

Appendix I



Archaeological Inventory Survey

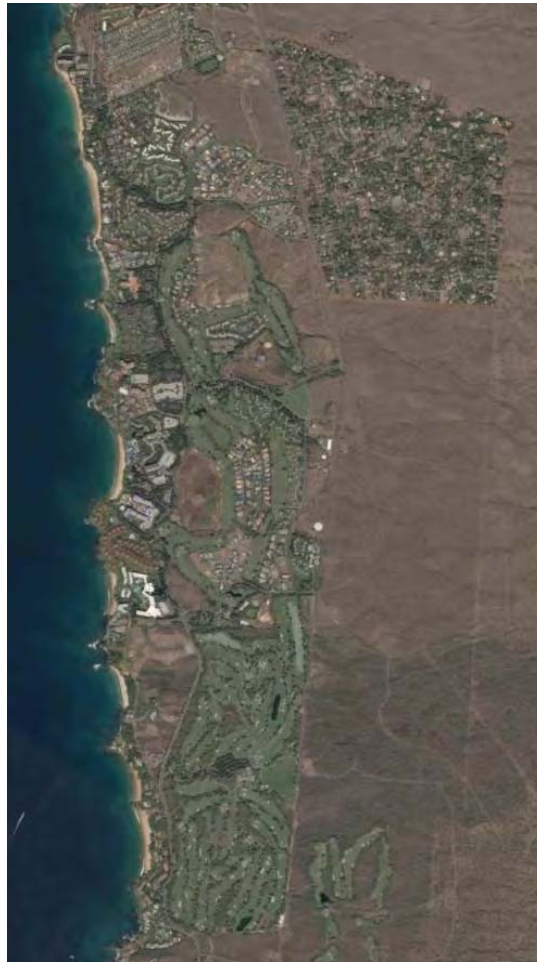


ASC080724

**REVISED ARCHAEOLOGICAL INVENTORY SURVEY:
Supplemental Archaeological Procedures
Proposed Honua`ula Development Area
Paeahu, Palauea, & Keauhou *ahupua`a*
Makawao District, Maui Island
TMK 2-1-08: 56 and 71**

July 2008

Updated March 2010



**Aki Sinoto Consulting
2333 Kapiolani Blvd. No. 2704
Honolulu, Hawaii 96826**

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ABSTRACT

At the request of Honua`ula Partners, LLC (formerly WCPT/GW Land Associates, LLC), Aki Sinoto Consulting of Honolulu completed revised archaeological inventory survey procedures for the proposed Honua`ula development area, formerly known as Wailea 670, located on the southwestern slopes of Haleakala in East Maui. In order to facilitate historic preservation review by the State Historic Preservation Division (SHPD), the current revision, covering the total development area, incorporates the results of two previous undertakings completed in May 2000 and June 2001 together with the results of additional fieldwork conducted during a number of separate procedures between August 2003 and June 2008.

The project area that encompasses 700 acres, ranges in elevation from approximately 320 to 720 feet amsl, and includes portions of three *ahupua`a*; Paeahu, Palauea, and Keauhou. The Honua`ula property is located in the modern district of Makawao on Maui Island. Topographically, the project area can roughly be divided in to two distinct areas, the northern two-thirds and the southern one-third. The Northern Section comprises a grass-covered area that exhibits compounded prior disturbance. The Southern Section, under high tree cover, primarily of *kiawe* and intermittent stands of *wiliwili* has expansive areas of open, relatively young aa flows in between older pahoehoe ridges and plateaus. A large wall, trending east to west, demarks a physical division between the two areas.

All of the afore-mentioned phases of fieldwork have resulted in the documentation of forty (40) sites comprised of some sixty (60) component features in the total 700-acre project area. The Northern Section yielded only one single-feature site, a natural overhang shelter in a seasonal gulch. Contrastingly, the Southern Section produced a total of 39 sites with 59 component features. The occurrence of two multiple feature complexes along with a relatively high frequency of larger platform sites were unexpected based on the elevation, topography, and climatic conditions.

Of the total 40 sites, 15 have been recommended for *in-situ* preservation, 18 for intensive data recovery, and the remaining 7 warrant no further work. Comprehensive preservation and data recovery plans are anticipated to be forthcoming shortly in conjunction with progressive phases of development planning.

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INTRODUCTION

At the request of the Owner, Honua`ula Partners, LLC (formerly WCPT/GW Land Associates, LLC), Aki Sinoto Consulting of Honolulu completed revised archaeological inventory survey procedures for the proposed Honua`ula development area, formerly called Wailea 670, located on the southwestern slopes of Haleakala in East Maui. To facilitate historic preservation review by the State Historic Preservation Division (SHPD), the current revision, covering the total development area, incorporates the results of two previous undertakings completed in May 2000 and June 2001 (Sinoto & Pantaleo 2000 & 2001) together with the results of additional fieldwork conducted during a number of separate procedures between August 2003 and June 2008.

PROJECT AREA

The development area for the proposed Honua`ula Project (hereafter referred to as the “project area”), encompassing approximately 700 acres (ca 670-acres plus the proposed Pi`ilani Highway extension easement and a Maui Electric substation exclusion that total ca 30-acres), is located along the southwestern slopes of Haleakala, within the *moku* (traditional district) of Honua`ula, currently subsumed into the Makawao District, on Maui Island (Fig. 1). Occupying elevations ranging between approximately 320 and 720 feet amsl, the project area (TMK: (2) 2-1-08: POR 56 & 71) conjoins portions of three *ahupua`a*, from Paeahu in the north, Palauea in the middle, to Keauhou in the south (Fig. 2). The project area is bordered on the north by the existing Maui Meadows residential subdivision; on the east by a barbed wire fence-line along its boundary with Ulupalakua Ranch lands; on the south by a paved utility road and another barbed wire fence-line along its boundary with Makena Resort lands; and on the west by a portion of the Wailea golf course, other developments within Wailea Resort, and a section of the Pi`ilani Highway. Roughly four fifths of the northern portion of the project area is located within Paeahu *ahupua`a* with the remaining fifth in Palauea *ahupua`a* and the southern portion is roughly half Palauea and the other half a portion of Keauhou 1 *ahupua`a*.

ENVIRONMENT

Two relatively distinct topographic characteristics separate the northern two-thirds and the southern third of the project area. The northern portion generally consists of grass-covered, moderately-sloping, rocky terrain dissected by several large, east/west trending dry gulches. The soil is Keawakapu extremely silty clay loam, developed in volcanic ash. This soil occurs in the low uplands on slopes between 3 to 25% and is characterized by moderate permeability, slow to medium runoff, and with slight to moderate erosion hazard (Foote et al. 1972:68). Bulldozed

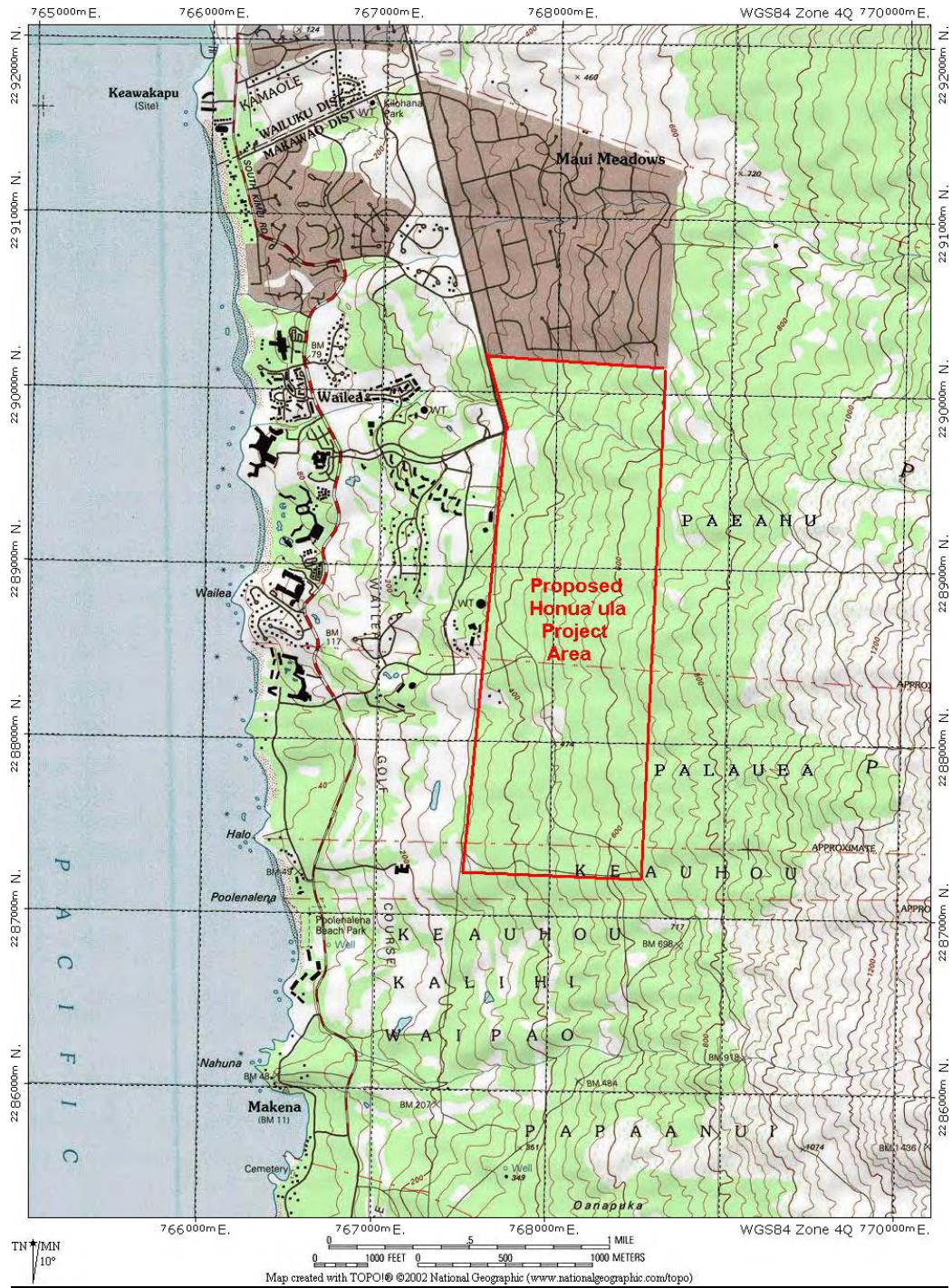


Figure 1. Location of Proposed Honua`ula Project Area on USGS Makena Quadrangle

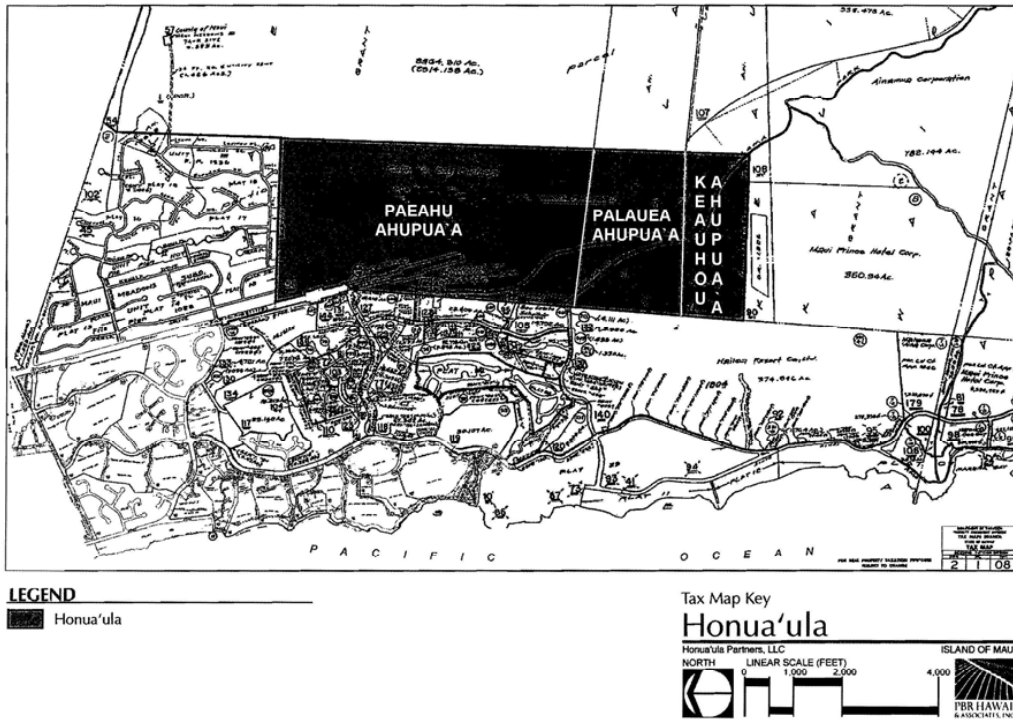


Figure 2. Tax Map of Project Area Showing Portions of the Three *ahupua`a*

roads, cuts, and clearings occur throughout the northern area. With the exception of the dry gulch and a few rocky outcrop ridge areas, extensive previous clearing is evident over most of the northern two-thirds of the project area. The southern portion consists of dense, tree cover on old pahoe-hoe ridges and aa flows with expansive, open, more recent, aa flows. Very Stony Land is characterized as areas where 50-90% of the surface is covered with stones and boulders. On Maui, this land type consists of young aa lava and occurs as large areas on the slopes of Haleakala (Foote et al. 1972:124). Soils in the southern portion include the Oanapuka Series, a well-drained and very stony silt loam that occurs on low uplands and derived from volcanic ash and cinders on slopes between 7-25%. These soils are characterized with slow runoff, moderately rapid permeability, and represents slight to moderate erosion hazard (Foote et al. 1972:101). The southern portion, too, exhibits signs of previous disturbances in the form of bulldozed cuts, clearings, and secondary growth vegetation. A wide corridor was cleared by bulldozer in conjunction with the proposed Pi'ilani Highway extension which to date has not been implemented. The western or *makai* half of the southern portion below the jeep road shows

expansive areas of previous disturbance, only some of which can directly be attributed to development activities in the adjoining areas or for utility infrastructure within the project property. Some of the clearing is probably associated with historic and modern ranching and also some military activities. The project area elevations range between 300 to 680 feet above mean sea level. Annual rainfall averages 10 to 15 inches, with most of it occurring during the winter months between November and February (Armstrong et al. 1983:62).

In the northern portion, the dominant vegetation is various dry grasses and shrubs with limited stands of *kiawe* (*Prosopis pallida*) and *koa haole* (*Leucaena leucocephala*) as high cover in the gulch areas. Some *pili* or Tanglehead grass (*Heteropogon contortus*) also occurs in the northern portion. In the southern portion, the dominant high cover vegetation is *kiawe* and the dominant ground cover in certain localities is dry grasses. Other notable flora consists of *wiliwili* (*Erythrina sandwichensis*), *koa haole*, *ilima* (*Sida fallax*), lantana (*Lantana camara*), wild basil (*Ocimum basilicum*), beggar's tick (*Bidens pilosa*), and golden crown-beard (*Verbesina encelioides*). Two species of cacti, *Panini* or prickly pear (*Opuntia ficus-indica*) and hedge cactus (*Cereus uruguayanas*) are also present. Fauna includes cattle, axis deer, feral cats, wild pigs, mice, and various common exotic avian species.

HISTORICAL BACKGROUND

Detailed historical summaries for the Wailea/Makena region have been presented in various reports including Clark and Kelly (1985), Cordy and Athens (1988), Schilt (1988), Gosser et al. (1997), McIntosh et al. (1997), and most recently Donham (2006). The reader is referred to a few notable studies completed for neighboring areas, in particular *Na Lawai`a o `Ao`ao o ka Moku: Excavations at the Southern Acreage and Lot 15, Wailea Maui* (Gosser et al 1993); *Data Recovery Procedures for Parcels III and IV, Makena Resort Corporation* (Gosser et al. 1997); *Addendum Survey and Supplementary Tasks for: Archaeological Inventory Survey of Portions of Palauea ahupua`a Makawao District, Maui, Hawaiian Islands* (Rotunno-Hazuka, Pantaleo, and Sinoto 2000); and *He Mo`olelo `Aina No Ka`eo Me Kahi `Aina E A`e Ma Honua`ula O Maui: A Cultural-Historical Study of Ka`eo and Other Lands in Honua`ula, Island of Maui* (Maly and Maly 2005). In addition, *Wailea: Waters of Pleasure for the Children of Kama* (Barrere 1975) and *Sites of Maui* (Sterling 1998) contain important historical information and ethnographic accounts regarding the region. Thus, a brief summary will be presented here.

The earliest prehistoric settlement on Maui Island is postulated to have occurred between A.D. 300-600 along the windward regions where abundant rainfall and fertile soil supported crop

cultivation and human populations (Kirch 1985, Cordy and Athens 1988, Gosser et al. 1997). Population expansion into the drier, leeward areas of Kihei, Wailea, and Makena, likely took place by A.D. 1000-1200 (Cordy 1974, Kirch 1985) although localized area of earlier permanent occupation appear to have been present (Gosser et al. 1997). The traditionally held view that population pressures forced expansion into the more “marginal” regions has been questioned by more recent research. The general pattern of occupation suggested by archaeological research to date consists of seasonal settlements occurring along the coastal areas to exploit marine resources, while permanent settlements occupied the upland areas to utilize forest products and cultivate agricultural resources. Between these settlement loci was an arid area used for cultivating sweet potatoes and during transit on *mauka-makai* trails. Upland populations exchanged taro, bananas, and sweet potatoes with the coastal populations for ocean resources (Handy 1940). Although a number of scenarios regarding the prehistoric chronology of the coastal Honuaua region have previously been postulated (Cordy and Athens 1988, Gosser et al. 1996, and Donham 2006), the number of dated sites is still too limited to permit the establishment of credible intra-regional chronological benchmarks.

The inhabitants of Honua’ula subsisted mainly on fish and sweet potatoes, a common diet of those who lived in the leeward area of Maui (Barrere 1975:41). The early French navigator La Perouse noted, while anchored at Keoneoio Bay that “this part of the coast was altogether destitute of running water. The inhabitants had no drinking water but a brackish water obtained from shallow wells.” (1798:350)

Due to the lack of running water, agricultural production in leeward Maui Island was limited to dryland taro in the upland areas in pockets of moist soil where rainfall was greater, while sweet potatoes were grown at the lower elevations (Handy 1940:113-114). Irish potatoes became an important cash crop in East Maui, for provisioning whaling ships and supplying the west coast of North America during the Gold Rush of 1848. By 1846, the cultivation of Irish potatoes had spread from Kula to Honua’ula. Sweet potatoes were also grown for export, and sugarcane was being cultivated commercially by 1841. M.J. Nowlein and S.D. Burrows leased lands from Kamehameha III at Ulupalakua to grow sugarcane and Irish potatoes. In 1845, Nowlein and Burrows transferred their lease and interests to Linton L. Torbert, who extended sugarcane cultivation to adjoining lands and started cattle ranching. In 1856, Captain James Makee bought the Torbert Plantation and it was later referred to as the “Rose Ranch.” By 1862, sugarcane was being extensively cultivated, and a steam mill was built for processing sugar. A severe drought in 1878 forced the end of sugarcane production, and cattle ranching became the dominant

commercial enterprise of Honua`ula. By the 1880s, `Ulupalakua Plantation was basically a cattle ranch utilizing the road and landing at Makena in Papa`anui. From the late 1800s into the 1970s, even through several land purchases and name changes including, Dowsett in 1886, Raymond in 1900 (Raymond Ranch), Baldwin in 1923 (Ulupalakua Ranch), and Erdman in 1963, ranching continued to dominate the economic activity in the region. However, although ranching still continues today in a more limited capacity, the dominant economic and land-use theme since then has focused on tourism-related and residential development. The past three decades have seen the intensification of golf course, resort, and luxury residence developments in the Wailea and Makena areas.

Land Tenure During the Historic Period

During the Mahele in 1848, lands of Hawaii were divided among the Royalty, Government, and commoners. Applications for land titles were considered by the Board of Commissioners to Quiet Land Titles. When a claim was validated, a Land Claim Award (L.C.A.) was awarded. Following payment of this claim, a Royal Patent (R.P.) was issued.

The *ahupua`a* of Paeahu was part of the lands assigned to Moses Kekaiwa, the eldest son of Kekuanao`a, a powerful governor of O`ahu. However, in 1842, it was included with other Honua`ula lands that were reclaimed by the government (Barrere 1975:32). The commutation of lands to the government, in lieu of cash tax payments, was a common practice among the chiefs. Thus, much of the land of Honua`ula became government lands (Cordy and Athens 1988:15). At the time of the Great Mahele, nine (9) *kuleana* Land Commission Awards (L.C.A.) in Paeahu ranged in size from 0.22 to 11.68 acres and consisted of shoreline parcels, houselots, and agricultural lands. Banana, dryland taro, and sweet potato were listed as the cultivated crops (Stocker et al. 1992:14). One of the *kuleana* awards, LCA 10665 to Piopio, appears to have been located close to, but beyond the northern boundary of the current project area, probably within the existing Maui Meadows subdivision. The locations of the other LCAs, with the exception of 5220 to Koukaina, located at the coast, are unknown. Most likely, the other parcels were located *mauka* of the current project area in the inland agricultural zone. Following 1850, portions of Paeahu *ahupua`a* were sold to *haole* businessmen, and large acreages changed owners often, until in 1864; 4,445 acres were sold to James McKee, the famous founder of Rose Ranch in Ulupalakua. Much of the lands passed through McKee to Ulupalakua Ranch and Alexander and Baldwin, Ltd. (Kleiger et al. 1992:25). For a detailed narrative of the history of land tenure in Paeahu *ahupua`a*, the reader is referred to Stocker et al. 1992 and Kleiger et al. 1992.

