



**PRESERVATION PLAN FOR KALOKO HEIGHTS**  
**TMK (3) 7-3-009:32**

Prepared by  
**Thomas R. Wolforth, M.S.**

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Prepared for  
**Kaloko Heights Associates, LLC**

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## INTRODUCTION

Kaloko Heights Associates, LLC proposes to develop approximately 213 acres into residential and light commercial occupancy in portions of the *ahupua'a* of Kohanaiki and Kaloko (Figure 1) in TMK: 3-7-3-009:32 (Figure 2), North Kona, island of Hawai'i. The project area is an irregular polygon defined by Hina Lani Street on the south, an irregular line at the *makai* end of residential development on the east, the boundary between the *ahupua'a* of Kohanaiki and 'O'oma on the north, and a line perpendicular to the northern boundary at roughly the 720 foot elevation on the west.

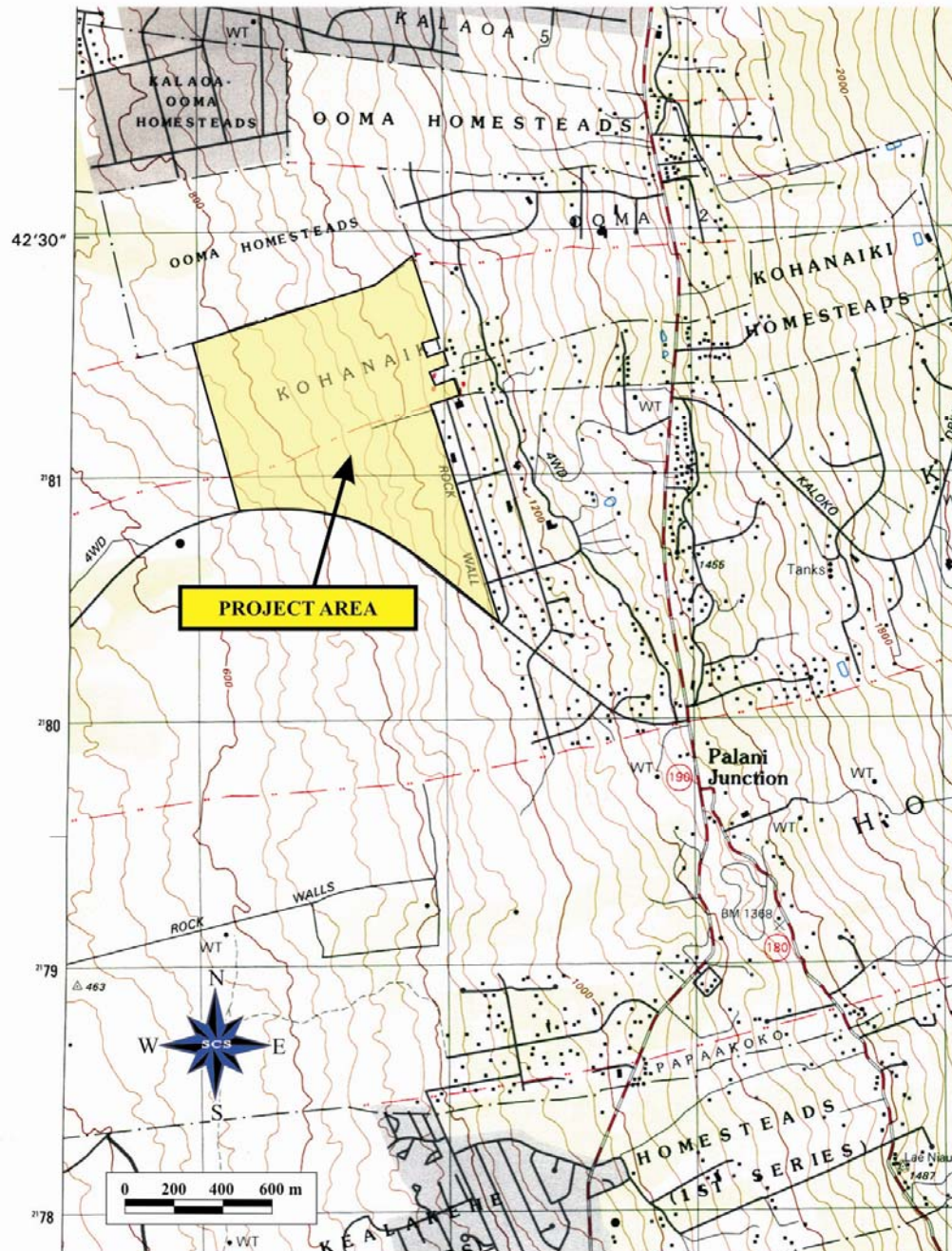


Figure 1. Project Location.

Scientific Consultant Services, Inc. (SCS) conducted Archaeological Inventory Survey on this property, hereafter referred to as the Kaloko Heights project, to identify and evaluate historical properties pursuant to state cultural resource management regulations (HAR § 275 and 276). The Inventory Survey report was submitted to the State Historic Preservation Division (SHPD) on January 20, 2005. SHPD responded with comments in a letter dated July 13, 2005 (SHPD Log No. 2005.1457). A revised Inventory Survey was submitted to SHPD on October 13, 2005 (Wolforth *et al.* 2005). SHPD responded to that second submittal with a letter dated October 24, 2005 (SHPD Log No. 2005.2296) concurring with the recommendation for preservation sites.

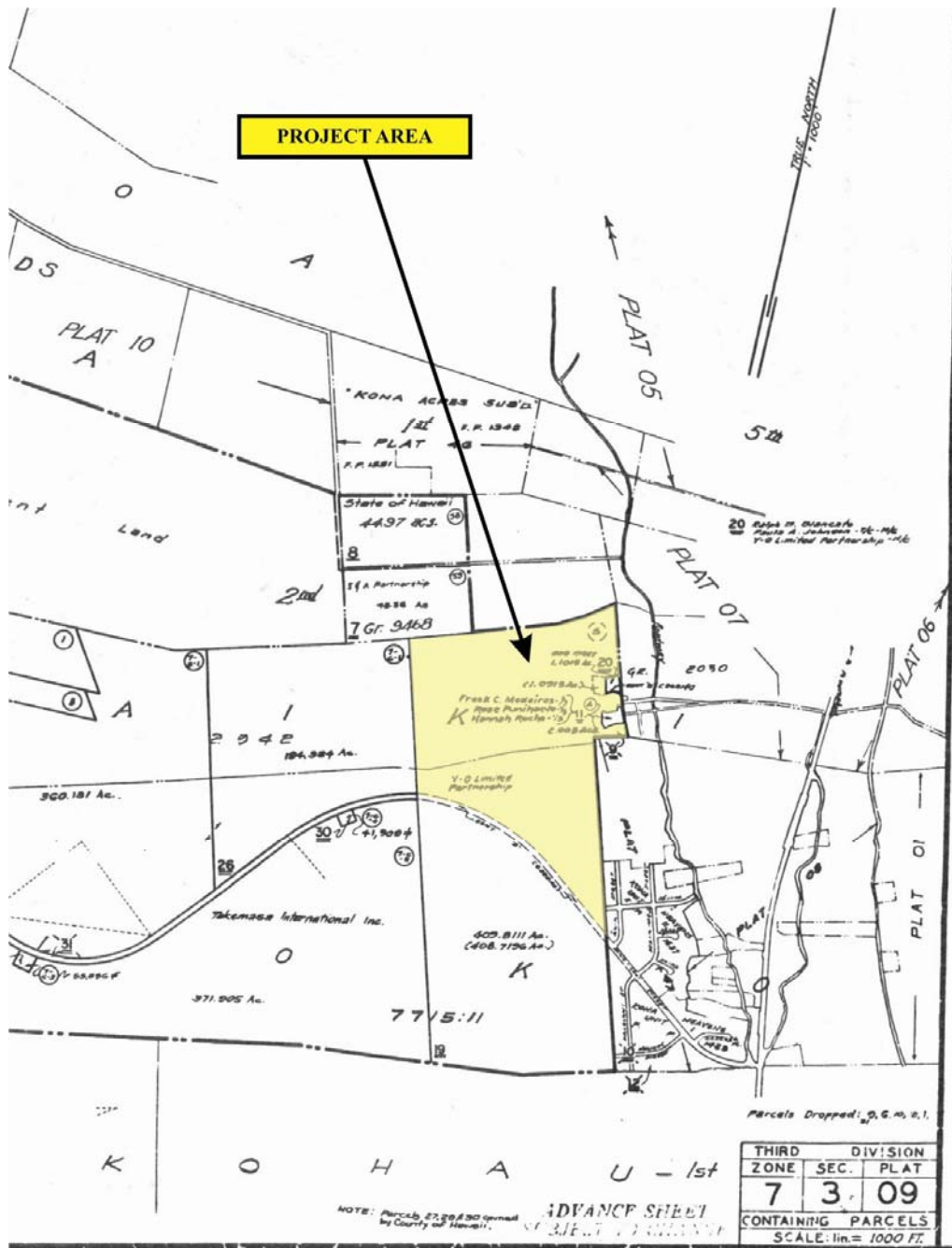


Figure 2. TMK.

## GENERAL OVERVIEW OF RESULTS OF THE INVENTORY SURVEY

The Inventory Survey determined that approximately half of the project area has been bulldozed. The bulldozed portion is within Kaloko, and is south of the wall that marks the boundary between Kaloko and Kohanaiki. The Kohanaiki side has not been bulldozed. There are many prehistoric archaeological resources in Kohanaiki (Figure 3).

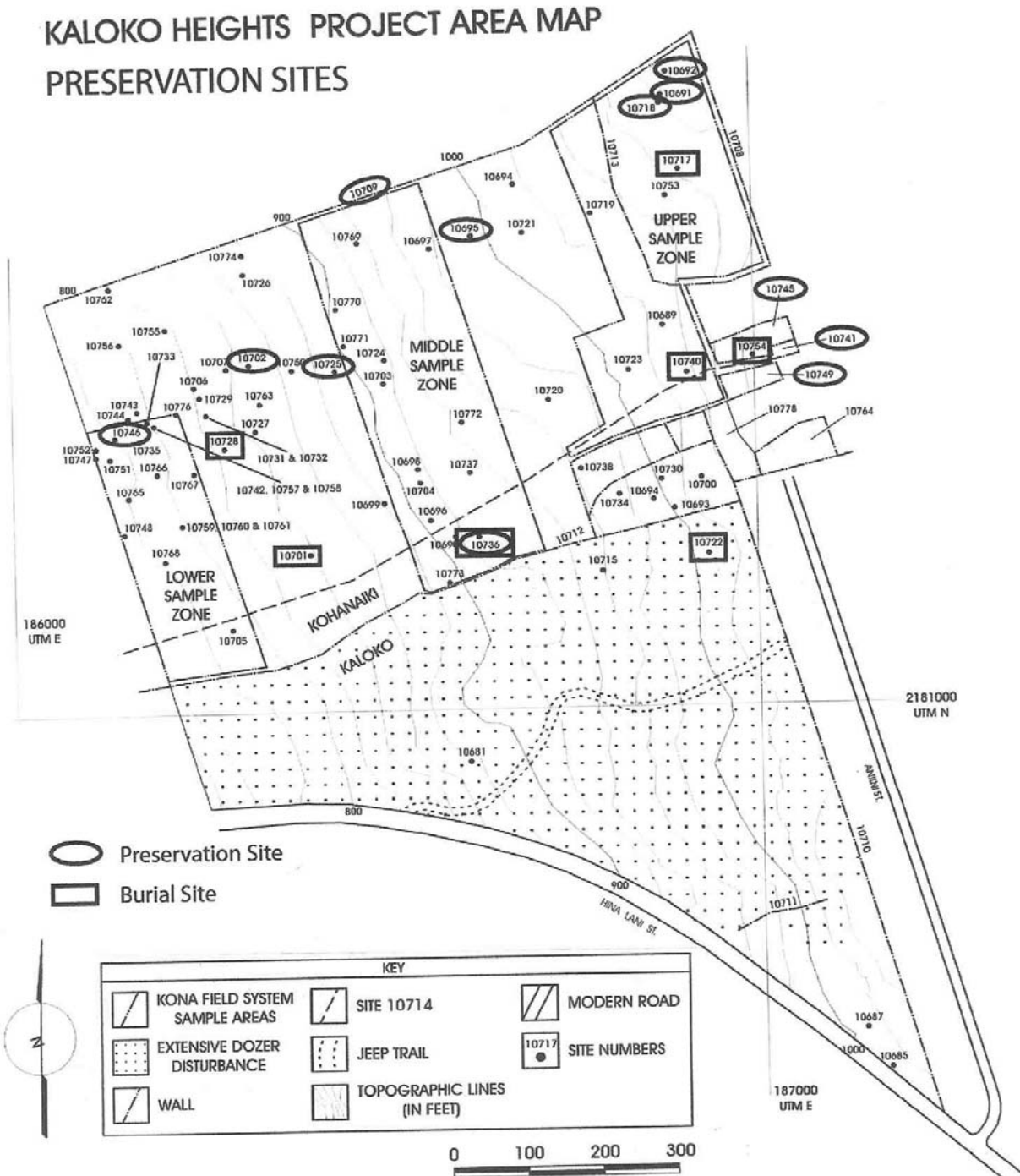


Figure 3. Archaeology Sites in the Project Area.

