders piled to form the architectural feature; the interior is relatively level, however, there are some exposed bedrock	3.5 X 1.5 X 0.5 m	No further work
6412	5	Military	Possibly Associated with Military Training	C-shape	Undetermined; possibly historic	Constructed of subangular to subrounded small to medium size basalt boulders piled to form a linear structure along the north with three boulder alignments extending south off	6.5 X 3.0 X 0.56 m	No further work

Site No.	Fe	Feature Type	Feature Use	Feature Type	Possible Site Age	Feature Description	Feature Dimensions (m)	Recommendation
						of the main structure to form 2 adjoining c-shapes		
6412	6	Historic Misc.	Undetermined	Alignment	Undetermined; possibly historic	Constructed of medium to large, subangular to subrounded basalt boulder alignments	length: 4.0 m , height: 0.25 m	No further work
6412	7	pre-Contact and Historic	Undetermined	Enclosure	possibly pre-Contact and historic	Constructed of subangular to subrounded cobbles to small basalt boulders piles along the north and west and alignments to 2 stones wide along the south and east; This feature might have an earlier component but later used during military training	exterior: 2.5 X 3.7 X 0.2 m; interior: 2.0 X 2.5 X 0.3 m	No further work
6413		pre-Contact	Temporary shelter	rock shelter and modified outcrop with 4 petroglyph panels	Pre-Contact & Historic	Basalt boulders and cobbles have been stacked to connect the cliff face with boulders that hae fallen, forming a simple enclosure. In the middle of this is a small pile of rocks, resembling a hearth however there is no sign of fire, there are four petroglyph panels on the cliff face. Most of the petroglyphs are antropomorphs and have been pecked. There are a few unidentifiable figures and there is some scratching	(See below)	(See below)

Site No.	Fe	Feature Type	Feature Use	Feature Type	Possible Site Age	Feature Description	Feature Dimensions (m)	Recommendation
6413	1	pre-Contact	Temporary shelter	Rock Shelter	pre-Contact	Fe-1 is a small ring of small basalt boulders in the center of Fe-1 under the dripline. It looks similar to a hearth however there is no charring or any other signs of fire. Shelter and modified outcrop the construction method is stacked basalt boulders and cobbles (0.50 - 1.5 m) the stacking connects the bedrock cliff face with large boulders that have fallen from the cliff making an enclosure; basalt cobbles and boulders, angular to subangular in shape	exterior: 9.5 X 4.0 m height: 0.15 - 0.98m; interior: 4.0 X 4.0 m height: 0.23 - 2.78 m; 5 courses high in the eastern poriton of the feature	candidate for preservation
6413	2	pre-Contact	Rock Art	possibly workshop, ceremonial, or communication	Pre-Contact & Historic	Consists of four panels of pre-historic rock art with petroglyphs (majority are pecked with some scratching) majority appear original, although some of the scratches (modifications) appear to have been added; pecked onto a north facing basalt wall	Panel 1: 1.20 X 2.0. Panel 2: 1.38 X 0.8 m, Panel 3: 1.95 X 2.0 m, Panel 4: 1.10 X 1.5 m	candidate for preservation

Site No.	Fe	Feature Type	Feature Use	Feature Type	Possible Site Age	Feature Description	Feature Dimensions (m)	Recommendation
6414		pre-Contact	Temporary Habitational	temporary	pre-Contact	Overhang measures 9.5 X 5.7. The ceiling is low starting 2.5 m from the dripline. It measures 70 cm high towards the opening and about 50cm at the back. The area between the low ceiling and the dripline measures 3.3 m at the highest point. The interior is level silt in the back and slopes southeasterly where the ceiling is highest. The slope continues for 4.0 m before dropping into the base of the gulch. two petroglyphs are present. One is on a boulder at the west end of the overhang and the other is on the gulch's wall 3.3 m from the east edge of the overhang.	see feature description	
6414	1	pre-Contact	Temporary Habitational	Overhang	pre-Contact	Overhang measures 9.5 X 5.7. The ceiling is low starting 2.5 m from the dripline. It measures 70 cm high towards the opening and about 50cm at the back. The area between the low ceiling and the dripline measures 3.3 m at the highest point. The interior is level silt in the back and slopes southeasterly where the ceiling is highest. The slope continues for 4.0 m before dropping into the base of the gulch.	see feature description	

Site No.	Fe	Feature Type	Feature Use	Feature Type	Possible Site Age	Feature Description	Feature Dimensions (m)	Recommendation
6414	2	pre-Contact	Rock Art	Communication	pre-Contact	Two petroglyphs are present, one is on a boulder at the west end of the overhang and the other is on the gulch's wall 3.3 m from the east edge of the overhang	Petroglyph 1: 0.28 X 0.22 m; Petroglyph 2: 0.28 X 0.16 m	
6415	1	pre-Contact	Travel Path	Trail	pre-Contact	Constructed of large cobbles to medium size boulders. The width ranges from two to several stones (3-5) depending on rock sizes. Several short segments are in good conditions	41.8 m long; 0.5-1.0 wide and 0.17-0.20 m high	
6416	1	pre-Contact	Agricultural	Rock Mound	pre-Contact	Mounded cobbles to small boulders. Most of the rocks covered with soils and plant remains; possibly a clearing	3.3 X 3.1 m	
6417	1	Historic Misc.	Agricultural/ Possibly Military Related	Wall	Undetermined	The site is an L-Shaped low wall constructed with subrounded and subangular small boulders. There are also isolated large boulder inclusions. An area of level soils along the southwest appears to be an old road way, however, the impact of erosion makes it difficult to verify this possible use. Possibly remnants of a garden area or possibly	17.1 X 7.2 m	

Site No.	Fe	Feature Type	Feature Use	Feature Type	Possible Site Age	Feature Description	Feature Dimensions (m)	Recommendation
						associated with military activities given the number of surrounding sites		
6418		Historic Misc.	Agricultural	(See below)	Undetermined	Site is located at the southwest end of facing slope of Kalanihakoi gulch near the north east edge of the project. Fe-1 is a low wall partially faced and poritons consisted of single medium to small boulders that are placed in upright positions, fundtion is not known, but possibly used to demarcating a garden area. The area upslope of the wall is very rocky with much alterations. FE-2 is a terrace in a narrow drainage and was obviously placed there for water flow control	56.0 X 9.0 m	(See below)
6418	1	Historic Misc.	Agricultural	Wall	Undetermined	Constructed of partially stacked, faced, single stone high in places. Composed of basalt cobbles to large angular and subrounded boulder inclusions	56.0 X 0.2-0.8 m height: 0.2 - 0.5 m; 3-5 courses high	No further work

Site No.	Fe	Feature Type	Feature Use	Feature Type	Possible Site Age	Feature Description	Feature Dimensions (m)	Recommendation
6418	2	Historic Misc.	Agricultural	Terrace	Undetermined	Constructed of stacked and faced basalt medium subangular boulders	2.2 X 0.2 X 0.6 m 3-5 courses high	No further work
6419	1	pre-Contact	Temporary Habitation	Overhang	pre-Contact	Site is an overhang with the entryway. Some charcoal scatter was observed on the surface, no detail recording due to bee hives	Entryway: 3 m long, 0.60 m high and is about 5.0 m deep	
6420		pre-Contact	Temporary Habitation	(See below)	pre-Contact	Fe-1 is a rockwall, Fe-2 is petroglyphs; rock shelter is part of a basalt rock outcropping which faces generally south. The east end has a chamber with exposed bedrock at 4 m deep. The chamber also includes Fe-1 which is a small basalt rock wall alignment which appears to have built into the existing bedrock. Sediment has filled in from above at the western end, just beyond the overhand, there are 2 petroglyphs (Fe-2) First image is pecked stick figure. Second is a scratched figure with a triangular body, both are faint. No artifacts noted on the	Shelter: 11.0 X 6.0 and 4 m deep	Candidate for preservation

Site No.	Fe	Feature Type	Feature Use	Feature Type	Possible Site Age	Feature Description	Feature Dimensions (m)	Recommendation
						surface or in Test unit		
6420	1	pre-Contact	Undetermined	Alignment	pre-Contact	Constructed of stacked rock along edge of existing natural bedrock, consisted of basalt small (less than 20 cm) to medium (20 - 40 cm) basalt boulders, several large (greater than 40 cm) basalt rocks	1.41 X 0.90, thickness: 0.40 m; 3 courses high from existing rock wall for 1.3 m	Candidate for preservation
6420	2	pre-Contact	Communication	Rock Art	pre-Contact	2 petroglyphs were scratched and pecked on a basalt rock wall outcropping, angle of wall is generally east-facing. Pecking tool was not located; Petroglyph 2 (stick figure) was pecked onto the rock panel and is not very deep or obvious without a close look, triangular figure has been scratched on the rock with some other small scratched lines nearby it, it's hard to determine if these scratches are original	Petroglyph 1: 7 X 3 cm; petroglyph 2: 2-9cm X 7 cm	Candidate for preservation
6421	1	Military	Possibly Associated with Military	Wall	Historic	Constructed of subrounded cobbles and small boulders as well as large naturally deposited boulders. Abutts the south bank of an old natural waterway. An old road crosses the gulch just to the northeast	7.0 X 1.5 m; ranges from 1 - 4 courses high	No further work

Site No.	Fe	Feature Type	Feature Use	Feature Type	Possible Site Age	Feature Description	Feature Dimensions (m)	Recommendation
						of the site		
6422		Historic Misc.	Undetermined	Rock mounds	Historic	All features are of mechanically altered basalt (angular shape) they are similar to other sites (6387, 7, and 8) in the area. Purpose of mounds is not known except associated with the most recent land alteration activities in the area	25.3 m long	No further work
6422	1	Historic Misc.	Undetermined	Rock mound	Historic	"	1.2 in diameter and 4 m high	No further work
6422	2	Historic Misc.	Undetermined	Rock mound	Historic	"	1.8 X 1.1 m and 0.37 m high	No further work
6422	3	Historic Misc.	Undetermined	Rock mound	Historic	"	1.3 X 0.9 m and 0.4 m high	No further work
6422	4	Historic Misc.	Undetermined	Rock mound	Historic	"	1.1 X 0.7 m and 0.26 m high	No further work
6422	5	Historic Misc.	Undetermined	Rock mound	Historic	"	1.7 S 0.8 m and 0.3 m high	No further work
6423		Historic Agriculture	Possibly Clearing for Cattle	Rock Mounds	Historic	Consisted of 3 historic rock mounds located on a low ridge between the existing road and		No further work

Site No.	Fe	Feature Type	Feature Use	Feature Type	Possible Site Age	Feature Description	Feature Dimensions (m)	Recommendation
						the south boundary fence. Comprised of mechanically altered small boulders. Purposefully piled mounds; but purpose is unknown		
6423	1	Historic Agriculture	Possibly Clearing for Cattle	Rock mound	Historic	"	2.6 X 1.4 m and 0.4 m high	No further work
6423	2	Historic Agriculture	Possibly Clearing for Cattle	Rock mound	Historic	"	2.0 X 1.3 m and 0.24 m high	No further work
6423	3	Historic Agriculture	Possibly Clearing for Cattle	Rock mound	Historic	"	2.26 X 0.9 m and 0.3 m high	No further work
6424	1	Historic Agriculture	Related to ranching	Rock Mound	Historic	Single historic linear mound located about 40 m northwest of site T-37 Both are on the same northwest ridge between the access road and the south boundary fence consists of broken up stones (angular)	1.8 X 1.0 m and 0.4 m high	No further work
6425		Historic Agriculture	Clearing	Rock Mounds	Historic	consisted of two rock mounds located about 70 m north of the existing access road. Consisted of subrounded to subangular large cobbles and small boulders;	(See below)	(See below)
6425	1	Historic Agriculture	Clearing	Rock mound	Historic	Piled, basalt subrounded to subangular cobbles and small boulders; the water channels probably started off as cattle trails	1.8 X 1.2 m and 0.24 m high	No further work

Site No.	Fe	Feature Type	Feature Use	Feature Type	Possible Site Age	Feature Description	Feature Dimensions (m)	Recommendation
6425	2	Historic Agriculture	Clearing	Rock mound	Historic	Piled, basalt subrounded to subangular cobbles and small boulders	1.7 X 1.4 m and 0.24 m high	No further work
6426	1	Military	Military Training Related	C-shape	Historic	Constructed of subangular and subrounded small boulders with some bedrock inclusion at the north end. The feature opens to the southwest which consisted of a boulder alignment and boulder pile (2 stones wide) along the east side. Interior is level soil with some exposed bedrock.		