The *ahupua`a* of Palaeua, comprising about 2,130 acres (LCA 11216:21) was awarded to Chiefess Miriam Kekauonohi during the Mahele of 1854. The current project area includes a portion of this Land Commission Award. Upon her death in 1851, the land passed to her husband Haalelea. In 1862, most of the *ahupua`a* was sold to James McKee through public auction. A total of fourteen (14) Land Commission Awards and eleven Royal Patent Grants are listed for Palaeua *ahupua`a*. Four (4) are described as Irish potato plots and three (3) others as houselots. The remaining awards are not described as to land use. Map locations of *kuleana* are unavailable. However, the narrative descriptions of two of the houselots place them at the coast. The others likely consisted of agricultural lots located in the wetter uplands.

In 1852, L.C.A. 6715 (R.P.8213) was awarded to Ho`omanawanui, which included the entire *ahupua`a* of Keauhou 1. The award covered an area of 853 acres. In 1856, Ho`omanawanui and her husband Hikiau sold Keauhou 1 to James McKee for \$1,000.00. Eleven commoner awards are listed for all of Keauhou (1 and 2) *ahupua`a*. Although their locations are unknown, based on the descriptions given in the award documents, most appear to be Irish and sweet potato lands or houselots. The potato lands probably occurred further inland (above the 1200' elevation) of the current project area, while the houselots were most likely located closer to the coast. In addition, five (5) Royal Patents Grants are also listed. None of the *kuleana* awards and grants appeared to have been within the boundaries of the current project area.

PREVIOUS ARCHAEOLOGY

Due to the advent of resort and residential development in the region in the past four decades, a large number of development-related archaeological studies have taken place in Wailea and Makena. Several have dealt with large land holdings ranging from 40 to more than 1,800 acres.

Island-wide Studies

For Maui Island, there are three references that can be considered to form the basis for the archaeological investigations that followed. The seminal work is the 1931 survey by Winslow Walker that focused on prominent sites throughout Maui. In Honua`ula *moku* his survey documented 10 coastal heiau, four upland heiau, a number of fishing shrines (*ko`a*), a coastal village, and two fishponds. Sterling continued where Walker left off and undertook extensive surface surveys in various regions of Maui and collected valuable first-hand information from native Hawaiian *kupuna* that lived in the regions. Although Sterling's data was not published until 1998, the represented body of her work spanned a decade of research between 1960 and 1970. The third was the Maui Island component of the Statewide Inventory of Historic Places

that took place during 1972-1973 under the auspices of the State of Hawaii, and completed an inventory of known sites on the island. The conditions and dispositions of sites previously recorded by Walker and Sterling were evaluated in the field by a team of archaeologists from the Bishop Museum accompanied by *kupuna* Charles Keau. Recommendations of nominations and eligibility to the Hawaii and National Registers of Historic Places were made and established the foundation for modern historic preservation initiatives on Maui and in the State of Hawaii. Although implementation did not take place until the mid-1980s, this undertaking also paved the way for establishing a computerized database of archaeological and historic records.

Regional Studies

A large number of studies have been completed in the coastal areas of Wailea and Makena. The reports for studies undertaken in conjunction with expansions of the Wailea (Gosser et al. 1993) and Makena (Gosser et al. 1997) golf courses, developments in coastal Palauea *ahupua`a* (Rotunno-Hazuka, Pantaleo, and Sinoto 2000), development parcels in Wailea (Stocker et al. 1992 and Kleiger et al. 1992), and coastal Makena (Donham 2006) contain comprehensive summaries of previous work in the general region (Fig. 3). The reader is referred to those reports for an archaeological overview of occupation areas in the vicinity of the current project.

The majority of previously completed projects in Paeahu *ahupua`a* have taken place along the coastal areas or just *makai* of Pi`ilani Highway across from the western boundary of the current project area. Brief summaries of selected studies in Paeahu *ahupua`a* are presented below.

In 1985, PHRI conducted archaeological data recovery for the Wailea Point Condominium site (Walker et al. 1985), located on the shoreline at Wailea Point. Three multiple feature sites were investigated. A total of 13 features; including 4 C-shapes, 4 U-shapes, a terrace, 2 walled enclosures, and two enclosed terraces; were investigated. The smaller, simple features yielded sparse midden and limited artifacts while the larger, more complex structural features yielded a profusion of prehistoric and early historic period artifacts. Of the more than 6,500 artifacts, 49% were prehistoric in type, 39% were historic, and 12% were modern. A span of occupation ranging from AD 1350 through 1900 was indicated through radiocarbon, stratigraphic, and artifactual analyses. Relocation and reconstruction of several of the features were recommended for public interpretation and were subsequently implemented.

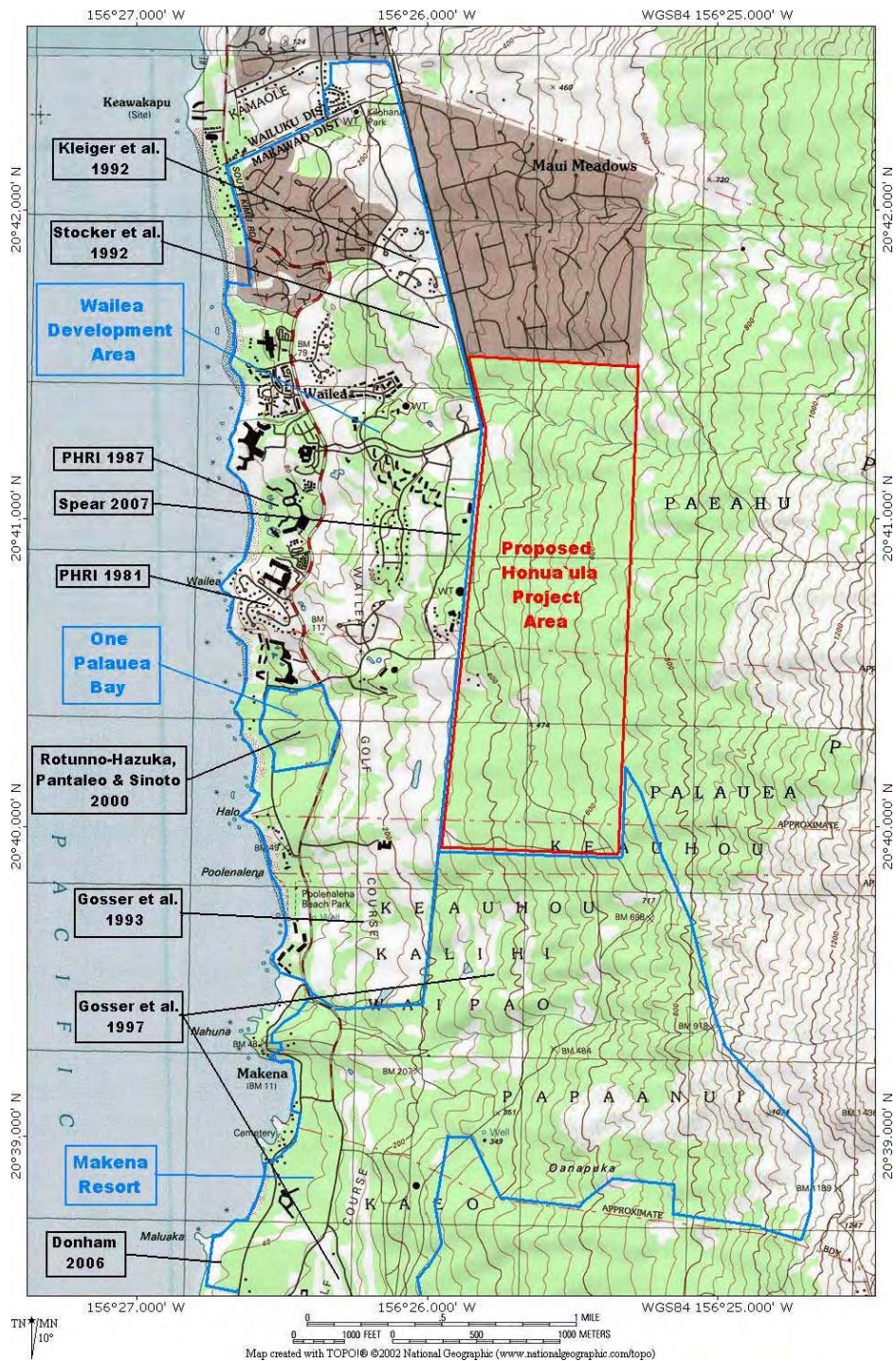


Figure 3. Locations of Previous Archaeology and Major Development Areas

In 1987, PHRI conducted archaeological data recovery for the proposed Grand Wailea Hotel (Rosendahl and Haun 1987), located on the shoreline of Paeahu *ahupua`a*. Site 2012, a single enclosure feature, and Site 2013, with 6 features (A-F) were excavated. Utilization of Site 2012 during three periods, late prehistoric (AD 1640-1890), early historic (AD 1650-1950), and recent (WWII) was determined. Two human burials were recovered from Site 2013 along with an extensive collection of portable artifacts. The prehistoric occupation of site was dated between the mid-1300s to the mid-1600s. Glass bead burial goods indicated that the burials originated during the historic period. No further work was recommended. These sites were destroyed during hotel construction and the burials were disinterred and later re-interred within the project area. A large number of burials, mostly prehistoric, were encountered during the subsequent monitoring procedures during hotel construction.

The Applied Research Group (ARG) of the Bishop Museum conducted archaeological data recovery in Parcel SF-7 of the Wailea Resort company holdings in 1992 (Klieger et al. 1992). Two sites were investigated including 3 C-shapes and two modified outcrop features. The only artifacts recovered from excavations were basalt and volcanic glass flakes and polishing stones. The radiocarbon analyses were unsuccessful, yielding modern or no dates. The C-shapes were all relegated to be of WWII origin while the modified outcrops were interpreted as traditional Hawaiian. No further work, for any of the features associated with the two sites, was recommended.

In the same year, ARG undertook an archaeological inventory survey in a portion of Wailea Resort Company Parcel MF-12 (Stocker et al. 1992). Four structural features of one site; two circular alignments, one oval enclosure, and one wall; were investigated within a portion of this parcel slated for a rock crusher site. No subsurface deposits or features were encountered. No further work was recommended for three of the features, and future data recovery was recommended for the wall feature.

Scientific Consultant Services conducted an archaeological inventory survey of a 17.89 acre parcel located between the 160-300 ft. elevation of Paeahu *ahupua`a* (Spear 2000), immediately *makai* of the current Wailea 670 project area. The area was found to be extensively altered previously and no surface cultural remains were encountered during the walk-through survey. Due to the negative results of the surface survey, no testing was performed and no further work was recommended.

Gosser's characterization of the nature of dry-land agriculture in the lower reaches of Paeahu to Papa'anui *ahupua`a* in the Wailea development area adjoining the subject project area to the west states in part that:

Agriculture in the Wailea region was restricted to small plots that were probably under sweet potato cultivation. Not much can be said about the agricultural sites in the Wailea area because very little excavated material was recovered from them and no attempt to calculate crop yields was made, primarily because crop production is potentially very variable. In terms of chronology, it is statistically significant that only one radiocarbon sample derived from an agricultural context dated to earlier than A.D. 1600. Agriculture, within the immediate region (perhaps in contrast to the wetter Makena region to the south) was not a primary pursuit although sweet potato was cultivated (based on the evidence of small mound clusters at Sites 2549, 2534, and 2535), probably at the *kauhale* or *kulanakauhale* level; it should also be stated that only one agricultural site (Site 2549) extended outside the project area, suggesting that the contiguous agricultural site was relatively small and would not constitute a "field system." (Gosser 1993:261)

The nature of the early occupation of the more arid localities in the *moku* of Honua`ula is still unclear. However; that a number of other factors influenced the settlement of these areas, besides just population growth and expansion from other districts and political hegemony, are becoming progressively understood. The transition from seasonal recurrent occupation for the exploitation of marine resources to the development of small permanent hamlets in localized areas with favorable micro-climates and brackish water sources, such as in Ka`eo in Makena, would not have been too difficult to imagine or to effect.

Previous Studies within the Project Area

Four surveys were previously conducted within the current project area; two for the previous proposed development of the Wailea 670 property, one for the proposed Piilani Highway extension, and the most recent, for a cinder haul road at the southern boundary. The earliest was completed in 1972 and covered the segment of the right-of-way corridor for the proposed highway extension within portions of Paeahu, Paluaea, and Keauhou *ahupua`a* (Walton 1972). Seven sites were recorded within the current project area. Site 200 is the long wall that forms the northern boundary of the project area. Site 201 is a complex of fairly prominent structural features. Site 202 is a complex of deteriorated walls near the Site 200. Site 203 is a deteriorated C-shaped enclosure. Site 204 is a small platform built against a bedrock ledge with an associated paved area. Site 205 is an enclosed overhang shelter. Site 211 is a single aa boulder alignment constructed along the base of a rocky ridge. All of the sites were recommended for avoidance with no further work. Site 201 was recommended for data recovery if avoidance was not possible

and Sites 204 and 205 were recommended for public interpretation. Sites 202, 203, and 211 could not be relocated during any of the subsequent surveys.

The first survey for the whole Wailea 670 property was completed seven years after Walton's report. This reconnaissance survey, completed in one day, did not locate any remains and failed to relocate Walton's sites, all of which were assumed to have been destroyed during the bulldozing of jeep roads (Hammett 1979). Based on the supposed "total absence of sites", archaeological "clearance" of the whole area was recommended without any further work including monitoring during construction. This researcher apparently mistook the wall (Walton's Site 200) at the northern boundary of the southernmost 190 acres to be the southern boundary of Wailea 670, so the southern third of the project area was not included in the survey.

The second survey of the 670 property was completed 9 years after Hammett's. This seven-day surface survey which also supposedly covered the whole area, both on foot and in a 4WD vehicle, failed to relocate any of Walton's sites or record any new sites (Kennedy 1988). Although Kennedy's survey included the whole property, no sites, including Walton's, were located. Based on the informal testimony of a former *paniolo* for Ulupalakua Ranch, the walls were assumed to be associated with "modern" ranching activities and considered not to warrant documentation, all of Walton's sites were assumed destroyed, and no further work was recommended.

The cinder haul road survey (Sinoto and Pantaleo 1993) was conducted along the southern boundary of the current project area. Three sites, a C-shaped enclosure (3156) and two walls (3156 and 3157) were recorded. Testing of the interior floor of the C-shape produced negative results. No further work and avoidance of these sites were recommended with limited breaching of the walls, with archaeological monitoring, for the cinder haul road. No inadvertent findings were made during monitoring.

No subsurface testing was previously undertaken in any of the known sites in the project area. Thus, the age of the sites are not known and at the same time, a paucity exists of dates obtained from sites in neighboring areas at around the same elevation. The closest dated sites occurred in the north course of the Maui Prince Golf Course and produced a date range of A.D.1327-1889 (Gosser et al. 1997). Corresponding date ranges occur in the coastal areas as well and indicate that a similar chronology could be predicted for the occupation of the current project area.

Current Phases of Archaeological Work in the Honua`ula Development Area

Commencing in April 2000, archaeological inventory procedures were undertaken within the 190-acre southern portion of the Honua`ula project area. The results of this study were reported in May 2000 and the final revision was completed in October 2000 (Sinoto and Pantaleo). Following this initial report, after re-evaluating the previous work by Hammatt and Kennedy, the State Historic Preservation Division (SHPD) concluded that the negative findings may have resulted from inadequate fieldwork and an inventory survey of the northern two-thirds of the Honua`ula project area was recommended (Fig. 4). At the same time SHPD requested additional walk-through transects to be completed within the 190-acre inventory survey area. The addendum survey addressing these concerns was completed during March through May 2001 and reported in June 2001 (Sinoto and Pantaleo). Only one site, an unmodified, natural overhang shelter (Site 29 / Site 50-50-14-5109) was found in a gulch within the northern two-thirds of the Honua`ula project area. The northern area was found to have undergone compounded extensive disturbances through historic and recent ranching activities and possibly some military activities during WWII. Within the southern third however, a total of 27 archaeological sites comprised of 43 component features were recorded during the course of the two surveys. In October of 2003, a GPS point survey was conducted in which all, but one of the sites recommended for *in situ* preservation was located. More transects sweeps were conducted during dry periods when ground cover vegetation was minimal. A total of 40 archaeological sites comprised of 60 component features, the subject of the following sections of this report, have been recorded in the proposed Honua`ula development area. Only one site comprised of one feature is represented in the northern section of the project area, the remaining sites and features all occur within the southern section.

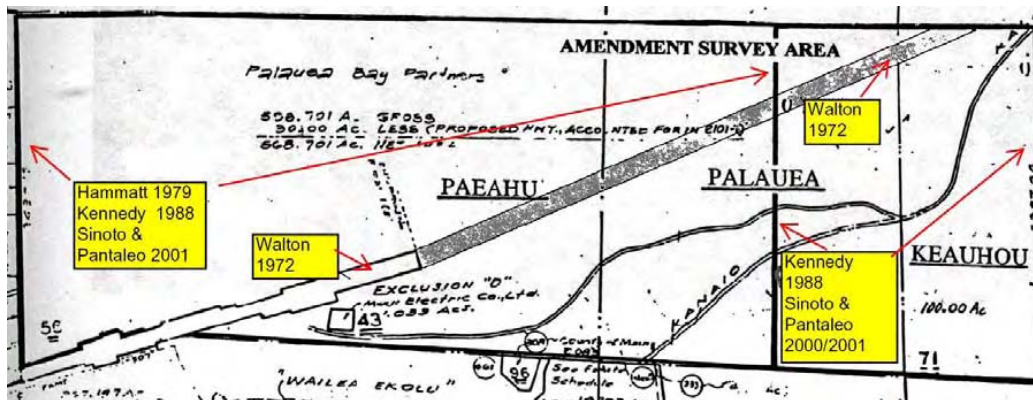


Figure 4. Map Showing Areas Covered by Previous Investigations within the Project Area

SETTLEMENT PATTERN INFERENCES BY PREVIOUS RESEARCHERS

Researchers such as Kirch (1974) have asserted that later prehistoric expansion on Maui led to the occupation of harsher or more ecologically marginal regions. Chapman and Kirch (1979) proposed that a pattern of transience existed between coastal and inland areas. Inhabitants of the upland agricultural region may have utilized the coastal shelters as temporary or seasonal bases for expanding the range of resource exploitation. Trails linked these permanent upland habitation areas to coastal areas. Cleghorn (1975) suggested dual permanent settlement in both coastal and inland areas of Keauhou. Temporary habitation sites, located along trails linking upland and coastal settlements were used by travelers from upland residences to the coast in order to exploit the seasonal marine resources.

Sinoto (1978) and Gosser et al. (1997) argued that the presence of localized, environmentally favorable zones, such as areas with more rainfall, influenced permanent occupation and the types of activities that took place. In fact, for Wailea, the area immediately west of the Honua`ula Development area, only 20% of the sites recorded within a 187-acre project area was considered to have some agricultural function. These primarily consisted of mounds for sweet potato cultivation, but the low frequency led Gosser to conclude that agriculture in Wailea, “was not a primary pursuit” (Gosser et al.1993:248).

Following a review of previous reports completed to the year 2000, Haun compiled a listing of minimally 77 permanent habitation features, 192 temporary habitation features, 282 agricultural features, 8 human burials, 23 ritual features, and 11 trail segments in coastal Honua`ula from Keauhou to Onau *ahupua`a*.

Based on work undertaken in Wailea, Gosser et al. (1993) noted a strong *ahupua`a* constrained site distribution along the coastal areas between Paeahu and Papa`anui. Additionally, the coastal settlement of Palauea and Keauhou *ahupua`a* appeared to indicate that the earliest sites were permanent residential units and other structural features that may have had religious or ceremonial functions. In both Keauhou and Palauea, these site types occur near the central portions of the *ahupua`a*. In Keauhou, a site complex that extends from the coast to approximately 300 m inland (40-80ft. elevation) consists of four to six *kauhale* (residential compound), a *mua* (or men’s house), a *heiau*, and a *ko`a* (fishing shrine).

Late prehistoric/early historic settlement in Palauea and Keauhou was characterized by permanent habitation along the coast and limited agricultural expansion into harsher, more ecologically

marginal regions (Kirch 1977). Sites over a quarter-mile inland continued to be temporary habitation and agriculture, although scattered permanent habitation extended as far as a half-mile inland in certain localities (Schilt 1988). The presence of earlier permanent settlements on the coast has been recently discovered as well (Donham 1986 and Fredericksen 1999).