Most of the resources in Kohanaiki are agricultural features, but there are also habitation features, trails, *heiau*, caves for water collection, and burials. Although the Kaloko side has been bulldozed, there are a few resources, mostly caves, that remain. There are also historical resources in the project area, most prominently represented by the Kohanaiki Homesteads.

**SITES TO BE PRESERVED**

Preservation is recommended for 11 non-burial sites, one *heiau* with a burial, and six burial sites (Table 1). The preservation sites are: three of the Kohanaiki Homesteads (10741, 10745, and 10749), four water source caves (10692, 10718, 10725, and 10746), two permanent habitation sites (10691, and 10695), an *ahupua* ‘a boundary wall (10709), and two *heiau* (10702 and 10736).

Table 1. Site Significance and Recommendations.

Site #	Preservation Sites	Function	Significance Criterion	Recommended Treatment
10691	Complex	Permanent habitation	C, D	P
10692	Cave	Water source/habit.	C, D	P
10695	Complex	Permanent habitation	C, D	P
10702	Complex	<i>Heiau</i>	D, E	P
10709	Wall	Boundary	C, D	P
10718	Cave	Water source	C, D	P
10725	Cave	Water source	C, D	P
10741	Homestead, Kaholi	Kohanaiki homestead	D, E	P
10745	Homestead, Pahuole	Kohanaiki homestead	D, E	P
10746	Cave	Water source	C, D	P
10749	Homestead, Kiaha	Kohanaiki homestead	D, E	P
	<b>Preservation and Burial Site</b>			
10736	Enclosure	Burial and <i>heiau</i>	D, E	P, BTP
	<b>Burial Sites</b>			
10701	Platform	Burial	D, E	BTP
10717	Cave	Burial/habitation	D, E	BTP
10722	Cave	Burial/habitation	D, E	BTP
10728	Cave	Burial/water source/ habitation	D, E	BTP
10740	Cave	Burial/habitation	D, E	BTP
10754	Cave	Burial/habitation	D, E	BTP

**PRESERVATION SITES WITH BURIALS**

There are seven sites with burials in the project area (Table 1). All of the burials will be preserved in place. Additional preservation elements, such as how cave openings will be designed (permanently sealed, closed with a lockable gate, or left as is), and the size and kind of easement delineation (for instance, with or without a wall around them) will be determined in consultation with lineal and cultural descendants, the Hawai‘i Island Burial Council, Kaloko Heights Associates, LLC and its successors and assigns, and the State Historic Preservation Division of the Department of Land and Natural Resources. That information will be documented in a Burial Treatment Plan separate from this Preservation Plan.

One of the sites that has human *iwi* remains is Site 10736. The site is a *heiau*. *Iwi* are situated in one portion of a relatively large complex of features at this site. The preservation easement takes into

account the larger arrangement of features. Consequently, the design of the preservation easement is detailed in this plan. Another burial site is 10754, and it is situated within the Kohanaiki Homestead area. A portion of the Kohanaiki Homesteads will be preserved, and this area contains the burial cave Site 10754. Consequently, the design of the preservation easement is detailed in this plan. All other sites with burials are discussed in a separate Burial Treatment Plan.

## **APPROACH TO PRESERVATION**

The preservation of ancient Hawaiian cultural sites within the context of modern development is a difficult endeavor involving consideration of a variety of inherently conflicting perspectives. The central conflict is that the retention of an ancient site contrasts tremendously with modern living spaces. All too frequently preservation sites are shut off from the modern living environment and are not maintained, and they become eyesores and unsafe places for a variety of reasons. Ultimately, what was meant to be preserved for the future becomes a nuisance for the present.

Part of the problem lies in the practice of creating the smallest preservation unit possible for a site. This creates an “island” of preservation that strips the site from its context with the surrounding land and cultural contexts. Another problem is that preservation sites are often walled off from the people that they are supposed to be preserved for. The preservation site then becomes physically and intellectually removed from those that live around it, which justifies abandonment and lack of maintenance of the preserved property. The preservation site then suffers from neglect, which in turn instigates more reason for abuse, disdain, and neglect from those living around it.

This Preservation Plan is designed to maximize site context in two places in the project area. Six of the 12 preservation sites are two relatively large preservation ‘parks’: a Kohanaiki Homestead park, and a Water Collection Caves park. In addition, preservation is designed to facilitate pedestrian access, education, and relaxation at some sites. Administration of the preservation areas is also considered, taking into account the needs of residents, and neighboring local Hawaiians. This plan also recognizes that preservation requires maintenance, and implements a periodic monitoring of the status of the preservation sites with means to rectify eventual deterioration at the sites.

These are progressive measures that are rarely included in preservation plans. They are designed to demonstrate that preservation can serve the ancient site and modern lifestyles.

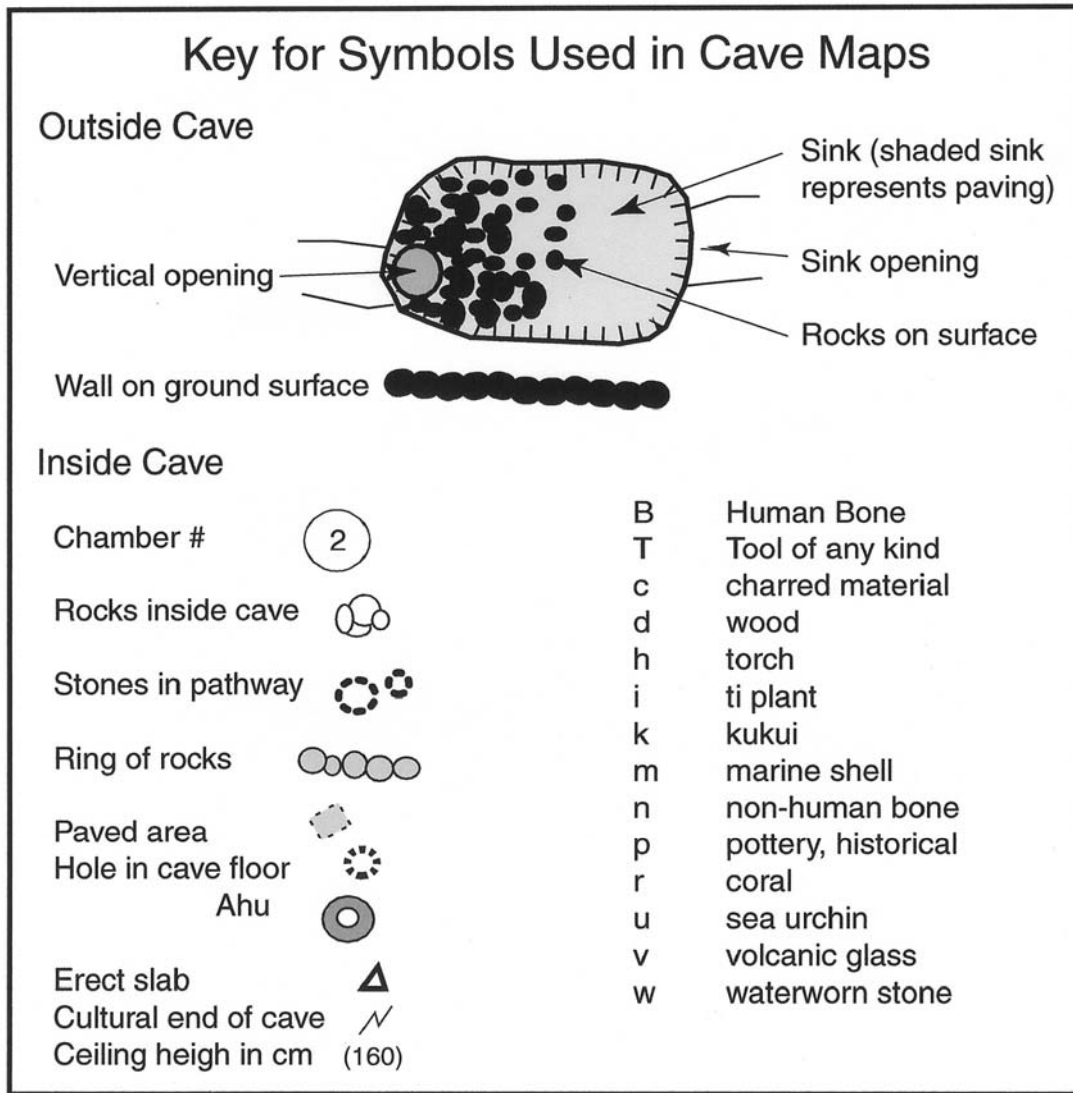
## **ADMINISTRATION**

Kaloko Heights Associates, LLC and its successors and assigns will be responsible for creating the preservation easements, as defined in this plan. Preservation sites will be on community lands that will be administered by the homeowners’ association. The association will be responsible for landscape maintenance, rubbish pickup, and periodic monitoring of the status of the sites.

The association will do its best to abide by the stipulations set forth in this plan. The association may desire or need to alter this plan in the future for situations that are currently unforeseen. The association is encouraged to consult with the State Historic Preservation Division of the Department of Land and Natural Resources (SHPD) for opportunities to enhance the preservation, maintenance, safety, interpretation, and enjoyment value of any and all of the preservation sites in this plan.

The association is also encouraged to contact local native Hawaiian organizations, community groups, and professional archaeologists for information on the cultural resources that are being preserved. A copy of the archaeological report on all sites identified within the Kaloko Heights subdivision is on file at SHPD. Kaloko Heights Associates, LLC and its successors and assigns and Scientific Consultant Services, Inc. also have copies and can provide copies upon request for the price of making the copies and postage.

The preservation sites will be inspected once a year by professional archaeologists that are fully briefed on the sites and their preservation commitments. A letter report will be submitted to the homeowners' association on the findings of these investigations. Any deviations from the preservation plan will be brought to the attention of the homeowners' association, and SHPD. Recommendations will be made for how to rectify any deviations. Homeowners' Association will pay for the annual assessments. Any alterations to the sites, or additional activities that might be needed to rectify deviations will not be at Kaloko Heights Associates, LLC's expense.





## PRESERVATION OF THE SITES

### **THE WATER COLLECTION CAVES PARK: SITES 10691, 10692, AND 10718 WITH 10709**

There are three preservation sites in the northeast corner of the project area. The preservation easement is designed to incorporate all three. In addition, a portion of the *ahupua'a* boundary wall Site 10709 is in this area, so that site is described in this section of the Plan.

