

# INTERPRETIVE PLAN

## **KÜKANILOKO BIRTHSTONES STATE MONUMENT WAHIAWÄ, OAHU (State Site No. 50-80-04-218)**

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## ACKNOWLEDGEMENTS

This interpretive project at Kūkaniloko Birthstones State Monument reflects a successful partnership between the Division of State Parks, the site curators (Hawaiian Civic Club of Wahiawa and the Friends of Kūkaniloko), and the Wahiawa community. Although the 5-acre parcel was purchased by the State in 1992 to protect and preserve this most significant cultural resource, the State's development of interpretive devices at the site has been hampered by program priorities and funding within the Division of State Parks.

In conjunction with the Centennial of Wahiawa, the curators invited community leaders and legislators to visit Kūkaniloko. These visits and discussions led to the community interest and support for the idea of interpretive signs at Kūkaniloko Birthstones. Instrumental in this effort have been Lurline Lee, President of the Hawaiian Civic Club of Wahiawa, and curators Tom Lenchanko, Daniel Au, and Kalama Makaneole. Without their vision and persistence, interpretive signs may not have been a reality for several more years!

The curators are also acknowledged for sharing their wealth of knowledge about Kūkaniloko and the cultural history of the Wahiawa Plateau. They not only shared information for this plan but have devoted many hours to sharing their knowledge with site visitors. Their commitment to Kūkaniloko, as both Hawaiians and curators, is reflected in their ongoing care and respect for the site. This acknowledgement is extended to all the members of the curator organization who give of their time and energy toward the preservation of Kūkaniloko.

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In an effort to understand all aspects of Kūkaniloko, those conducting research into the astronomical aspects of the site are recognized. Thanks to Will Kyselka, Douglas Fernandes, and Dr. Joseph Ciotti for taking to time to share their thoughts on this theme for one of the interpretive signs.

To all the partners of this project, *mahalo nui loa*. Your dedication, support, and cooperation has made this project a pleasure and a most rewarding experience.

## I. INTRODUCTION

Kūkaniloko Birthstones State Monument is located on the Wahiawa Plateau in Central Oahu (Figs 1 and 2). The plateau is delineated by the Koolau Mountain Range on the east and the Waianae Range on the west. Significant geographical landmarks along the Waianae Range include Kolekole Pass and Mt. Kaala which are within the view corridor west from Kūkaniloko. Kūkaniloko is situated near the center of the plateau on the level area between Kaukonahua Stream Gulch on the south and Poamoho Stream Gulch to the north. Modern landmarks include Wahiawa Reservoir and Wahiawa town to the south, Schofield Barracks to the west, and Whitmore Village to the east.

Today, Kūkaniloko refers to the 0.5 acre that encompasses the 180 boulders defining the birthsite. However, when the birthsite was in use during the prehistoric period, Kūkaniloko referred to a much larger area that included much of the Wahiawa Plateau. This interpretive plan specifically address interpretive devices within the Kūkaniloko Birthstones State Monument but attempts to place this site within the larger context of the Wahiawa Plateau and the cultural land area known as Kūkaniloko and Wahiawa.

### Significance of Kūkaniloko

Kūkaniloko Birthstones is one of the most significant cultural sites on Oahu and in Hawaii. Recognized as a birthing site for the *alii*, this site is associated with the birth of several important Hawaiian chiefs. One's birth at Kūkaniloko legitimized their high ranking and established their right to be leaders of society. Consequently, chiefs with ties to the Oahu lineage sought to have their children born at Kūkaniloko. After birth, the child was taken to nearby Hoolonopahu Heiau where the umbilical cord was cut. The only other birthing site of high ranking *alii* recorded in traditional history is located at Holoholokū, Waialua, Kauai. The significance of Kūkaniloko is recorded as follows on the nomination form for the National Register of Historic Places:

*Along with Holoholokū on Kauai, Kūkaniloko is one of only two places specifically designated for the birth of high ranking children (Kamakau 1991:38). Kūkaniloko is particularly celebrated in recorded traditions as it is repeatedly called upon in commemorating the life-histories of important paramounts in the chiefly lines of Oahu. In ancient Hawaii, genealogical descent from the gods gave chiefs their lofty status and hence, established their right to be leaders of society. Birth within the ritual setting of Kūkaniloko served to legitimize this genealogical descent and their godly status was further enhanced if the rituals and prohibitions performed at birth were completed successfully. The Oahu and Kauai chiefly lineages were traditionally known for their antiquity and purity and it was said that chiefs from Hawaii and Maui often sought greater prestige for their lineages by marrying those who had strong ancestral ties to exalted lineages. Some have speculated that Kūkaniloko on Oahu and Holoholokū on Kauai helped maintain the coveted purity of these genealogical lines and, as such, the significance of Kūkaniloko and the events that took place there reach far beyond the island of Oahu. (HRHP, 1994)*