According to Cordy (1978), where the 30-inch rainfall zone exceeded distances of 6 to 7 miles inland, dual permanent settlement occurred. If it was less than 6 miles inland, permanent settlement would primarily be coastal. In the current study area, 30-inch rainfall occurs beyond 6 miles inland, thus suggesting permanent settlement both on the coast and further inland. Situated between the 300-700-foot elevations, the project area occurs wholly within the intermediate zone. This zone was traditionally considered by researchers primarily as a zone of transit between the coastal and inland areas during the prehistoric period and increasing agriculture-related permanent occupation during the early to middle historic period.

In Paeahu, the regional pattern of habitation on the coast below the 150-200-foot elevations and at higher elevations above 3000 feet in areas with more rainfall appears applicable. The intermediate zone that lies between these two permanent settlement areas exhibits a much lower density of sites and smaller site type variation. Only marginal structural features such as modified outcrops, rock shelters, and stone mounds are common to this intermediate zone.

The foregoing pattern of occupation, in the general region of the project area, is applicable to the prehistoric and early historic patterns of traditional occupation. By the 1800s, with the advent of cattle and commercial agricultural enterprises; the introduction of the western concept of private ownership of land; together with the development of cart paths, roadways, and harbors; the traditional occupation pattern underwent major changes throughout this region as well as island-wide.

SITE EXPECTABILITY

According to the settlement pattern model discussed in the preceding sections, the subject area, located approximately three-quarters of a mile to one and a quarter miles inland, is situated in a harsher, more ecologically marginal area. Sites expected in this zone would include features related to temporary habitation, possibly limited dry-land agricultural features, and transportation during the prehistoric period. Features represented may include modified outcrops, C-shape and U-shape structures, overhang shelters, and trails. Most likely, the historic period sites would primarily be related to ranching activities. These may include; walls, mounds, pits, modified

outcrops, enclosures, clearings, and roadways. Site density is expected to be sparse with occurrences being scattered and dispersed over a wide area. Especially within the northern portion, with evidence for extensive previous disturbance over much of the area, only those remnant areas near and within the gulches and rocky outcrops have potential for extant remains.

METHODS

The initial fieldwork for the inventory survey took place discontinuously over a three week period, commencing on April 18 and concluding on May 9, 2000. The project personnel consisted of Jeffrey Pantaleo, M.A. principal investigator and Aki Sinoto, project coordinator; assisted by Lisa Rotunno-Hazuka and Paul Titchenal, M.A.. The survey entailed walking systematic north-south and east-west transects. The density of vegetation and the type of terrain directly influenced the transect intervals, which generally ranged between 5-25 m apart. Areas disturbed through extensive mechanical clearing were spot checked. To facilitate the walk-through survey and locating the recorded sites on a map, the bulldozed roadways were used to subdivide the survey area into units of more manageable size. The project area was divided into east and west sectors using the main unpaved access road that traverses across the area from the Ulupalakua Ranch gate at the southeast corner through the central section of the Site 200 wall on to the two entry gates into the Wailea 670 property. When a site was identified, it was cleared of vegetation, assigned a temporary site number, plan mapped using tape and compass, and located on a topographic map provided by the client. The site was tagged with a piece of flagging tape, labeled with the site number, for subsequent relocation and identification. B&W and color photographs in 35mm format were taken of project area overviews and selected sites.

Subsurface testing was conducted at selected sites/features to determine the presence/absence and extent of cultural remains, deposits, and to retrieve any datable samples. Controlled manual excavations, using a trowel, were conducted by natural layers in 5cm levels, and soil was sifted through a 1/8" mesh screen. Any collected material was placed in labeled bags.

The fieldwork for the amendment survey took place discontinuously over a two month period during March-May 2001, with an accumulated total of twenty person days being expended for preparation and surface survey. The personnel consisted of Lisa Rotunno-Hazuka, Ian Bassford, Aki Sinoto, and Jeffrey Pantaleo, M.A. In the southern portion, the amendment procedures entailed traversing areas with denser vegetation with closer interval transects oriented 180° from the previous pass with the objective to maximize visual coverage of outcrop and ledge areas. In the northern, grass-covered portion where immediate ground visibility was poor, an enlargement

of a 1996 aerial color photograph taken by the R.M. Towill Corporation was utilized to determine specific localities of potential sensitivity. These areas, concentrated along the vegetated dry gulches and remnant outcrop ridges, were thoroughly inspected by walking systematic transects. Subsurface testing was undertaken at the solitary overhang shelter located in the northern portion.

During subsequent occasions between August 2003 and June 2008, various field procedures; including additional walk-through inspections during the die-back of cover vegetation in the dry season and GPS point survey of sites recommended for preservation were conducted. Some monitoring was also undertaken in conjunction with the clearing of firebreaks along the northern boundary with Maui Meadows, marking sites for surveyors, assessing the impact of deer on archaeological surface remains, and the construction of a water tank and access road for Wailea Resort within a portion of the subject project area. These tasks were undertaken by Kimokeo Kapahulehua,; Eugene Dashiell, M.A., Paul Titchenal, M.A., and Aki Sinoto.

Accepted archaeological standards, procedures, techniques, and practices were followed throughout this undertaking. Permanent State Site (SIHP) numbers were obtained from the State Historic Preservation Division for 28 sites. Assignment of SIHP numbers for the remaining sites is still pending. For the purposes of this report, consecutive temporary site numbers from 1 to 40 shall be employed with reference to the permanent number for the 28 sites assigned a permanent number.

RESULTS OF SURVEY

A total of 40 sites comprised of 60 component features have been recorded within the 700-acre, project area during multiple field sessions that took place between April 2000 and June 2008. One site was located in the northern section (Fig. 5) and the remaining thirty-nine sites are in the southern section (Fig. 6). Seven of the sites in the southern section were previously recorded prior to the start of the current procedures. Thus, a total of thirty-three sites were previously unknown. Remnant segments of the historic roadway referred to as the Kanaio-Kalama roadway were apparently obliterated at the time when the current access road was bulldozed atop the same alignment. Waterworn cobbles and boulders, representing manuports foreign to the environment, presumably used in the original construction of the Kanaio-Kalama roadway, can be seen strewn on either side of the existing jeep road in certain locations. Portions of the roadway may also have been modified for use by the military.

Twenty-eight sites (Sites 1-27 and 29) were previously assigned permanent State Site numbers and these numbers appear in parentheses following the temporary numbers. Descriptions of all recorded sites are presented below:

SITE 1 (SITE 200) *(all permanent SIHP numbers are prefixed by 50-50-14-)*

This well-constructed wall, running *mauka-makai* and previously recorded by Walton (1972), defines the northern boundary between the north and south sections of the project area. This free-standing, double-faced wall built of 4-10 courses of stacked basalt cobbles and boulders, measures 0.80-2.0 meters in height and 0.50-0.80 meters in width, and continues beyond the east and west boundaries of the project area (Fig. 7). According to Walton (1972:10), this wall was constructed by Ulupalakua Ranch in the 1880s. The wall was breached in several locations by bulldozing for access roads. Other walls also intersect and conjoin with this wall.

(SITE 1/200A)

Another well-constructed wall, second longest after Site 1/200, starts near the western breach of Site 1/200 and follows the curving edge of a drop in elevation toward the south. This wall, upon reaching an area of bare aa, sharply turns towards the west and continues beyond the west boundary (Fig. 8). This wall is similar in construction and dimensions to Site 1/200 over most of its length although in places the construction does not appear contemporaneous. This segment was not recorded by Walton, but designated as part of Site 1/200 due to the contiguous nature of the two sites.

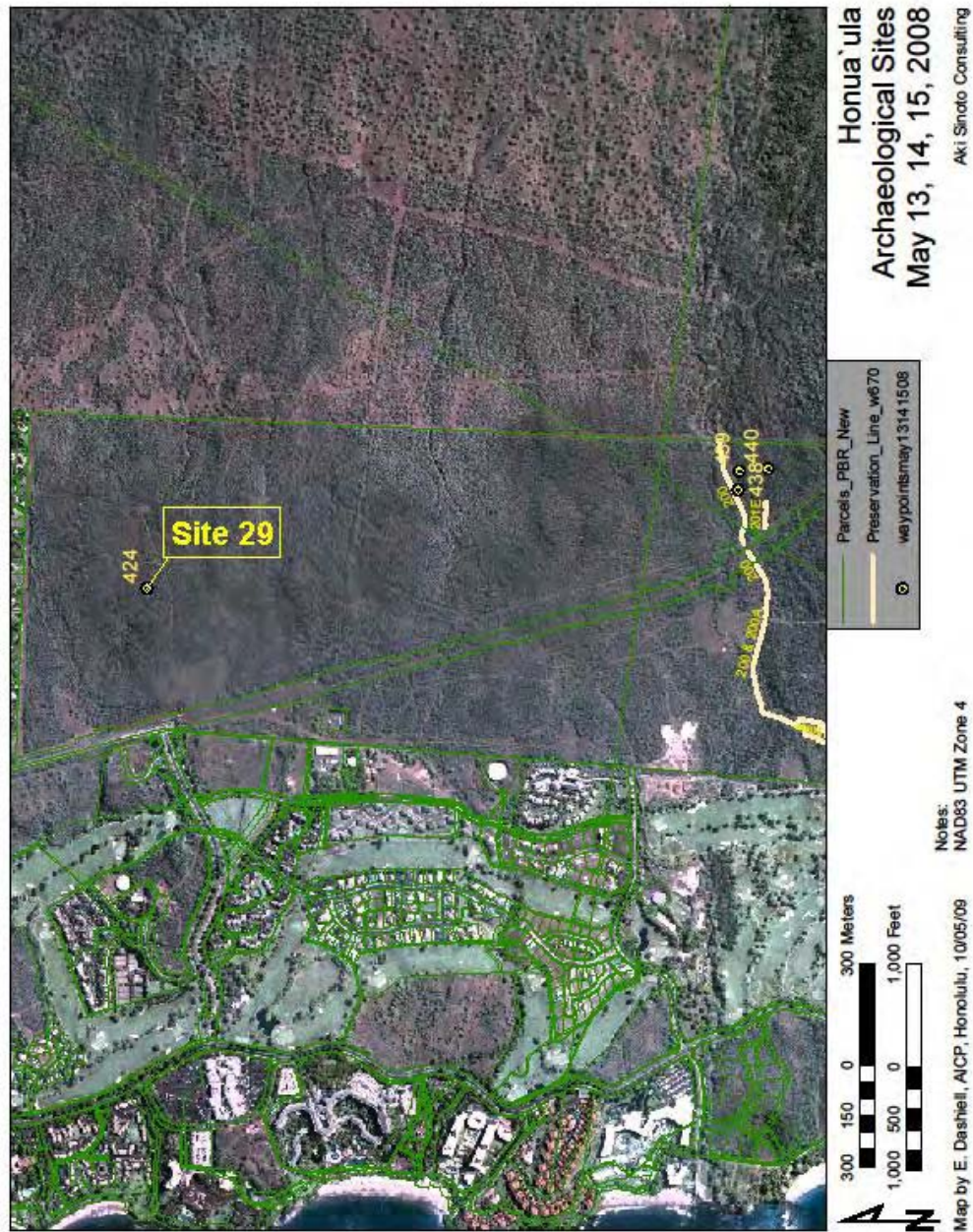
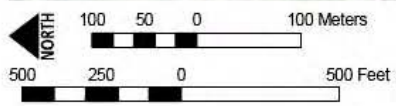
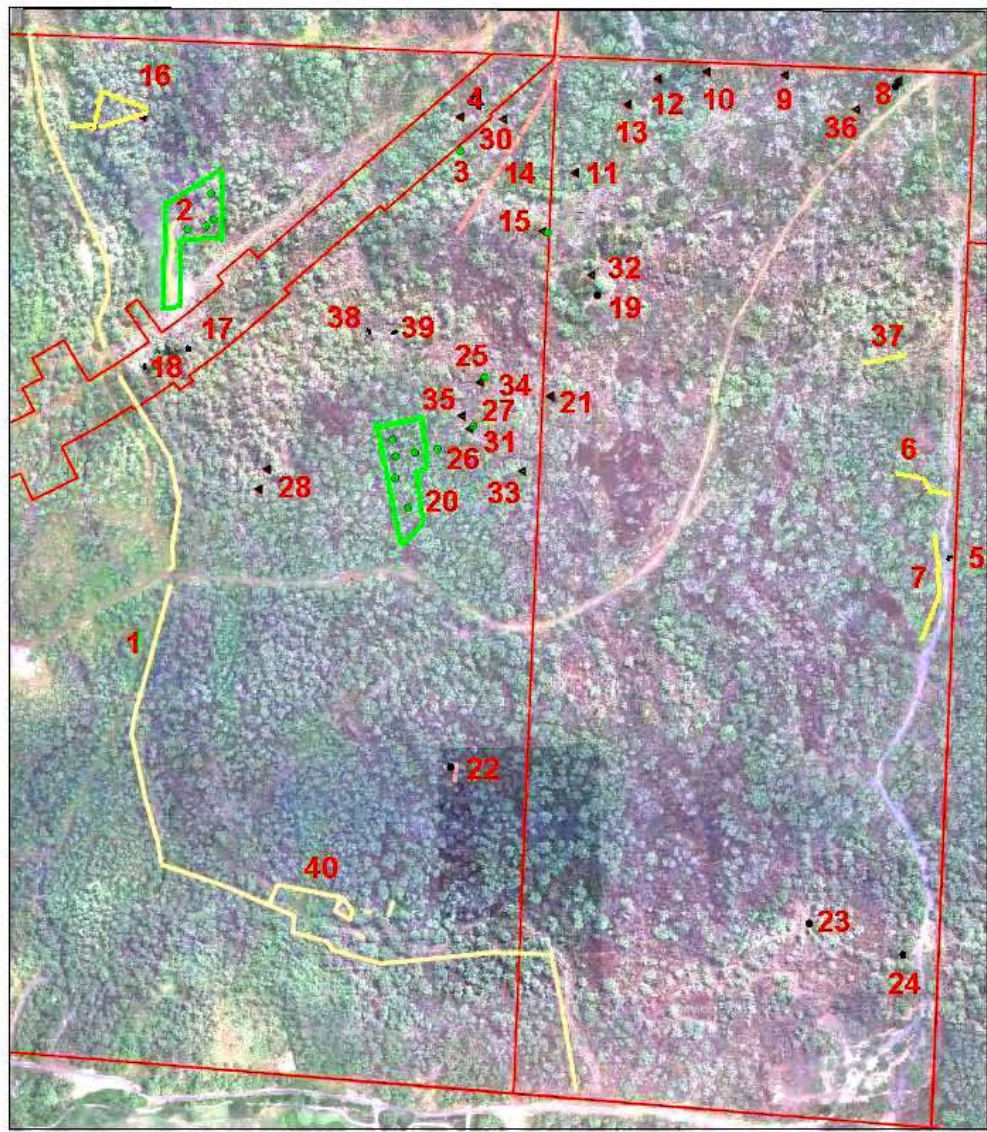


Figure 5. Location of Site 29 in the Northern Section of the Project Area
 (Note Site 1/200 Wall to the South)



Honua'ula Project
 Archaeological Sites
 July 2008

Map by E. Dashiell, AICP, Honolulu, 3/10/2009
Site 29 in Northern Section Off Map

Aki Sinoto Consulting

Figure 6. Locations of 39 Sites in the Southern Section

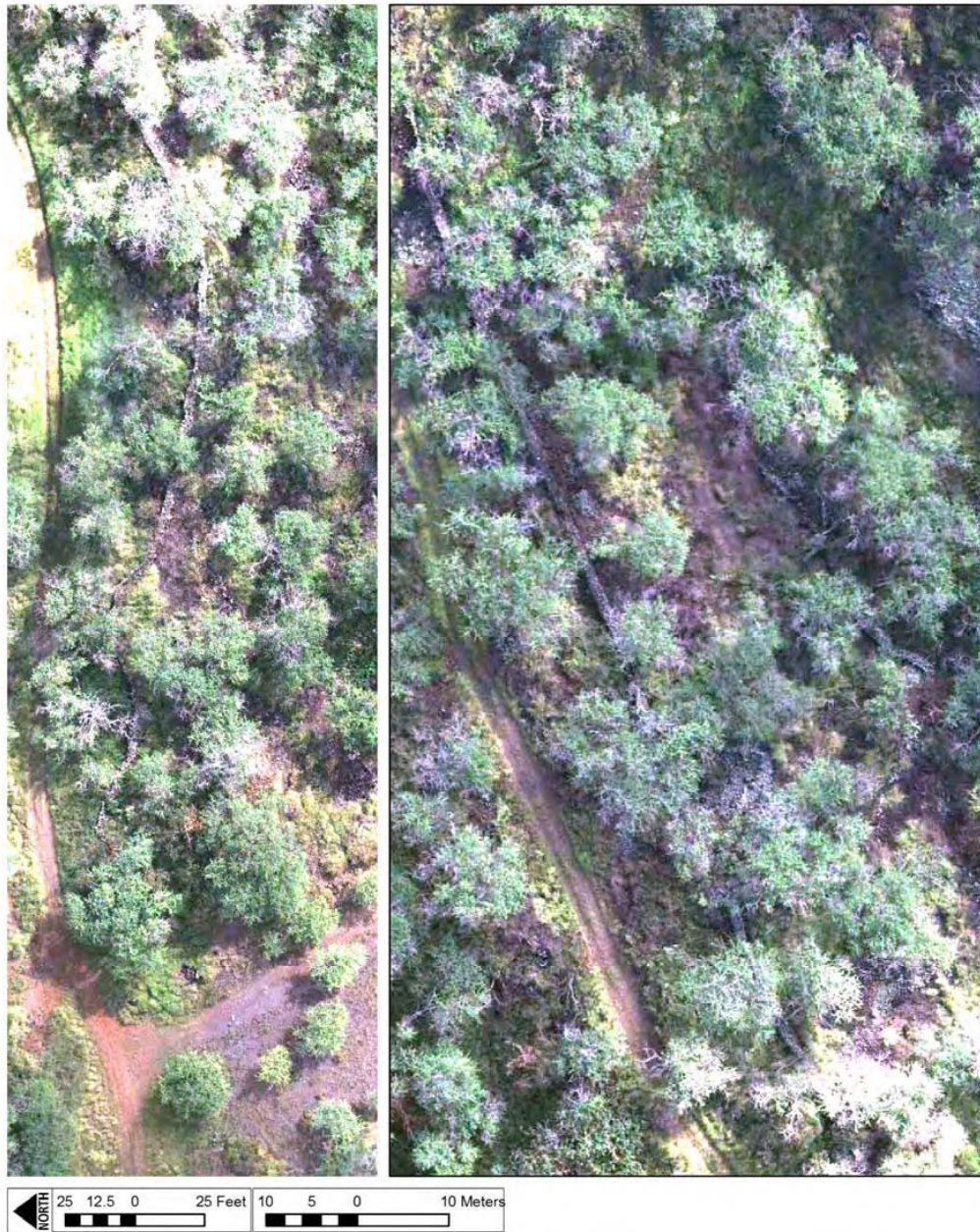


Figure 7. Partial Aerial Overviews of Intact Section of Site 1/200 Wall
Left Panel: Lower Segment Showing Breach at Jeep Road Entry
Right Panel: Upper Segment Connected to Lower Segment
(Aerial Courtesy PBR Hawaii, Inc.)



Figure 8. View of the Site 1/200A Wall Near Its Western Breach at Boundary, View to East

SITE 2 (SITE 201)

This site, previously recorded by Walton (1972:17), is a complex consisting of a meandering wall, a platform, overhang shelter, parallel walls, and a low, amorphous clinker platform located near the northeast corner of the south section (Fig. 9). The site occupies an area ca 4100 square meters.

Feature A is a terrace platform built against the southern edge of an outcrop ledge (Fig. 10 top). The platform measures 10.2 by 3.5 m and ranges between 0.7 to 1.8 m high. It is solidly constructed of stacked basalt cobbles and boulders, 3-10 courses high, and filled with boulder/cobble clinkers. A depression was observed on the surface in the southeastern corner of the platform and a portion of the long southern face is tumbled.

Feature B is an overhang shelter located 10 m west of Feature A. The shelter measures 2.8 by 1.2 m and the ceiling at the entrance is 0.8 m high. Fronting the shelter is a level soil terrace enclosed by a piled basalt cobble/boulder wall. The terrace measures 2.6 by 2.8 m. The wall enclosing the soil area is circular, 3-4 courses high, and measures between 0.4 to 0.7 m wide and interior height 0.55 m and exterior height 0.65 m. A cowrie shell octopus lure was found on the surface of the south wall.

Feature C consists of parallel walls located in a swale 8 m north of Feature B (Fig. 10 bottom). These free-standing parallel walls are 3 m apart and constructed of stacked basalt cobbles and boulders. They measure 10.6 by 0.8 m and 1.0 to 1.6 m high.