APPENDIX H

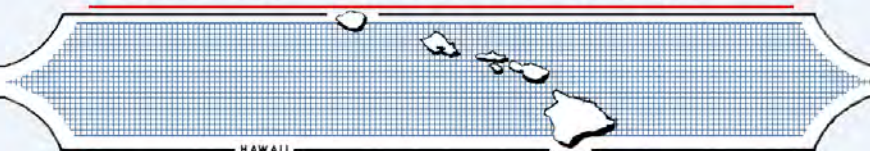
**Archaeological Monitoring Plan dated July 2011 with
SHPD acceptance letter dated August 2011**

**AN ARCHAEOLOGICAL MONITORING PLAN FOR
THE KAONOULU MARKETPLACE PROJECT
LOCATED IN KĪHEI,
KA`ONO`ULU AHUPUA`A, MAKAWAO DISTRICT,
MAUI ISLAND, HAWAII
[TMK: 3-9-01:16 and (2) 2-2-002:015 por.]**

Prepared By:
David Chaffee, B.A.,
and
Michael Dega, Ph.D.
July 2011
FINAL

Prepared For:
Mr. Charlie Jencks
Pacific Rim Land
P.O. Box 220
1300 N. Holopono St., Ste. 201
Kihei, Maui, HI 96753

SCIENTIFIC CONSULTANT SERVICES Inc.



711 Kapiolani Blvd. Suite 975 Honolulu, Hawai'i 96813

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INTRODUCTION

At the request of Mr. Charlie Jencks of Pacific Rim Land, Scientific Consultant Services, Inc. (SCS) prepared this Archaeological Monitoring Plan in advance of grading and construction on an 88-acre parcel of land (Pi'ilani Promenade South, LLC., majority landowner) located in Kīhei, Ka'ono'ulu Ahupua'a, Wailuku and Makawao Districts, Maui Island, Hawai'i [TMK: 3-9-01:16 and 2-2-02: 015 por.] (Figures 1 through 5). Proposed development on this lot consists of a master planned project district with an integrated concept, whereby land use will be organized around a commercial and mixed-use village center to serve these planned neighborhoods. A combination of commercial, light industrial, residential, recreational and public/quasi-public uses is anticipated as part of the project area's land use.

The subject parcel has undergone Inventory Survey in the past by Fredericksen *et al.* (1994). A portion of the project area was studied by Shefcheck *et al.* (2008). Archaeological Monitoring was recommended by the State Historic Preservation Division (SHPD) in a letter dated March 7, 2011 (Log No.:2011.0536; Doc No.:1103MD05). This AMP will be in effect for all ground altering activities and planned construction related activities for the marketplace project.

Archaeological Monitoring "shall entail the archaeological observation of, and possibly intervention with, on-going activities which may adversely affect historic properties" (§13-279-4, HAR). Monitoring will ensure that significant cultural resources, if identified on the property, are documented through profiles and plan view maps, possibly sampled through excavation of exposed features, and evaluated for their historical significance. This Monitoring Plan will also ensure that if human remains are identified during subsurface work, appropriate and lawful protocol concerning the Inadvertant Discovery of Human Remains (pursuant to §13-300-40a, b, c, HAR) is followed. As will be made aware to the construction team, the archaeological Monitor has the authority to halt any ground disturbing activities during this project in the immediate area of a find in order to appropriately carry out the provisions of this plan.

This AMP will require the approval of the State Historic Preservation Division (SHPD) prior to any land altering activities on the parcel. The following text provides more detailed information on the reasons for monitoring, potential site types to be encountered during excavation, monitoring conventions and methodology for both field and laboratory work, and discusses curation and reporting of cultural material recovered.

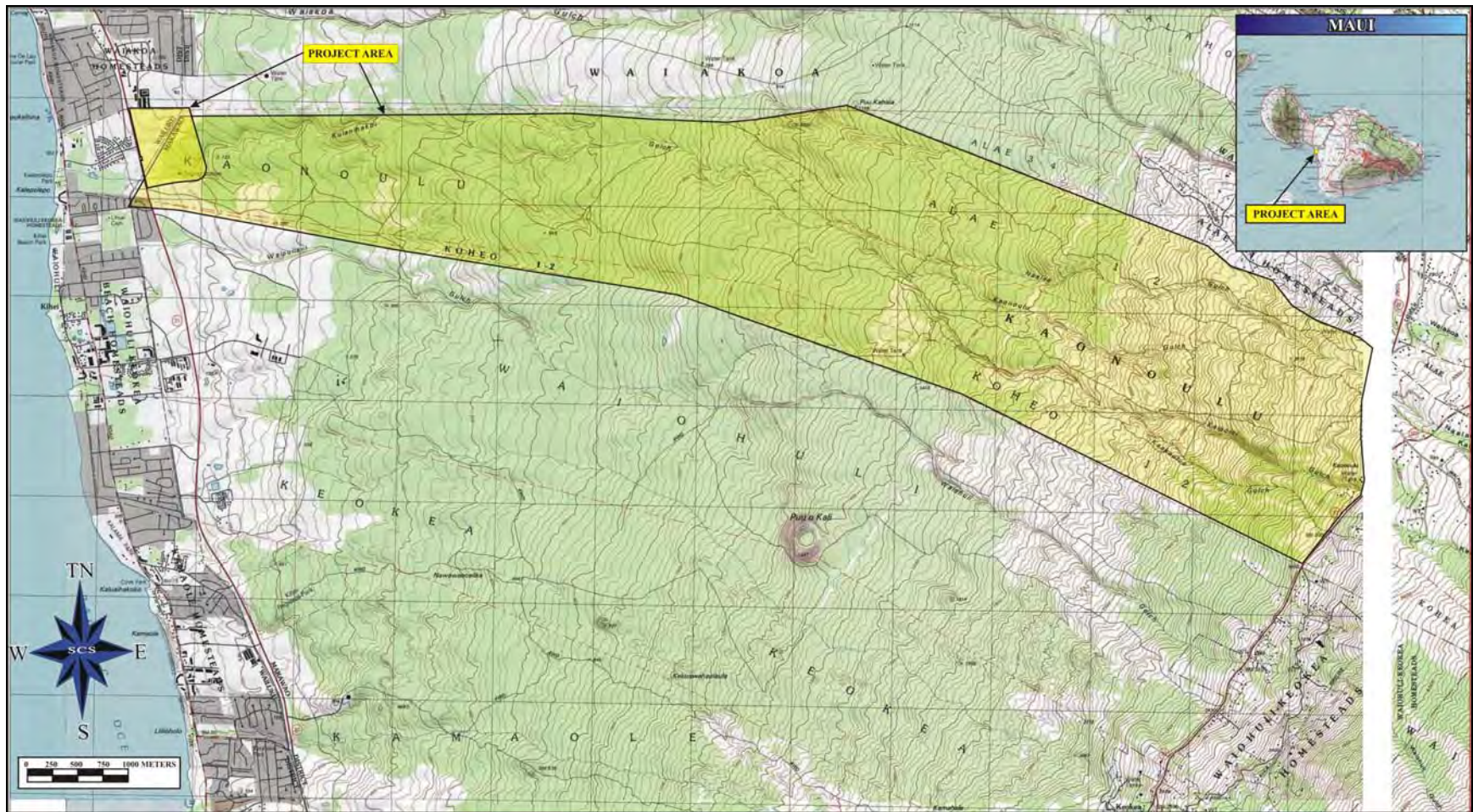


Figure 1: USGS Pu'u O Kali Quadrangle Showing the Project Area.

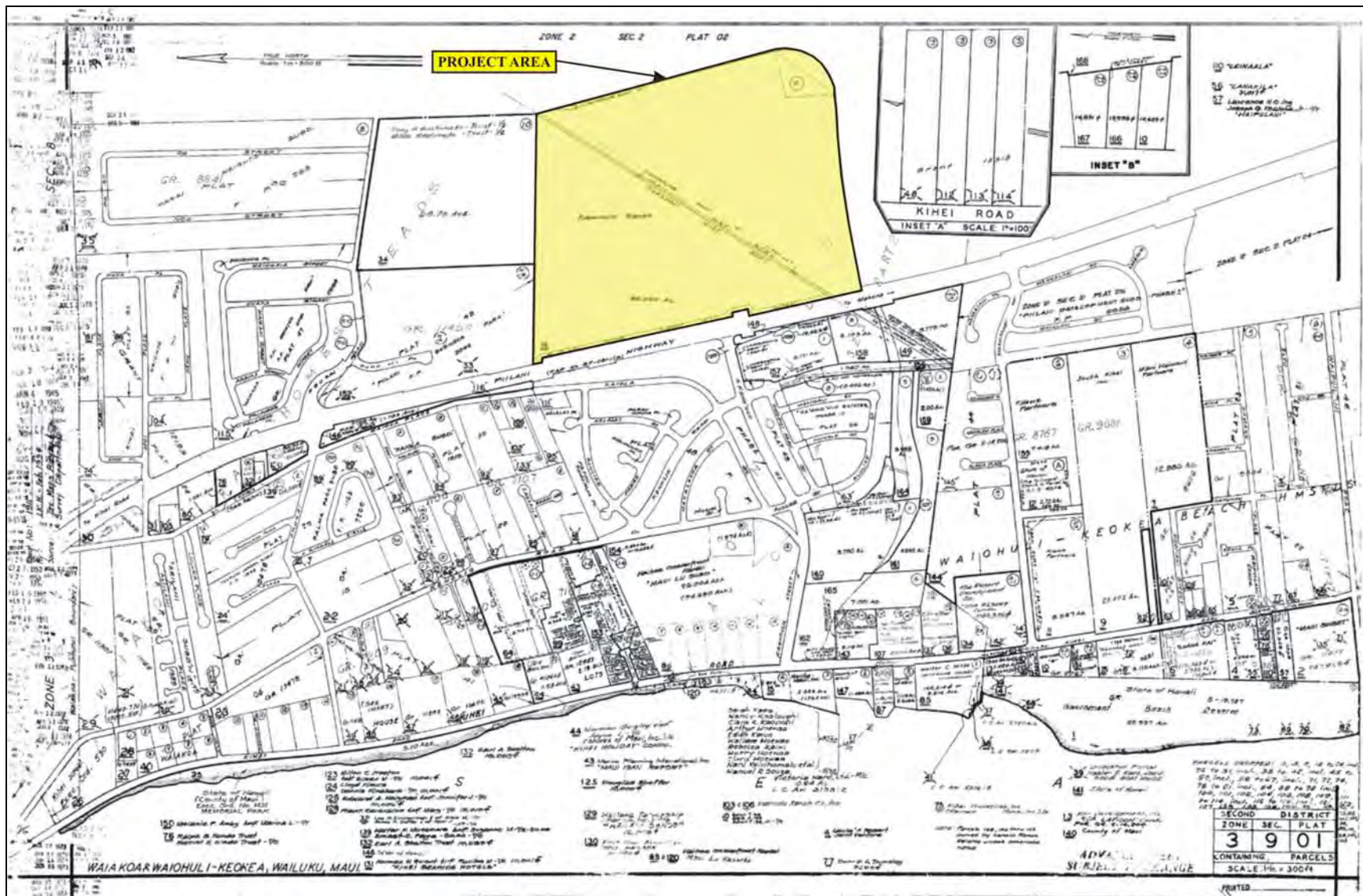


Figure 2: Tax Map Key [TMK] Showing the Project Area as a Portion of Lot 15.