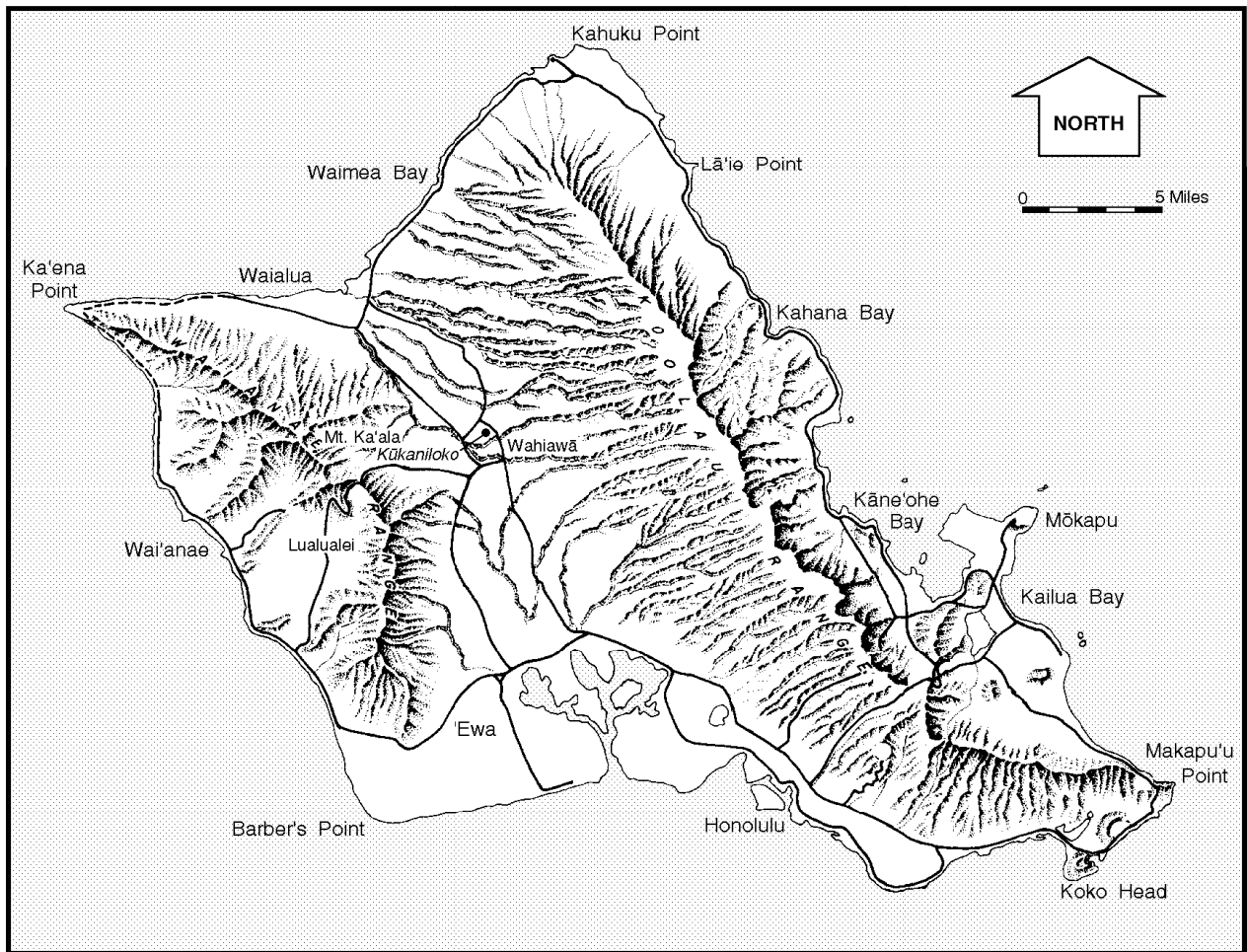


FIG. 1 - Location of Wahiawa Plateau and Kūkaniloko on the island of Oahu.

In most traditions, the Kūkaniloko birthing site is said to have been established by Nanakaoko at the birth of his son Kapawa. Some references date Kūkaniloko to the 12th Century (McAllister, 1933:134). Kamakau provides a date of A.D. 1100 for Kūkaniloko when he records the birth of Kalanimanuia (1991:57). However, other dating by genealogical lines suggests that Kapawa dates to the 1300s and Kalanimanuia to the 1600s (Cordy, 1996). Fornander associates Kapawa with the traditions of Pao who is said to have brought a chief named Pili Kaaiea whom he installed as ruler of Hawaii Island after deposing Kapawa. Using the genealogical lines of Hawaii Island, this would place the establishment of Kūkaniloko in the 1400s (HRHP, 1994).