#### **Site 10691**

Site 10691 consists of nine features including three terraces, one mound, two platforms, two walls, and one trail (Figure 4). This is an excellent example of a multi-structure residential area incorporated within an agricultural landscape. A total of 8 m<sup>2</sup> (4 TUs, 3 STs) was excavated at the site. Cultural materials recovered in excavation were almost exclusively traditional artifacts, with only one historic artifact (glass button). Traditional materials include basalt abraders, basalt pebble manuports, utilized flakes (basalt), a worked marine shell, and pieces of volcanic glass debitage. Midden includes invertebrates (including several taxa of shell), vertebrates (mammals, fish and bird), charcoal, *kukui* nut shell, and coral. The only radiocarbon date was from the platform (Feature 3), suggesting a terminal pre-Contact and/or early historic era occupation of Site 10691: 150 ± 50 BP (Beta No. 197059) from Layer II, ST-1, Feature 3, at Site 10691, and calibrated to A.D. 1640-1960 (2 sigma).

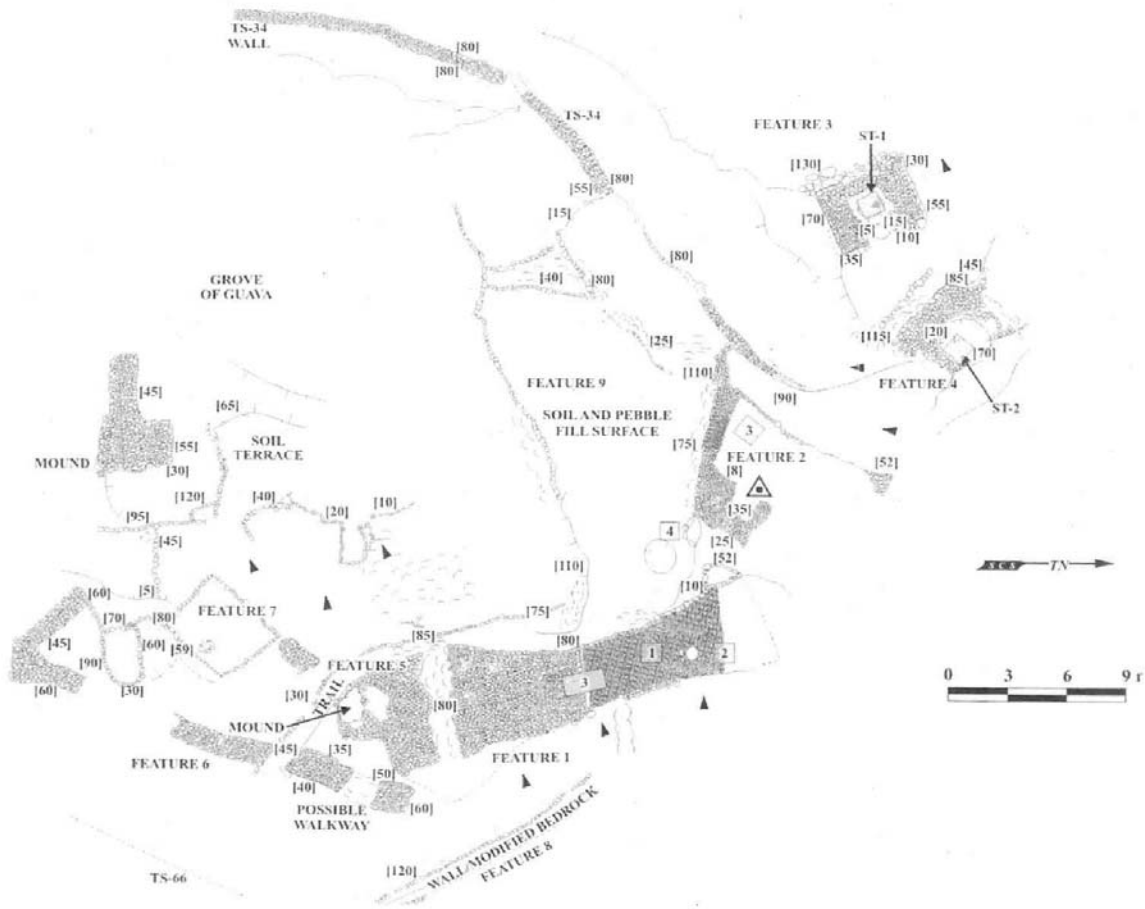


Figure 4. Site 10691.

## Site 10692

Site 10692 is a cave associated with a modified with paved terraces on the east (3.5 by 2 m) and west (3.8 by 2.8 m) sides (Figure 5). There is a wall (3.5 m long and 0.7 m high) that spans the entrance to the cave at the south end of the sink. A paved terrace (5 by 4 m) is near the entrance. Beyond that there is a cleared pathway with stones in intermittent alignment on the path sides. There are six rock circles in various places in the cave. A few pieces of vegetable matter (probably gourd) were found alongside the pathway. The full length of the cave is approximately 50 meters. The principal functions of this cave are for water collection and for habitation/shelter. The semi-walled entrance and paved area near the entrance suggest some kind of regulation of passage into the cave.

Excavations were conducted in the paved terrace just inside the entrance. Small pebbles pave the surface of the terrace. Pig bone, one marine shell, and a coral abrader were collected from the terrace surface. A variety of materials reflecting tools, ornamentation, cooking or light production, and food consumption were recovered from the 62 cm deep unit (Figure 41). One conventional radiocarbon determination of  $190 \pm 50$  BP (Beta No. 197060) was obtained from Layer I, TU-1, Feature 1, at Site 10692. Calibrated dates (Oxcal v. 3.5) are (1 sigma) A.D. 1730–1810 (0.62), A.D. 1650-1690 (0.22), and A.D. 1920-1950 (0.16); (2 sigma) A.D. 1640-1960 (1.00).

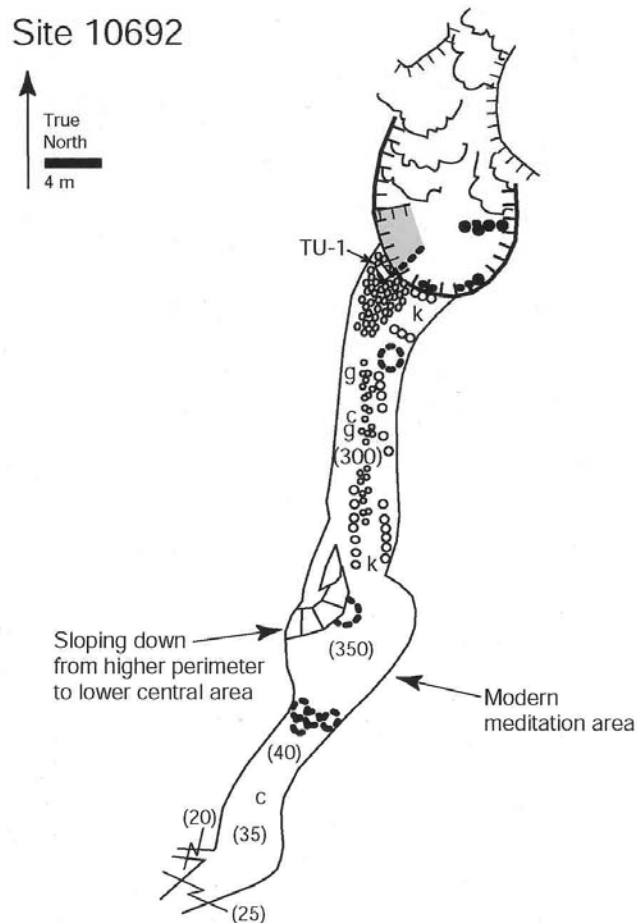


Figure 5. Site 10692.

### Site 10718

Site 10718 is a cave (Figure 6). Access to the cave interior is through a vertical shaft created as a result of substantial modification to a natural sink. The entire western portion of the sink apparently was naturally open to the interior cave, but most of this opening was intentionally filled. A small passage from the modified sink connects to an intersection of trails within the cave. The entire intersection area was created by stacking rocks from floor to ceiling in the central portion of the cave. Well-constructed passages lead to chambers to the north, west, and south of the intersection. The passages are level and paved. The passage to the south chamber has well-constructed step downward into that chamber, and a paved trail continues in the northern chamber beyond the built up intersection area.

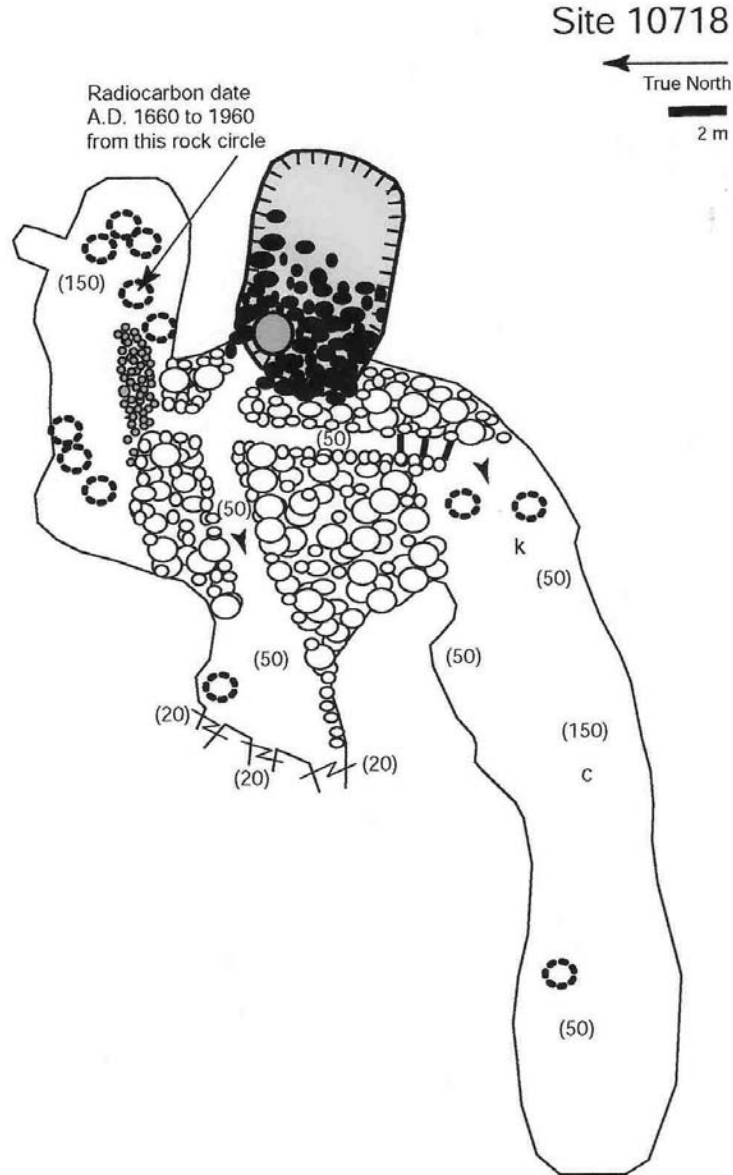


Figure 6: Site 10718.

## Site 10709

Site 10709 is a wall at the boundary of Kohanaiki and 'O'oma Ahupua'a (see Figure 3). This wall is oriented *mauka-makai* extending from the northeast corner to the northwest corner of the property and beyond. The portion of the wall within the project area is approximately 940 meters with an average height of 100 centimeters and an average width of 70 centimeters.

### Preservation

The wall is one of the many ranch walls that were built in the early 1900s when ranchers enclosed portions of their land to control the movement of their cattle. Nearly a kilometer of this wall will be preserved in this project. Because the wall is along the northern boundary of the project area, house lots that abut the boundary will already include a 20 foot building setback from the wall Site 10709. Consequently, the wall will not be in danger of house construction impacts. The kinds of impacts that may be incurred include breaches for a future road from the project area to the north, and minor modifications to the wall by individual landowners. It is presumed that individual landowners will not want to breach the wall. Rather, they will be motivated to keep this wall intact as a yard boundary. The preservation easement is designed with the following criteria in mind.