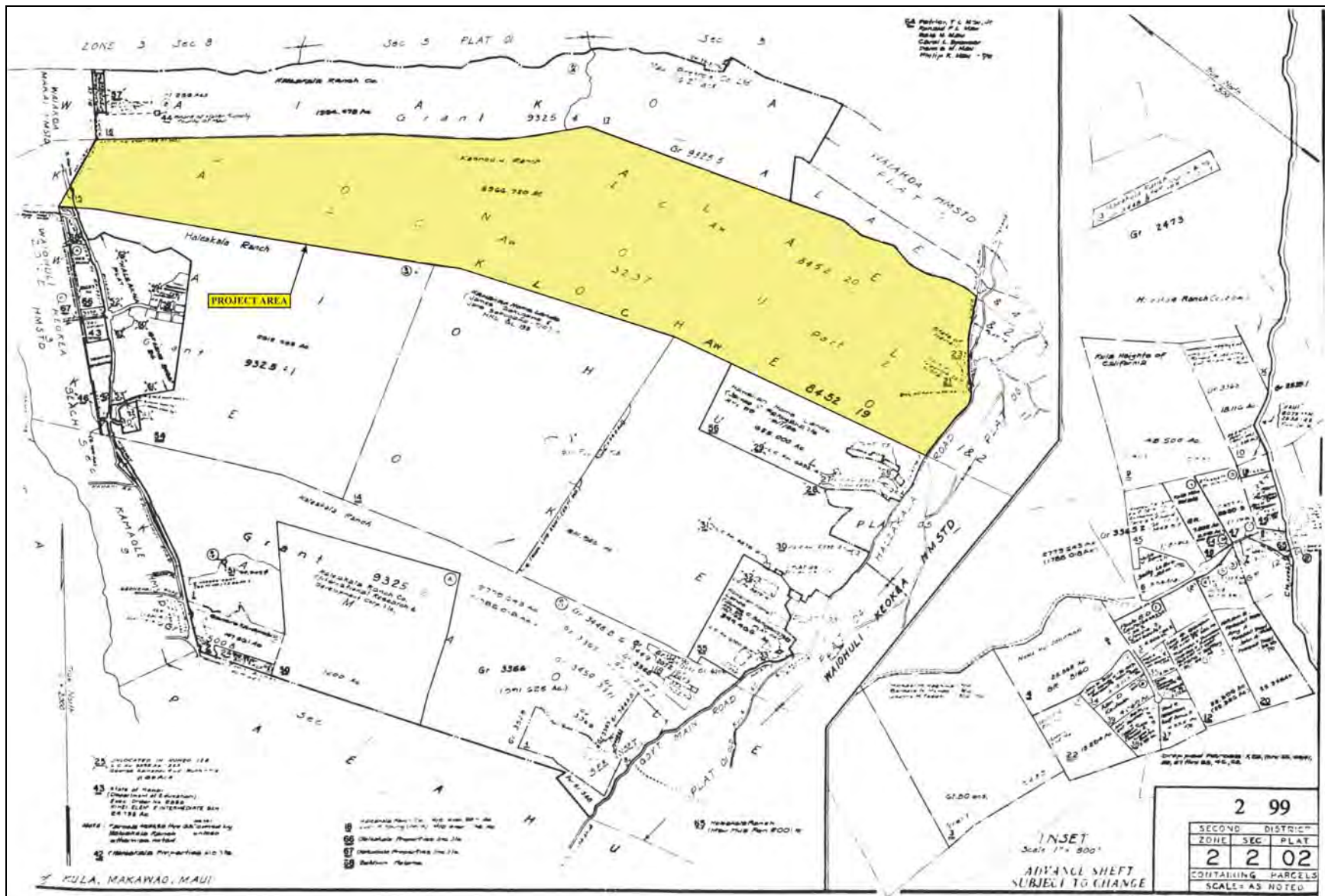
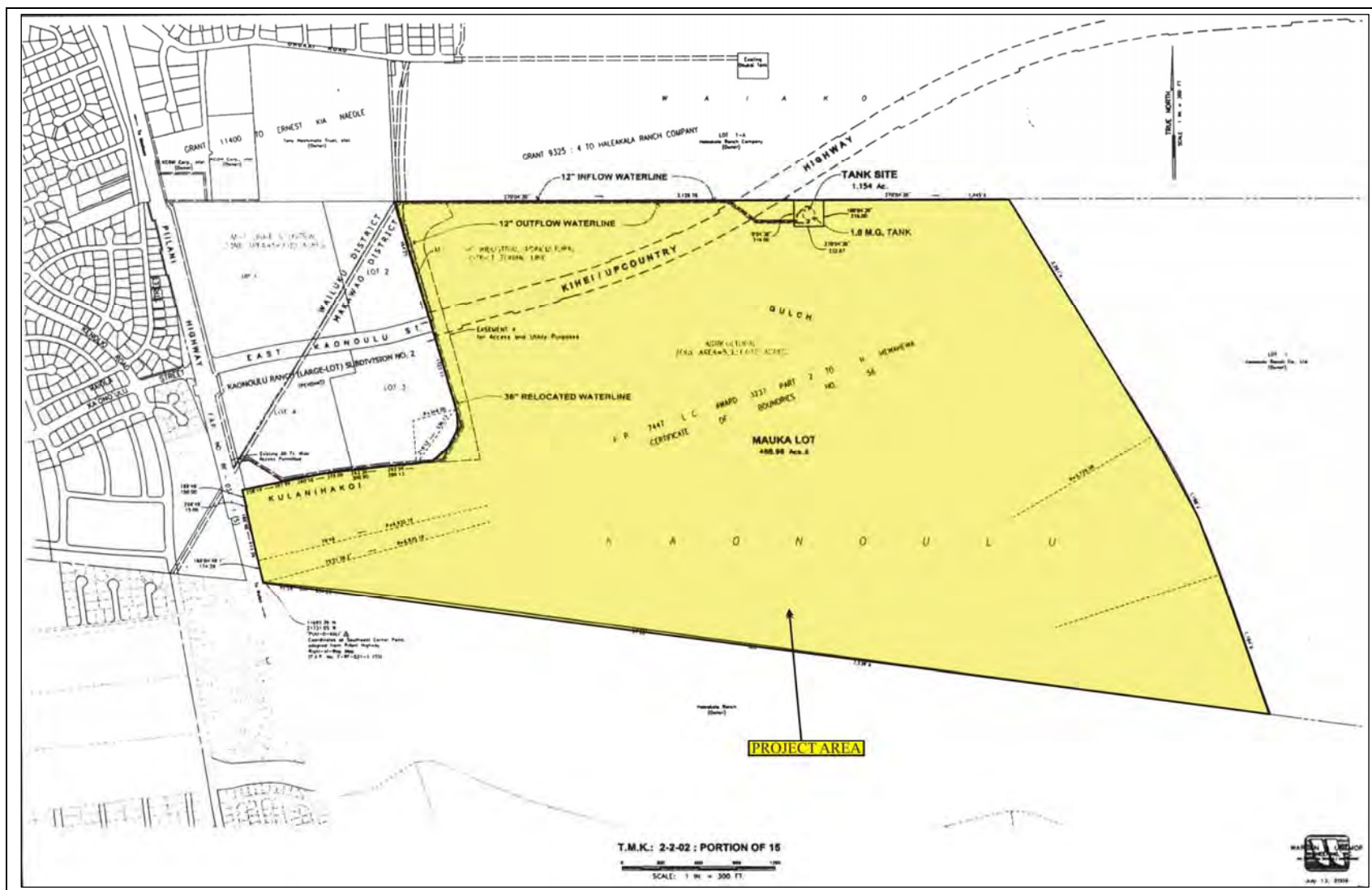