The appearance and use of Kūkaniloko is described by Kamakau (1991: 38)

*A line of stones was set up on the right hand and another on the left hand, facing north. There sat thirty-six chiefs. There was a backrest, a kuapuu, on the upper side, this was the rock Kūkaniloko, which was the rock to lean against. If a chiefess entered and leaned against Kūkaniloko and rested on the supports to hold up the thighs in observance of the Liloe kapu (prescribed regulations for birthing), the child born in the presence of the chiefs was called an alii, an akua, a wela -- a chief, a god, a blaze of heat.*

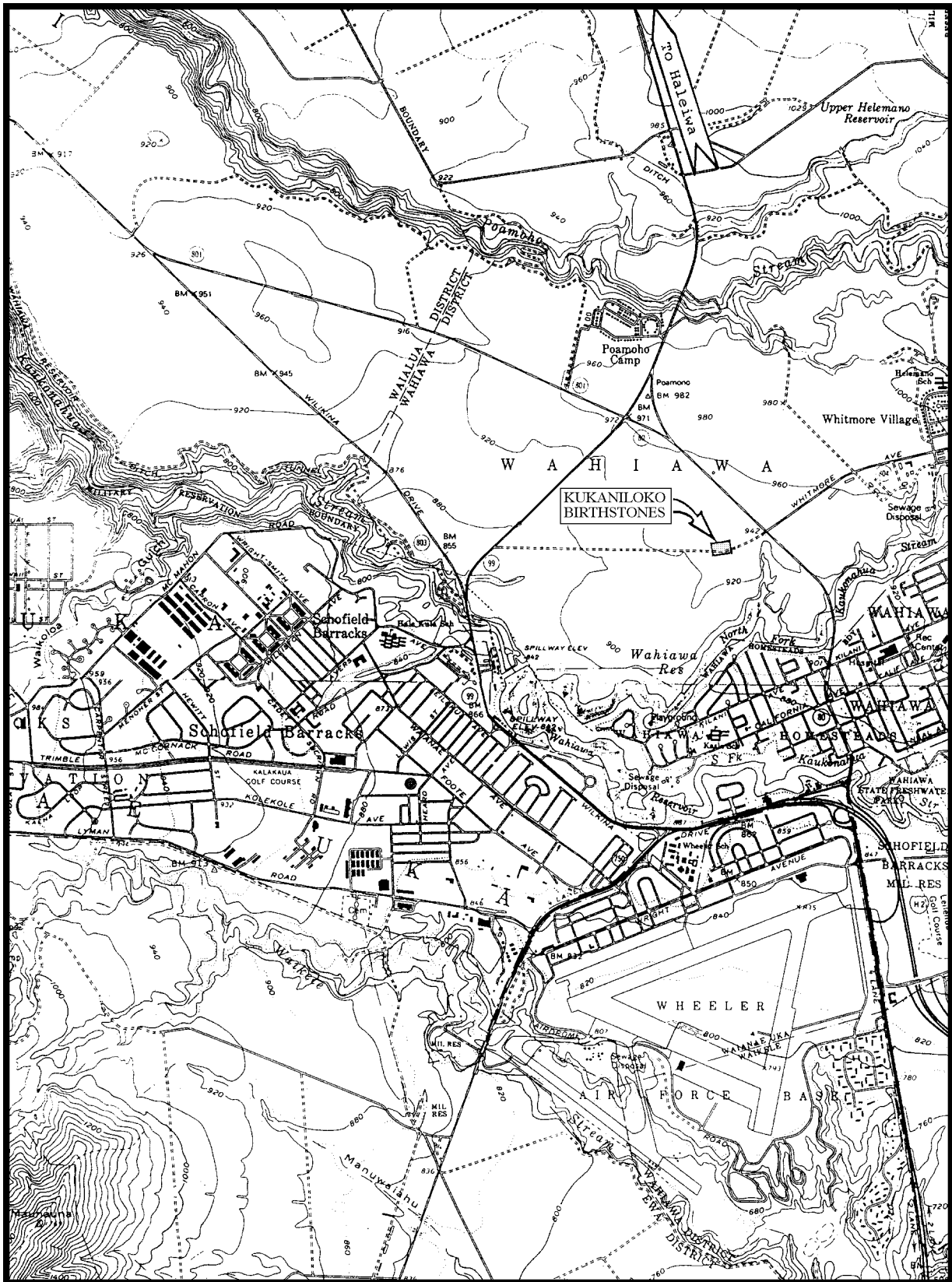


FIG. 2 - Location of Kūkaniloko Birthstones, Wahiawa, Oahu. (USGS, Haleiwa and Schofield Barracks quads.)



*When the child was born, it was quickly taken inside the waihau heiau Hoolono-pahu. There were forty-eight chiefs ministered to the child and cut the naval cord.*

*Two furlongs (1 furlong equals approximately 220 yards) to the west of Kūkaniloko was where the sacred drum Hawea was beaten; it indicated the birth of a chief. On the east of the stream on that side of Kuaikua were the makaāinana -- a great many of them -- and to the south, three furlongs distant, were the kauwā (servants).*

While numerous chiefs and chiefesses are believed to have been born at Kūkaniloko, there are 4 that are known to have been born within the site: Laa, Māilikūkahī (k), Kalanimanuiā (w), and Kākuhihewa (k). The birth of these *alii* at Kūkaniloko indicates the importance of the site into the 17th Century. Māilikūkahī and Kākuhihewa were highly celebrated Oahu paramount chiefs whose reigns were marked by peace and great prosperity (Kamakau, 1991). In discussing Kūkaniloko, Fornander notes that “so highly were those dignities and privileges prized, even in later times, when the ancient structure and surroundings had fallen in decay, that Kamehameha I, in 1797, previous to the birth of his son and successor, Liholiho, Kamehameha II, made every arrangement to have the accouchement take place at Kūkaniloko” (Vol. 2, pp. 20-21).