- There is no easement. Instead the wall itself constitutes the preservation area.
- A stipulation will be added to the deed for houses abutting the wall: "The rock wall at the northern boundary of this property cannot be taken apart, made smaller in height or width, have any rocks removed, or altered in any way detrimental to its long term preservation".

Individual landowners with lots that abut the wall will be able to do a variety of common landowner things up to, and even on, the wall. For instance, each landowner can decide how to landscape right up to the wall, with barren outcrop, gardens, or grass lawn. Items could be leaned on the wall, or decorative things placed on it. This preservation treatment is based on this philosophy: landowners will be motivated to keep the wall intact, in good shape, and aesthetically pleasing, and will make decisions and take action involving the wall Site 10709 that are in harmony with the long term preservation of the wall.

### Signage

A portion of the wall is within the Water Collection Caves park area in the northeast corner of the project area. A sign will be placed near the wall that provides information about the wall, and notifies the reader of legal protective measures.

This wall corresponds to the boundary between the *ahupua'a* of 'O'oma and Kohanaiki. It was built by ranchers in the early 1900s to mark property boundaries and to keep cattle within certain pastures. The wall was originally many miles long extending from near the ocean to further upland.

Pursuant to Hawaii Administrative Rules chapter 6E-11, it is unlawful to any person, natural or corporate, to take, appropriate, excavate, injure, destroy, or alter any historic property or aviation artifact located upon this property. Violations can result in fines not more than \$10,000 for each separate offense.

## Water Collection Caves Park Preservation

This park includes a complicated permanent habitation area, openings to two caves that were used to collect fresh water, an *ahupua'a* boundary wall, and scattered agricultural features. The preservation easement is designed with the following criteria in mind (Figure 7):

- Protect the lands above the caves.
- 20 foot buffer around the exterior of the main habitation features and caves. The area incorporated within this polygon includes land modified for agricultural purposes, and consequently, provides an excellent holistic preservation easement of habitation, water collection, and agriculture.
- This area was used for a variety of purposes, and was not a *kapu* space. Consequently, preservation design encourages modern use with opportunities to walkabout and picnic.

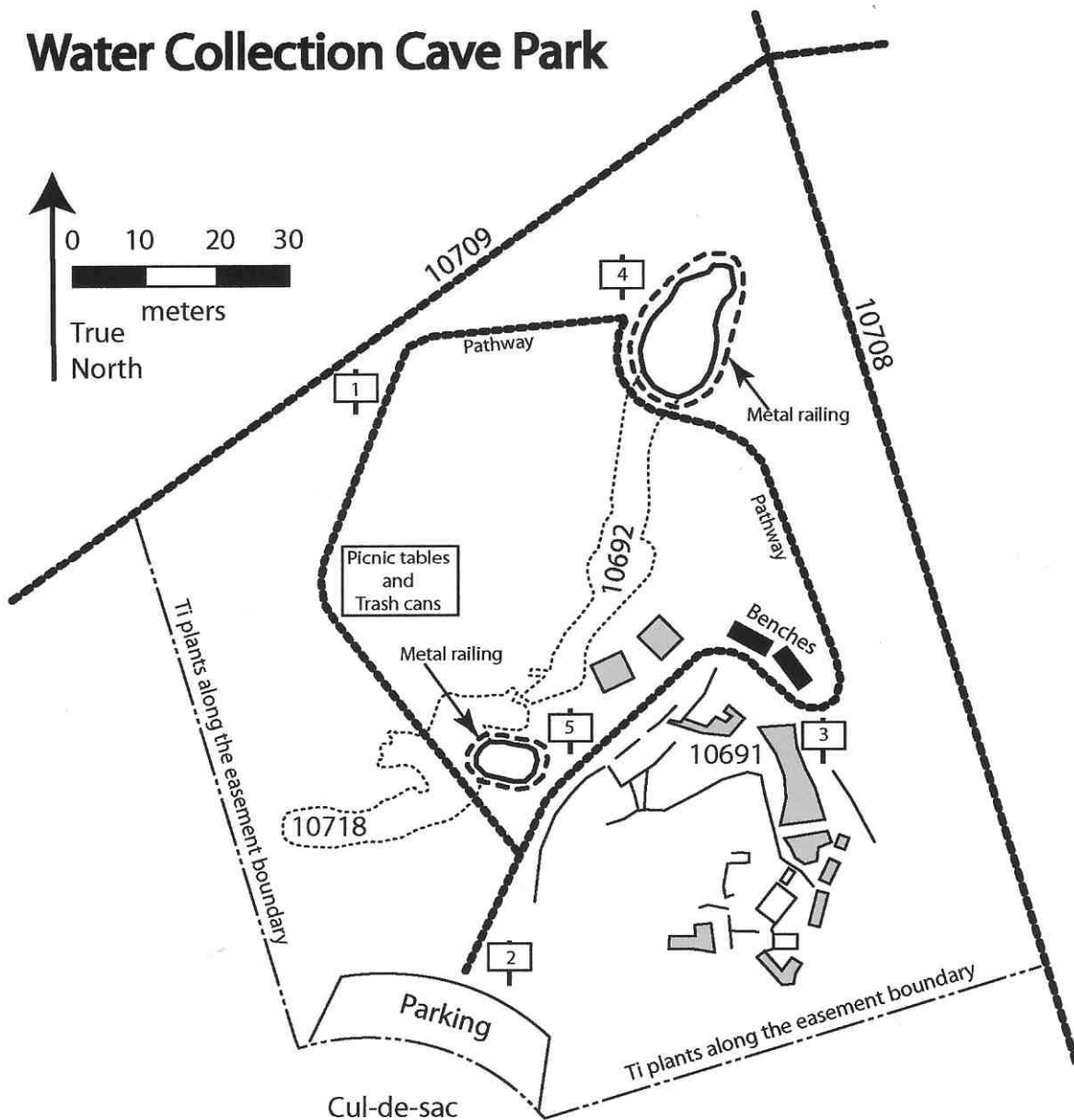


Figure 7. Water Cave Collection park preservation.

## The perimeter and landscaping

The perimeter of the easement will be marked by *ti* plants only. The landscape should reflect an open area with native plant species. All non-native plants will be removed with the aid of hand-held machinery (ie. chainsaws). Native plants will be retained. In addition, native trees (such as *alahe'e* and *lama*) that are present in the surrounding area (beyond the preservation easement) will be transplanted within the buffer. Subsistence and medicinal-related tree species, such as *ulu* (breadfruit), *kukui*, *'ilima*, *noni*, and *ko'oko'olau* that are present in the project area, will be transplanted from the surrounding area into the preservation easement.

A stepping stone walkway will be placed in a rambling pathway to facilitate pedestrian travel around the site. The pathway could be made of typical garden-like concrete tiles, or some kind of similar material. Benches will be placed in one area, and a cement pad with picnic tables and small trash cans will be placed in another area (see Figure 7). A small parking area will be created along the street to facilitate car parking.

The two cave openings are connected to “sinks” that have vertical drops of 6 to 10 feet. A metal railing will be built around the entire sink for cave Site 10718, and around the western edge of cave Site 10691 (the eastern edge of that sink is not a steep drop off).

## Reconstruction

Excavations have taken place at Sites 10691 and 10692. These will be reconstructed by archaeologists to as near as original configuration as possible.

## Signage

This site incorporates a variety of aspects of ancient lifeways. The preservation approach to this site facilitates the attendance of future residents. It is designed to allow people to enjoy and learn about the place, and control movement of people within the area. A walking path, benches and four signs will promote these values and opportunities. The sign will be built with materials to be determined later.

### Sign 1

This sign is situated near the *ahupua'a* wall Site 10709. The text for this sign is presented in the section for Site 10709 above.

### Sign 2

This sign is situated near the parking area to orient the visitor.

This park is a cultural resource preserve. Remains of ancient Hawaiian agricultural fields, homesteads, trails and burial areas once existed over much of this part of Kona. The park was created in consultation with the State Historic Preservation Division of the Department of Land and Natural Resources, and is maintained the local homeowner's association.

Pursuant to Hawaii Administrative Rules chapter 6E-11, it is unlawful to any person, natural or corporate, to take, appropriate, excavate, injure, destroy, or alter any historic property or aviation artifact located upon this property. Violations can result in fines not more than \$10,000 for each separate offense.

**Sign 3**

This sign will be situated near Feature 1 of Site 10691.

A variety of structures were built and used at this site. They probably represent the various structures that were part of the *kau hale* style of homestead where different buildings were used for different functions. The location of these structures near two water collection caves suggests that the people living here were involved in the control, maintenance, and collection of cave water. Perhaps one or more of these structures were for water storage.

Pursuant to Hawaii Administrative Rules chapter 6E-11, it is unlawful to any person, natural or corporate, to take, appropriate, excavate, injure, destroy, or alter any historic property or aviation artifact located upon this property. Violations can result in fines not more than \$10,000 for each separate offense.

**Sign 4**

Sign 4 will be situated near the opening of cave Site 10692.

Fresh water that was collected from some caves was taken to Kailua for the exclusive use of the *ali'i*. It is not known whether water from this cave was used for *ali'i* only, but the wall at the cave opening suggests that access into the cave was controlled. Perhaps only *ali'i*, or special water collectors, were allowed in.

It is dangerous to enter this cave. Do not enter.

Pursuant to Hawaii Administrative Rules chapter 6E-11, it is unlawful to any person, natural or corporate, to take, appropriate, excavate, injure, destroy, or alter any historic property or aviation artifact located upon this property. Violations can result in fines not more than \$10,000 for each separate offense.

**Sign 5**

Sign 5 will be located near the cave opening at Site 10718.

Water drips slowly, but continuously, from the ceiling of this cave. Gourds were placed under the drips, and were propped up with circles of rocks. Caves like this were kept clean to keep the water uncontaminated.

It is dangerous to enter this cave. Do not enter.

Pursuant to Hawaii Administrative Rules chapter 6E-11, it is unlawful to any person, natural or corporate, to take, appropriate, excavate, injure, destroy, or alter any historic property or aviation artifact located upon this property. Violations can result in fines not more than \$10,000 for each separate offense.

## SITE 10695

Site 10695 is in Kohanaiki Ahupua'a in the north-central portion of the project area, immediately above the 1,000 foot elevation contour and on the older of the project area's two Hualalai flows. There are six habitation features and several agricultural features distributed across a gentle west facing slope and covering 30 by 50 meters (Figure 8). Habitation features include three terraces, one platform, and one three-sided enclosure, and there is one trail. Agricultural features of the Kona Field System occur within, and around, the site.