Figure 3: Tax Map Key [TMK] Showing the Project Area not Included in Figure 2



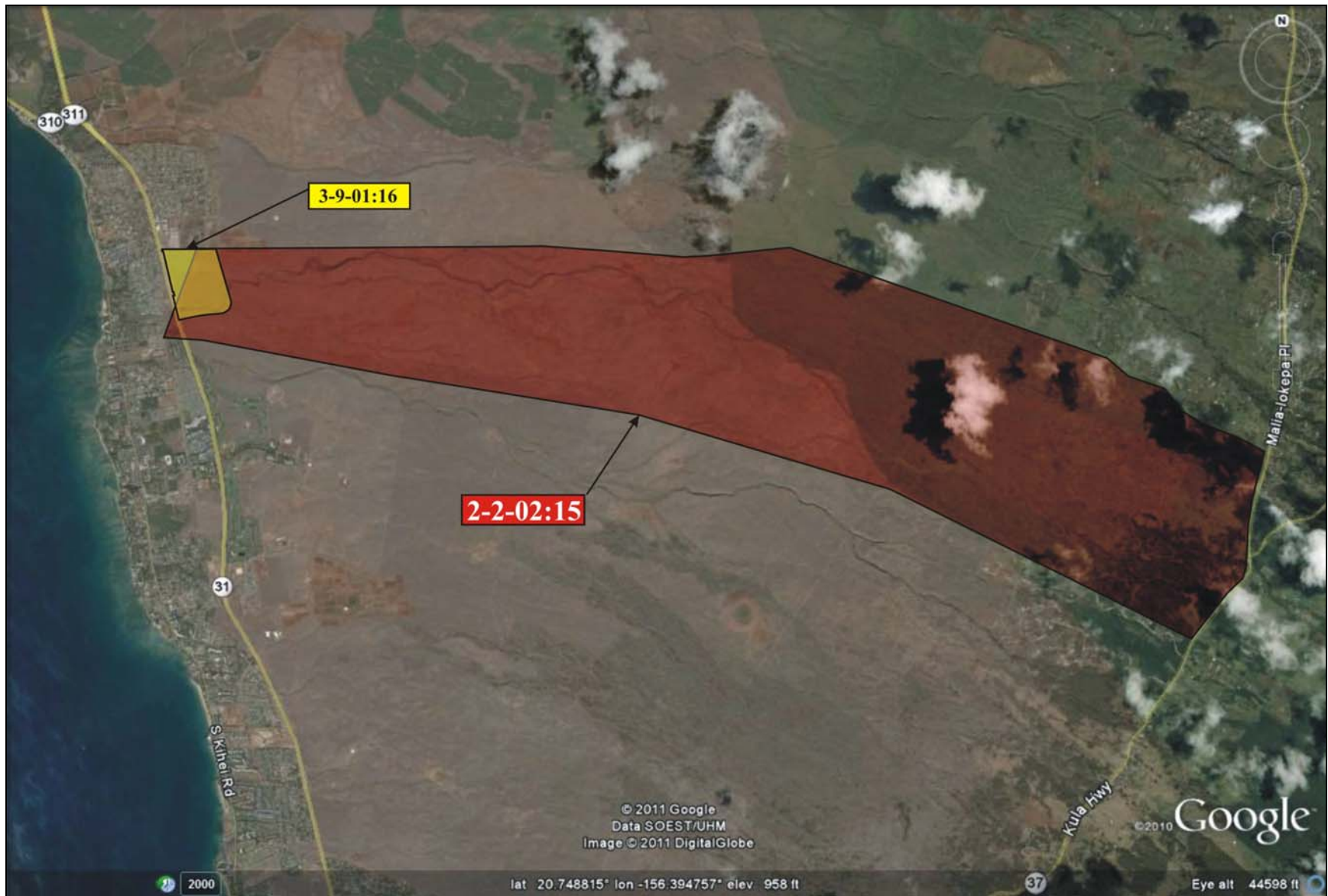


Figure 5: Google Maps Showing Project Area.

Monitoring will be conducted on a full-time basis during all ground-altering activities, with one archaeological monitor per piece of excavating equipment, in order to document any historic properties which may be encountered during the proposed undertaking and to provide its significant assessments and recommended mitigation measures, in consultation with the State Historic Preservation Division (SHPD). This Monitoring program will ensure that if human remains are identified during subsurface work, appropriate and lawful protocol concerning the Inadvertent Discovery of Human Remains (pursuant to 13-300-40a, b, c, HAR) is followed. Archaeological Monitoring will also ensure that significant cultural resources, if identified, are sampled, adequately documented, and evaluated for their historical significance in accordance with SHPD recommendations. Cultural resources, as is described in more detail below, could consist of remnant cultural layers, artifacts, or midden associated with traditional Native Hawaiian or early historic times.

PROJECT AREA DESCRIPTION

The project area is located in Kaʻonoʻulu Ahupuaʻa, east of the Wailuku-Makawao boundary that cuts across the *ahupuaʻa*. It is bordered on the north by Waiakoa Ahupuaʻa and to the south by Kōheo Ahupuaʻa. The southwestern boundary abuts Piʻilani Highway for some distance and then jogs inland ending with its northwest corner on the Wailuku-Makawao boundary (see Figure 2). The entire parcel was part of the Kaonoulu Ranch lands and spans from a half mile to approximately two miles inland of the coastline within an area archaeologically known as the “barren zone”.

The project area soils are dominated by Waiakoa Extremely Stony Silty Clay Loam (WID2). This soil type is generally associated with highly eroded landscapes with shallow, 3 to 25 percent slopes and low precipitation (Foote *et al.* 1972: 126). Kīhei gets less than ten inches of rainfall per year (Armstrong 1983). Elevation ranges from 40 to 600 feet above mean sea level (amsl). The northeastern flank of the project area is marked with a steep natural gulch, called Kulanihakoi. While there is a general absence of perennial streams throughout the project area environs, Kulanihakoi Gulch does support a perennial stream during seasons of particularly heavy rainfall.

BARREN ZONE

In geographical and physiographical terms, the barren zone is an intermediary zone between direct coastline and back beach areas to upland forests and more montane environments. The barren zone is a medial zone that appears to have been almost exclusively transitory, or at best, intermittently occupied through time. Intermittent habitation loci, as defined by surface midden scatters or small architectural features (*i.e.*, C-shapes, alignments) dominate the few

documented traditional-period site types (pre-Contact) in the area through time. Post-Contact features are generally limited to walls and small alignments, respectively associated with ranching and military training in the area.

The barren zone was an intermediary region between verdant upland regions and the coastline. Apparently, agricultural endeavors were practically non-existent in the barren zone and tool procurement materials (basalt, wood) were selected from other locales as well. Sediment regimes in the area are shallow, most often overlying bedrock, and perennial water sources are virtually non-existent.

Cordy (1977) divided the Kīhei (inclusive of Kaonoulu) area into three environmental zones (or subzones when one considers the entire *ahupua`a*): coastal, transitional/barren, and inland. The current project location occurs in the transitional or barren zone: the slopes back of the coast with less than 30 inches of rainfall annually (Cordy 1977:4).

This barren zone is perceived as dry and antagonistic to permanent habitation. Use of the area would primarily have been intermittent or transitory, particularly as the zone could have contained coastal-inland trails and would have marked an intermediary point between the two more profitable ecozones. The region remains hostile to permanent habitation, only having been “conquered” in recent times through much modern adaptation (i.e., air conditioning, water feed systems, etc.).

Based on general archaeological and historic research, the barren zone was not subject to permanent or expansive population until recent times. This intimates that population pressure along the coast was minimal or non-existent in the Kīhei coastal area through time. As such, architectural structures associated with permanent habitation sites and/or ceremonial sites are not often identified in the area. The prevailing model that temporary habitation-temporary use sites predominate in the barren zone has been authenticated further by recent research.

CULTURAL HISTORICAL CONTEXT

The island of Maui ranks second in size of the eight main islands in the Hawaiian Archipelago. The island was formed by two volcanoes, Mount Kukui in the west and Haleakalā in the east. The younger of the two volcanoes, Haleakalā, soars 2,727 m (10,023 feet) above sea level and embodies the largest section of the island. Unlike the amphitheater valleys of West Maui, the flanks of Haleakalā are distinguished by gentle slopes. Although it receives more rain than its counterpart in the east, the permeable lava flows of the Honomanū and Kula Volcanic

Series prevent the formation of rain-fed perennial streams. The few perennial streams found on the windward side of Haleakalā originate from springs located at low elevations. Valleys and gulches were formed by intermittent water run-off. The environment factors and resource availability heavily influenced pre-Contact settlement patterns. Although an extensive population was found occupying the uplands above the 30-inch rainfall line where crops could easily be grown, coastal settlement was also common (Kolb *et al.* 1997). The existence of three fishponds at Kalepolepo, north of the project area, and at least two *heiau* (shrine, temple, place of worship) identified near the shore confirm the presence of a stable population relying mainly on coastal and marine resources.

Agriculture may have been practiced behind the dune berms in low-lying marshland or in the vicinity of Keālia pond. It is suggested that permanent habitation and their associated activities occurred from A.D. 1200 to the present in both the uplands and coastal region (*Ibid.*).

PAST POLITICAL BOUNDARIES

Traditionally, the division of Maui's lands into districts (*moku*) and sub-districts was performed by a *kahuna* (priest, expert) named Kalaiha`ōhia, during the time of the *ali`i* Kaka`alaneo (Beckwith 1979:383; Fornander places Kaka`alaneo at the end of the fifteenth century or the beginning of the sixteenth century [Fornander 1919-20, Vol. 6:248]). Land was considered the property of the king or *ali`i`ai moku* (the *ali`i* who eats the island/district), which he held in trust for the gods. The title of *ali`i`ai moku* ensured rights and responsibilities to the land, but did not confer absolute ownership. The king kept the parcels he wanted; his higher chiefs received large parcels from him and, in turn, distributed smaller parcels to lesser chiefs. The *maka`āinana* (commoners) worked the individual plots of land.

In general, several terms were used to delineate various land sections. A district (*moku*) contained smaller land divisions (*ahupua`a*), which customarily continued inland from the ocean and upland into the mountains. Extended household groups living within the *ahupua`a* were able to harvest from both the land and the sea. Ideally, this situation allowed each *ahupua`a* to be self-sufficient by supplying needed resources from different environmental zones (Lyons 1875:111). The *`ili`āina* or *`ili* were smaller land divisions next to importance to the *ahupua`a* and were administered by the chief who controlled the *ahupua`a* in which it was located (*ibid*:33; Lucas 1995:40). The *mo`o`āina* were narrow strips of land within an *`ili*. The land holding of a tenant or *hoa`āina* residing in an *ahupua`a* was called a *kuleana* (Lucas 1995:61). The project area is located in the *ahupua`a* of Ka`ono`ulu, which translated means literally "the desire for breadfruit" (Pukui *et al* 1974.:86).

TRADITIONAL SETTLEMENT PATTERNS

The Hawaiian economy was based on agricultural production and marine exploitation, as well as raising livestock and collecting wild plants and birds. Extended household groups settled in various *ahupua`a*. Within the *ahupua`a*, residents were able to harvest from both the land and the sea. Ideally, this situation allowed each *ahupua`a* to be self-sufficient by supplying needed resources from different environmental zones (Lyons 1875:111).

During pre-Contact times, there were primarily two types of agriculture, wetland and dry land, both of which were dependent upon geography and physiography. River valleys provided ideal conditions for wetland *kalo* (*Colocasia esculenta*) agriculture that incorporated pond fields and irrigation canals. Other cultigens, such as *kō* (sugarcane, *Saccharum officinarum*), *mai`a* (banana, *Musa* sp.), and *`uala* (sweet potato, *Ipomoea batatas*) were also grown. This was the typical agricultural pattern seen during traditional times on all the Hawaiian Islands (Kirch and Sahlins 1992, Vol. 1:5, 119; Kirch 1985). Agricultural development on the leeward side of Maui was likely to have begun early in what is known as the Expansion Period (AD 1200–1400, Kirch 1985). According to Handy (1940: 159), there was “continuous cultivation on the coastal region along the northwest coast” of Maui . He writes:

On the south side of western Maui the flat coastal plain all the way from Kihei and Ma`alaea to Honokahua, in old Hawaiian times, must have supported many fishing settlements and isolated fishermen's houses, where sweet potatoes were grown in the sandy soil or red lepo [soil] near the shore. For fishing, this coast is the most favorable on Maui, and, although a considerable amount of taro was grown, I think it is reasonable to suppose that the large fishing population, which presumably inhabited this leeward coast, ate more sweet potatoes than taro with their fish.... [*ibid*]

There is little specific information pertaining directly to Kīhei, which was originally a small area adjacent to a landing built in the 1890s (Clark 1980). Presently, Kīhei consists of a six-mile section along the coast from the town of Kīhei to Keawakapu. Scattered amongst the agricultural and habitation sites were places of cultural significance to the *kama`āina* of the district including at least two *heiau*. In ancient times, there was a small village at Kalepolepo based primarily on marine resources. It was recorded that occasionally the blustery Kaumuku Winds would arrive with amazing intensity along the coast (Wilcox 1921).