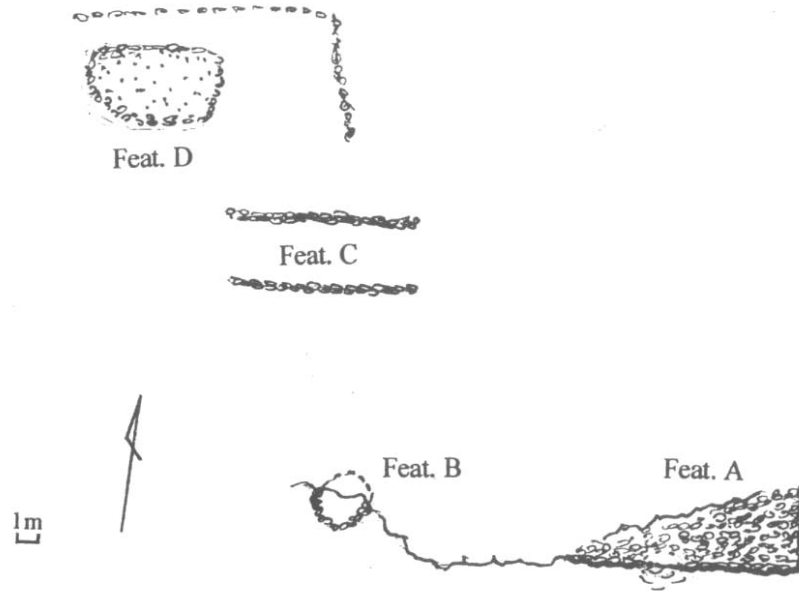


Figure 9. Plan View of Site 2/201 Complex

Feature D is a crude platform located on a ridge approximately 4 m north of Feature C. It is constructed of stacked cobbles and small boulders, filled with cobbles and clinkers, and its sides are not faced. It is roughly rectangular, measuring 6.0 by 4.0 m, and orients east-west along its long axis. The brass washer was located on the east side of this platform. A meandering wall is located to the east and north of this feature. The western end of the wall meanders to the Pi'ilani Highway extension cut where it is truncated.



Figure 10. (top) Site 2/201 Feature A Platform to West
(bottom) Site 2/201 Feature C Parallel Walls to East

SITE 3 (SITE 204)

This site, also previously recorded by Walton (1972:12) is a platform and a small paved area located approximately 30 m west of Site 4/205 along the base of a sloping outcrop ridge (Fig. 11). The platform measures 5.5m long by 3.9 m wide and 1.2 m high. It is constructed of stacked basalt cobbles and boulders, 3-4 courses high. A coral manuport is located on a level soil area immediately north of the platform. The eastern portion of the platform has been disturbed by a large, fallen *wiliwili* tree. The paved area, one stone high and measuring 2.0 m by 1.0 m, is located roughly 6 meters north of the large platform. The brass washer was located in a boulder on the north face, near the northwest corner of the large platform.

SITE 4 (SITE 205)

This site, previously recorded by Walton (1972:14), consists of an overhang shelter open to the west with an enclosed walled area fronting the opening (Fig. 12). The shelter measures 3.7 m long by 1.5 m deep and 0.85 m high at the entrance. Fronting the shelter is a level soil area measuring 3.0 by 4.0 m enclosed by a three-sided wall. The north wall measures 2.2 m long, 0.9 m wide, and 0.6 m high; the south wall measures 2.5 m long, 0.8 m wide and 0.2 m high; and the west wall measures 3.7 m long, 0.6 m wide, and 0.8 m high. The western side of this wall is tumbled. No artifacts or midden were seen on the surface or the interior floor. The brass washer with site number left by Walton was located above the opening of the shelter, wedged into a crack in the outcrop.

SITE 5 (SITE 3156)

This C-shaped structure constructed of stacked aa cobbles and boulders, measures 3.8 by 2.3 m with wall heights of 0.65-0.80m. This site, located roughly 5 m north of the southern boundary fence-line, was previously recorded by Sinoto and Pantaleo (1993:7). Subsurface testing of two units on the interior floor and at the opening produced negative results. Based on the absence of cultural materials, its age and function are not clear.

SITE 6 (SITE 3157)

This site is a ranch wall located near the central portion of the southern boundary of the project area. It is oriented north-south and continues beyond the southern boundary of the project area. This wall, constructed of stacked aa cobbles and boulders, was also previously recorded by Sinoto and Pantaleo (1993:10). Its length was estimated to be 1400 m, with wall widths ranging from 0.60-1.0 m, and heights ranging 1.0-1.5 m.

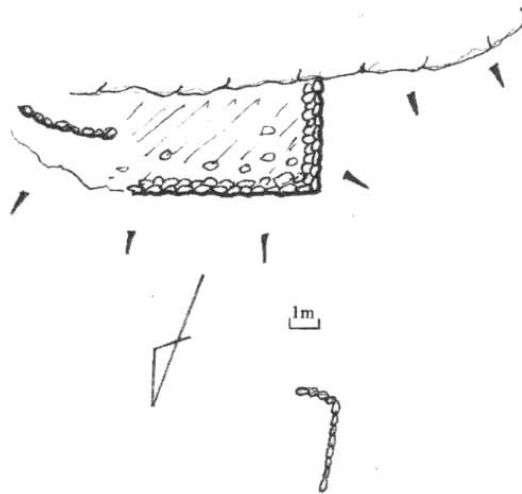


Figure 11. Plan View and Photo of Site 3/204 Platform to East

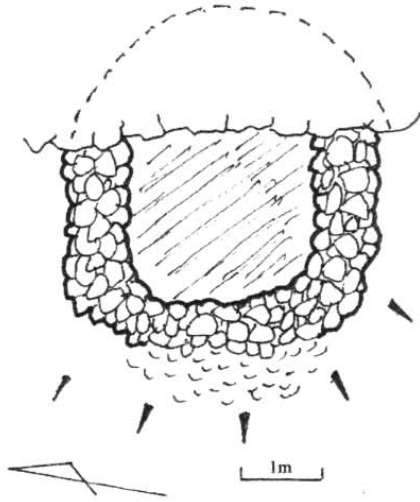


Figure 12. Plan View and Photo of Site 4/205 Modified Overhang Shelter to East

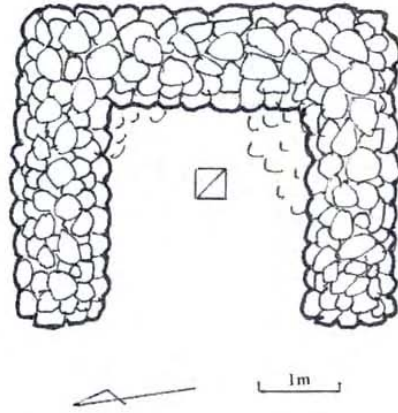


Figure 13. Plan and Photo of Site 8/4945, U-shaped Enclosure, View East

SITE 7 (SITE 3158)

This free-standing wall measures 1.2 to 2.5 m high and 1.0 to 1.5 m wide. It is constructed of stacked aa cobbles and boulders and oriented east-west. This site was also previously recorded by Sinoto and Pantaleo (1993:10). At the time of the previous survey, this wall was reported to continue in both directions beyond the project area. Currently, large segments of the wall appear to have been bulldozed by the construction of the gravel haul road. Discontiguous segments are still visible sporadically along its original alignment.

SITE 8 (SITE 4945)

This site is a U-shaped enclosure located at the southeastern corner of the project area (Fig. 13). It is constructed of stacked basalt cobbles and boulders with clinker fill and open to the west. The enclosure measures 4.6 by 4.0 m, with walls between 0.3 to 0.65 m high and 1.0 to 1.2 m wide. The south wall is tumbled and the northeast corner incorporates an outcrop. The interior floor is soil and no midden or artifacts were observed on the surface.

Testing

A 0.25 X 0.25m test unit revealed no cultural deposit within the soil floor of this structure. A thin overburden, 2-3cm, covered a sterile clinker and loam substratum. Excavation was terminated at 20 cmbs due to the absence of cultural remains and abundant clinkers (Fig. 14).

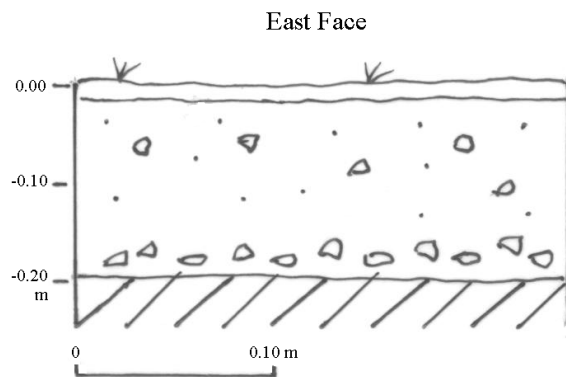


Figure 14. Stratigraphic Profile of Test Unit at Site 8/4945

SITE 9 (SITE 4946)

This site is a C-shaped enclosure located 7.5 m west of the eastern boundary fence near the southeast corner of the project area. It is constructed of stacked basalt cobbles and boulders with clinker fill and open to the south. The enclosure measures 4.2 by 2.2 m and the collapsed wall heights range between 0.2 to 0.4 m (Fig. 15). This C-shape is in poor condition due to extensive bulldozing in the area. No midden or artifacts were observed on the surface.

SITE 10 (SITE 4947)

This site is an overhang shelter fronted by two levels of modified outcrop terracing (Fig. 16). It is located on the south edge of a gulch, along the northern slope of an outcrop ridge near Site 9 /4946 along the eastern boundary of the project area. The overhang shelter measures 2.2 m wide by 2.0 m deep and the ceiling at the entrance is 0.6 m high. Fronting the shelter are two levels of terracing. The upper terrace is constructed of an alignment of basalt cobbles and boulders creating a level area measuring approximately 4.5 m long and 0.8 m wide. The terrace face is 0.5 to 0.6 m high. The lower terrace near the base of the slope measures approximately 4.0 m long and 1.8 m wide. This terrace is disturbed and in poor condition due to tumbled wall face. No midden or artifacts were observed on the surface in or near this site.

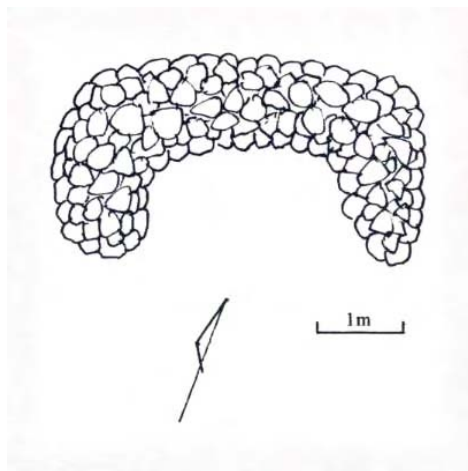


Figure 15. Plan of Site 9/4946, Collapsed C-shaped Enclosure

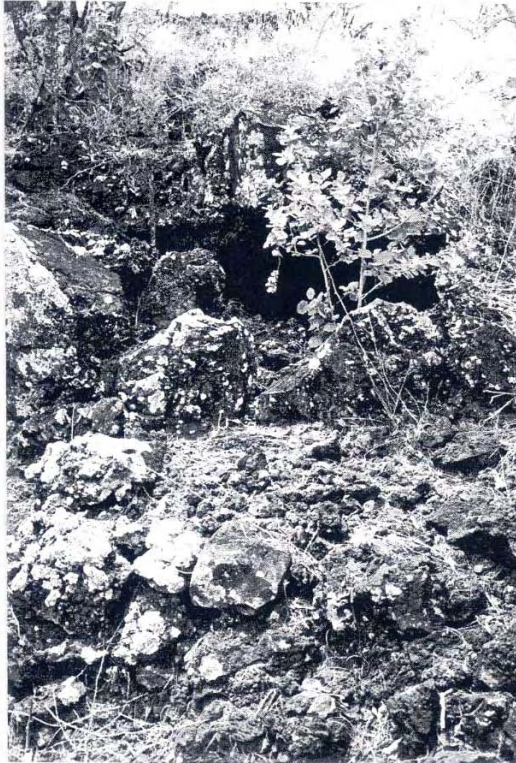
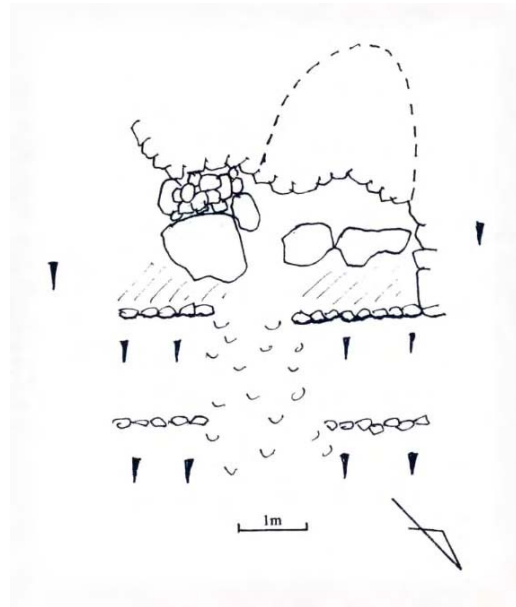


Figure 16. Photo and Plan of Site 10/4947, Overhang Shelter with Terraces, View to Southwest

SITE 11 (SITE 4948)

This site is a large, open, earthen clearing measuring, 30 m east to west and 15m north to south. A series of 10+ amorphous rock, probable clearing, mounds, roughly 1.0 to 1.5 m in diameter and ranging 0.10 to 0.30 m in height, are located near the southwestern edge of the clearing.

SITE 12 (SITE 4949)

This site consists of 3 overhang shelters fronted by 4 modified outcrop terraces (Fig. 17). It is located 14 m west of the eastern boundary of the project area along the southern edge of an outcrop ridge. The eastern shelter measures 5.0 by 3.5 m and 0.8 m high at the entrance, and the interior measures 1.8 m deep and 3.0 m wide. The middle shelter measures 4.5 by 3.5 m and 0.6 m high, and the interior measures 1.0 m deep and 2.0 m wide. A clinker paved area measuring 4.0 by 3.0 m separates the eastern and middle shelters. The western shelter measures 2.5 by 2.0 m and 0.5 m high, and the interior measures 1.5 m deep and 0.8 m wide. Fronting the series of overhang shelters are 4 modified outcrop terraces constructed of basalt cobble and boulder alignments creating level areas. This site occupies a 60 square meter area which measures 15m (e/w) by 4m (n/s).

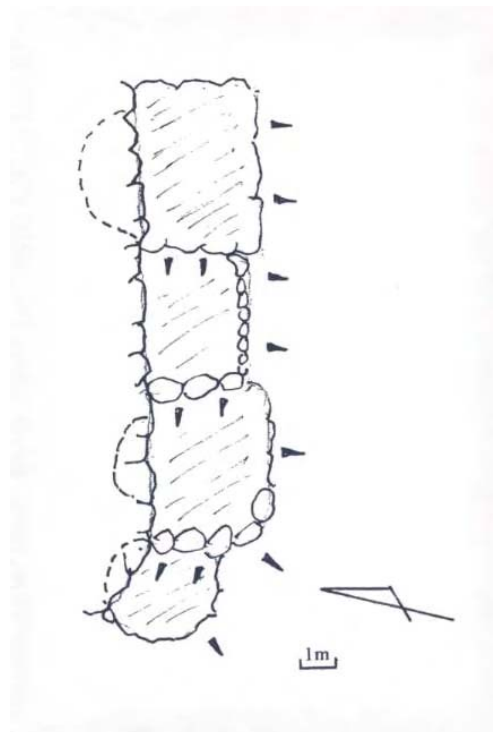


Figure 17. Plan of Site 12/4949, Overhang Shelters and Terraces

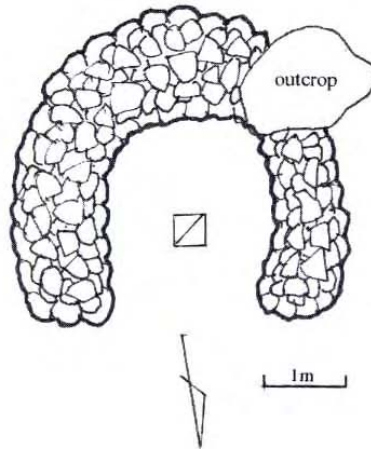


Figure 18. Plan and Photo of Site 13/4950, C-shaped Enclosure, View to Southeast

SITE 13 (SITE 4950)

This site is a C-shaped enclosure located 30 m north of Site 12/4949 along the eastern boundary of the project area (Fig. 18). It measures 4.0 by 3.5 m and is constructed of stacked basalt cobbles and boulders incorporating a large outcrop on the southwest portion. The C-shape is open to the north with a clinker filled interior floor. The opening measures 1.7 m wide. The walls measure 1.0 m wide and the exterior heights range between 0.25 to 0.8 m and interior between 0.2 to 0.3 m. No midden or artifacts were observed.

Testing

A 0.25 by 0.25 m test unit was excavated in the central interior floor of the enclosure. No subsurface cultural remains or deposits were encountered during testing. The culturally sterile soil matrix consisted of a brown silty loam with abundant rocks. Excavation was terminated at 15 cm bs due to reaching bedrock (Fig. 19).

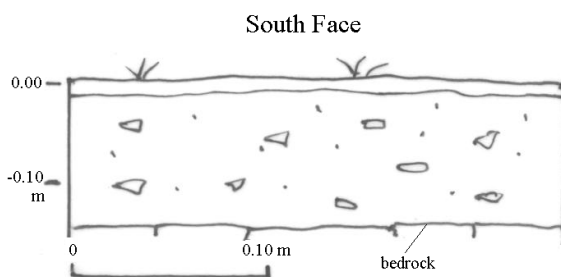


Figure 19. Stratigraphic Profile of Test Unit at Site 13/4950

SITE 14 (SITE 4951)

This site is a stepping-stone trail located on an open aa flow in the central area of the eastern half of the southern section (Fig. 20). The trail is constructed of flat basalt slabs placed at 0.5 to 1.0 m intervals. It is oriented east-west and continues beyond the eastern boundary of the project area. The segment measures approximately 30 m long. Another segment of this trail was identified further west within the same aa flow (Site 22/4959).

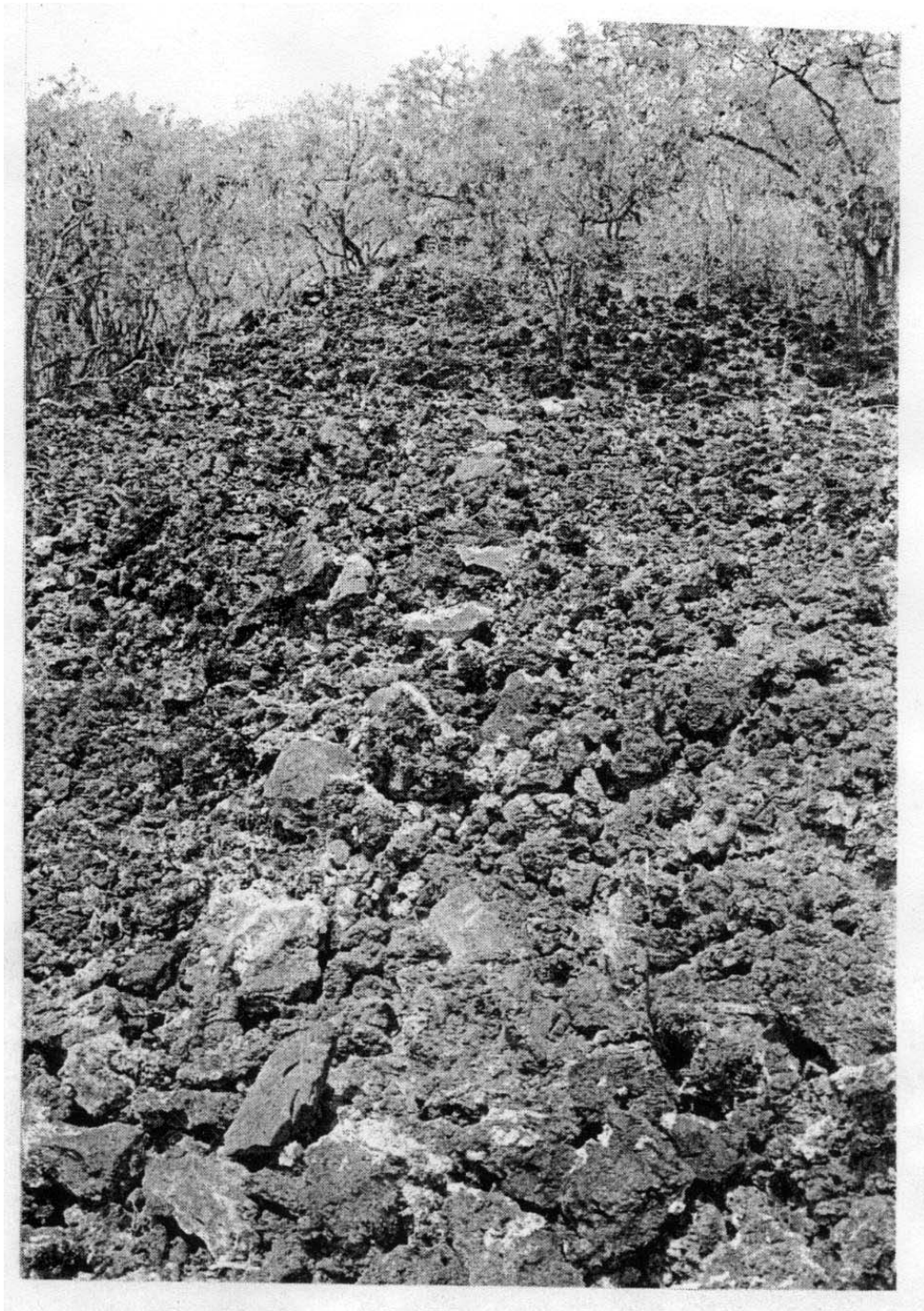


Figure 20. Photo of Site 14/4951, Steppingstone Trail in Aa Flow, View to West

SITE 15 (SITE 4952)

This site is a platform built against an outcrop on a gentle slope to the west of the Site 14/4951 steppingstone trail (Fig. 21). It measures 2.3 by 1.5 m and ranges between 0.7 to 1.3 m high along the faced sides. The platform is constructed of stacked basalt cobbles and boulders, 3-4 courses high, on the northeast and northwest sides. The southern side abuts a large outcrop bench creating a level area. No midden or artifacts were observed.