Associated with Kūkaniloko was Hoolonopahu Heiau. The sacred drums that announced the birth of an *alii* were kept at this *heiau* but nothing remained of the *heiau* in 1920s as a result of the pineapple cultivation (McAllister, 1933). Several oral informants suggest that several stones from the *heiau* have been incorporated into the Kūkaniloko complex (Tom Lenchanko, pers. comm.).

In recognition of the site’s cultural and historical significance, Kūkaniloko was placed on the National Register of Historic Places (Site No. 218) in 1972 and the Hawaii Register of Historic Places in 1994. The site remains significant to the Hawaiian community today with a growing need to nurture a respect for the site.

### Kūkaniloko Birthstones State Monument

Because of the cultural and historical significance of the Kūkaniloko Birthstones site, the State acquired a 5-acre parcel in January of 1992. This parcel includes the 0.5-acre Kūkaniloko Birthstones site, a 4.5-acre buffer around the complex, and a road easement from Kamehameha Highway (Fig. 3). The State-owned property is identified by TMK: 7-1-01: 4. The 0.5-acre historical site is marked by a grove of eucalyptus and coconut trees surrounded by an expanse of pineapple fields (Photo 1). Within the 0.5-acre area is a concentration of waterworn boulders, some set into the ground and others sitting on the surface.

The site was originally set aside and fenced by Mr. W. Goodale of the Wahiawa Agricultural Company in 1909 (Thrum, 1911). The Daughters of Hawaii began maintaining the site in 1918 but did not finalize an agreement with the Galbraith Estate until 1925 (Africa, 1992). In 1951, the site reverted back to the Galbraith Estate and the Hawaiian Civic Club of Wahiawa became active in the maintenance of the site. While the Division of State Parks was given jurisdiction of the site for management and maintenance in 1992, the community continues to provide assistance with site maintenance, management, and interpretation. In 1997, State Parks entered into a curatorship agreement with the Hawaiian Civic Club of Wahiawa and the Friends of

Kūkaniloko. These organizations are recognized as the curators of Kūkaniloko Birthstones State Monument.

### Site Improvements

After the 1992 harvest, pineapple was not replanted within the 5-acre site. In December of 1993, a crew from the City and County of Honolulu, Department of Public Works assisted with the clearing and grading of the 4.5-acre buffer. The furrows from the prior cultivation were leveled and the portion of the dirt roadway adjacent to the site was discontinued. A small parking area was designated with boulders in the southeastern corner of the parcel (Photo 2). A dirt mound was made along with eastern side of the parcel. The grass that replaced the pineapple is cut on a regular basis to create an open green space around the site. The following is a summary of the site improvements implemented since 1993 (Fig. 4):

- In 1993, the buffer around the site was cleared and leveled with the creation of open space. This made Kūkaniloko Birthstones visible from Kamehameha Highway and was done to discourage the undesired activities at the site. In addition, the grading has facilitated maintenance by creating a level area for mowing.
- In 1993, both ends of the dirt road running along the southern side of the site were barricaded to prevent vehicle traffic around and through the site. When the grading of the buffer was done, the roadway was covered and is no longer evident on the surface.
- In 1993, a small parking area, measuring approximately 60 feet on a side, was created at the southeastern corner of the parcel. The area is lined with large boulders to prevent vehicle traffic in proximity to the site. A service entrance with a chain facilitates maintenance of the site. This parking lot is approximately 200 feet east of the site complex. A 700-foot dirt road leads from the Whitmore intersection to the parking lot.
- In January of 1995, the legal easement to Kūkaniloko Birthstones from the Whitmore Village intersection at Kamehameha Highway was surveyed. This dirt roadway tends to be steep, rutted, and muddy and when machinery is available, the plantation grades and improves this access road.
- In 1995, an HVB Warrior Sign was installed at the southwestern corner of the parking lot but was stolen soon after installation. At present, a new HVB sign has been placed along Kamehameha Highway.