There were several fishponds in the vicinity of Kīhei; Waiohuli, Ka`ono`ulu-kai, and Kalepolepo Pond (Site 50-50-09-1288), which is also known by the ancient name of Kō`ie`ie Pond (Kolb *et al.* 1997). Constructed on the boundary between Ka`ono`ulu and Waiohuli

Ahupua`a, these three ponds were some of the most important royal fishponds on Maui. The builder of Kalepolepo and two other ponds (Waiohuli and Ka`ono`ulu-kai) has been lost in antiquity, but they were reportedly rebuilt at least three times through history, beginning during the reign of Pi`ilani (1500s) (*ibid*; Cordy 2000).

Oral tradition recounts the repairing of the fishponds during the reign of Kiha-Pi`ilani, the son of the great chief Pi`ilani, who had bequeathed the ponds to Umi, ruler of Hawai`i Island. Umi's *konohiki* (land manager) ordered all the people from Maui to help repair the walls of Kalepolepo's fishponds. A man named Kikau protested that the repairs couldn't be done without the assistance of the *menehune* who were master builders (Wilcox 1921:66-67). The *konohiki* was furious and Kikau was told he would die once the repairs had been made. Ka`ono`ulu-kai was the first to be repaired. When the capstone was carried on a litter to the site, the *konohiki* rode proudly on top of the rock as it was being placed in the northeast corner of the pond. When it was time for repairs on Waiohuli-kai, the *konohiki* did the same. As the last pond, then known as Ka`ono`ulu-kai, was completed, the *konohiki* once again rode the capstone to its resting place. Before it could be put into position, the capstone broke throwing both the rock and *konohiki* into the dirt. The workers reportedly said "*Ua konohiki Kalepolepo, ua eku i ka lepo*," or, "the manager of Kalepolepo, one who roots in the dirt" (*ibid*:66). That night a tremendous storm threw down the walls of the fishponds. The *konohiki* implored Kikau to help him repair the damage. Kikau called the *menehune* who rebuilt the walls in one night. Umi sent for Kikau who lived in the court of Waipi`o Valley from then on. The region of Ka`ono`ulu-kai and Ka`ono`ulu-kai fishpond became known as Kalepolepo fishpond (*ibid*).

The Kalepolepo fishponds were rebuilt by Kekaulike, chief of Maui in the 1700s, at which time it supplied `ama`ama (mullet) to Kahekili II. Again, it was restored by Kamehameha I when he ruled as governing chief over Maui, and for the last time in the 1840s, when prisoners from Kaho`olawe penal colony were sent to do repairs (Kamakau 1961; Wilcox 1921). At this time, stones were taken from Waiohuli-kai pond for the reconstruction of Kalepolepo. It was here at Kalepolepo that Kamehameha I reportedly beached his victorious canoes after subduing the Maui chiefs. The stream draining into Keālia pond (north of the project area) became sacred to royalty and *kapu* to commoners (Stoddard 1894).

Trails extended from the coast to the mountains, linking the two for both economic and social reasons. A trail known as the *alanui* or "King's trail" built by Kihapi`ilani, extended along the coast passing through all the major communities between Lāhainā and Mākena, including Kīhei. Kolb noted that two traditional trails extended through Ka`ono`ulu. One trail, named "*Kekuawaha`ula`ula*" or the "red-mouthed god", went from Kīhei inland to Ka`ono`ulu.

Another, the Kalelepo trail, began at the Kalepolepo fishpond and continued to upland Waiohuli. These trails were not only used in the pre-Contact era, but were expanded to accommodate wagons bringing produce to the coast in the 1850s (Kolb *et al.* 1997:61).

WESTERN CONTACT

Early records, such as journals kept by explorers, travelers and missionaries, Hawaiian traditions that survived long enough to be written down, and archaeological investigations, have assisted in the understanding of past cultural activities. Unfortunately, early descriptions of this portion of the Maui coast are brief and infrequent. Captain King, Second Lieutenant on the *Revolution* during Cook's third voyage briefly described what he saw from a vantage point of "eight or ten leagues" (approximately 24 miles) out to sea as his ship departed the islands in 1779 (Beaglehole 1967). He mentions Pu'u Ōla'i, south of Kīhei, and enumerates the observed animals, thriving groves of breadfruit, the excellence of the *taro*, and describes the sugarcane as being of an unusual height. Seen from this distance and the mention of breadfruit suggest the uplands of Kīpahulu-Kaupo and `Ulupalakua were his focus.

In the ensuing years, LaPérouse (1786), Nathaniel Portlock and George Dixon, (also in 1786), sailed along the western coast, but added little to our direct knowledge of Kīhei. During the second visit of Vancouver in 1793, his expedition becalmed in the Ma`alaea Bay close to the project area. (A marker commemorating this visit is located across from the Maui Lu Hotel). He reported:

The appearance of this side of Mowee was scarcely less forbidding than that of its southern parts, which we had passed the preceding day. The shores, however, were not so steep and rocky, and were mostly composed of a sandy beach; the land did not rise so very abruptly from the sea towards the mountains, nor was its surface so much broken with hills and deep chasms; yet the soil had little appearance of fertility, and no cultivation was to be seen. A few habitations were promiscuously scattered near the waterside, and the inhabitants who came off to us, like those seen the day before, had little to dispose of. [Vancouver 1984:852]

Archibald Menzies, a naturalist accompanying Vancouver stated, "...we had some canoes off from the latter island [Maui], but they brought no refreshments. Indeed, this part of the island appeared to be very barren and thinly inhabited" (Menzies 1920:102). According to Kahekili, then chief of Maui, the extreme poverty in the area was the result of the continuous wars between Maui and Hawai'i Island causing the land to be neglected and human resources wasted (Vancouver 1984:856).

THE MĀHELE

In the 1840s a drastic change in traditional land tenure resulted in a division, or Māhele, of island lands. This system of private ownership was based on western law. While a complex issue, many scholars believe that in order to protect Hawaiian sovereignty from foreign powers, Kamehameha III (Kamehameha III) was forced to establish laws changing the traditional Hawaiian economy to that of a market economy (Kuykendall Vol. I, 1938:145 footnote 47, 152, 165–6, 170; Daws 1968:111; Kelly 1983:45; Kame`eleihiwa 1992:169–70, 176).

Among other thing, foreigners demanded private ownership of land to insure their investments (Kuykendall Vol. I, 1938:138, 145, 178, 184, 202, 206, 271; Kame`eleihiwa 1992:178; Kelly 1998:4). Once lands were made available and private ownership was instituted the *maka`āinana* (commoners) were able to claim the plots on which they had been cultivating and living, if they had been made aware of the foreign procedures (*kuleana* lands, Land Commission Awards, LCA). These claims could not include any previously cultivated or presently fallow land, *`ōkipū* (on O`ahu), stream fisheries or many other resources necessary for traditional survival (Kelly 1983; Kame`eleihiwa 1992:295; Kirch and Sahlins 1992). The awarded parcels were called Land Commission Awards. If occupation could be established through the testimony of two witnesses, the petitioners were awarded the claimed LCA, issued a Royal Patent number, and could then take possession of the property (Chinen 1961: 16). Fifty-five LCA claims were made for land in Ka`ono`ulu.

As western influence grew, Kalepolepo, west of the project area became the important provisioning area. Europeans were now living or frequently visiting the coast and several churches and missionary stations were established. A Mr. Halstead left medical school on the East coast of the continent to become a whaler and after marrying the granddaughter of Issac Davis, settled in Kalepolepo on land given him by Kamehameha III (Kolb *et al.* 1997). His residence and store situated at Kalepolepo landing was known as the Koa House having been constructed of *koa* logs brought from the uplands of Kula. The store flourished due to the whaling and potato industry and provided an accessible port for exported produce. Several of Hawai`i's ruling monarchs stayed at the Koa House, including Kamehameha III, Kamehameha the IV, Lot Kamehameha (V), and Lunalilo. After viewing the surroundings, Wilcox stated, "...Kalepolepo was not so barren looking a place. Coconut trees grew beside pools of clear warm water along the banks of which grew taro and ape..." (1921:67). However, by 1887 this had changed. Wilcox continues:

...the Kula mountains had become denuded of their forests,
torrential winter rains were washing down earth from the uplands,
filling with silt the ponds at Kalepolepo...ruins of grass huts

[were] partly covered by drifting sand, and a few weather-beaten houses perched on the broad top of the old fish pond wall at the edge of the sea, with the Halstead house looming over them dim and shadowy in the daily swirl of dust and flying sand..." [ibid]

As early as 1828, sugar cane was being grown commercially on Maui (Speakman 1981:114). Sugar was established in the Makawao area in the late 1800s and by 1899, the Kihei Plantation Company (KPC) was growing cane in the plains above Kīhei. In 1908, the Kihei Plantation was absorbed by the Hawaiian Commercial and Sugar Company (HC&SC); the new-formed company continued cultivating what had been the KPC fields into the 1960s. A 200-foot-long wharf was constructed in Kīhei at the request of Maui plantation owners and farmers and served inter-island boats for landing freight and shipping produce to Honolulu (Clark 1980). In 1927, Alexander and Baldwin became the agents for the plantation (Condé and Best 1973). A landing was built at Kīhei around 1890.

Kaonoulu Ranch lands have been in the Rice family since 1916. Previously, both the Haleakalā and Kaonoulu Ranches leased the then Crown lands for pasture and other ranching activities. The introduction of a dependable water supply in 1952 set a foundation for overseas investment and development, which has thrived along the coastal region of Kīhei.

PREVIOUS ARCHAEOLOGY

Archaeological studies in the greater Kīhei area began in the early twentieth century with T. Thrum (1909), J. Stokes (1909–1916), and W. M. Walker (1931). These surveys included areas of leeward Maui and inventoried both upland of the Kula District and coastal sites (Figure 6).

The barren zone areas of this study have recently been subject to a proliferation of archaeological studies as residential and business endeavors expand from the coastline into other reaches of the Kīhei area. Concomitant with modern expansion involves necessary historic preservation work. The following section provides a general overview of archaeological studies in the general Kīhei area, focused on the barren zone.