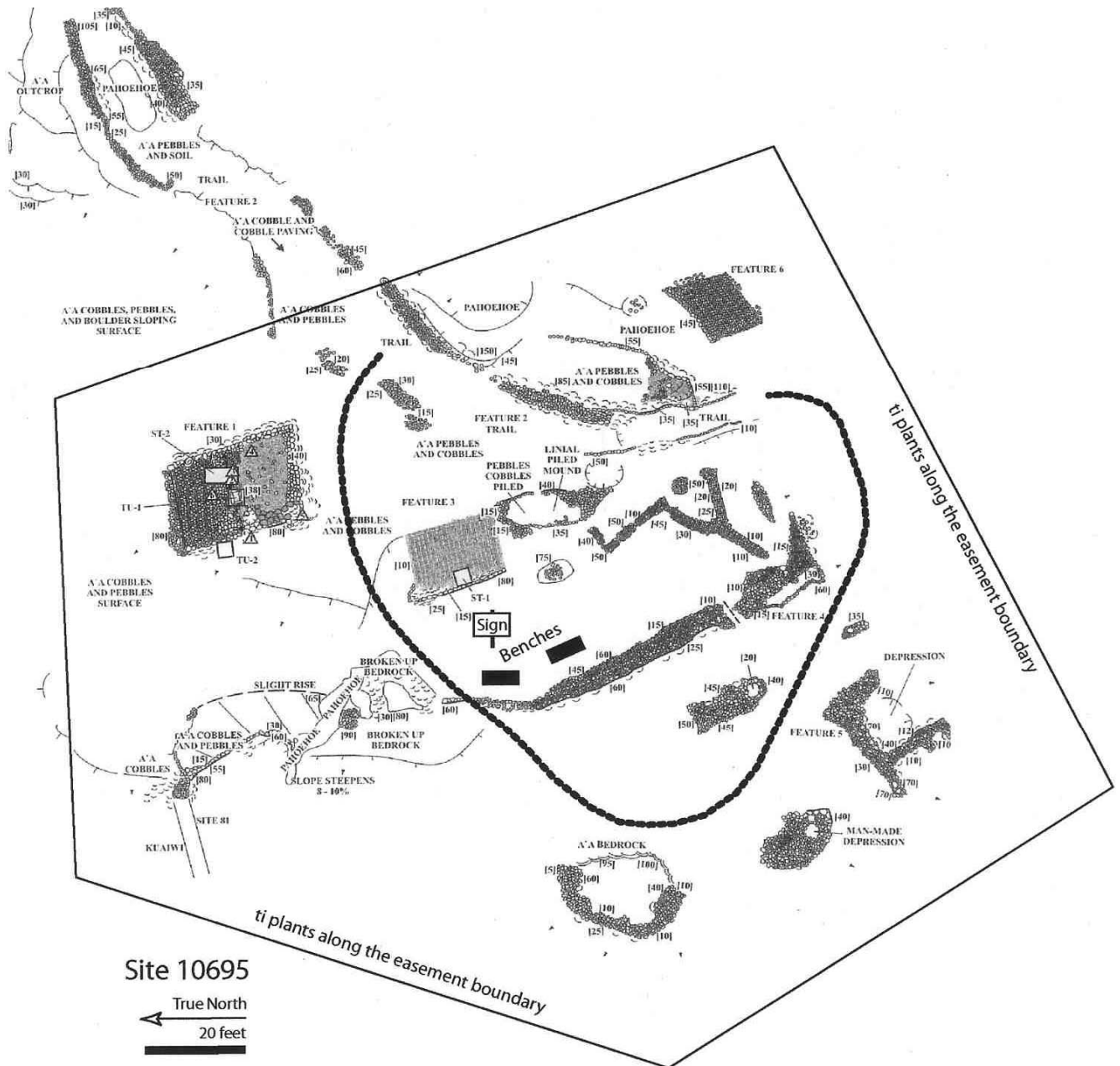


Figure 8. Site 10695.



A total of 5.0 m<sup>2</sup> (2 TUs, 2 STs) was excavated at Site 10695. Features 1 and 3 were test excavated. Traditional cultural materials recovered include three polishing stones, three pieces of volcanic glass, two hammerstones, one piece of worked basalt, one adze fragment, and one piece of worked bone. Other cultural materials recovered from excavation include marine shell, vertebrates, coral, *kukui*, and charcoal. One conventional radiocarbon determination of 120 ± 50 BP (Beta No. 197062) was obtained from the south half ST-2, Layer II. Calibrated dates (OxCal v.3.5) are (1 sigma) A.D. 1670-1780 (0.38) and A.D. 1800-1960 (0.62); at 2 sigma, A.D. 1660-1960 (1.00).

### **Preservation**

This habitation was situated within acres and acres of agricultural landscape. The preservation easement is designed with this criterion in mind.

- 20 foot buffer around the exterior of the main habitation features. The area incorporated within this polygon includes land modified for agricultural purposes, and consequently, provides an excellent holistic preservation easement of habitation and agriculture.

### **The perimeter and landscaping**

The perimeter of the easement will not be marked in any way. The landscape should reflect an open area with native plant species. All non-native plants will be removed with the aid of hand-held machinery (ie. chainsaws). Native plants will be retained. In addition, native trees (such as *alahe'e* and *lama*) that are present in the surrounding area (beyond the preservation easement) will be transplanted within the buffer. Subsistence and medicinal-related tree species, such as *ulu* (breadfruit), *kukui*, *'ilima*, *noni*, and *ko'oko'olau* that are present in the project area, will be transplanted from the surrounding area into the preservation easement.

### **Signage**

This site was a residential space, but also one that involved agricultural practices. The preservation approach to this site facilitates the attendance of future residents. It is designed to allow people to enjoy and learn about the place, and control movement of people within the area. A walking path, benches and one sign will promote these values and opportunities. The walking pathway will incorporate the ancient trail that passes through the site area. The sign will be built with materials to be determined later.

This sign is situated near the center of the site.

People lived and farmed here as long as 500 years ago. Different structures were used for different purposes in a residential complex like this one called a *kau hale*. There were separate houses for men (called *mua*) and women (*hale 'āina*) to eat. The men's house also served as a place for the family to worship. Everyone slept in the *hale noa*, and other structures were used for cooking and storage.

Pursuant to Hawaii Administrative Rules chapter 6E-11, it is unlawful to any person, natural or corporate, to take, appropriate, excavate, injure, destroy, or alter any historic property or aviation artifact located upon this property. Violations can result in fines not more than \$10,000 for each separate offense.

### **Reconstruction**

Excavations have taken place at the site. These will be reconstructed by archaeologists to as near as original configuration as possible.

## SITE 10702

Site 10702 is located in the northwestern portion of the project area, in Kohanaiki Ahupua'a, and between the 840 and 860 ft. elevation contours. There are 11 features on a gentle to moderate west facing slope and covering an area approximately 45 by 30 meters. There are several well-constructed mounds of the Kona Field System directly adjacent to the north, and Site 10763, a trail, appears to lead to the site from the south (Figure 9).

Site 10702 is one of the most impressive sites in the project area, with a notable amount of branch coral in Feature 1, and Feature 6, a possible socket for a *tiki*, and finely created, multiple episodes of facing of the interior of Feature 2. Two charcoal samples from this site were submitted for radiocarbon dates, suggesting a possible site occupation from as early as the late 17<sup>th</sup> century into the early historic period. One conventional radiocarbon assay of  $180 \pm 50$  BP (Beta No. 197065) from Feature 1 calibrates to A.D. 1640–1960 (at 2 sigma). Another conventional radiocarbon determination of  $170 \pm 70$  BP (Beta No. 197066) from Feature 11 calibrates to A.D. 1630–1960 (0.99) and A.D. 1520–1530 (at 2 sigma).

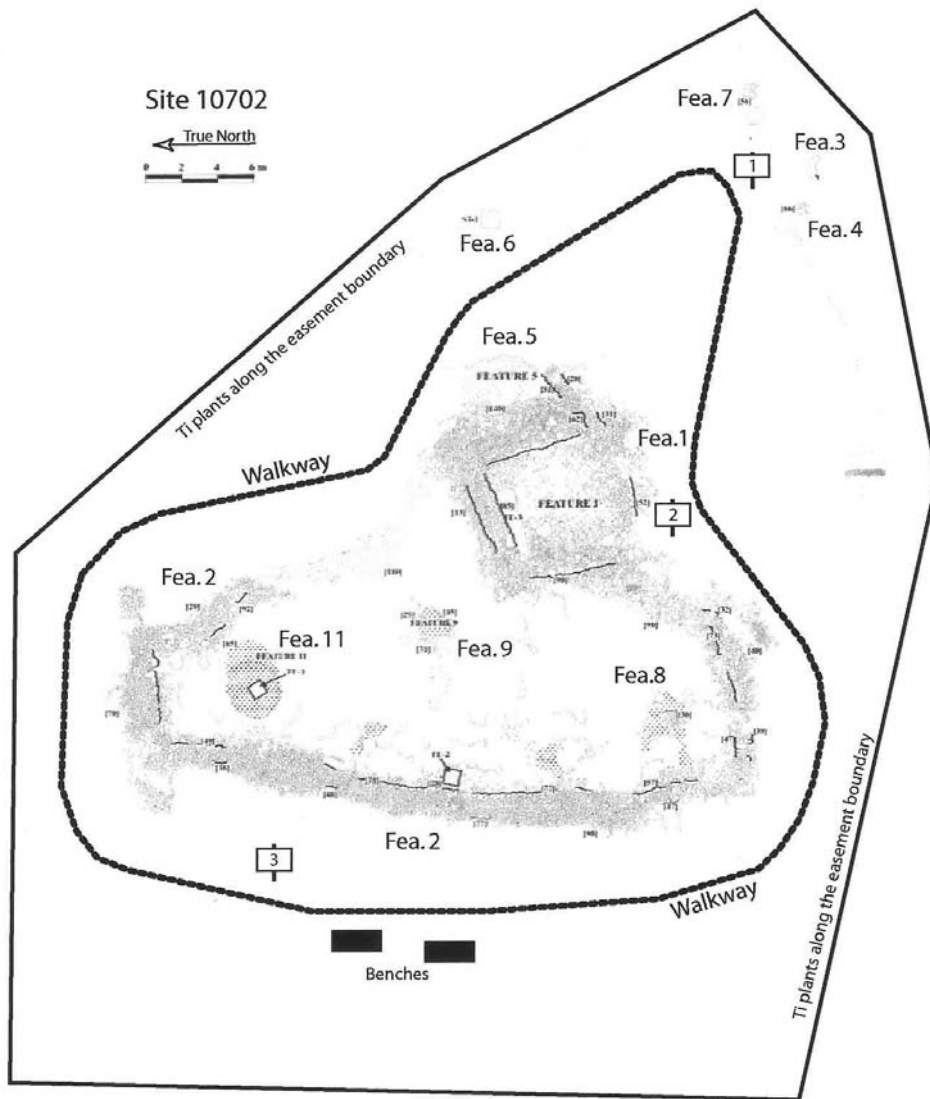


Figure 9. Site 10702.

## Preservation

The preservation easement is designed with the following criteria in mind.

- 10 foot buffer around the “back” of the site at Features 3, 6, and 7. This is the back of the *heiau* area, and these are minor features.
- 20 foot buffer around the “sides” of the main *heiau* feature as represented by Feature 2.
- 50 foot buffer at the “front” of the site. This front area is oriented towards the ocean. The vista from the main structure, represented by Feature 1, is presumed to have been in this direction. The larger buffer here is designed to retain the context of the vista with the *heiau*.

## The perimeter and landscaping

The *heiau* was a sacred space. Placement of *ti* plants around the perimeter (instead of building a wall), is an appropriate easement boundary marker. The *heiau* landscape was used to perform ceremonies, probably with local residents in attendance. The landscape should reflect an open area with native plant species.

All non-native plants will be removed with the aid of hand-held machinery (ie. chainsaws). Native plants will be retained. In addition, native trees (such as *alahe'e* and *lama*) that are present in the surrounding area (beyond the preservation easement) will be transplanted within the buffer.

A stepping stone walkway will be placed in a rambling pathway to facilitate pedestrian travel around the *heiau* and to the signs. The pathway could be made of typical garden-like concrete tiles, or some kind of similar material.

## Signage

This site was a sacred space, but also one that involved the attendance of residents of the area for various ceremonies. The preservation approach to this site facilitates the attendance of future residents. It is designed to allow people to enjoy and learn about the place, and control movement of people within the area. A walking path, benches and signage will promote these values and opportunities. Signs will be built with materials to be determined later.

### Sign 1

This sign is situated near Features 4 and 7 which are two rock cairns. Rock cairns in pairs like this often mark symbolic passageways to places. For instance, cairn pairs are often situated on *ahupua'a* boundaries along trails. Sign 1 informs the reader about this.

Rock cairns often mark boundaries along pathways. These two rock cairns may have marked the passage from the profane to sacred spaces. *Heiau* were approached from the rear, and this area is situated at the back of the *heiau* area.