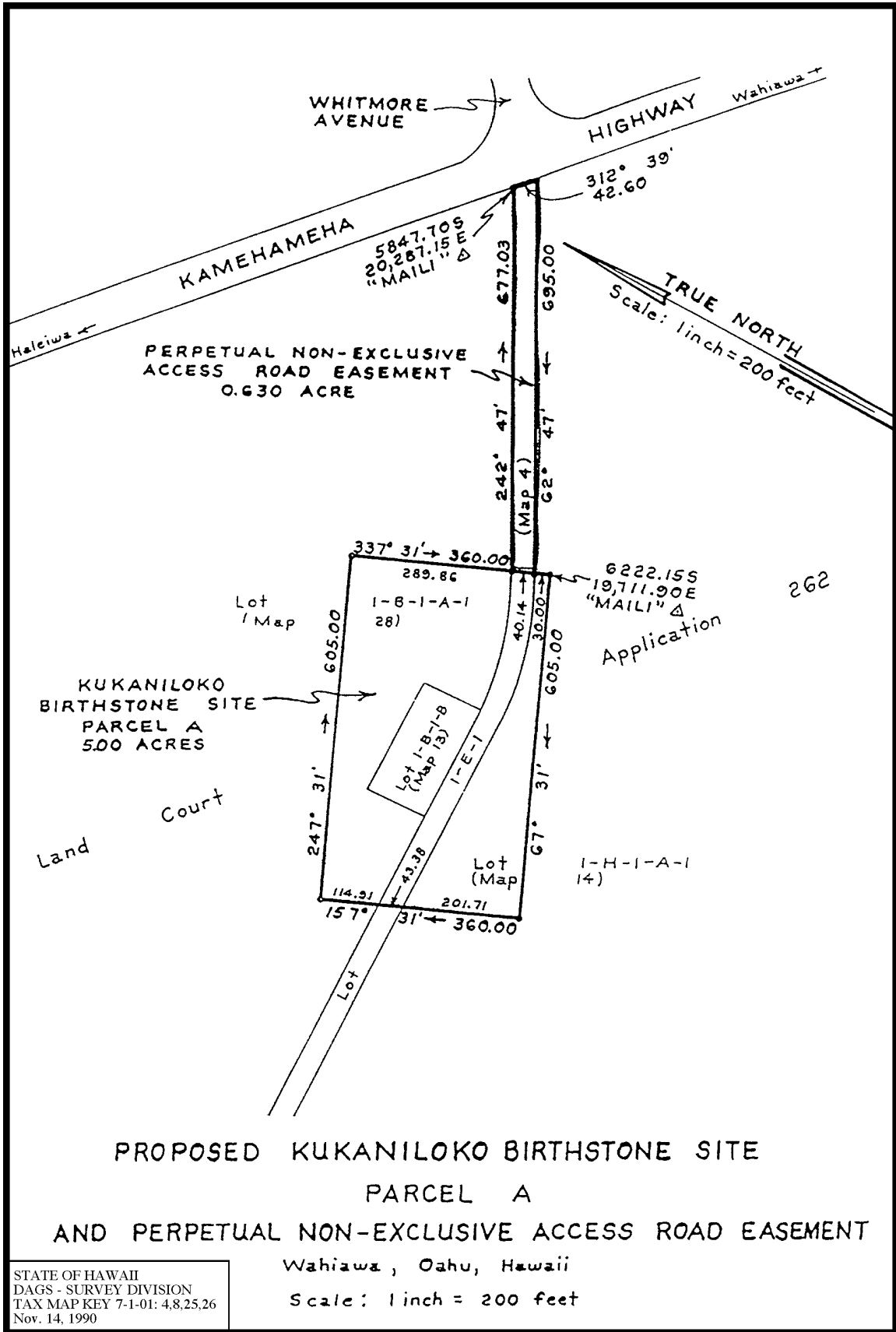


FIG. 3 - Boundaries of Kūkaniloko Birthstones State Monument.



PHOTO 1

The Kūkaniloko Birthstones site as marked by the eucalyptus and coconut trees.  
View to the west which includes the Waianae Range in the distance.



PHOTO 2

Recent site improvements, including grading and placement of boulders to delineate the parking lot in the foreground.