SITE 16 (SITE 4953)

This site consists of a series of intersecting, meandering walls near the northern end of the eastern half of the southern section. The western wall is located in a low-lying area and measures 0.7 m wide and 0.9 m high. It is constructed of stacked basalt cobbles and boulders and oriented east-west. A discontinuous wall, incorporating an outcrop ledge, extends east-west along the top of the ledge, and is constructed of stacked and aligned basalt cobbles and boulders. Portions of the wall incorporate outcrop and it terminates at a large outcrop boulder at its eastern end (Fig. 22). A free-standing wall extends roughly 100m northward, from the northern base of the ledge to the Site 1/200 wall along the northern boundary of project area. It is constructed of stacked basalt cobbles and boulders and measures 0.8 m high along the western side and 0.7 high along the eastern side. The wall is 0.8 m wide, and is breached in several areas. Another discontinuous segment of a wall parallels Site 1/200 on the south edge of the gulch over a distance of +200 m. This wall continues down-slope into the western half of the southern section below the jeep road. Segments of this wall also occur on the north side of the complex at Site 2/201.

SITE 17 (SITE 4954)

This site is a deteriorated C-shaped enclosure located, immediately north of a road cut near the northern boundary and west of the Pi'ilani Highway extension corridor (Fig. 23). It measures 3.2 by 2.5 m with walls 0.8 m wide and 0.4 to 0.5 m high. A large outcrop boulder is incorporated into the northeast wall measures 1.3 m long, 1.0 m wide, and 0.50m high.

Testing

A 0.25 by 0.25 m test unit was excavated in the central interior floor of the C-shape. A culturally sterile cobbly, silt loam was encountered immediately underlying the humic overburden. No cultural remains were observed during testing. Excavation encountered bedrock at 10 cmbs (Fig. 24).

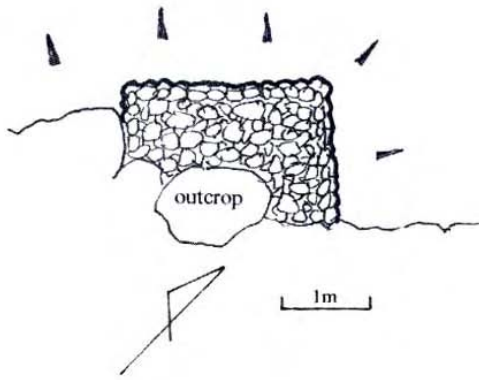


Figure 21. Plan and Photo of Site 15/4952, Modified Outcrop Platform, View to Northwest

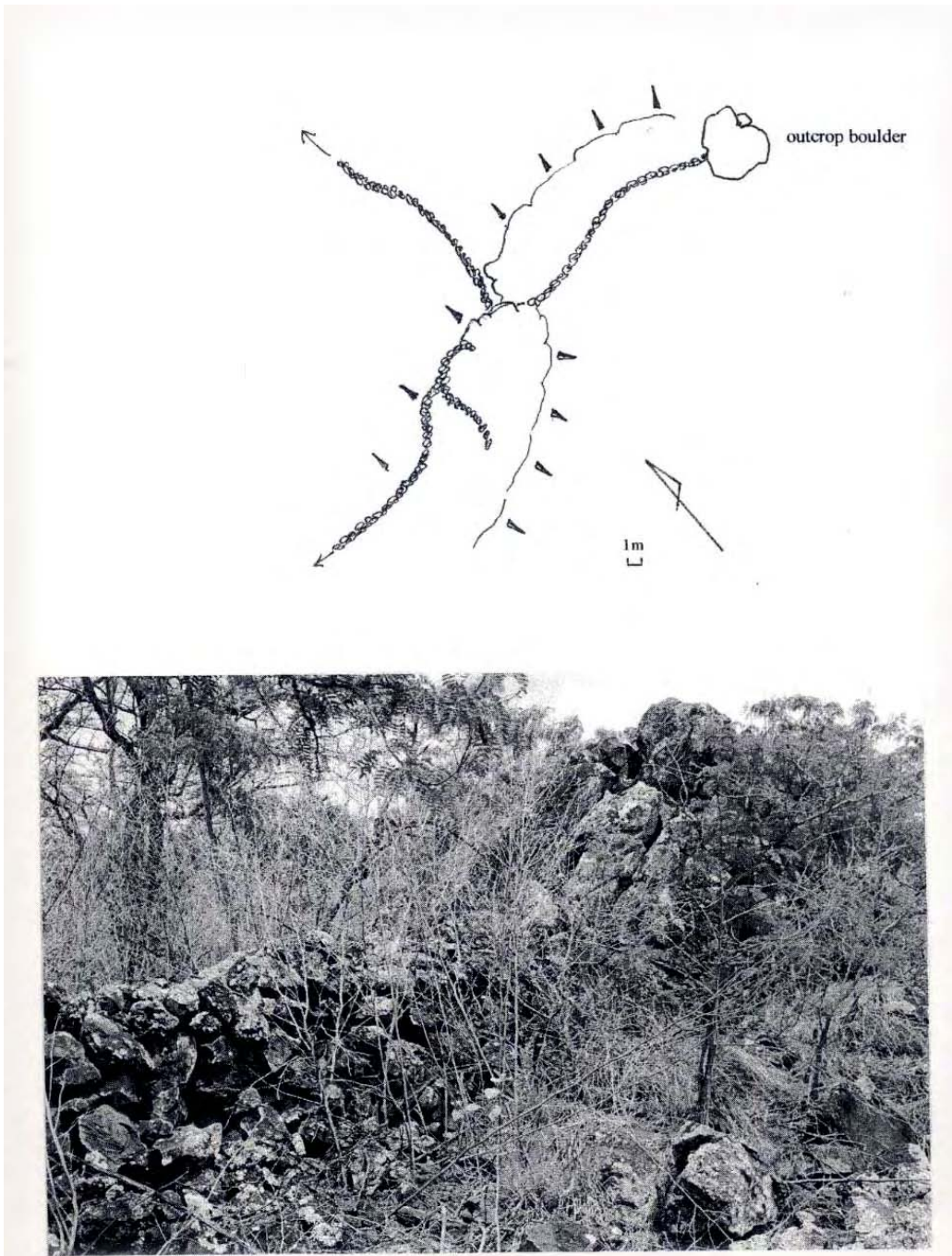


Figure 22. Plan and Photo of Site 16/4953, Interconnected Walls, View to East

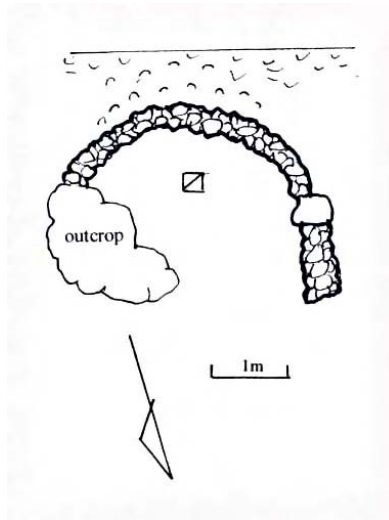


Figure 23. Plan of Site 17/4954, C-shaped Enclosure

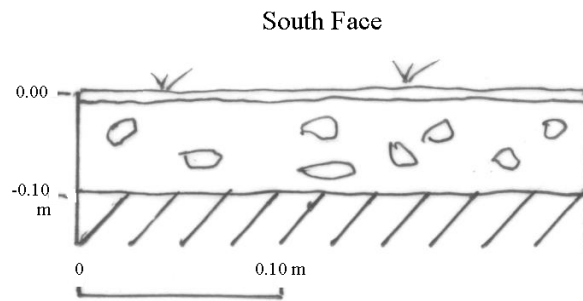


Figure 24. Stratigraphic Profile of Test Unit at Site 17/4954

SITE 18 (SITE 4955)

This site is an overhang shelter with a flat, soil terrace fronting the opening with two walls partially enclosing the soil area (Fig. 25). It is located on the south slope of a ridge south of a bulldozer cut paralleling the northern boundary wall (Site 1/200) within the proposed highway corridor. The overhang in the outcrop ledge measures 2.0 m wide, 1.2 m deep, and 0.70 m high at the opening. The soil terrace measures 5.0 m by 2.0 m. The western wall segment measures 2.0 m long, 0.80 m wide, and 0.60 m high. The longer eastern wall segment measures 2.8 m long, 1.2 m wide, and 0.80 m high. A sea urchin shell fragment and a medium bird bone were observed on the surface of the shelter floor.

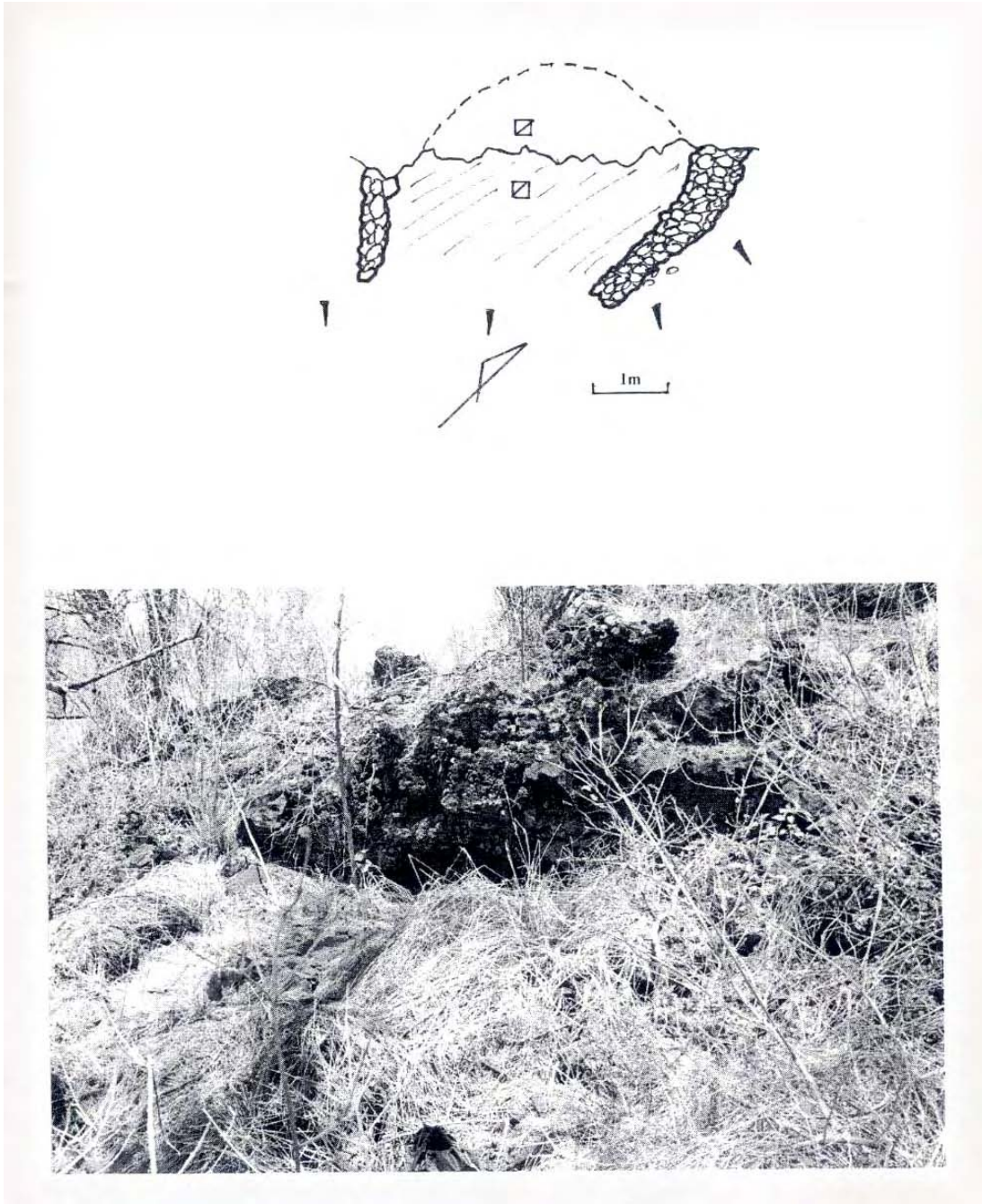


Figure 25. Plan and Photo of Site 18/4955, Modified Overhang, View to Northwest

Testing

Two 0.25 by 0.25 m test units were excavated; one in the interior floor of the overhang and another in the central area of the soil terrace fronting the shelter. The interior unit was taken to 15cm below surface and the other to a depth of 22 cm. Both units revealed a sterile, cobbly silt loam deposit with no cultural materials (Fig. 26).

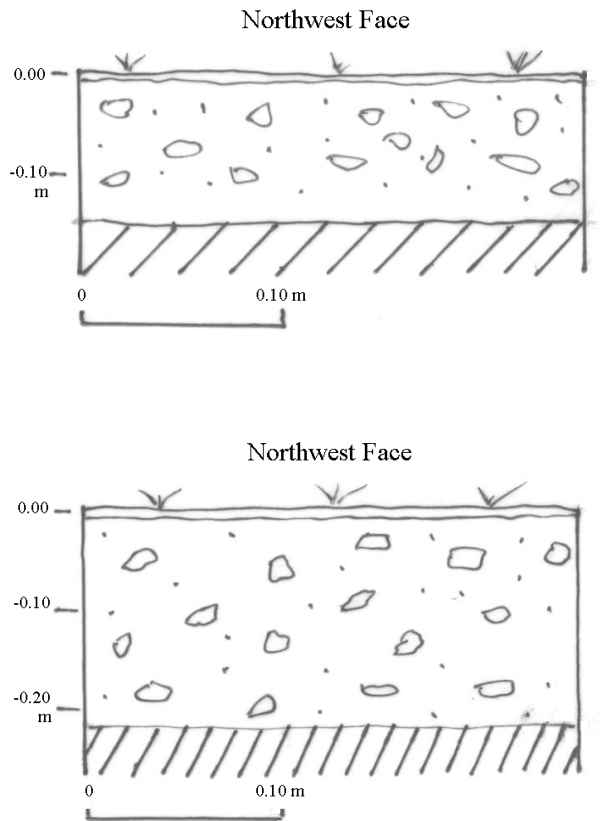


Figure 26. Stratigraphic Profile of Test Units at Site 18 (4955)
(top) interior unit (bottom) exterior unit

SITE 19 (SITE 4956)

This site consists of a 7.0 m long outcrop ledge, oriented northeast-southwest, with two small overhangs (Fig. 27). It is located in the southern central portion of the east half of the southern section. The smaller western overhang measures, 0.80 wide, 1.0 m deep, and 0.30 m high at the opening. It is fronted by a rectangular alignment, 1.6 by 2.3 m, of single boulders and one large slab forming the eastern side. A flat soil area 4.5 m by 2.0 m fronts the ledge. At the eastern end is another small overhang, 0.80 m wide, 2.0 m deep, and 0.70 m high at the opening. A cranium of a cat was found on the interior floor surface.

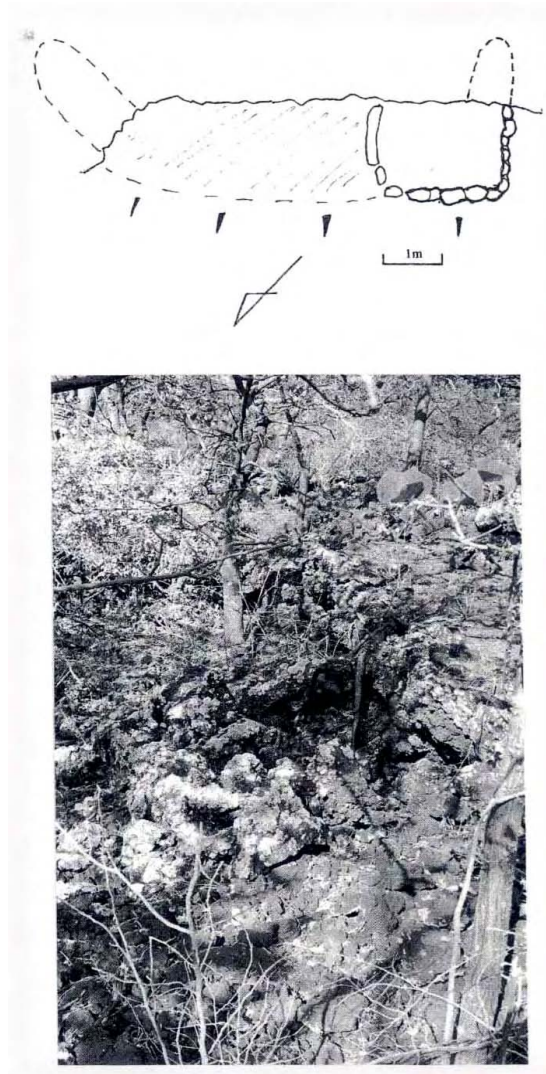


Figure 27. Plan and Photo of Site 19/4956, Modified Overhangs, View to Northeast

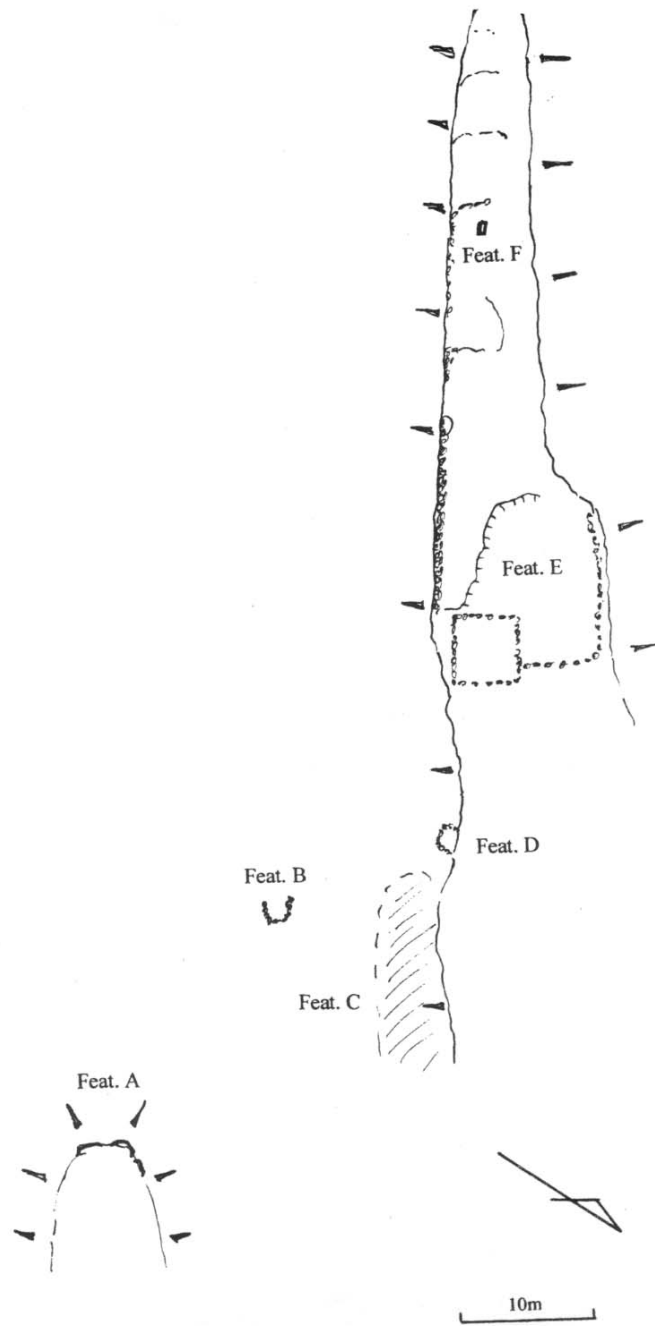


Figure 28. Plan View of Site 20/4957, Ridge-top Complex

SITE 20 (SITE 4957)

This complex of 6 features is located along a ridge crest on the southern edge of a gulch east of the jeep road in the eastern half of the southern section near the Site 1/200 wall (Fig. 28). It encompasses ca 3000 square meters and measures 100m (ne/sw) by 20-50m (nw/se). Portions of this complex are visible from the main access road.

Feature A is a cluster of 10+ modified outcrops along the base of an outcrop ridge located to the east of the main complex. These features consist of filled areas, single stone alignments, and crude mounds.

Feature B is a C-shaped enclosure measuring 5.0 m by 2.8 m with dilapidated walls ranging in height from 0.20 to 0.45 m. The enclosure opens to the west and the interior floor is soil. The southern portion of this structure incorporates a large outcrop into the wall.