Pursuant to Hawaii Administrative Rules chapter 6E-11, it is unlawful to any person, natural or corporate, to take, appropriate, excavate, injure, destroy, or alter any historic property or aviation artifact located upon this property. Violations can result in fines not more than \$10,000 for each separate offense.

## Sign 2

This sign is situated near the main *heiau* structure. Excavation here revealed that this structure was built in multiple episodes. Sometimes ceremonial structures are rebuilt or modified when new leaders come to the area. In these instances, the new authority demonstrates their control by removing the old structure and replacing it with one dedicated to the new authority. Sign 2 informs the reader about this.

This is the principal *heiau* structure. Excavations here revealed multiple building episodes. Rebuilding of *heiau* was sometimes performed when a new leader replaced an old leader, or when the power of the old *heiau* seemed to be waning.

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## Sign 3

This sign discusses how this *heiau* might have been used. It will also remind the reader that these sites are protected by law.

This *heiau* is situated with the extensive agricultural fields that were farmed to support the residents that lived in these elevations. That suggests that this *heiau* was used in ceremonies dedicated to agricultural productivity. This kind of *heiau* was commonly called *Hale o Lono*. Other names for this type of *heiau* are *Waihau* and *Unu o Lono*.

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## Reconstruction

Excavations have taken place at the site. These will be reconstructed by archaeologists to as near as original configuration as possible.

## SITE 10725

Site 10725 is a cave in Kohanaiki Ahupua'a at the 890 foot elevation. The natural opening is small and narrow (Figure 10). There is a pathway that was created by moving and piling rocks ten meters from opening. Beyond the trail there are six rock circles in the central portion of the cave. The cave is damp with water dripping from the ceiling. Charred material is plentiful, and scattered throughout most of the many chambers of the cave. Charred material occurs in the lower, narrow chamber, too. This large and complicated cave system was used for fresh water collection. Artifacts are limited to *kukui* and charred material. The association of the rock circles with an internal pathway, and difficult to access opening is also consistent with other water collection caves in the project area.

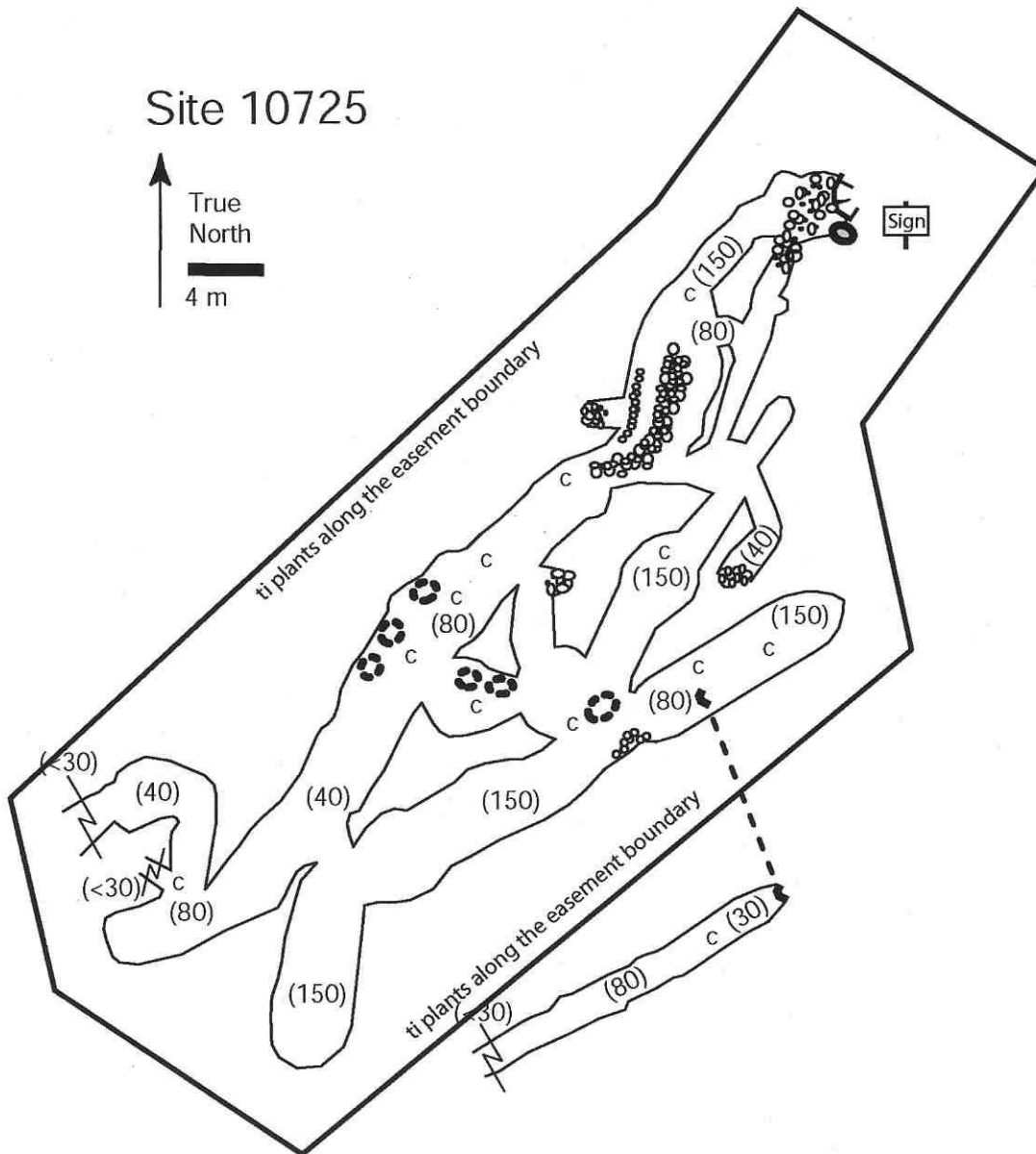


Figure 10. Site 10725.

### Preservation

This cave was used probably exclusively to gather fresh water. The kinds of impacts that might impact the cave include construction above it, people getting inside and trampling features, and puncturing from surface modifications. The modification to the cave opening makes it difficult to get in to. This ancient modification is a deterrent to entry now, and no new restriction will be made to the opening. The preservation easement is designed with the following criteria in mind.

- The entire cave will be protected.
- The buffer will be no less than 20 feet around the opening.
- The buffer will be no less than 10 feet from the remainder of the cave.
- No construction will be allowed within the easement.
- There will be no wall around the easement. Instead, it will be marked by *ti* plants.

## The perimeter and landscaping

The cave was a protected place, as indicated by the man-made constricted entrance. It is possible that the water cave was controlled by local *konohiki*, and consequently, the cave had very limited access. The water production of the cave may be influenced by the vegetative setting. The landscape should reflect an open area with native plant species.

All non-native plants will be removed with the aid of hand-held machinery (ie. chainsaws). Native plants will be retained. In addition, native trees (such as *alahe'e* and *lama*) that are present in the surrounding area (beyond the preservation easement) will be transplanted within the buffer.

## Signage

A sign will be located near the cave entrance to warn people about the dangers of entry, and legal ramifications of impacts to the cultural resources.

Long ago people collected fresh water that dripped from the ceiling of caves like this. It was used to irrigate local gardens and supply *ali'i* with drinking water.

It is dangerous to enter this cave. Do not enter.

Pursuant to Hawaii Administrative Rules chapter 6E-11, it is unlawful to any person, natural or corporate, to take, appropriate, excavate, injure, destroy, or alter any historic property or aviation artifact located upon this property. Violations can result in fines not more than \$10,000 for each separate offense.

## SITE 10736

Site 10736 is near the center of the project area. The main feature at the site is a large dry-stacked enclosure, with several auxiliary features, including several slab-lined cysts. The complex architecture suggests that this is a *heiau*. Excavations were conducted in a portion of this feature during earlier archaeological work (Barrera 1991) (Figure 11). An abundant sample of traditional artifacts, including adzes, a bone fishhook blank, and several abraders (both coral and basalt) were encountered during that work. No historic artifacts were recovered. A large amount (7,942.1 g) of fragmentary branch coral was recovered from the paved surface and in excavation. Five hydration rind dates from this feature indicate that it was used between AD 1465 and 1628.

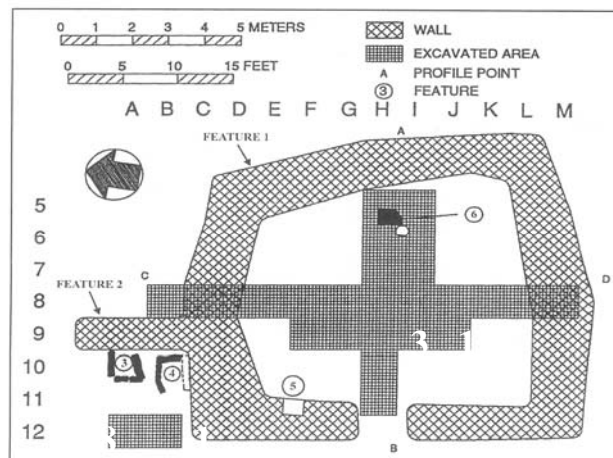


Figure 11. Site 10736 (from Barrera 1991). Showing only *Heiau* (Features 1 and 2)

In addition to the abundant artifacts recovered from the excavation within the feature interior, disarticulated *iwi* were also observed. Only teeth, toe, and finger bones were observed, and these were in various locations within the feature. The small *iwi* could represent several different activities. They may represent *iwi* from *kino* or *pōpō iwi* that were once interred within the feature, but that were removed for one reason or another. Or, they might indicate that defleshing of *iwi kanaka* took place on the surface of this feature, and some small *iwi* were not collected up during the ultimate transfer of the *iwi kanaka* to another place. Or, the presence of the small *iwi* could be the remains of individuals that were sacrificed on the surface of this feature.

### Preservation

The distribution of *iwi* within this *heiau* appears to indicate that this feature was not created or used as a burial place. Instead, it appears that some kind of activity that involved *iwi kanaka* took place in this *heiau*. The preservation easement is designed with the following criteria in mind (Figure 12).

- The main feature is connected to a series of smaller enclosures, and a possible terrace – all connected features will be preserved.
- The “front” of the *heiau* appears to be towards the ocean, and this is the principal orientation.
- The front area will have a 50 foot buffer measured from the outer wall of the *heiau*.
- The south and east sides of the main walled enclosure will have a 20 foot buffer measured from the *heiau* wall.
- The north part of the easement will be 10 feet from the smaller enclosures.