As noted by Hammatt and Shideler (1992:10), "what is particularly striking in the many archaeological reports on Kīhei is the general paucity of sites within the transitional or barren zone." Cordy (1977) and Cox (1976) all conducted large-scale survey in this zone that led to the recordation of only small, temporary habitation or temporary use sites. Several other studies in this zone of Kama`ole Ahupua`a, including those conducted by Mayberry and Haun (1988) and

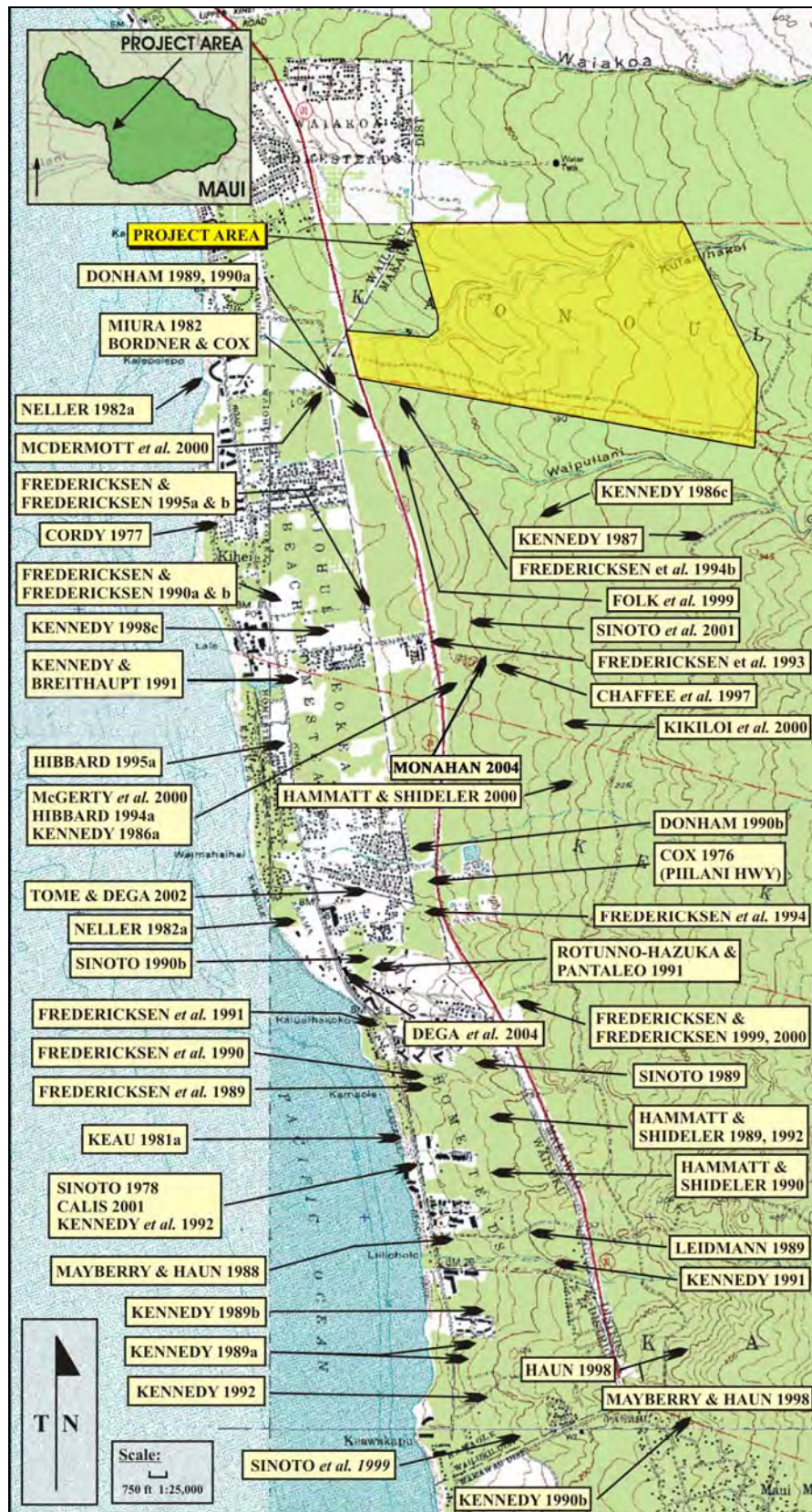


Figure 6: USGS Map Showing Locations of Previous Archaeological Investigations.

Hammatt and Shideler (1990), also only revealed the presence of temporary habitation and temporary use loci.

McDermott (2001:100) states that site densities are typically quite low within the “barren zone” with multiple studies having been conducted on large parcels (Kennedy 1986, Watanabe 1987, Hammatt and Shideler 2000, Kikiloi *et al.* 2000) that did not lead to the identification any pre-Contact sites. However, military sites related to World War II (WWII) training exercises have been previously documented in the area (McGerty *et al.* 2000), these sites often consisting of low, short alignments or walls. The few radiocarbon dates acquired from the area indicate definitive use of the landscape in later prehistory c. A.D. 1500 to 1600+.

SCS, and others, have more recently conducted numerous projects in the vicinity of the present project area. Several studies have been conducted in association with development of the Maui Research and Technology Park and the Elleair Maui Golf Club (Kennedy 1986; Hibbard 1994; Chaffee *et al.* 1997; McGerty *et al.* 2000; Sinoto *et al.* 2001; Tome and Dega 2002; Monahan 2003).

Kennedy (1986) conducted an archaeological reconnaissance of the entire 150.032 acres of the then-proposed Maui Research and Technology Park (TMK:2-2-02, since changed to 2-2-24). Kennedy’s study, which did not include subsurface testing (excavation), concluded that no archaeological sites or features were located within the project area. Chaffee *et al.* (1997) conducted an Archaeological Inventory Survey, including subsurface testing, of a portion of the Maui Research and Technology Park, within the area investigated by Kennedy (1986). Three sites consisting of ten archaeological features were identified. The features included remnant terraces, stone alignments, a mound, and a modified outcrop. All of the sites were interpreted as agricultural in function with the exception of a rock mound that may have functioned as a religious feature.

Monahan (2003) conducted an Archaeological Inventory Survey, including subsurface testing, of a 28.737-acre portion of the Maui Research and Technology Park, within the area investigated by Kennedy (1986). Other than one surface feature, a small arrangement of stacked boulders interpreted as a ‘push pile,’ this survey yielded no evidence of historic or prehistoric significance.

Theresa Donham conducted an Archaeological Reconnaissance Survey of the Haleakalā Greens Subdivision area (Hibbard 1994). She identified a low, circular rock mound, a historical site with multiple features on the crest of a prominent ridge, a linear rock mound or wall

remnant, a rock-filled terrace outlined with a low, rock wall, and other modifications along a rock outcrop. Shell midden was observed on the surface inside an enclosure.

McGerty *et al.* (2000) surveyed 15 selected areas within the Elleair Maui Golf Club, and identified five archaeological sites (State Site Nos. 50-50-10-5043, -5044, -5045, -5046, and -5047) containing a total of seven surface features. The surface features were interpreted as agricultural terraces, perhaps dating from the pre-Contact period, and C-shaped rock formations (fighting positions) built during World War II training. Ten excavation units placed within these features yielded no cultural material.

Sinoto *et al.* (2001) conducted an Archaeological Inventory Survey of a parcel adjacent to the subject property. No archaeological or historical sites or features were identified.

Tome and Dega (2002) conducted an Archaeological Inventory Survey along the northeastern flank of the Elleair Maui Golf Club property. They identified a historical ranching corral and a short agricultural wall, collectively designated State Site No. 50-50-10-5233. No other structures or subsurface deposits were identified. No traditional Native Hawaiian sites or features were identified. Another Inventory Survey along the southern flank of the Elleair Maui Golf Course (Dega 2003) failed to yield any archaeological or historical features.

Scientific Consultant Services (SCS), Inc. conducted Archaeological Inventory Survey (Monahan 2004) on two undeveloped lots totaling approximately 56.647 acres near the Elleair Golf Course in Kīhei, Waiohuli and Ka`ono`ulu Ahupua`a, Wailuku (Kula) District, Kīhei, Maui Island, Hawai`i [TMK: 2-2-24: Portion 12 and 13]. A pedestrian survey and subsurface testing was performed in advance of a proposed residential project near the Elleair Golf Course. Four surface features consisting of stacked basalt stones were located within the project area; each was assigned a separate state site number. Test excavations yielded buried cultural material consistent with traditional Native Hawaiian activities at three of the four sites (Sites 50-50-10-5506, -5507, and -5509). Excavation at the fourth site (-5508)—a C-shaped rock pile consistent with a World War II military training feature—did not yield any subsurface evidence. The discovery of three traditional Native Hawaiian sites in this area is significant, as previous studies have generally failed to document any such activity. One of these sites (-5509) yielded a modern radiocarbon date (0 ± 50 BP), but its context is questionable and it may not be associated with the buried artifacts. Two other sites (-5506 and -5507) did not yield charcoal, although both contained buried traditional artifacts and midden. No additional archaeological work was recommended in the project area (Monahan 2004).

Field Inspection for two waterline corridors was conducted by Dega and Tome in 2006. That letter report describing the results of the field work is included as Appendix A.

SCS personnel Tomasi Patolo, B.A., Dea Funka, B.A., and Bryan Armstrong, B.A. conducted Inventory Survey on the current area of study between January 24 and April 6, 2007 under the general supervision of Michael Dega, Ph.D. (Shefchek *et al* 2008). Forty new archaeological sites were identified and recorded during this work. Of the forty sites recorded during this work, eight are associated with pre-Contact activities. These pre-Contact sites consisted of temporary rock shelters with petroglyph components, enclosures, platforms, a mound and a wall. Historic sites found during this work pertained to agriculture and military training activities.

PROJECT AREA EXPECTATIONS

The current project area falls into the barren zone. Archaeological reconnaissance and inventory survey work in the barren zone have yielded only a modest amount of evidence for traditional and historic-period activity. Documented sites in the general area primarily include agricultural terraces and short walls, C-shaped structures (military period), and historic ranching features (walls, corrals).

This project area has been subject to Inventory Survey, with 20 sites documented (see above). However, being located within the barren zone, it is not expected to yield many, if any, traditional-type deposits in subsurface contexts, this due to the shallow nature of soils overlying bedrock. Previous archaeology in the area (McGerty *et al.* 2000) attests to the likelihood for encountering numerous sites relating to military activity on the parcel. There is limited expectation that significant sites will be identified in subsurface contexts.

REASON FOR MONITORING

The main impetus for full-time Archaeological Monitoring of construction activities in the current project area directly correlates to the positive results earned through Inventory Survey (Fredericksen *et al.* 1994). Given that twenty sites were identified in the area, there maintains some occupation through time, which could be revealed again during Monitoring.

In addition, the numerous archaeological projects that have been conducted in the Kīhei-Makena area have been important in determining the pre- and post-Contact period settlement patterns within the general project area (see Figure 5; Table 1). Much of this research has demonstrated that significant cultural deposits, consisting of subterranean cultural strata,

subsurface pit features, midden, artifacts, and human burials, are present in subsurface contexts in the area. Surface, and subsurface, features related to traditional and historic-period occupation, whether complete or partially truncated, have been documented in several of the area's studies (see Previous Archaeology section below). The present monitoring work will provide an opportunity to more closely assess the presence/absence of significant cultural resources on the property, and if present, will allow for complete documentation of such resources. Data gleaned through this study should allow for contributing to the database of knowledge for the area, and for refining Kīhei settlement pattern models.

MONITORING CONVENTIONS AND METHODOLOGY

This Archaeological Monitoring Plan has been devised in accordance with DLNR-SHPD rules governing standards for Archaeological Monitoring (DLNR-SHPD 2003). SCS monitors will adhere to the following guidelines during monitoring:

1. A qualified archaeologist intimately familiar with the project area and the results of previous archaeological work conducted in the Kīhei-Makena area will monitor subsurface construction activities on the parcel. Please note that one archaeological monitor is required for each piece of ground altering machinery. If significant deposits or features are identified and additional field personnel are required, the contracting archaeologist will notify the contractor, or representatives before additional personnel are brought to the site.
2. If features, or cultural deposits, are identified during Monitoring, the on-site archaeologist will have the authority to temporarily suspend construction activities at the significant location so that the cultural feature(s), or deposit(s), may be fully evaluated and appropriate treatment of the cultural deposit(s) is conducted, per the letter of this plan. SHPD will be contacted to establish feature significance and potential mitigation procedures. Treatment activities primarily include documenting the feature/deposit through plotting its location on an overall site map, illustrating a plan view map of the feature/deposit, profiling the deposit in two dimensions, photographing the finds (with the exception of human burials), collecting artifact and soil samples, and triangulating the finds on a map. Construction work and/or back-filling of excavation pits or trenches will only continue in the sample location when all documentation has been completed.
3. Soil stratigraphy associated with subsurface cultural deposits will be noted and photographed, particularly those containing significant quantities or qualities of cultural materials. If deemed significant by SHPD and the contracting archaeologist, these deposits will be sampled, as determined by the same.