Testing

One test unit, 0.25 by 0.25 m, was excavated in the center of the soil floor. Underlying the superficial humic overburden was a culturally sterile, cobbly, silt deposit. The excavation was stopped at 15 cm (Fig. 29). No cultural materials were encountered.

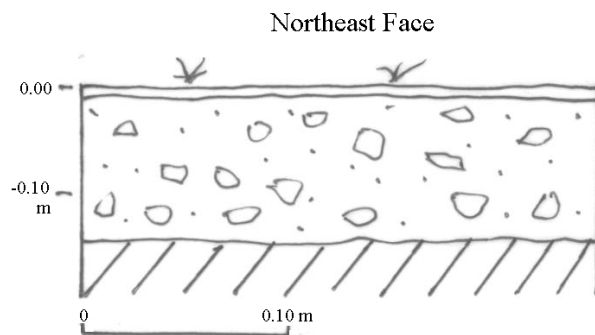


Figure 29. Stratigraphic Profile of Test Unit at Site 20/4957 Feature B

Feature C is an open, earthen clearing, adjacent to the outcrop ridge. It measures about 15 m east-west and 6 m north-south. Several clearing mounds of rocks and cobbles occur in the area between this feature and Feature B.

Feature D is a small platform built up against the southern base of the ridge just 4 m southwest of Feature C. It measures 2.4 m square and 1.0 m high at its southern facing. Its northern side is incorporated onto a bedrock ledge.

Feature E consists of a rectangular enclosure with two adjoining walled areas and several small activity areas that are leveled and descend down the top of a narrow outcrop ridge towards the southwest (Fig. 30 top). The enclosure measures roughly 5.5 m square, with walls ranging in



Figure 30. (top) Site 20/4957 Feature E, Rectangular Enclosure and Attached Wall, View to NW
(bottom) Feature F, Slab-lined Firepit, Long Axis Orients Northeast/Southwest

width from 0.80-1.0 m and 0.70-1.4 m high. A straight wall adjoins the southern corner of the enclosure and follows the edge of the ridge down-slope for 14.5 m. An L-shaped wall adjoins the enclosure on the northwest side to create a three-sided enclosed area. This wall follows the northern edge of the ridge for about 8.0 m. The interior floor areas are fairly clear of rocks and flat. A branch coral manuport was located outside the southwest wall of the enclosure. Below these structures along the ridge are at least three, stepped, modified terrace areas that measure 5.0 by 3.0 m. Each terrace is about 0.35-0.40 m lower. Modification of rock and rubble fill areas and some boulder alignments define these terrace areas.

Feature F is a rectangular firepit located on the last well-defined terrace area of Feature E (Fig. 30 bottom). It is located nearly centrally within a level floor area measuring 6.1 by 2.6 m. It is composed of four elongate, thin slabs of basalt set on edge to form a rectangular enclosure measuring 0.73 by 0.56 m, and standing about 0.16 m above ground surface. Each of the slabs was buried about 12-14cm into the ground.

Testing

The western end of the firepit was excavated in an effort to collect charcoal for dating. A 0.35 by 0.30 m unit was excavated and produced a small amount of charcoal. Three small fragments of cowrie shell and seven small fragments of sea urchin carapace were recovered. The excavation was terminated at 10 cm below surface when bedrock was encountered. Unfortunately, upon transmittal and processing, the consultant found the quantity of charcoal collected to be inadequate to permit chronometric analyses.

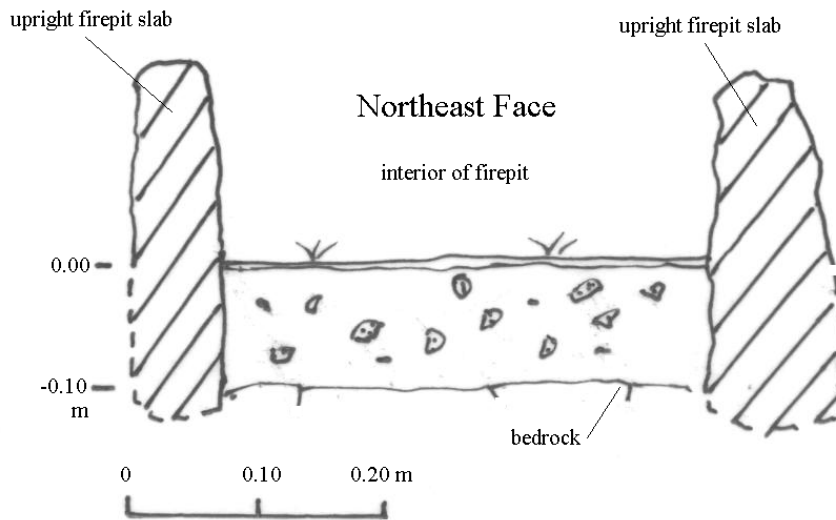


Figure 31. Stratigraphic Profile of Testing at Site 20/4957, Feature F, Firepit

SITE 21 (SITE 4958)

This site consists of a circular enclosure and an adjacent low rectangular enclosure constructed 2m apart, on an aa flow in the central portion of the southern section (Fig. 32).

Feature A, the circular enclosure, measures 4.0 by 3.5 m with an interior height of 1.1 m and an exterior height of 0.9 m. The walls are core-filled and constructed of stacked basalt cobbles and boulders. The southern and northern ends are tumbled. The interior floor of the structure is rock filled.

Feature B, the low rectangular enclosure, is located 2.0 m west of Feature A. It measures 3.0 by 2.7 m and ranges between 0.3 to 0.5 m high. A possible entranceway is located along its western wall. The walls are core-filled and constructed of stacked basalt cobbles and boulders. The interior floor consists of soil and rocks.

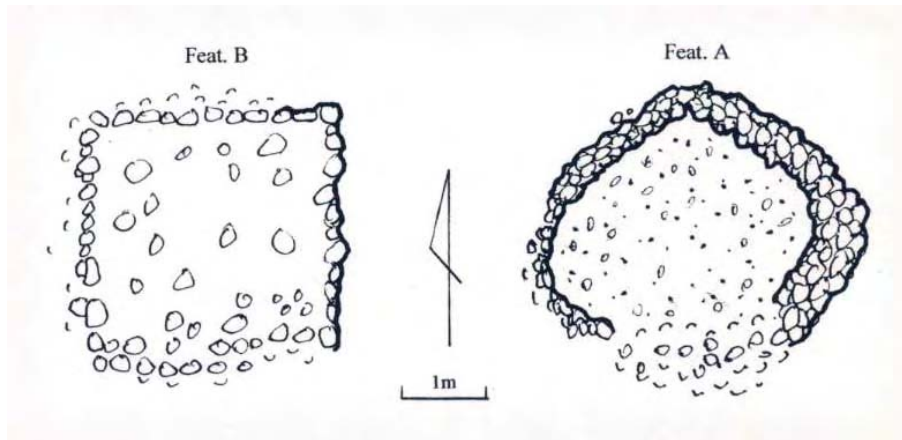


Figure 32. Plan of Site 21/4958, Two Adjoining Enclosures

SITE 22 (SITE 4959)

This site consists of two intersecting segments of steppingstone trails and pits located in an aa flow in the central portion of the western half of the southern section (Fig. 33). The steppingstone trail is constructed of flat basalt slabs placed at 0.5 to 1.0 m intervals. One segment of the trail extends north-south and measures approximately 15 m long. The east-west segment intersects with the north-south segment and measures 20 m long. This longer segment is probably a continuation of the Site 14/4951 trail segments located on the same aa flow to the east.

At the western end of the longer trail segment are 3-4 pit features in the aa flow. These pits are the result of removing aa rocks and clinkers to create a shallow depression. The pits range from 1.0-1.5 m in diameter and between 0.5 to 0.7 m in depth. These pits are artificial and exhibit diagnostic attributes when compared with depressions formed when trees are uprooted.

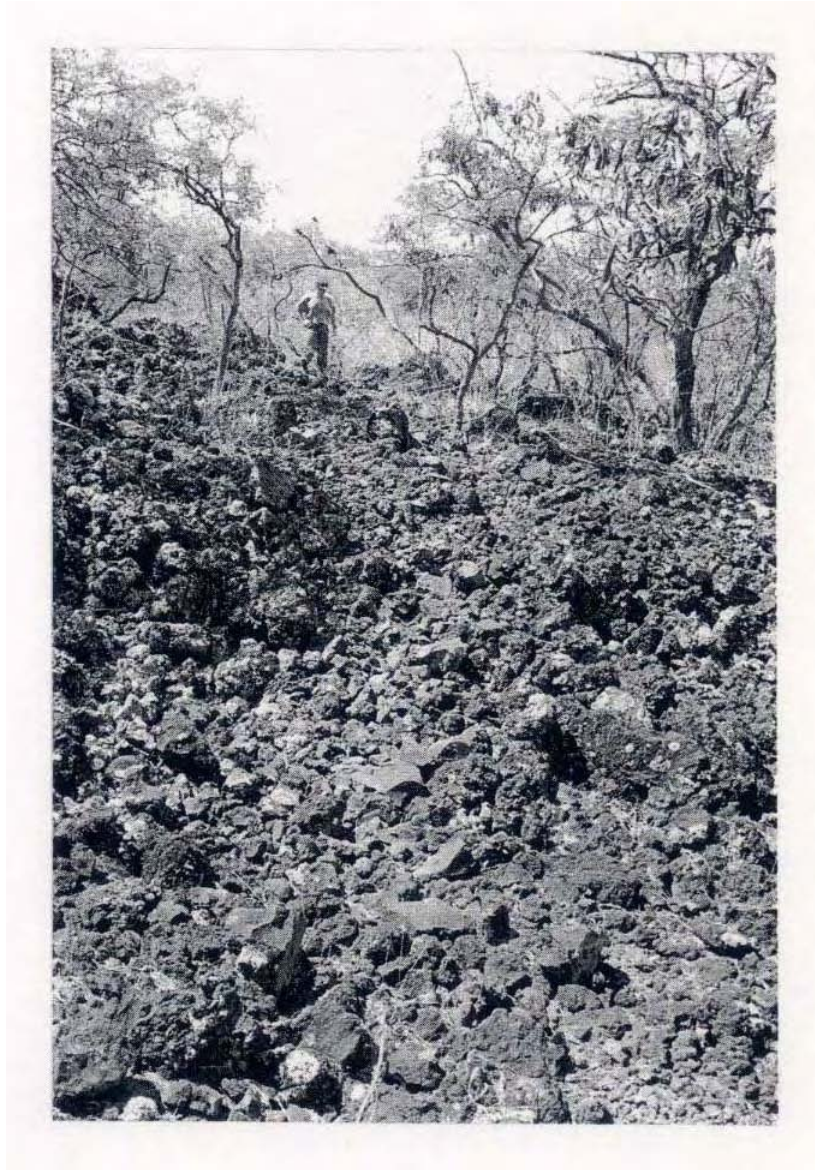


Figure 33. Site 22/4959, Steppingstone Trail on Aa, View to East

SITE 23 (SITE 4960)

This site consists of two adjoining platforms constructed against the base of a ridge located in the central portion of the southern half of the western half of the southern section (Fig. 34). The feature measures 6.7 m in total length, with the lower paved platform, to the north, measuring 3.5 m and the filled platform 3.2 m. The filled platform is 1.3 m in height and the interior is rock and soil filled, while the paved platform is .90 m high and its surface is paved with cobbles and clinkers. A 1.2 m long common wall separates the two features with the paved platform situated 0.30 m lower than the filled platform. Constructed stone facings define the north, west, and south sides of this structure but the eastern side is built up against the ridge base.

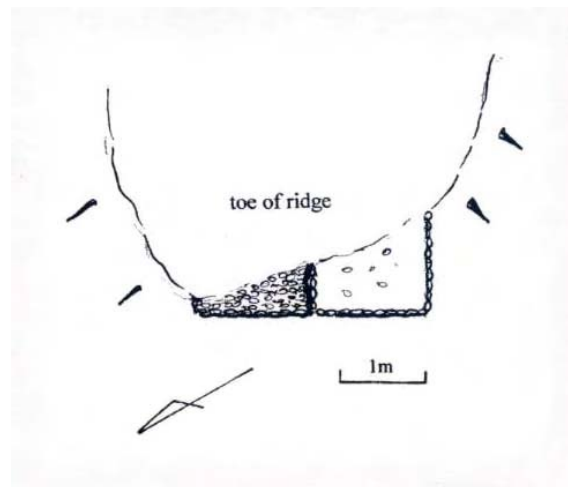


Figure 34. Plan of Site 23/4960, Two Adjoining Platforms

SITE 24 (SITE 4961)

This site is a remnant bend of a wall located along the base of a ridge near the southern boundary in the middle of the western half of the southern section (Fig. 35). The wall is core-filled and constructed of stacked basalt cobbles and boulders. The long segment of the wall along the base of the ridge is oriented east-west and measures 7.9 m long, 1.0 m wide, and 0.7 m high. The eastern end of the wall is breached and the western end is tumbled. The north-south segment measures 4.0 m long, 0.6 m wide, and 0.85 to 0.4 m high. This wall segment extends from the top to the base of the ridge.

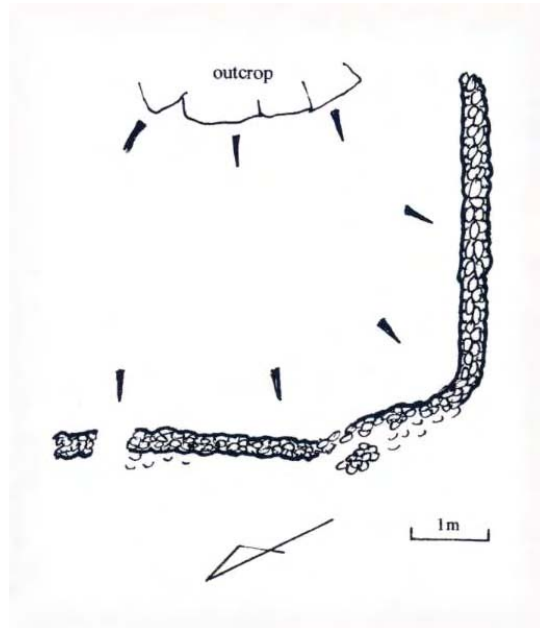


Figure 35. Plan of Site 24/4961, Remnant Wall

SITE 25 (SITE 5110)

This site is a small, collapsed lava-blister shelter measuring 2.7 m wide, 1.6 m deep, and 0.75m high at the dripline (Fig. 36). This site consists of a collapsed lava tube located on the northwest facing edge of an outcrop ledge near the 560 ft. elevation. A few small fragments of marine shell were observed on the interior floor surface. However, a series of trowel probes revealed a shallow deposit (0.15 m) of culturally sterile silty loam with cobbles overlying bedrock on the interior floor.

SITE 26 (SITE 5111)

This site is a small terrace platform constructed against an outcrop ridge around the 680 ft. elevation within the southern half of the eastern half of the southern section, roughly 182m (600 feet) west of the eastern boundary fenceline. It is also located immediately west of an old bulldozed road. The site measures 5.0 m long, 2.0 m wide, and varies in height from 0.30 m on the south side to 1.2 m on the west side (Fig. 37). An outcrop ridge occupies the eastern side, and the northern side is tumbled. Five to six courses of aa boulders form a facing around the exterior of this roughly rectangular structure. The upper surface and interior are clinker-filled and leveled. No cultural material was observed on the surface of the structure or in areas surrounding this site.

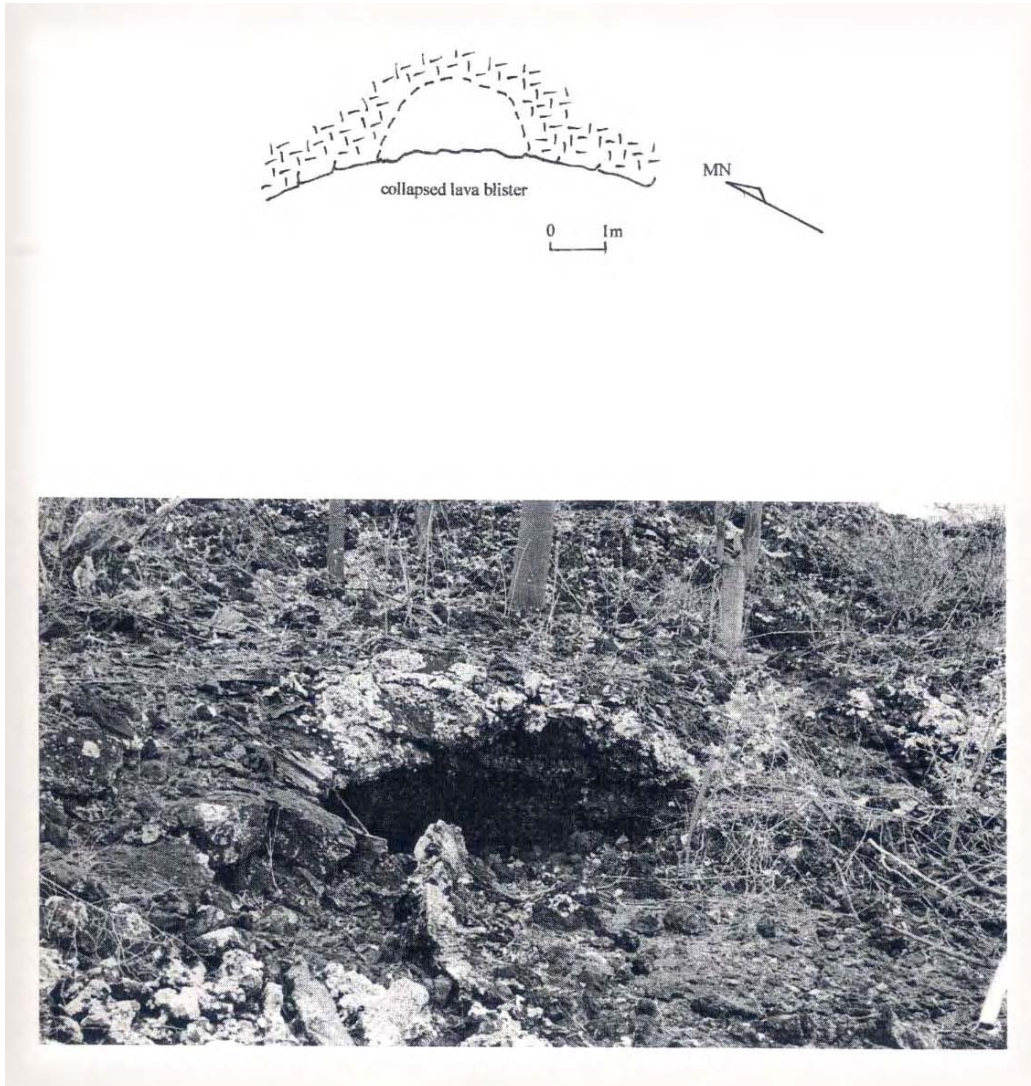


Figure 36. Plan and Photo of Site 25/5110, Lava Blister Shelter, View to Northeast

SITE 27 (SITE 5112)

This site, similar in construction and form to Site 26/5111, is another terrace platform incorporating an outcrop ridge. It is located about 40 m northwest of the Site 25/5110 shelter. This platform is constructed against the northwest side of an outcrop ridge and measures 12.0 m in length, 2.5 m in width, and averages 1.3 m in height (Fig. 38). The structure is roughly rectangular with three sides faced with 3-4 courses of aa cobbles and boulders with the interior and upper surface clinker-filled. Its long axis orients roughly east to west. No cultural material was observed on the platform surface or in the surrounding areas.

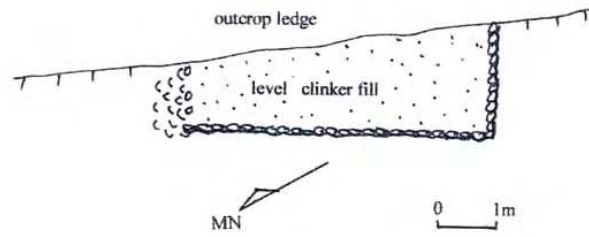


Figure 37. Plan View and Photo of Site 26/5111, Platform, View to Northeast

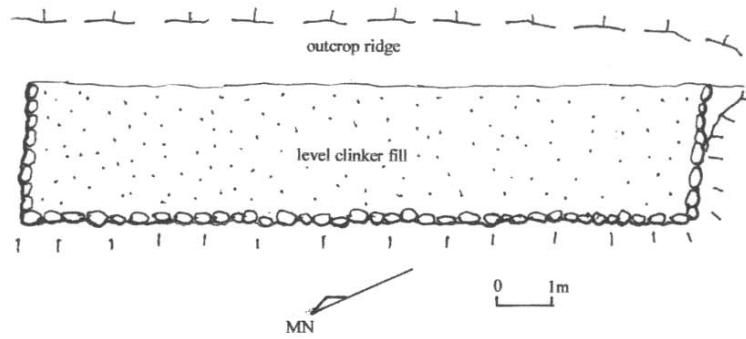


Figure 38. Plan View and Photo of Site 27/5112, Platform, View to Northeast

SITE 28

A small cluster consisting of two small structural features occurs along the northern slope of a ridge located ca 260 meters south of the north boundary wall (Site 1/200) of the southern section (Fig. 39). The site is located 90-100 meters east of the main jeep road that separates the eastern and western halves of the southern section of the project area.