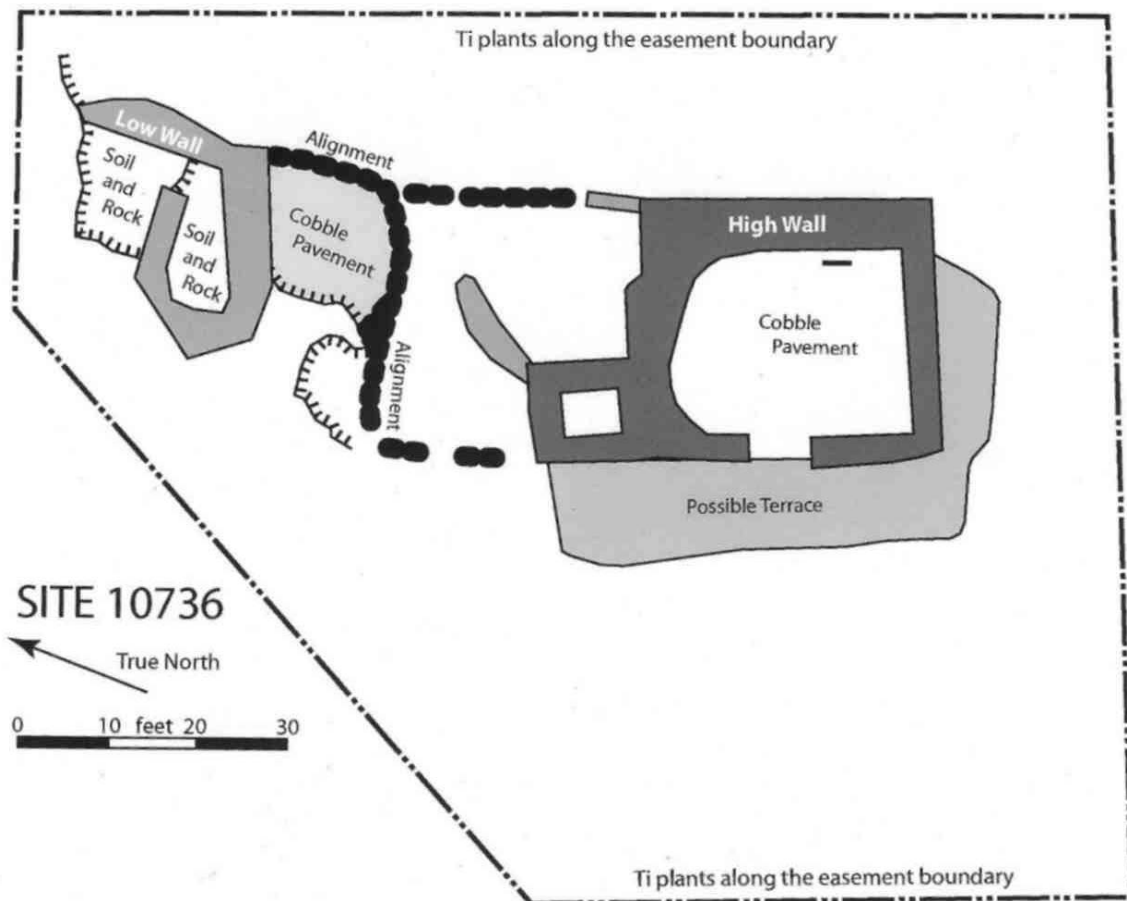


Figure 12. Site 10736. Showing all features at site.

## The perimeter and landscaping

The *heiau* was a sacred place, and access was limited to designated persons at particular times. Access to this *heiau* will also be limited. There will be no walking path or benches, but there will also be no wall around the preservation perimeter. *Ti* plants will be planted around the easement perimeter.

Although access to the *heiau* will not be encouraged, the landscape and vegetation around the *heiau* should be maintained for several reasons: to avoid damage to the resource due to uncontrolled weeds and brush; to avoid creating an eyesore to the community; to avoid creating a haven for rats and other animal and insect pests; to avoid creating an opportunity for unsupervised congregations of people, and; to promote local pride in the care of the cultural resource by making it an aesthetically attractive place.

The landscape should reflect an open area with native plant species. All non-native plants will be removed with the aid of hand-held machinery (ie. chainsaws). Native plants will be retained. In addition, native trees (such as *alahe'e* and *lama*) that are present in the surrounding area (beyond the preservation easement) will be transplanted within the buffer.

## Reconstruction

Excavations have taken place at the site. These will be reconstructed by archaeologists to as near as original configuration as possible.

## SITE 10746

Site 10746 is a cave in Kohanaiki Ahupua'a. The difficult to define sink is modified with a constricted entrance at the west end. The opening to the chamber is small (less than 50 cm diameter), and connects to a narrow, built passageway inside the cave (Figure 13). *Kukui* and charred material are prevalent in the cave, and there are six rock circles and one marine shell.

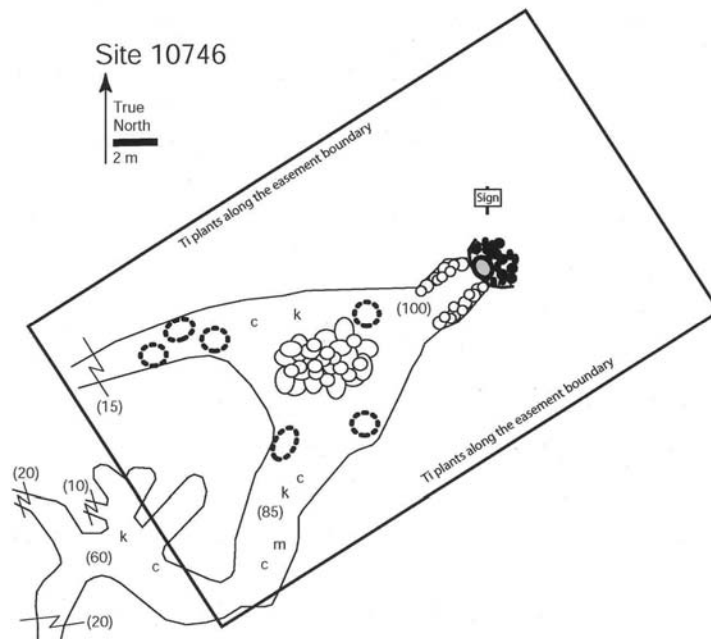


Figure 13. Site 10746.



## Preservation

This cave was used probably exclusively to gather fresh water. The kinds of impacts that might impact the cave include construction above it, people getting inside and trampling features, and puncturing from surface modifications. The modification to the cave opening makes it difficult to get in to. This ancient modification is a deterrent to entry now, and no new restriction will be made to the opening. The preservation easement is designed with the following criteria in mind.

- The portion of the cave that contains the water features will be protected.
- The buffer will be no less than 20 feet around the opening.
- The buffer will be no less than 10 feet from the remainder of the cave.
- No construction will be allowed within the easement.
- There will be no wall around the easement. Instead, it will be marked by *ti* plants.

## The perimeter and landscaping

The cave was a protected place, as indicated by the man-made constricted entrance. It is possible that the water cave was controlled by local *konohiki*, and consequently, the cave had very limited access. The water production of the cave may be influenced by the vegetative setting. The landscape should reflect an open area with native plant species.

All non-native plants will be removed with the aid of hand-held machinery (ie. chainsaws). Native plants will be retained. In addition, native trees (such as *alahe'e* and *lama*) that are present in the surrounding area (beyond the preservation easement) will be transplanted within the buffer.

## Signage

A sign will be located near the cave entrance to warn people about the dangers of entry, and legal ramifications of impacts to the cultural resources.

Long ago people collected fresh water that dripped from the ceiling of caves like this. It was used to irrigate local gardens and supply *ali'i* with drinking water.

It is dangerous to enter this cave. Do not enter.

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## THE HOMESTEAD PARK: SITES 10741, 10745, 10749 (AND 10754)

### Kohanaiki Homesteads Background

The Kohanaiki Homesteads is a small historical village that is partially within project area (Figure 14).

Kohanaiki was a set of about 16 stone house enclosures and a protestant church, collectively called the Konanaiki Homesteads.... The church seems to be the one built in the 1870s (previous section). Interestingly, none of these enclosures or the homesteads are mentioned in the Mahele records or the grant (Gr. 2030), suggesting a post-1854 age [Cordy et al. 1991:418].

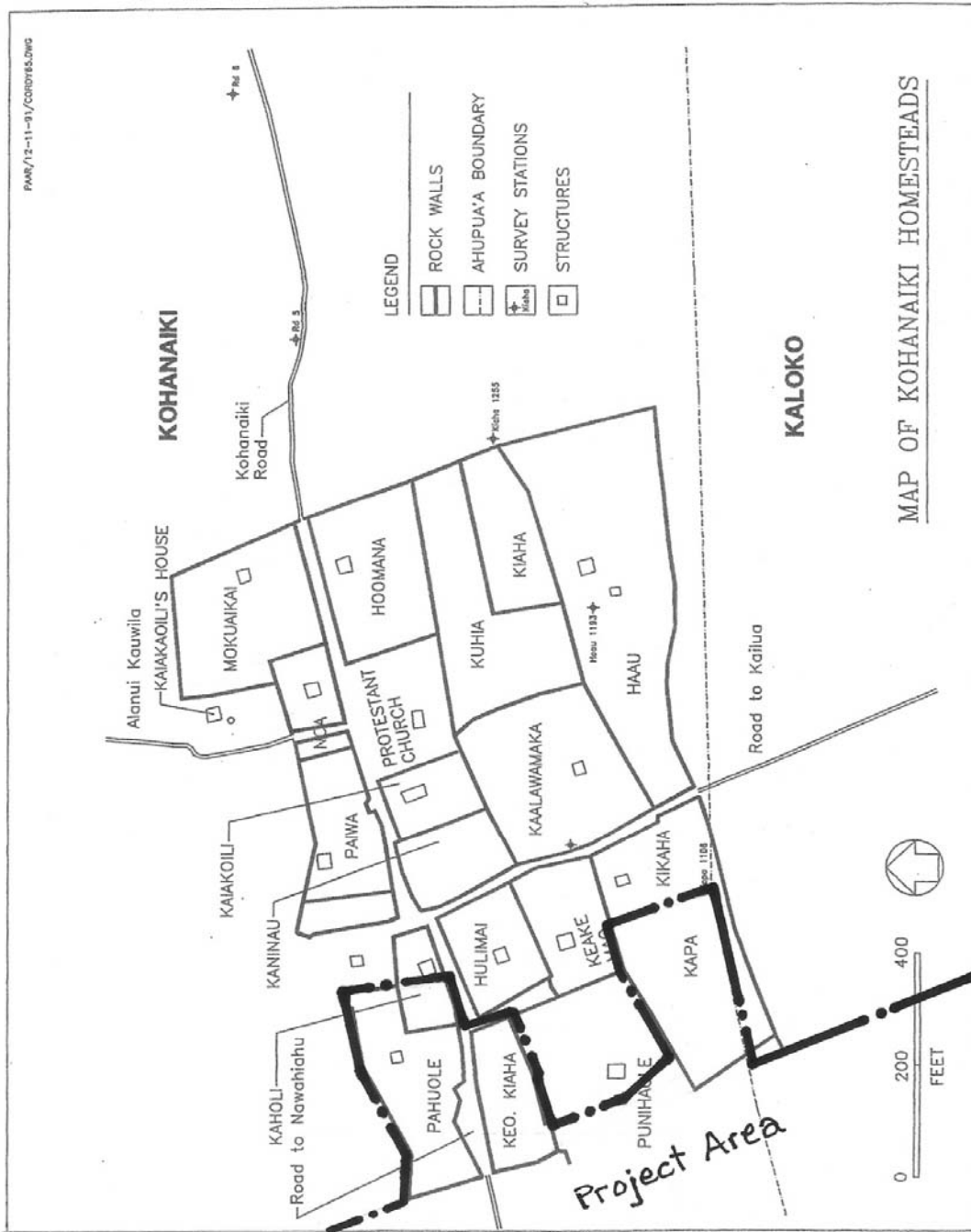


Figure 105. Map of the Kohanaiki Homesteads. (Adapted from Emerson 1888e).

Figure 14. Kohanaiki Homesteads (Adapted from Cordy *et al.* 1991 adaptation of Emerson 1888).

The formal designation of the Kohanaiki Homesteads is a relatively late affair. They are not mentioned in the Mahele, suggesting that they postdate the mid-1800s, and an investigation into the Surveys Division of the State of Hawai'i's Department of General Services indicates that the lots were purchased between 1895 and 1898 (Cordy *et al.* 1991:419). Only six homesteads are noted on a 1924 map, but, based on the limitations of USGS mapping, that should not be considered as an absolute indication of the number of houses or homesteads in operation. The population may have been reduced to

one homestead in 1959. Two empty squares on the map are 1959 USGS symbols for "ruins".

Much of the Kohanaiki Homestead area has been destroyed by previous development *mauka* of the project area. Portions of five of the total of 18 homesteads lots are within the Kaloko Heights project area. Those homesteads are: Kaholi, Pahuole, Kiaha, Kapa, and Punihaole. Each has been assigned a SIHP: Kaholi (10741), Pahuole (10745), Kiaha (10749), Kapa (10764), and Punihaole (10778).