Table 1: List of Sample Archaeological Projects by Ahupua`a Location in Chronological Order.

Location	Report
Kama`ole Ahupua`a	Sinoto 1978
	Keau 1981
	Neller 1982
	Leidemann 1989
	Hammatt and Shideler 1989
	Sinoto 1989
	Fredericksen <i>et al.</i> 1989
	Fredericksen <i>et al.</i> 1990
	Hammatt and Shideler 1990
	Sinoto 1990
	Kennedy 1991
	Fredericksen <i>et al.</i> 1991
	Rotunno-Hazuka and Pantaleo 1991
	Kennedy <i>et al.</i> 1992
	Hammatt and Shideler 1992
	Fredericksen <i>et al.</i> 1994
	Mayberry and Haun 1998
	Haun 1998
	Fredericksen and Fredericksen 1999
	Calis 2001
	Tome and Dega 2002
Keokea Ahupua`a	Cox 1976
	Brown 1989
	Brown <i>et al.</i> 1989
	Donham 1990b
	Kennedy and Breithaupt 1991
	Hibbard 1995
	Hammatt and Shideler 2000
	Fredericksen 2001
	Fredericksen and Fredericksen 2001
Waiohuli Ahupua`a	Cordy 1977
	Miura 1982
	Kennedy 1986
	Watanabe 1987
	Riford 1987
	Kennedy 1988
	Donham 1989
	Donham 1990a
	Fredericksen <i>et al.</i> 1993
	Fredericksen <i>et al.</i> 1994
	Hibbard 1994
	Fredericksen and Fredericksen 1995a
	Fredericksen and Fredericksen 1995b
	Dunn and Spear 1995
	Chaffee <i>et al.</i> 1997
	Sinoto <i>et al.</i> 1999
	McDermott and Hammatt 2000
	Kikiloi and Hammatt 2000
	McGerty <i>et al.</i> 2000
	McDermott 2001
	Sinoto <i>et al.</i> 2001

4. In the event that human remains are encountered, all work in the immediate area of the find will cease and the area will be secured from further activity until burial protocol has been completed. The SHPD-Maui Cultural Historian will be immediately identified about the inadvertent discovery of human remains on the property. Notification of the inadvertent discovery will also be made to the Maui/Lanai Islands Burial Council by either SHPD or the contracting archaeological firm. A determination of the minimum number of individuals (MNI), age(s), and ethnicity of the burial(s) will be ascertained in the field by the contracting archaeologist. Rules outlined in Chapter 6e, Section 43 shall be followed. Profiles, plan view maps, and illustrative documentation of skeletal parts will be recorded to document the burial(s). The burial location will be identified and marked. If a burial is disturbed during trench excavations, materials excavated from the vicinity of the burial(s) will be manually screened through 1/8-inch wire mesh screens to recover any displaced skeletal material. If the remains are to be removed, the work will be in compliance with HRS 6.E-43.6, Procedures Relating to Inadvertent Discoveries after approval from all parties (SHPD).
5. To ensure that contractors and the construction crew are aware of this Archaeological Monitoring Plan and possible site types to be encountered on the parcel, a brief coordination meeting will be held between the construction team and monitoring archaeologist prior to initiation of the project. The construction crew will also be informed about the possibility that human burials could be encountered and how they should proceed if they observe such remains.
6. SCS will provide all coordination with the contractor, SHPD, and any other group involved in the project. SCS will coordinate all Monitoring and sampling activities with the contractor's safety officers to ensure that proper safety regulations and protective measures meet compliance. Close coordination will also be maintained with construction representatives in order to adequately inform personnel of the possibility that open archaeological units or trenches may occur in the project area.
7. As necessary, verbal reports will be made to SHPD and any other agencies as requested.

LABORATORY ANALYSIS

All samples collected during the project, except human remains, will undergo analysis at the SCS laboratory in Honolulu. In the event that human remains are identified and SHPD-Burial Sites Program personnel authorize their removal, they will be curated on-site in a secure location or at the SHPD-Maui. All other burials will remain protected and in place until any decisions are made by the SHPD-Burial Sites Program. Photographs, illustrations, and all notes accumulated during the project will be curated at the Honolulu laboratory. All retrieved artifact and midden samples will be thoroughly cleaned, sorted, and analyzed. Significant artifacts will be photographed, sketched, and classified (qualitative analysis). All metric measurements and weights will be recorded (quantitative analysis). These data will be presented in tabular form

within the final monitoring report. Midden samples will be minimally identified to major ‘class’ (e.g., bivalve, gastropod mollusk, echinoderm, fish, bird, mammal). All data will be clearly recorded on standard laboratory forms that also include number and weight (as appropriate) of each constituent category. These counts will also be included in the final report.

Should any samples amenable to dating be collected from a significant cultural deposit, they will be prepared in the SCS laboratory and submitted for specialized radiocarbon analysis. While primary emphasis for dating is placed on charcoal samples, we do not preclude the use of other material such as marine shell or nonhuman bone materials. SCS will consult with SHPD and the client if radiocarbon dates are deemed necessary.

All stratigraphic profiles will be drafted for presentation in the final report. Representative plan view sketches showing the location and morphology of identified sites/features/deposits will be compiled and illustrated

CURATION

If requested by the land owner, SCS will curate all recovered materials in Honolulu (except human remains and associated goods, which would remain on-island) until a permanent, more suitable curation center is identified. The land owner may request to curate all recovered cultural materials once analysis has been completed.

REPORTING

An Archaeological Monitoring report documenting the project findings and interpretation, following SHPD guidelines for Archaeological Monitoring reports, will be prepared and submitted within 180 days after the completion of fieldwork.

If cultural features or deposits are identified during fieldwork, the sites will be evaluated for historical significance and assessed under State significance criteria. The Archaeological Monitoring report will contain these significance assessments, as well as recommendations for any future work to be conducted on the parcel.

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**APPENDIX A: LETTER REPORT FOR TWO WATERLINES IN THE PROJECT
AREA**

Dr. Melissa Kirkendall
SHPD-Maui
130 Mahalani Street
Wailuku, HI 96793

June 9, 2006

Re: Field Inspection of Proposed Waterlines near the Kaonoulu Market Place in Kihei, Maui, Hawai'i [TMK:2-2-02:por. of 15 and 3-9-01:16]

Dear Dr. Kirkendall:

At the request of Pacific Rim Land, Inc., Scientific Consultant Services, Inc. (SCS) conducted a Field Inspection of a two proposed waterline corridors and a proposed water tank site in the "barren zone" of Kihei, Maui, Hawai'i at TMK:2-2-02:por. 15 and 3-9-01:16. The purpose of the Field Inspection was to determine the presence/absence of architecture, midden deposits, and/or artifact deposits on the surface of the corridors and to assess the potential for the presence of subsurface cultural deposits. Other characteristics pertinent to the parcel were noted and include descriptions of landscape disturbance, topographic changes, and soil regimes present, among others. Fieldwork for this project was conducted on June 9, 2006 by M. Dega, Ph.D. and G. Tome, B.A., both of SCS.

Location and Current Status

The project area is linear in morphology and is generally bounded on the North by two parcels containing corn fields, a residence, a pond, and an orchard. Ohukai Road borders the northern portions of these two parcels. The southern flank is defined by Kulanihakoi Gulch. The eastern flank is demarcated by undeveloped land associated with the future Kaonoulu Market Place (which borders Pi'ilani Highway). The western flank spreads into undeveloped land owned by Kaonoulu Ranch. The current project area is currently undeveloped. A swath of the proposed Kihei/upcountry Highway cuts through a small portion of the project area's northeastern flank.

Two proposed waterline corridors and a tank site were subject to this Field Inspection. Corridor A is designated for a north-south trending corridor running c. 2,200 feet to its terminus at the northern flank of Kulanihakoi Gulch, a large intermittent drainage. Corridor B is designated for an east-west trending segment running c. 3,400 feet to the proposed tank site. The tank site itself will measure 200 sq. ft in diameter. The width of both corridors measures 12 feet. Pedestrian survey of the corridors was conducted by the two crew members walking abreast but separated by 6 feet to cover the flanks and center of the corridors. Ground surface visibility was generally high.

Corridor A consists of slightly undulating land with slope trending toward the south where it meets the base of Kulanihakoi Gulch. Primarily flat across the northern 2/3 of the corridor, the slope descends gradually to the flank of the drainage wherein a virtual cliff face is present as the corridor descends to the stream bank. Corridor A generally runs along the 120 ft. elevation line. This corridor has been subject to minor grading in areas, with several unimproved dirt roads coursing east-west or perpendicular across the corridor in three locations. Corridor B is generally flat as it skirts existing corn fields and gains elevation near the proposed tank

location. An extremely small arterial drainage (c. 3 feet deep) in the western 1/3 has been filled with soil and rocks cleared from the corn fields. From east to west, Corridor B runs from the 120 ft elevation line to a maximum 200 ft above mean sea level at the proposed tank location. The eastern 2/3 of Corridor B primarily consists of corn fields and access roads to the fields. The remaining 1/3 is currently undeveloped. The proposed water tank site occurs at the eastern terminus of Corridor B on the top of a small knoll at the 200 ft elevation line. This land is also undeveloped. Barbed-wire fences are common through and around Corridor A, Corridor B, and the tank site.

RESULTS

Full pedestrian survey of Corridor A, Corridor B, and the proposed water tank site failed to lead to the identification of any archaeological structures, scatters, or deposits. In addition, no areas readily amenable to the recovery of cultural materials in subterranean contexts were identified. A brief listing of description and results for each of the three survey areas follows.

Corridor A

This north-south trending segment crossed both flat and slightly undulating topography to its step terminus on the north bank of Kulanihakoi Gulch. The surface of the corridor was relatively open. Bedrock and scattered, non-modified cobbles and boulders were present along the length of the survey area. Modern impacts included three non-improved roads (c. 8 feet wide) running perpendicular to the corridor, soil testing pits (filled), and multiple cattle trails. A small herd of cattle grazed under the *kiawe* trees near the northern flank of the corridor. Neither rock concentrations nor artifacts/midden were identified on the surface of Corridor A. In addition, bedrock was ubiquitous across portions of the surface. Soil deposits appeared extremely shallow in this area. A close inspection of the steep cliff area near the southern terminus failed to reveal any cultural modifications, including petroglyphs on rock panels. This corridor only yielded negative results and was not expected to yield cultural resources through any subsurface sampling.