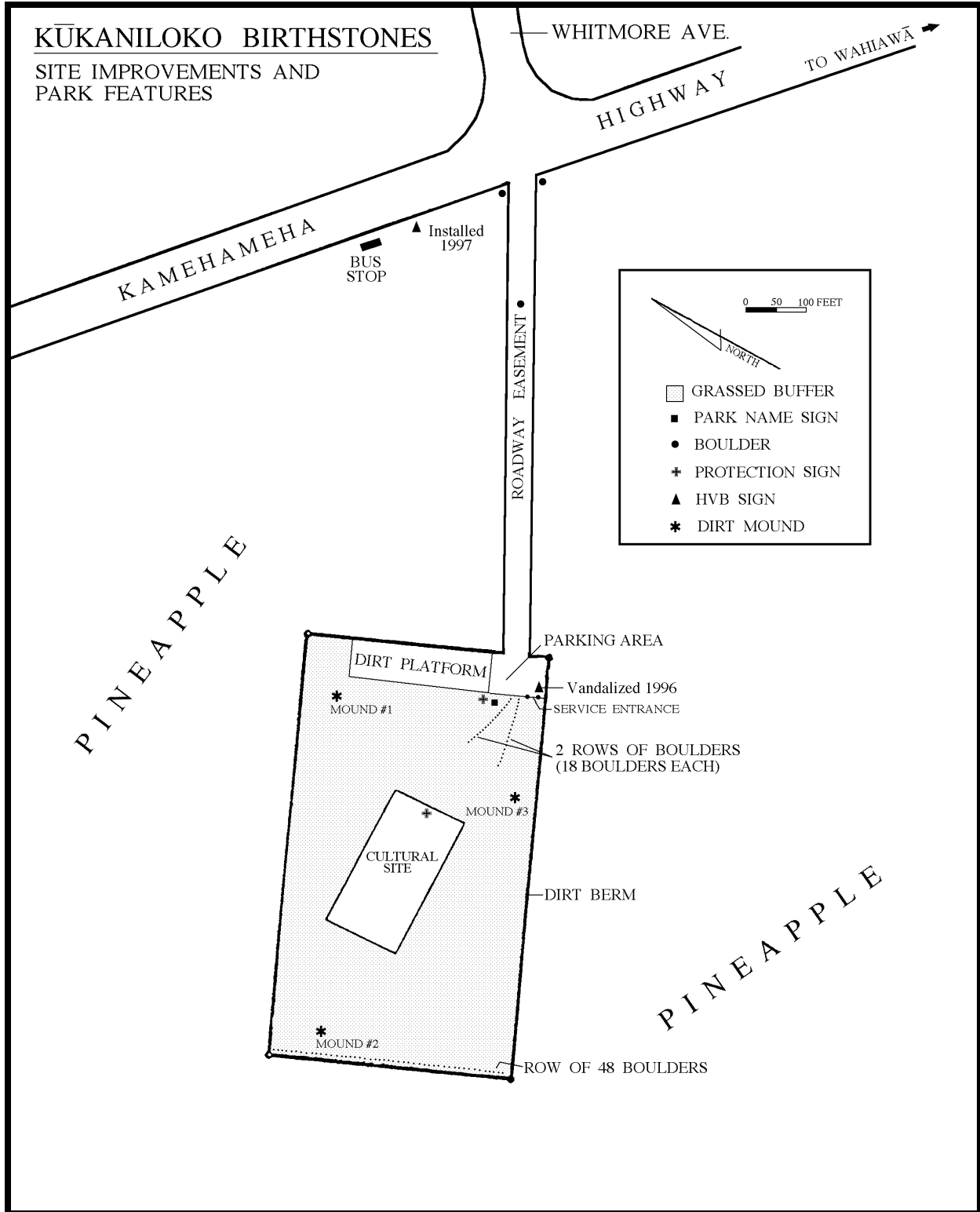


FIG. 4 - Recent improvements at Kūkaniloko Birthstones State Monument as recorded in 1996.

## Existing Interpretive Conditions

As part of the site improvements made in 1993, several alignments of boulders were placed within the 5-acre parcel to symbolize the traditions associated with the site (Fig. 4). Two alignments of 18 stones each run from the parking lot toward the site. These stones represent the 36 chiefs who witnessed the birth of a child (refer to Photo 2). Another 48 boulders run along the western property line. These boulders represent the 48 elder, high-ranking chiefs who oversaw the cutting of the umbilical cord. In addition, very large boulders mark 3 of the property corners and represent *wahine*, *kane*, and *keiki* (Tom Lenchenko and Kalama Makaneole, pers. comm.).

Also in 1993, a dirt mound was constructed along the eastern property line with the accumulation of extra dirt and some vegetation debris from the site after grading. It was felt that the dirt should remain on-site and the mound was an opportunity to create an overview for the site area. In the future, this mound might be used for cultural activities or for the installation of an interpretive overlook with signs.

In August of 1994, interim site protection signs were installed at the eastern side of the site and at the parking lot to heighten public awareness and respect for the site (Fig. 5). The Hawaii's Visitor's Bureau (HVB) provided a warrior sign with site name for Kūkaniloko in 1995. When stolen from the parking lot, a new sign was installed along Kamehameha Highway near the entry road to the site. In July of 1995 a large place name sign (KUKANILOKO BIRTHSTONES STATE MONUMENT) was placed at the west edge of the parking area.