Three of the five homesteads that are partially within the project area (Kapa, Punihaole and Kaholi) had their house outside of the project area. Consequently, the houses for those three homesteads have been destroyed by previous developments. The two homesteads that are completely within the project area are Kiaha and Pahuole.

Preservation is recommended for the two homesteads that are completely within the project area: Kiaha and Pahuole (Sites 10745 and 10749). The rationale for preserving these two is that they exhibit the full compliment of what is manifest with a late 1800s homestead. The Kaholi homestead (Site 10741) is next to the Pahuole homestead, and is also included in the preservation area, even though it is incomplete, and the house that went with this homestead was beyond the project area. The other two homesteads (Punihaole and Kapa) are partial homesteads in the project area are lacking essential parts of the homestead, and consequently, do not provide an understanding of how homesteads are arranged.

The opening to burial cave Site 10754 is in a gap in the wall that surrounds the Pahuole homestead. The small cave continues to the southwest under the pathway Site 10714, and under the Kiaha homestead.

### **Preservation**

All informants expressed a desire to see the Homesteads preserved. The idea of preserving just the two intact homesteads was presented to Mr. Punihaole, Mr. Kahananui, Ms. Coelho, and Ms. Punihaole, and they agree with the rationale for preserving just the complete ones, even though that means that the Punihaole homestead will not be preserved.

Site 10754 is a small cave with one *kupuna iwi*. The cave opening is very small, and difficult to get into. The *kupuna iwi* will be preserved in place. The small opening precludes all but the most adventurous from entering.

The remains of the Kohanaiki Homesteads are an interesting example of a particular settlement organization from the late 1800s and early 1900s. The preservation easement is designed with this criterion in mind.

- The two complete homesteads provide a record of how homesteads were organized.
- Burial cave Site 10754 is directly associated with two homesteads.
- The preservation buffer will surround the Pahuole and Kiaha homesteads, and include that portion of the Kaholi homestead that is within the project area.

### **The perimeter and landscaping**

The preservation perimeter will correspond to the project boundaries along the north, east, and south part of the three homesteads (Figure 15). The western preservation boundary will be along the western boundary of the Pahuole and Kiaha homesteads.

# Kohanaiki Homestead Park

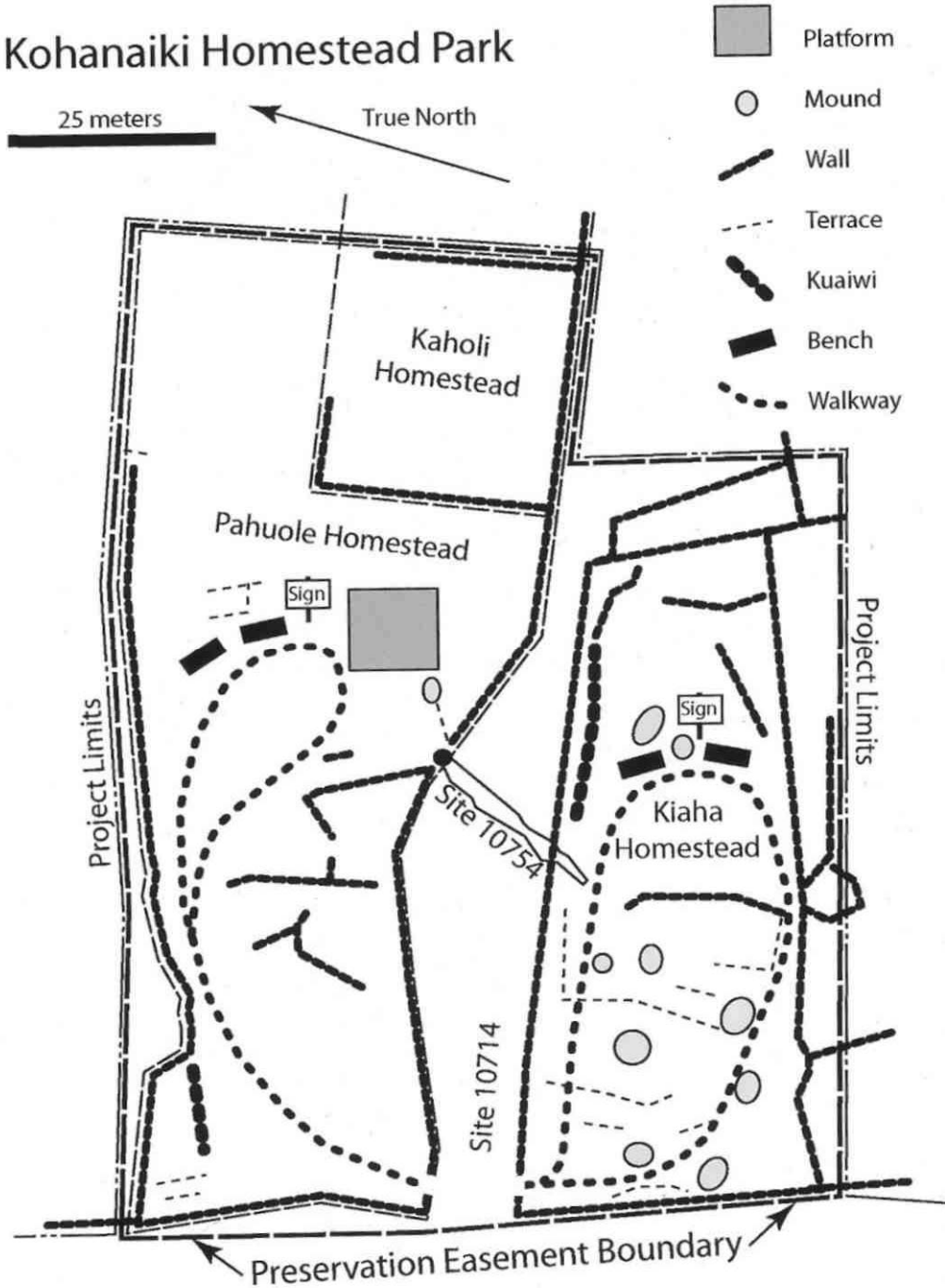


Figure 15. Kohanaiki Homestead Park.

There will be no new walls built for the preservation boundary. Walls associated with the homesteads exist around much of the preservation area, and these will serve to mark the boundary of the preservation easement.

The preservation area is currently in tangled vegetation dominated by Christmas berry trees and vines. The homesteads were occupied during the historical era, and consequently, many alien tree and shrub species had been introduced by that time. Nevertheless, the Christmas berry trees need to be

removed (with the aid of hand-held machinery, ie. chainsaws) to open up the space into a park-like setting. Native and alien plants that are present will be retained. Trees that would reflect the time of occupation at the homesteads would include mangoes, guava, citrus fruit trees, and coffee, and these should be retained.

The northeast portion of the project area had been bulldozed during construction of houses beyond the current project area. Mango trees are currently located in that area, and can be retained as other plants are cleared out.

Thick vegetation will be kept around the cave Site 10754 opening to hide the opening, and keep people from venturing into it.

Two breaches will be created in the walls of the Pahuole and Kiaha homesteads to facilitate pedestrian access. A stepping stone walkway will be placed in a pathway to facilitate pedestrian travel around homesteads and to the signs and opportunities to rest and reflect at benches. The pathway could be made of typical garden-like concrete tiles, or some kind of similar material.

### **Signage**

One sign will be placed in each of the two complete homesteads.

#### Sign for Pahuole Homestead

The area within these walls was one of 18 house lots of the Kohanaiki Homesteads. This one was owned by the Pahuole family. This stone platform was once the foundation for a house that was occupied between approximately 1880 and 1925. Garden and living spaces were distributed around this area.

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#### Sign for Kiaha Homestead

The area within these walls was one of 18 house lots of the Kohanaiki Homesteads. This one was owned by the Kiaha family. There is no known house area within this lot, suggesting that the area was used primarily for gardening for subsistence foods.

Pursuant to Hawaii Administrative Rules chapter 6E-11, it is unlawful to any person, natural or corporate, to take, appropriate, excavate, injure, destroy, or alter any historic property or aviation artifact located upon this property. Violations can result in fines not more than \$10,000 for each separate offense.

## **IMPLEMENTING THE PLAN**

There are many design elements in this Plan. All of the elements cannot, and will not, be implemented simultaneously. The implementation of the plan will take place in five major increments: Interim Protection; Protection and Stabilization; Site Development; Establish Vegetation; and Maintenance. Kaloko Heights Associates, LLC and its successors and assigns will be responsible for implementing the multiple phases of the Plan.

### **PHASE I: INTERIM PROTECTION**

#### **Burial Sites**

All burial sites will be surrounded with orange construction fencing that will be a minimum of 50 feet from the outer perimeter of the burial feature. For instances where burials are in stone features on the ground feature, that 50 feet will be measured from the outer edge of the stone feature. For those burials that are within caves, that 50 feet will be measured from the outer edge of the cultural perimeter of the cave as it is projected to the ground surface.

Interim protective measures will be maintained until the Burial Treatment Plan is appropriately ratified, and the SHPD Burial Sites Program has provided written notification that the treatments have been appropriately implemented.

#### **Preservation Sites**

All preservation sites will be surrounded with orange construction fencing that will be a minimum of 20 feet from the outer edge of the proposed preservation easement as documented in this plan. The orange fencing will remain in place until Phase II preservation tasks are completed (outlined below).

Pursuant to SHPD regulations regarding site preservation, after this plan has been agreed upon, and the preservation easements established on the ground, Kaloko Heights Associates, LLC and its successors and assigns will engage professional surveyors to survey in the boundaries on project maps.

Prior to construction, Kaloko Heights Associates, LLC and its successors and assigns will ensure that an archaeologist is present to provide on-site briefing to construction crews regarding the preservation sites and all rules and regulations involved. An archaeologist will be present for grubbing and grading that takes place nearby the interim protective fencing.

### **PHASE II: PROTECTION AND STABILIZATION**

Phase II tasks will include:

- Filling in holes that were created during Archaeological Inventory Survey. This task will be conducted by archaeologists.
- Planting *ti* plants around the perimeter of the preservation easement.

### **PHASE III: ESTABLISH VEGETATION**

Phase III tasks will include:

- Removing the alien vegetation, while retaining native species.
- Transplanting or planting anew native vegetation as specified for each preservation area.

### **PHASE IV: SITE DEVELOPMENT**

Phase IV tasks will include:

- Placing walkways, benches, and signs as specified for each preservation area.
- Build the metal railings around the cave openings.

## **PHASE V: MAINTANENCE**

Phase V tasks will include:

- Establish procedures and schedule for periodic monitoring of potential impacts to sites.
- Any deviations from the Plan that are noticed during monitoring will be reported to SHPD, and consultation with SHPD will be conducted to rectify.

## **REFERENCES CITED**

### **Barrera, W. Jr.**

1991 *Kohanaiki, North Kona, Hawaii Island: Archaeological Inventory Survey and Data Recovery*. Prepared for Richard M. Sato and Associates, Honolulu.

### **Cordy, R., J. Tainter, R. Renger and R. Hitchcock**

1991 *An Ahupua'a Study: the 1971 Archaeological Work at Kaloko Ahupua'a North Kona, Hawai'i*. Western Archaeological and Conservation Center Publications in Anthropology No. 58. National Park Service, Washington, D.C.

### **Emerson, J.S.**

1888 Map, "Akihipuu Section, North Kona, Hawaii." Map (Reg. #1449), on file Surveys Division, Department of Accounting and General Services, State of Hawaii, Honolulu.

### **Wolforth, T.R., C. Monahan, K. Johnson, T. Paikuli-Campbell, and R.L. Spear**

2005 *Archaeological Inventory Survey of the Northern Portion of the Kaloko Heights Project in Kohanaiki and Kaloko Ahupua'a*. SCS Report 455-2. Prepared for Standord Carr Development, LLC, Honolulu. Scientific Consultant Services, Inc., Honolulu.