Corridor B

A majority of this east-west directional corridor proceeded through corn fields, along modified dirt access roads to the fields, and up a small knoll at its western terminus. Most of the proposed corridor area had been extensively modified through agriculture (corn) and associated infrastructure. Undeveloped portions of this corridor were present for c. 600 feet to the top of the knoll. Surface grasses and scattered cobbles/boulders were identified. None of the rocks formed alignments, walls, or C-shapes. There also appeared to be no areas that could lead to the recovery of cultural resources in subterranean contexts. The terminus of Corridor B led to the tank site.

Water Tank Site

The proposed tank area measures c. 200 sq. ft. in diameter and occurs at the top of a small knoll. The knoll itself is fairly flat. The tank area was primarily devoid of any rock concentrations and covered in surface grasses. Bedrock was evident at the top of the knoll and along its slight slope. Soil deposits appeared shallow even at the apex of the knoll. No structures, scatters, or deposits were identified in the proposed tank area.

In addition, based on previous archaeological work by SCS in this “barren zone” area, few, if any, cultural resources would be expected in subsurface contexts.

Recommendations

This Field Inspection of a “barren zone” project area did not lead to the identification of any archaeological sites nor areas thought to contain deposits in subsurface contexts. The corridors and water tank area surveyed during this Field Inspection were void of sites, this being the result of limited activity through time in the area and the nature of the “barren zone” itself. Few archaeological signatures are present in this zone, particularly in subsurface contexts. While ranching may have altered the landscape of the overall zone, ranching related structures were virtually absent in the project area. Even informal survey of Kulanihakoi Gulch, beyond the project area boundaries, failed to lead to identification of any sites.

Based on the above factors and the extremely limited potential for excavation, no further work is recommended for the above noted project area.

If any questions arise pertaining to this Field Inspection or recommendations herein, please contact me at your earliest convenience. Thank you.

Best Regards,

Michael F. Dega, Ph.D.
Senior Archaeologist
Scientific Consultant Services, Inc.

1224
NEIL ABERCROMBIE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
601 KAMOKILA BOULEVARD, ROOM 555
KAPOLEI, HAWAII 96707

WILLIAM J. AILA, JR.
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

GUY KAULUKUKUI
FIRST DEPUTY

WILLIAM M. TAM
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

August 10, 2011

Robert Spear, Ph.D.
Scientific Consultant Services, Inc.
711 Kapiolani Blvd., Suite 975
Honolulu, Hawaii 96813

LOG NO: 2011.2060
DOC NO: 1108MD12
Archaeology

Dear Dr. Spear:

**SUBJECT: Chapter 6E-42 Historic Preservation Review –
Archaeological Monitoring Plan for the Pi'ilani Promenade South Project
Ka'ono'ulu Ahupua'a, Makawao District, Island of Maui
TMK: (2) 2-5-002:015 (por.) and 3-9-001:016**

This letter summarizes our review of the aforementioned plan (Chaffee and Dega July 2011; *An Archaeological Monitoring Plan for the Kaonoulu Marketplace Project Located in Kihei, Ka'ono'ulu Ahupua'a, Makawao District, Maui Island, Hawai'i* [TMK: 3-9-01:16 and (2) 2-2-002:015 por.]/SCS Project Number 1224 AMP-1), which we received on July 29, 2011.

The proposed project will involve grubbing, grading and development of 88 acres. A search of our records indicates that an archaeological inventory survey of this location was conducted (Xamanek Researches 1994). SHPD previously determined that a similar proposed project would have no effect in 2006, and more recently we recommended archaeological monitoring during a grubbing and grading permit review from Maui County (Log No. 2011.0536, Doc No. 1103MD05).

This plan is accepted as final pursuant to HAR §13-279-4. Please notify the Maui and Oahu offices via fax at the start and completion of archaeological monitoring. Upon receipt of this letter please submit one paper copy of your report marked Final to our Kapolei office along with a CD containing a searchable pdf version of the final report and a copy of this approval letter, marked to the attention of the Kapolei Library. If you have questions about this letter please contact me at (808) 243-5169 or via email to: morgan.e.davis@hawaii.gov.

Aloha,

Morgan E. Davis
Lead Archaeologist, Maui Island Section
State Historic Preservation Division



APPENDIX H-1
Archaeological Consultant Memo
dated October 28, 2016

XAMANЕК RESEARCHES LLC
P.O. BOX 880131
PUKALANI, MAUI, HI 96788
Phone: 572-8900
Phone/Fax: 572-6118
E-mail: xamanekresearchesllc@gmail.com

Jordan E. Hart, President
Chris Hart & Partners, Inc.
115 N. Market Street
Wailuku, Hawaii 96793-1717
Phone: 808-242-1955
Fax: 808-242-1956

Attn: Jordan Hart, President

28 October 2016

Subject: Piilani Promenade, Draft EIS Comments Received Regarding the Small Gulch (Drainageway “A”) for the Project located in Kihei, Maui, Hawaii. TMKs: (2) 3-9-001:016, 170-174.

Dear Mr. Hart,

I provide the following response to your memo, dated 12 October 2016, which I received via email on 19 October, and via mail on 24 October 2016. By way of background, the area in question - Drainageway “A” is located in the northern half of the current Project (reference your Figures 2-3 and 2-4). A portion of this drainage feature contains one previously identified historic property - Site 50-50-10-3740.

Site 3740 was first identified during an earlier 1994 archaeological inventory survey of an 88-acre portion of the current Project area (Fredericksen, et al., 1994). At the time, Site 3740 was interpreted as a post-contact ranch-era feature, possibly associated with erosion control. This site consists of segments of a low, discontinuous rock wall that primarily extend along portions of either side of the gully. The State Historic Preservation Division (SHPD) Maui staff archaeologist at the time visited the project area in 1994 to inspect the various sites that had been identified during the inventory survey, including Site 3740. The SHPD approved the archaeological inventory survey report, concurred with site interpretations, and indicated that no further archaeological work was needed for any of the remaining¹ identified sites, including Site 3740. This recommendation was reaffirmed in a 2011 SHPD comment letter (SHPD DOC NO: 1103MD05).

Xamanek Researches LLC was subsequently hired to carry out an archaeological inventory survey of the original 88-acre parcel plus additional lands in 2014-2015. This subsequent survey reexamined sites previously identified in 1994, including Site 3740, in

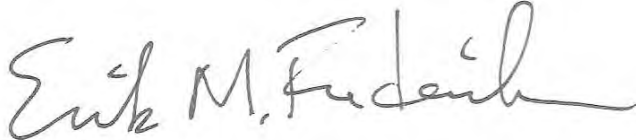
¹ At the time, one site - a petroglyph on a boulder (Site 3746) was recommended for preservation. This petroglyph was removed from the property by a former landowner after the 1994 inventory survey, and relocated to the Kula area.

addition to one newly identified site. Pedestrian inspections of all previously identified sites, including Site 3740, were conducted during our 2014-2015 fieldwork. The SHPD Maui staff archaeologist at the time carried out two project inspections with Xamanek Researches LLC staff in 2015. The SHPD Maui staff archaeologist was able to view all sites, including Site 3740. Our archaeological inventory survey report (Fredericksen, 2015) for the overall project area was approved in a 2016 SHPD comment letter (SHPD DOC NO: 1601MD08). The SHPD concurred with the interpreted function for Site 3740 and affirmed that no additional work was warranted for this post-contact site.

Xamanek Researches LLC staff members have subsequently revisited the gully area on three separate occasions since the inventory survey was accepted in early 2016. No additional findings have been made in the gully. However, given concerns raised, the developer's representative has voluntarily agreed to have archaeological data recovery work carried out on Site 3740. This additional and intensive work will include detailed mapping, subsurface and surface investigation of the construction style of sections of the wall segments, including a short wall section that is located within along a portion of the drainage feature's slope. Results of this work will be included in the Project's forthcoming data recovery report. The SHPD will review the results of this future report.

Please contact me if you have any questions regarding the above memo for the subject project in Kihei, Maui.

Sincerely,

A handwritten signature in dark ink, reading "Erik M. Fredericksen". The signature is fluid and cursive, with the first name "Erik" being more prominent and the last name "Fredericksen" following in a similar style.

Erik M. Fredericksen



APPENDIX H-2
Archaeological Consultant Memo
dated November 15, 2016

XAMANЕК RESEARCHES LLC
P.O. BOX 880131
PUKALANI, MAUI, HI 96788
Phone: 572-8900
Phone/Fax: 572-6118
E-mail: xamanekresearchesllc@gmail.com

Jordan E. Hart, President
Chris Hart & Partners, Inc.
115 N. Market Street
Wailuku, Hawaii 96793-1717
Phone: 808-242-1955
Fax: 808-242-1956

Attn: Jordan Hart, President

15 November 2016

Stone identified as being significant by Interested Parties for the Project located in Kihei, Maui, Hawaii. TMKs: (2) 3-9-001:016, 170-174.

Dear Mr. Hart,

I provide the following response to your memo, dated 3 November 2016, which I received via email on 4 November, and via mail on 12 November 2016. By way of background, the subject "Stone" is a natural, unmodified basalt boulder, which is located in the vicinity of Site 50-50-10-3727 and Site -3728. Our previous archaeological inventory survey report (Fredericksen, 2015) for the overall Piilani Promenade project area was approved in a 2016 State Historic Preservation Division comment letter (SHPD DOC NO: 1601MD08). Site 3727 consists of three stone piles and a surface scatter, and Site 3728 consists of a stone pile. Both of these sites will be further investigated during the forthcoming Archaeological Data Recovery project (Fredericksen, 2016).

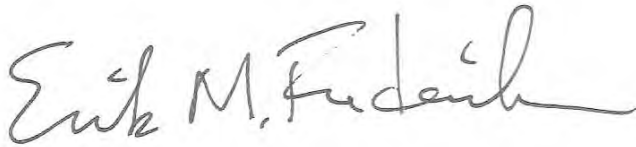
Both of the above sites are in the vicinity (west) of the County of Maui Department of Water Supply 36-inch waterline that crosses the c. 88-acre main portion of the project area (TMK (2) 3-9-001: 16). This substantial waterline was installed about 40 years ago. Many boulders in this area display heavy equipment scars from prior mechanical disturbance of this portion of the project area.

By way of background, the SHPD Maui staff archaeologist previously carried out two project inspections with Xamanek Researches LLC staff in 2015. The staff archaeologist was able to view all previously identified sites, including Sites 3727 and 3728. The SHPD Maui staff archaeologist was previously sent the Submittal by Interested Parties that included comment regarding the natural boulder in question. She subsequently provided Xamanek Researches LLC with a copy of this 2015 memo in advance of her two inspections of the project area with our staff.

Xamanek Researches LLC staff members have subsequently revisited this portion of the project area on two separate occasions since the inventory survey was accepted in early 2016. No additional archaeological findings have been made, which suggest the possible function of this boulder. However, given the concern raised, the developer's representative has voluntarily agreed to preserve this natural boulder on the project area. It is my understanding that concerned individuals will be consulted regarding the final location of this boulder.

Please contact me if you have any questions regarding the above memo for the subject project in Kihei, Maui.

Sincerely,

A handwritten signature in dark ink, reading "Erik M. Fredericksen". The signature is fluid and cursive, with the first name "Erik" being more prominent and the last name "Fredericksen" following in a similar style.

Erik M. Fredericksen