Feature A is a small platform terrace built along the toe of the west-facing slope of a rocky ridge roughly 100 meters east of the main jeep road. The structure measures 2.5 m in length, 1.5 m in width and 0.80m in height with 4-5 courses of stone facing on three sides; north, west, and south. The eastern side is built into the slope of the ridge. The long-axis of the platform trends north/south.

Feature B, located 20m northeast of Feature A on a small level plateau below the ridge, is a U-shaped enclosure. This structure measures 4.0m in length, 2.0m in width, and its walls built of 2-3 courses of stacked boulders is 0.60m in height. The west side is open and the interior earthen floor has been cleared of rocks.

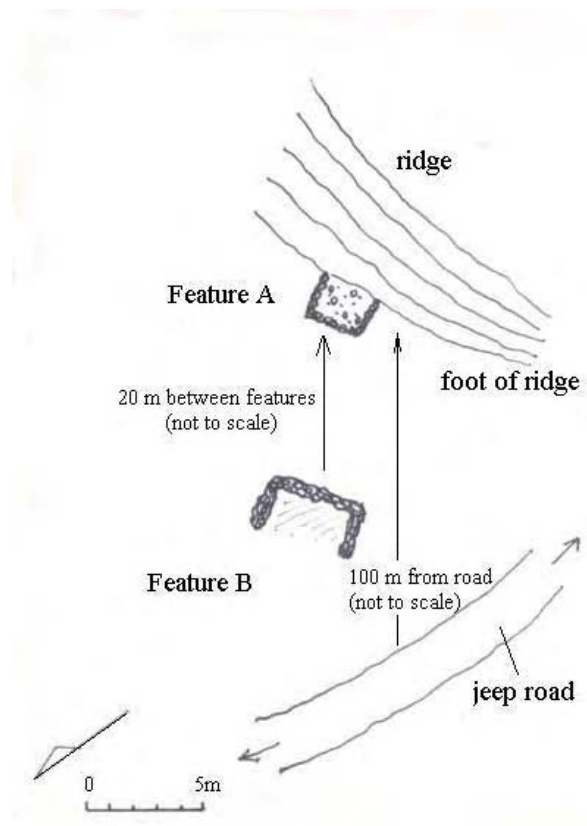


Figure 39. Plan of Site 28, Two-feature Cluster
(Note distances are not to scale)

SITE 29 (SITE 5109)

This site consists of a small overhang shelter situated near the 500 ft. elevation on the north edge of the second gulch southward from the northern boundary in the northern section of project area. The overhang is located on a ledge 4 meters above the gulch bed and measures 6.0 m wide and ranges in depth from 0.50 to 1.5 m from the drip-line. The ceiling heights vary from 0.50 to 0.70 m at the drip-line and decreases towards the back wall of the shelter, where the ceiling eventually meets the floor. A small, natural, earthen terrace area, measuring 1.5 m wide and 4.0 m long, fronts the shelter opening to the south (Fig. 40). Two fragments of sea urchin carapace were observed on the surface of the interior floor in the central portion of the shelter (Fig. 41). No other cultural remains were present.

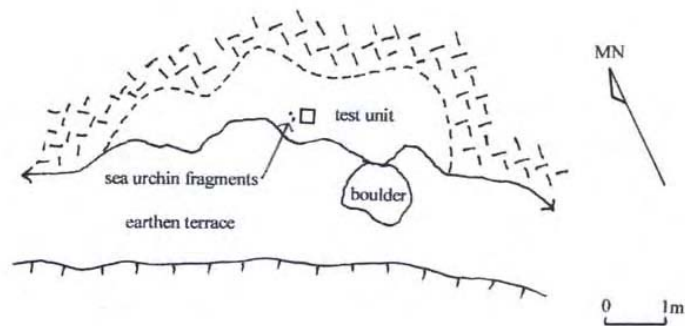


Figure 40. Plan and Photo of Site 29/5109, Overhang Shelter, View to North

Testing

A small test unit, 0.25 by 0.25 m, was excavated in the central interior floor near the sea urchin shell fragments (Fig 41). The unit revealed a culturally sterile deposit of silty loam and saprolytic rock overlying a solid bedrock substratum. The deposit was 0.20m deep with reddish brown (5YR 4/4) silty loam occupying the upper half (0 to 10 cm) and saprolytic rock within the same silty loam matrix in the bottom half (10 to 20 cm). No cultural material was encountered.

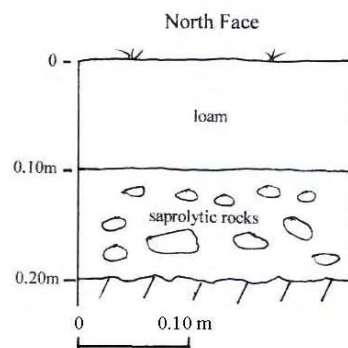


Figure 41. Sea Urchin Fragments on Surface of Shelter Floor and North Face Profile of Test Unit

SITE 30

This C-shape is located about 40 meters south of the Site 4/205 modified overhang shelter on a low bedrock bluff on the eastern edge of a bulldozer cut. The enclosure measures 3.0 by 3.0 meters with wall width 0.40 m and 0.40 m in height (Fig. 42). The interior floor is bedrock with some loose cobbles and boulders. The feature opens to the east. No surface remains were observed in or around this site.



Figure 42. View of Site 30, C-shaped Enclosure, to North

SITE 31

This site is a modified outcrop platform located roughly 60 meters northeast of the Site 33 cluster of two C-shaped enclosures. This feature is built up against an outcrop ledge and measures 5.0 m long by 1.8 m wide and averages 0.80 m in height (Fig. 43). The outcrop is incorporated on the south side and the long axis of the feature is east to west. The top is clinker and cobble filled. No surface remains were observed.

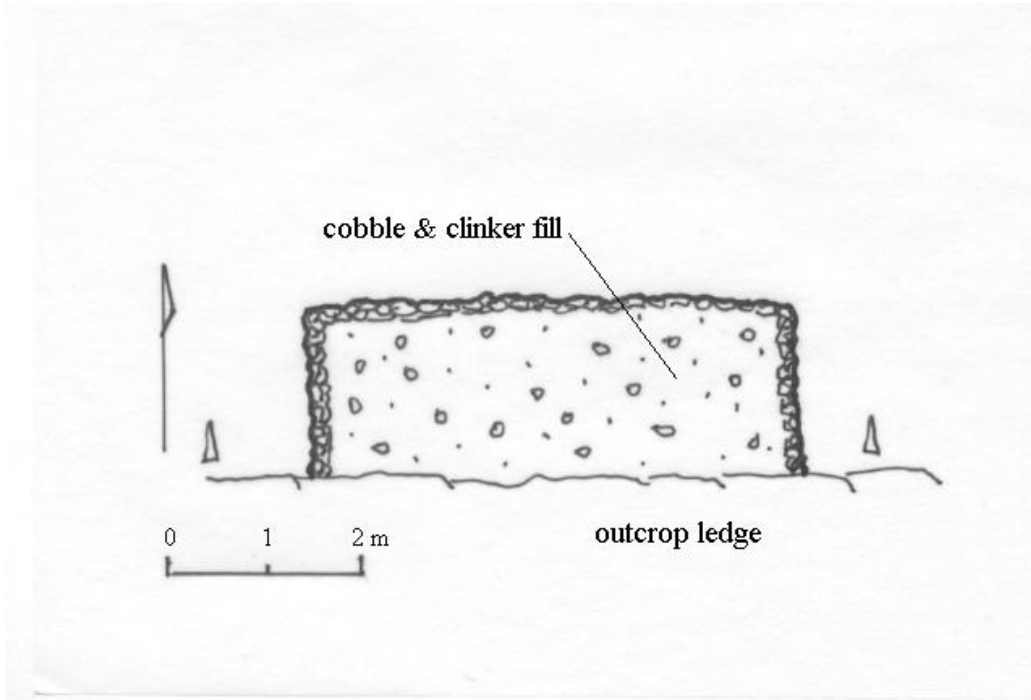


Figure 43. Plan and Photo of Site 31, Modified Outcrop Platform, View to Northeast

SITE 32

This site is a short segment of a steppingstone trail located about 20 m east of the Site 19/4956 modified overhang shelter. This short segment, measuring 5.0 m in length in a north/south orientation with only 4 visible steppingstones, is in a low-lying open aa flow. This trail remnant, located more than 140 meters southwest of the Site 14/4951 steppingstone segment, probably did not connect to that segment.

SITE 33

This site is a feature cluster comprised of two C-shaped enclosures situated 2 meters apart in a low-lying area, roughly 100 meters due south of the Site 20/4957 complex. The larger structure, Feature A, measures 3.5 m by 4.5m with 0.80 m thick walls that range in height from 1.0 to 1.2 meters (Figs. 44 & 45). The opening is oriented 151° of magnetic north. Feature B, the smaller structure, located roughly 2.0 meters to the south-southwest, measures 3.6 m in diameter with 0.60 m wide walls that range in height from 0.20 to 0.40 m. The opening of the smaller C-shape is oriented 126° of magnetic north. The interior floor of both features is dirt. No cultural remains were observed on the surface in or near both features.

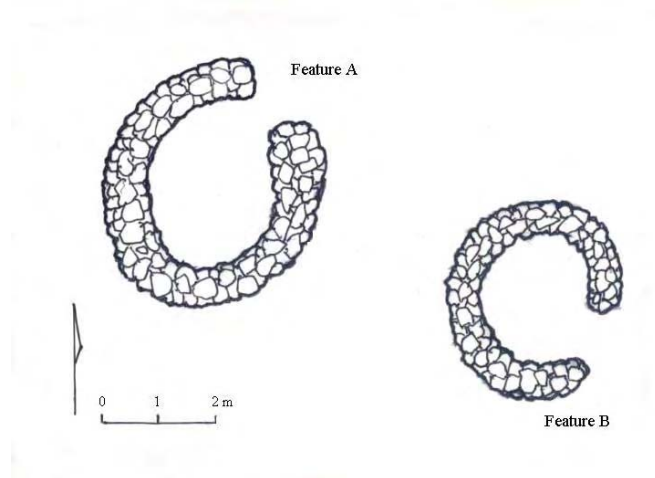


Figure 44. Plan of Site 33, Two C-shaped Enclosures

SITE 34

This overhang shelter is at the base of an outcrop ledge and opens to the north. The opening measures 2.5 m wide, 1.5 m deep, and 0.90 m high at the dripline (Fig. 46). The interior floor consists of silt with some cobbles. No surface remains were observed.



Figure 45. Photos of Site 33, Two C-shaped Enclosures, (top) View of Feature A to East
(bottom) Overview to North with Feature A to Left and Feature B to Right

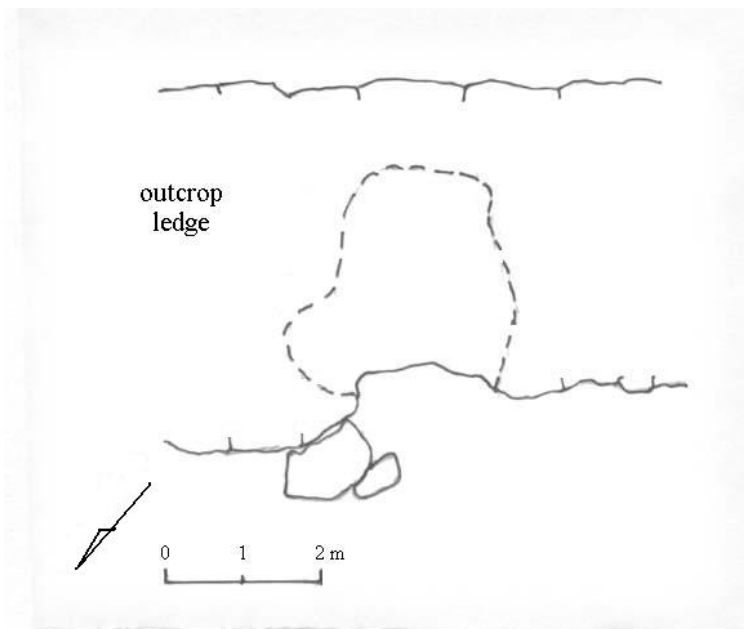


Figure 46. Plan and Photo of Site 34, Overhang Shelter, View to South

SITE 35

This modified outcrop, rectangular platform, measuring 9.0 m long, 2.5 m wide, and 1.2 m in height, is built along the edge of an outcrop ridge with its long axis oriented at 210° of magnetic north (Fig. 47). This site is located about 50 meters south of the eastern terminus of the Site 20/4957 complex and northeast of Site 27/5112.

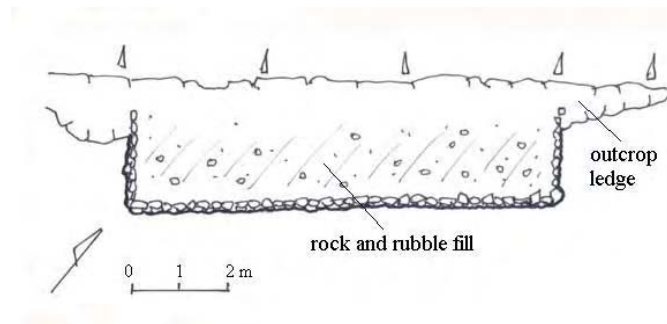


Figure 47. Plan and Photo of Site 35, Terrace Platform on Edge of Outcrop Ridge

SITE 36

This site is a lava tube with the opening facing east and measuring 1.2 m east/west, 0.80 m north/south, and 0.80 m in height (Fig. 48). The interior opens up to a chamber measuring 3.0 m wide and 3.5 m deep with ceiling heights ranging from 0.8 to 1.3 m. The opening is situated at the eastern edge of a bedrock ledge approximately 1.0 m high. This site is located near the southeast corner of the southern section roughly 50 meters northwest of Site 8/4945 and 30 meters east of the main jeep road.

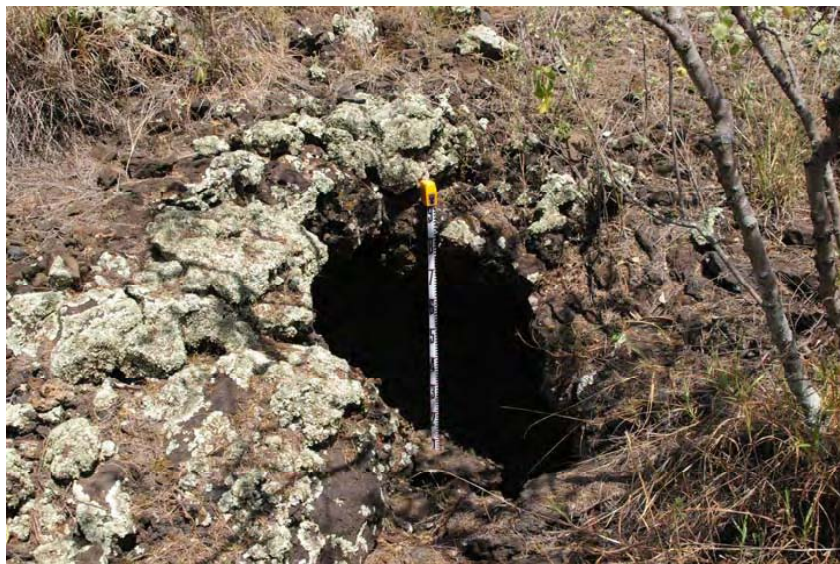
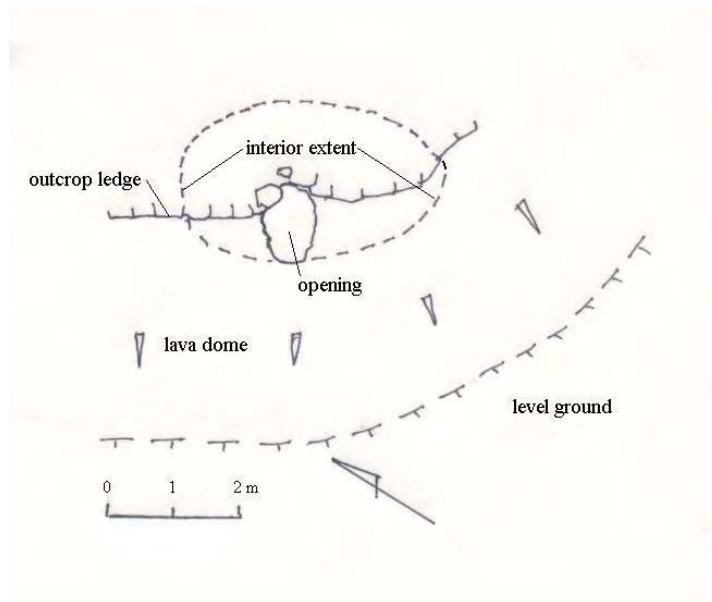


Figure 48. Plan and Photo of Site 36 Lava Tube, View to Northeast

SITE 37

This site is a segment of a stone wall, crudely constructed of stacked single slabs of basalt, located near the southern boundary of the project area, roughly a third of the way west from the southeast corner of the project area. The segment measures 50 m long, 0.30 m wide, and ranges in height from 0.30 to 0.70 m. A bulldozed road cut parallels the wall on the east along a north/south orientation.

SITE 38

This modified outcrop ridge is located roughly 100 northeast of the Site 20/4957 complex and consists of a 40 m long ridge top roughly 5.0 m wide. Associated with this natural feature are a number of artificial modifications including a worn trail, a roughly 6.0 X 2.0 meter filled and paved area, and a stacked rock facing 7.0 m long and 1.2 m in height with 6 courses of stones along the north edge of the paved area (Fig. 49). The long axis of the ridge is oriented east/west.

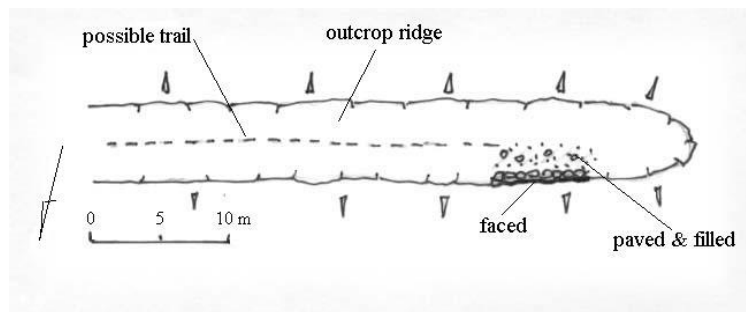


Figure 49. Plan of Site 38, Modified Outcrop Ridge

SITE 39

This site is a small overhang shelter at the east end of a 7.0 m long outcrop ledge oriented east/west. It is located about 30 m south of Site 38. The opening faces south and measures 0.60 m wide and 0.30 m high with a walled modification built along the western edge of the shelter, creating a level area 1.5 m square fronting the feature to the southwest (Fig. 50). No surface remains were observed.

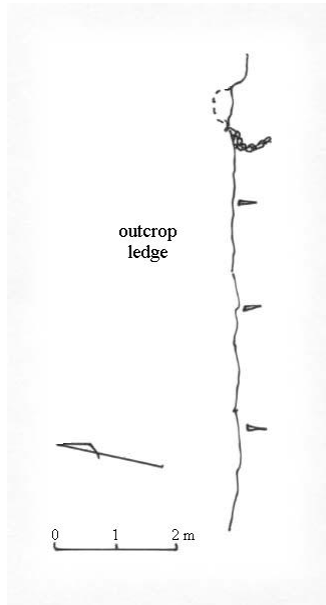


Figure 50. Plan and Photo of Site 39, Modified Outcrop Shelter, View to Northeast

SITE 40

This site consists of a wall which is connected to the Site 1/200A wall near its central section between the northern bend to the east and the southern bend to the west. The feature consists of a wall segment roughly 100 m long which parallels the 200A wall to the east and incorporating a segment of the Site 1/200A wall creates a large, roughly rectangular enclosure, encompassing almost 4000 square meters, with an opening on the south. Built on to the southern end of the Site 40 wall is a triangular enclosure (see Fig. 5). The wall is well constructed and consists of up to 5-8 courses of stones. The wall ranges in width from 0.60 to 0.80 m and in height from 0.70 to 1.2 m. Three shorter remnant wall segments occur near the southern end of this feature. A bulldozed road parallels the Site 1/200A wall in this area.

SUMMARY

The subsurface testing procedures, comprising 10 test units at seven sites, produced negative results, with the exception of the Feature F firepit at Site 20 (4957). The remaining units exhibited a total absence of subsurface cultural components and associated midden, other sample material, or artifacts. No post-field laboratory procedures were warranted. There was also a pronounced paucity of surface remains, especially historic period artifacts, such as glass bottles, and cans that are usually found in association with occupation areas. A summary of all findings by site is presented on Table 1 below and data summaries for all sites is presented on Table 2 on the following page.