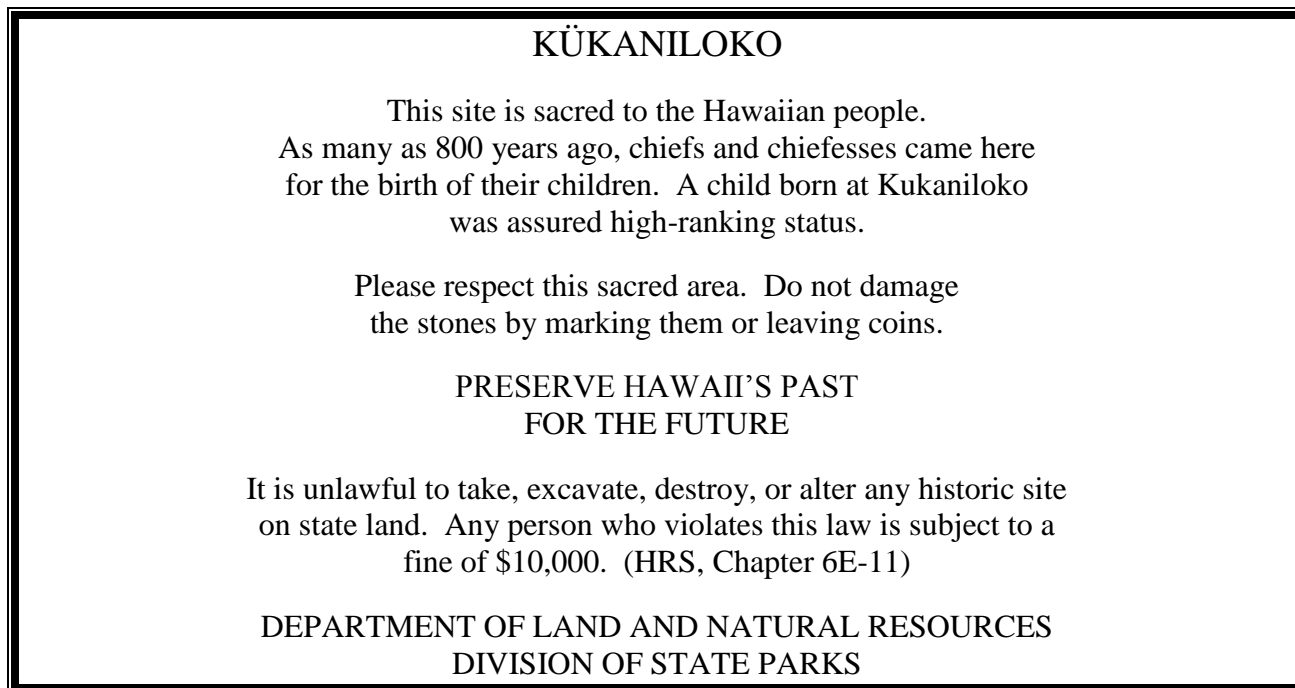


FIG. 5 - Site protection signs placed at the site and parking lot area. Metal signs measure 18" by 12" and consist of yellow lettering screened onto brown panel.

## Purpose of Interpretive Plan

The objectives of an interpretive plan are to identify the interpretive goals and objectives, inventory the resources in and around the park and site area, identify the interpretive themes, and evaluate both the interpretive potential and sensitivity of the resources. Based on this background information and analysis, an interpretive program is developed using the most effective interpretive techniques for interpreting the themes while maintaining the preferred visitor pattern.

In interpretive planning it is also important to understand the visitors and their reasons for visiting the site or park. In a park setting, many visitors are on vacation and therefore, learning needs to be framed as a recreational activity. However, at historic and cultural sites, there is also an element of cultural awareness and respect that needs to be incorporated into the learning process. To assist in understanding the visitors, visitor surveys are conducted to determine the most effective interpretive techniques and best means of presentation to achieve the goals and objectives of interpretation.

This interpretive plan for Kūkaniloko Birthstones State Monument proposes to install interpretive devices at the site which will promote cultural understanding, awareness, and respect for this very significant cultural site. In addition, written materials and guided tours are being recommended to enhance the visitor experience.

Another aspect of the plan is to look at resource management concerns and propose actions that will promote the long-term protection and preservation of the Kūkaniloko Birthstones complex. The major resource management issues to be addressed are:

- Impact of the trees. The eucalyptus trees were planted in the 1940s and the coconut around 1970. The coconut trees have the greater potential to damage the stones because of falling nuts and some trees should be removed to protect the stones. The other concern is the impact of the trees on the view corridor to the Waianae Range.
- Vandalism. A history of vandalism has been documented at the site, from scratching on the stones to fires that have fractured the stones (Yent, 1995). Actions to reduce vandalism have been initiated with vehicle barriers, the “site protection” signs, and the presence of the curators who educate site visitors.
- Offering. Some offerings, such as coins, candles, and incense, can be detrimental to the stones. Like vandalism, efforts to address this concern after been initiated through signs and visitor education.
- Preservation of the cultural and historical setting of the site. This has been initiated with the establishment of an open space buffer.
- Maintain the culturally significant view corridors from the site, especially those along the Waianae Range.

## II. GOALS AND OBJECTIVES

The overall goal of Kūkaniloko Birthstones State Monument is the preservation of the cultural, historical, archaeological, scenic, and other scientific values of the site while providing opportunities for appropriate types of visitation that will not destroy or impair the features and values to be preserved. Consequently, the development of interpretive devices and programs at Kūkaniloko should be sensitive to the cultural values and the historical setting.

A number of objectives have been identified which reflect the desired visitor experience, what the visitor should learn, and/or the preferred visitor behavioral patterns that result from implementation of the program. The expectations associated with each objective are reflected as percentages of visitors which can then be used as a basis for evaluating the effectiveness of the program elements. Visitor surveys are the best way of determining if the program is meeting the desired objectives.

### Orientation

At present, there is no orientation for the visitor. The location of Kūkaniloko on the Wahiawa Plateau encompasses several significant view corridors. These view corridors are important to understanding why Kūkaniloko was such an important cultural site and how it fit into the larger geographical context of central Oahu over the past 800 years. By providing orientation information, it is expected that:

75% of the visitors will know that Kūkaniloko is roughly in the center of Oahu.

50% of the visitors will be able to orient to the Waianae and Koolau Ranges.

### Cultural History

The natural and biological resources of the area have been altered over the past 200 years by the loss of forest and pineapple cultivation. It is the cultural history that is the dominant theme at Kūkaniloko although, the natural and biological history are important to understanding the historical setting. Many of the historical and cultural traditions are associated with the pre-contact use and importance of the site.