Table 1. All Surface and Subsurface Portable Cultural Remains

Site	Feat.	Type	Surface	Test Unit/Subsurface
2 (201)	B	OH*	cowrie shell octopus lure	
3 (204)		platform	coral manuport	
18 (4955)		OH	sea urchin shell frag., med. bird bone	
19 (4956)		OH	cat cranium	
20 (4957)	E	rect encl.	branch coral manuport	
"	F	firepit		cowrie and sea urchin shell frags. and charcoal pieces
29 (5109)		OH	sea urchin shell fragments	

*OH – overhang shelter

Table 2. Archaeological Sites in the Honua`ula Development Area

No.	Type	Feats.	ahupua`a	Period	Recorded	SIHP*	Signif.	Pres.	Data Rec.	NFW
1	wall	1	Palauea	historic?	1971	200	C,D	X		
2	complex	5	"	traditional?	"	201	A,D	X		
3	platform	2	"	"	"	204	D	X		
4	mod OH	1	"	"	"	205	"	X		
5	C-shape	1	Keauhou	"	1993	3156	nls			X
6	wall	1	"	historic?	"	3157	nls			X
7	"	1	"	"	"	3158	nls			X
8	U-shape	1	"	traditional?	2000	4945	D		X	
9	C-shape	1	"	"	"	4946	"		X	
10	mod OH	1	"	"	"	4947	"		X	
11	open area	1	"	historic?	"	4948	"		X	
12	mod OH	2	"	traditional?	"	4949	"		X	
13	C-shape	1	"	"	"	4950	"		X	
14	SS trail	1	Palauea	"	"	4951	C,D,E	X		
15	platform	1	"	"	"	4952	D	X		
16	walls	3	"	historic?	"	4953	nls			X
17	C-shape	1	"	traditional?	"	4954	D		X	
18	mod OH	1	"	"	"	4955	"		X	
19	"	2	Keauhou	"	"	4956	"		X	
20	complex	6	Palauea	"	"	4957	A,D	X		
21	enclosures	2	"	"	"	4958	D		X	
22	SS trail/pits	3	"	"	"	4959	C,D,E	X		
23	platform	1	Keauhou	"	"	4960	D		X	
24	wall seg.	1	"	historic?	"	4961	nls			X
25	lava blister	1	Palauea	traditional?	2001	5110	D		X	
26	platform	1	Keauhou	"	"	5111	"	X		
27	platform	1	Palauea	"	"	5112	"	X		
28	cluster	2	"	"	2003	na	"		X	
**29	OH	1	Paeahu	"	2001	5109	"	X		
30	C-shape	1	Palauea	"	2008	na	"		X	
31	platform	1	"	"	"	"	"		X	
32	trail	1	Keauhou	"	"	"	C,D,E	X		
33	cluster	2	Palauea	"	"	"	D	X		
34	OH	1	"	"	"	"	"		X	
35	platform	1	"	"	"	"	"	X		
36	lava tube	1	Keauhou	"	"	"	"	X		
37	wall mod	1	"	historic?	"	"	Nls			X
38	outcrop	1	Palauea	traditional?	"	"	D		X	
39	OH	1	"	"	"	"	"		X	
40	walls	2	"	historic?	"	"	Nls			X
Totals		60						15	18	7

* State Inventory of Historic Places Site Number (prefixed by 50-50-14-)

** Site located in northern two-thirds of project area

DISCUSSION

The project area includes portions of three *ahupua`a*; Paeahu, Palauea, and Keauhou, from north to south. The majority of the northern two-thirds occupies a section of Paeahu *ahupua`a* and roughly half of the width of a section of Palauea *ahupua`a*. Only one site was recorded in all of the northern two-thirds of the project area and although there is ample evidence that the area had previously undergone compounded extensive disturbances, the paucity of archaeological remains is remarkable especially when compared to the southern third. The southern one-third consists of the remaining half of the width of the section of Palauea *ahupua`a* and a partial section of Keauhou *ahupua`a*. This portion of the project area consists of large areas of later aa flows with intermittent earlier pahoehoe flow ridges and there is much more vegetation cover in comparison to the northern portion. Due to the rough terrain, it appears that the earlier historic ranching activities attempted to keep the cattle out of this southern area and did not encroach south of the large wall (Site1/200) until a later phase of the ranching activities. Ninety-seven and a half percent (97.5 %) of the recorded sites occur within the southern one-third of the project area. Also, the presence of two sites representing feature complexes with some prominent structural features and the presence of 7 platform sites are relatively uncommon for the elevation and their presence and the overall density of sites were unexpected, especially in view of the topography.

The distribution of the 40 sites within the three *ahupua`a* consists of; Paeahu – 1, Palauea- 23, and Keauhou-16. The two complexes and the majority of the platform sites are located in Palauea *ahupua`a*. The fact that the full width of only Palauea *ahupua`a* is represented in the project area may be an important consideration when comparing the number and assemblage of sites among the three *ahupua`a*. The distribution of sites in the eastern portion of the southern section, *mauka* of the main jeep road may not be just the result of extensive disturbance in the western half. Three clusters of sites are apparent with the central one around the Site 20/4957 complex by far the most prominent. Whether this clustering indicates a functional association among the sites or attributable to other factors is currently not clear.

Figure 51 presents a graphic representation of the four most frequently occurring feature types within the Southern Section of the project area. These are platforms with nine (9), followed by C-shapes and walls both with eight (8), and overhang shelters (7). With the exception of the wall features, the other features all appear to be clustered within the eastern half of the southern section.

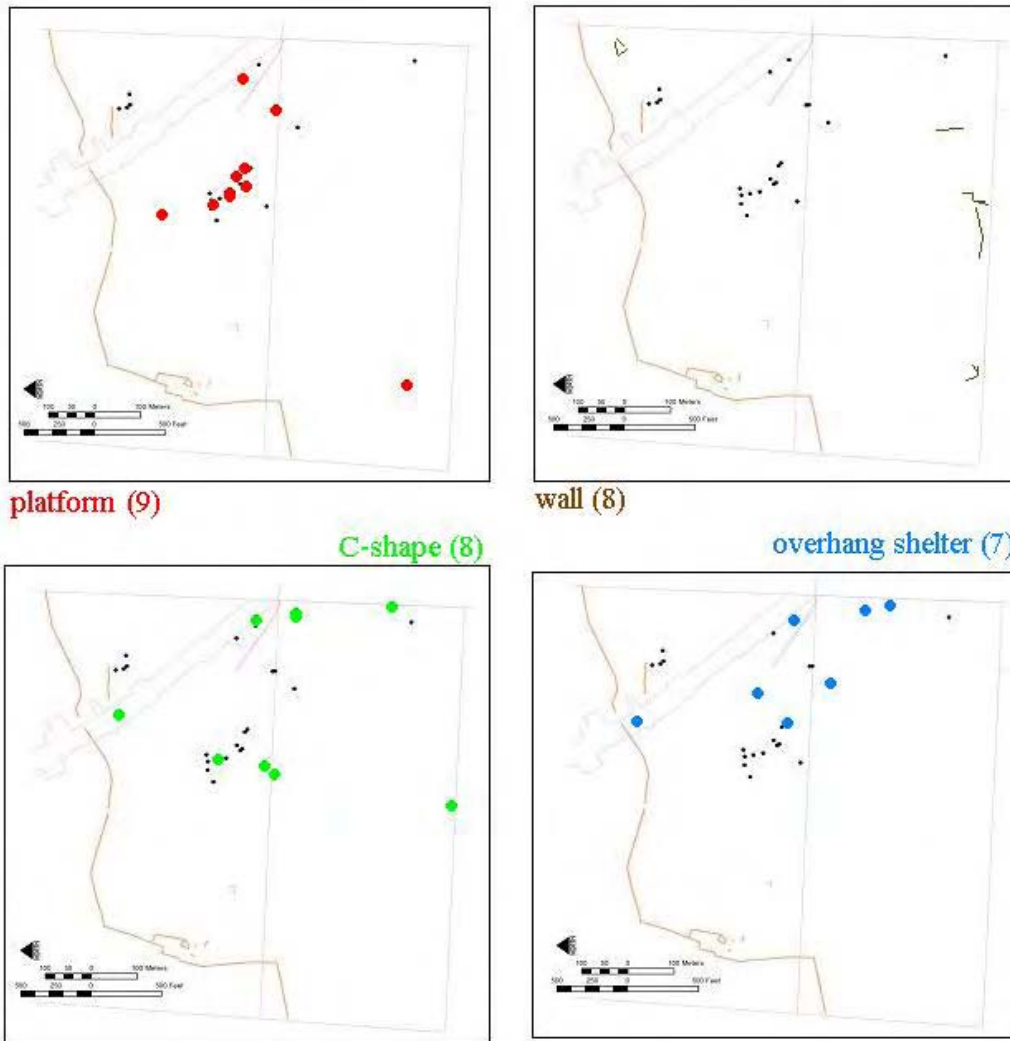


Figure 51. Distribution of Most Frequently Occurring Feature Types in the Southern Section

During the current inventory procedure, eight subsurface test units were excavated at six sites. These were; Site 8/4945, U-shaped enclosure; Sites 13/4950, 17/4954, Site 18/4955, overhang shelter; 20/ 4957 Feature B, C-shaped enclosures; Feature F, firepit; and Site 29/5109 overhang shelter. Only the firepit (Site 20/4957 Feature F) yielded any cultural material, sparse quantity of marine midden consisting of 3 small cowrie shell fragments and seven small fragments of sea urchin. Only one other site has been tested during the course of the previously completed surveys. Site 5/3156, the C-shaped enclosure located near the middle of the southern boundary of the project area was tested with negative results from the two units (Sinoto and Pantaleo 1993:7).

Thus, without the benefit of more data, it is difficult to interpret the function and age of the two prominent complexes at Sites 1/201 and 20/4957; some general observations can be presented regarding the settlement pattern postulated in earlier sections of this report. The presence of the steppingstone trail in the aa flows and the small, isolated feature types that are best represented, support the argument that these mid-elevations zones were primarily used for temporary transit stops during travel between the coast and inland areas. Based on the results of previous research in the region, the dispersed, isolated occurrence of these small, crudely constructed, structural features; such as C-shapes, modified outcrops and overhang shelters; can be indicative of temporary habitation. These feature types are well-represented in the neighboring areas and have been interpreted as temporary habitation sites, most with intermediate to late prehistoric period origins. The paucity of subsurface remains is also a common trait of these types of features.

The two multiple feature complexes (Sites 2/201 and 20/2957); composed of more substantial structural features in terms of variety, size, numbers, and construction; suggest more intensive, if not permanent, occupation in the area. How these two complexes relate chronologically and functionally to the other temporary sites are important questions that still need to be answered. Perhaps, these complexes originated later and are associated with historic period ranching activities. Also, how the various sites fit into the broader settlement patterns of the rest of Paeahu, Palauea, and Keauhou *ahupua`a* is another interesting question. Perhaps the most intriguing question is why this particular area, with such rough terrain and unfavorable topography was utilized at all while much less harsher areas were available in the immediate neighboring areas, even within the same *ahupua`a*. Further investigations are needed to clearly understand the nature of occupation for these sites.

CURRENT INSIGHTS ON THE REGIONAL SETTLEMENT PATTERN

As amply demonstrated by the various hypotheses put forth by previous researchers regarding the nature of *mauka/makai* settlement, the prevailing conventional archaeological interpretation regarding the prehistoric settlement of this region has, until recently, held to two generalized patterns of occupation. One, consisting of seasonal satellite settlements occurring along the coastal areas to exploit the marine resources, while permanent settlements occupied the upland areas to utilize forest products and cultivate agricultural resources in a more favorable climatic zone. The second, consisting of permanent settlements in both the coastal and inland areas given certain environmental conditions. In both patterns, the area between the two activity loci, termed the “intermediate zone” was considered an area of transience represented by trails and occupied by only a low number of marginal, temporary site types.

The progressive broadening of the archaeological knowledge base over the past two decades has shown that this conventional settlement pattern is applicable to some areas (*ahupua`a*), but not to the whole Honua`ula region. The traditionally held generalization that the “intermediate zone” was barren, used only during transit between the inland and coastal areas, and lacked any consequential occupation until the late prehistoric or historic periods, has come into question by the results of investigations in the Wailea and Makena areas. Recent studies of the intermediate zone (Gosser et al. 1993 & 1997, Sinoto & Pantaleo 2000/2001) highlight the importance of the intermediate zone in specific areas of the region and the wide range of site types representing various activities engaged in by the inhabitants of this zone.

The foregoing discussion indicates that interpretation of the human occupation of an extensive region such as Honua`ula cannot be generalized to any single pattern. Each traditional land unit, the *ahupua`a*, needs to be first analyzed on the basis of its discrete characteristics. Only then can the nature of human occupation for the whole region be meaningfully interpreted and this can only be accurately undertaken with the availability of a broad knowledge base. The current availability of the necessary information permits such interpretations to be made only within the northern half of the vast Honua`ula region, where the majority of development-related investigations to date have taken place.

The northern two-thirds of the Property, including portions of Paeahu and Paluea *ahupua`a*, exhibits an “intermediate zone” largely devoid of sites with seemingly more arid environmental conditions relative to the areas to the south. Thus, in the northern section of the Property, the major human activities appear to have been taking place in the inland and coastal settlements, with the “intermediate zone” primarily an area of transit between the two loci.

The southern third of the Property consisting of portions of Palauea and Keauhou *ahupua`a* with aa flows, a more undulating terrain, and cover vegetation indicative of less arid conditions; exhibit remains of a more diverse and intensive human occupation. In contrast with the northern section, the majority of the recorded sites occur within the southern section. Although further work, such as age determinations for specific sites are needed to make conclusive temporal interpretations (prehistoric or historic) of the occupation of the southern section, the frequencies of more prominent site types reflect permanent or seasonal recurrent occupation in this “intermediate zone.”

During the historic period transition, permanent settlements in both the inland and coastal areas concentrated along the cart paths and roadways and the strong intra-*ahupua'a* based relationships declined as the movement of people and goods shifted to one that laterally cut across traditional land (*ahupua'a* and *moku*) boundaries. This shift in the settlement pattern reflected the cultural transition from a traditional subsistence economy to an introduced market economy that made the inhabitants progressively dependent on imported goods and affected by global economic trends.

SITE CHRONOLOGY

No subsurface testing was previously undertaken in all, but one (Site 5/3156), of the previously recorded sites in the project area. Due to the lack of chronometric data from the project area and a marked scarcity of dates from previously investigated sites occupying similar elevations in neighboring areas, the age of the extant sites in the project area remains unclear. A date range of A.D. 1327-1889 obtained from three sites in the North Course of the neighboring Maui Prince Golf Course (Gosser et al. 2002:349) to the south and a date range of A.D. 1280 to 1650 from three lower elevation sites in the Wailea Golf Course (Gosser et al. 1993:258-259) to the west represent the closest dated sites to the subject area. Since similar age ranges occur from sites in the coastal areas, corresponding chronological ranges of A.D. 1300-1500 as early and A.D. 1600-1800 as late, may be tentatively postulated for the occupation of the subject area. The later prehistoric and proto-historic date ranges also suggest that the occupation may have continued into the historic period at certain sites.

Due to the absence of dated sites from the project area, the absolute ages of the sites are still unknown. However, based on the site type or the presence/absence of diagnostic artifacts, the relative periods of origin for the sites can be inferred. For instance, most of the long walls can be attributed to historic ranching period, while the other features such as platforms and overhang shelters can be associated with the prehistoric period. Of the 40 total sites recorded, 32 can be categorized as traditional-type sites and 8 as historic sites. Table 3 on the following page presents this breakdown by site type.

Table 3. Site Type Frequencies

Site Types	
Traditional Type	Number
Cluster	2
Complex	2
C-shape	5
Enclosure	1
lava blister	1
lava tube	1
mod OH	5
mod	
outcrop	1
OH	3
Pits	0.5*
Platform	7
SS trail	2.5*
U-shape	1
Total	32
Historic Type	Number
open area	1
Wall	7
Total	8
Total	40

**the pits and one of the trail segments occur together and are thus counted as 1 site*

INITIAL SIGNIFICANCE ASSESSMENT

Initial significance has been assessed for all 40 recorded sites in the current project area. These assessments are based on the five Hawaii Register of Historic Places significance evaluation criteria which are stated as follows:

Criterion A specifies association with events or broad patterns important to the prehistory or history of a region, island, or Hawaii in general;

Criterion B reflects association with persons important to the prehistory or history of a region, island, or Hawaii in general;

Criterion C applies to sites that reflect architectural achievements or are excellent examples of a specific type of site;

Criterion D specifies that the site has yielded or has the potential to yield information significant to the understanding of traditional culture, prehistory, history, and/or foreign influences on traditional culture and history of a region, island, or Hawaii in general; and

Criterion E applies to sites or places perceived by the contemporary community as having traditional cultural value.

Seven sites (Sites 5/3156, 6/3157, 7/3158, 16/4953, 24/4961, 37, and 40) are considered no longer significant. Six sites (Sites 1/200, 2/201,14/4951, 20/4957, 22/4959, and 32) are evaluated to be significant under multiple criteria. The remaining 27 sites are all considered significant under criterion D.

A summary of initial significance assessments is presented in Table 2.

RECOMMENDATIONS

The extant sites are recommended for placement into three categories; no further work, data recovery, or *in situ* preservation. No further work is recommended for a total of seven sites which correspond to those sites which were evaluated to be no longer significant. Data recovery is recommended for 18 sites. Permanent preservation is recommended for 15 sites (Fig. 52). Table 2 also presents the recommended categories for each site. Following SHPD concurrence to the recommendations in this report, preservation and data recovery plans shall be formulated, produced, and transmitted for review in conjunction with appropriate development planning phases in the near future.

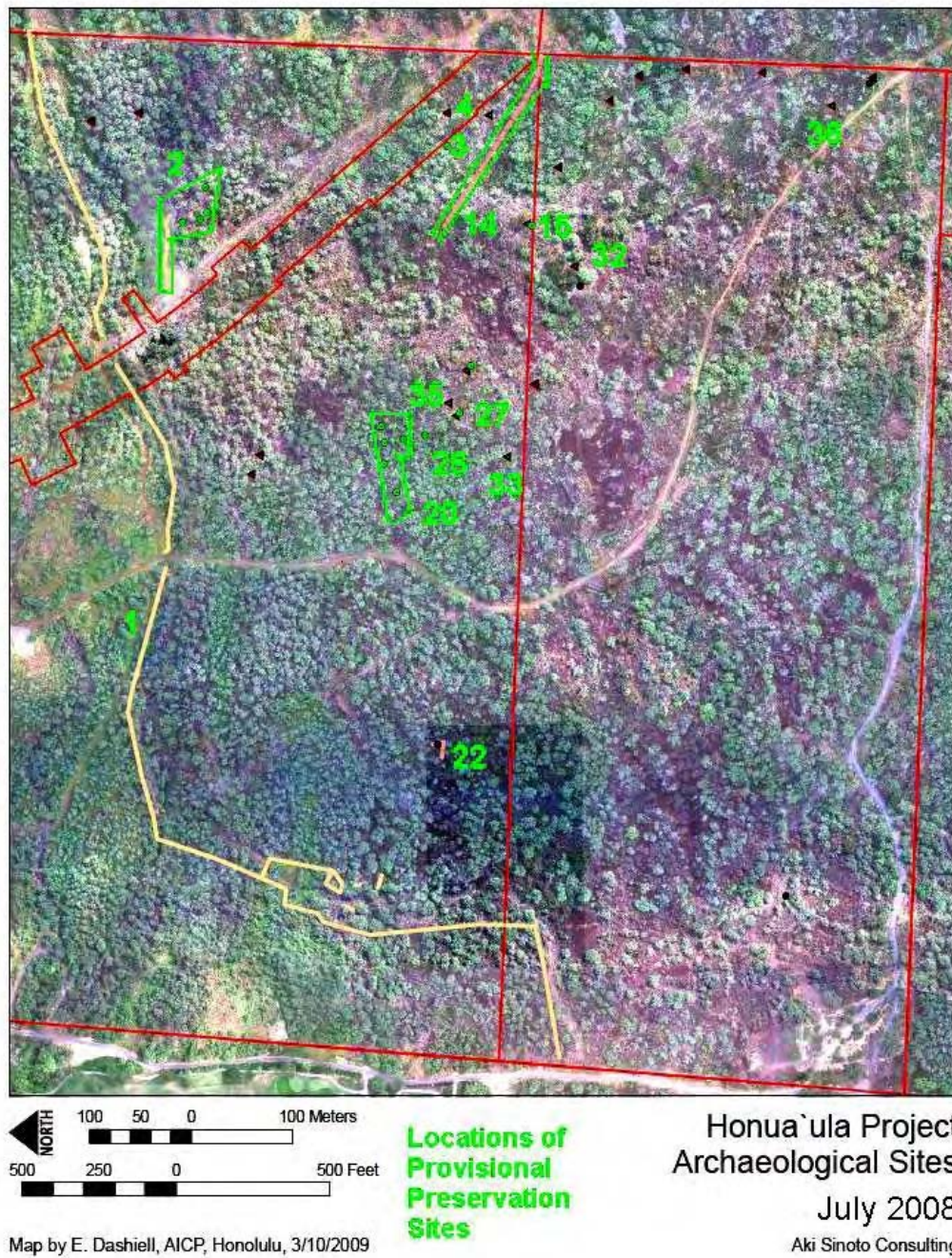


Figure 52. Locations of 14 of the 15 Sites Recommended for Preservation in the Southern Section (Site 29 is in the Northern Section, please refer to Fig. 6 for location)

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