80% of the visitors will know that Kūkaniloko is the royal birthing site on Oahu.

75% of the visitors will know that Kūkaniloko was restricted to the *alii* and *kāhuna*.

50% of the visitors will understand that Kūkaniloko was part of a larger religious complex that included Hoolonopahu Heiau.

50% of the visitors will understand that the Wahiawa Plateau looked different in the past when Kūkaniloko was used by the Hawaiians than it does today.

### Resource Management



Interpretation can also assist with the management and preservation of the resources being interpreted. Today, the Kūkaniloko site is limited to the 0.5-acre concentration of boulders, but these boulders have been subject to vandalism and unintentional damage over the years. This damage includes scratching graffiti on the rock surfaces and leaving coins which can cause a chemical reaction on the stone surfaces. The most serious damage occurred in 1992 when a fire set between several boulders resulted in the fracturing of three stones. Many visitors will respect the site and follow the trails if they are informed about the cultural sensitivity. Interpretation seeks to promote respect for these sensitive resources with the preferred behavioral pattern being reflected by:

- 80% of the visitors will not disturb or damage the boulders, including hitting, scratching, chalking, or burning.
- 80% of the visitors will not leaving “damaging” offerings on the boulders, such as coins and candles.
- 75% of the visitors will understand that this site is considered “sacred” to the Hawaiian people and should be treated with respect.

#### Preservation of View Corridors

Closely associated with resource management is the need to maintain the historical integrity and view corridors in balance with public visitation. This may include devices and facilities being setback and designed to blend in with the historical setting.

- 75% of the visitors will not mind walking a short distance to the site from the parking lot to protect the view corridors and historical setting.
- 60% or more of the visitors will take photographs of these view corridors.

#### Feedback

There needs to be an evaluation of the program’s effectiveness in achieving the outlined objectives. This entails a feedback system that seeks to understand the visitor’s response to the interpretive materials. This feedback can take the form of suggestion boxes or questionnaires where the visitor is asked to provide written comments. It can also be based on the feedback between the visitor and interpretive staff through verbal and nonverbal interaction. In addition, the behavioral objectives can be evaluated through a monitoring system of the resources.

It is proposed that a visitor survey be conducted with the draft signs to evaluate visitor interest and understanding of the materials presented in the signs. Based on feedback and visitor suggestions, changes can be made before finalizing the signs. Future surveys should be taken after the signs are installed to evaluate additional needs.

### **III. RESOURCES**

The central resource at Kūkaniloko Birthstones is the 0.5-acre cultural/historical site consisting of a complex of boulders, some of which appear to be well embedded while others appear to be

sitting on the ground surface. The other resources associated with the site are the natural/geological features and the culturally significant view corridors.

### Cultural Resources

The name Kūkaniloko is translated as “the sound or resonance rises from within“ (Maly in Henry et al, 1992:4). Several sources refer to Kūkaniloko as the name of a chief or chiefess. Handy records “Kūkaniloko was the name of an ancient high chief of Oahu who is said to have made the first *loi* here [at Kūkaniloko]” (Handy and Handy, 1972:465). Fornander says a chiefess bore the name and from her line were born powerful *alii* (Fornander, 1969: Vol. 2:21). He also reports that she was the great-grand-daughter of Māilikūkahi (ibid:91). John Papa Ii identified Kūkaniloko as an important *puuhonua* on Oahu (Ii, 1959:138).

Kūkaniloko as a place name referred to a much larger area in the past. It encompassed the area from Waikakalaua and Lihue to the south, Kalena to the west, and Helemano to the north (Figures 6 and 7). These boundaries correspond in large part to Waianae Uka and the Wahiawa *ahupuaa*. Today, Kūkaniloko is used to refer to the 0.5-acre area where the boulder concentration is located.

### Kūkaniloko Birthstones

The Kūkaniloko Birthstones site was recorded by McAllister in his archaeological survey of Oahu during the late 1920s (McAllister, 1933: 134-137). He described the site as 0.5-acre in size with many large stones scattered about on a well-kept lawn:

*“There is now little to see at Kukaniloko. It is an inclosed area about one-half acre in size, with many large stones, some just visible, others protruding to a height of 3 to 4 feet, scattered about on a well-kept lawn. Tall trees border the site. To the old Hawaiians these stones were all named and represented alii, but now the only name remembered is Kahamaluihi, a flat stone near the center of the group. The old Hawaiians of today remember that in their childhood they were never allowed by their parents to approach even near the sacred birthplace, an indication of the great respect in which Kukaniloko was held, even a century after contact with Europeans and more than a half century after the coming of the missionaries.”* (1933: 136)

The first detailed mapping and inventory of the boulders of the site were conducted in 1992 (Henry, Walker, Rosendahl, 1992 and Yent, 1995). A total of 180 stones cover an area approximately 50m (east-west) by 25 meters (north-south) but when the eucalyptus and coconut trees around the stones are included, the site encompasses about a half acre (70m by 30m) (Fig. 7). Photographs indicate that the coconut trees were planted around 1970 (George Bacon photograph at Hawaii State Archives).

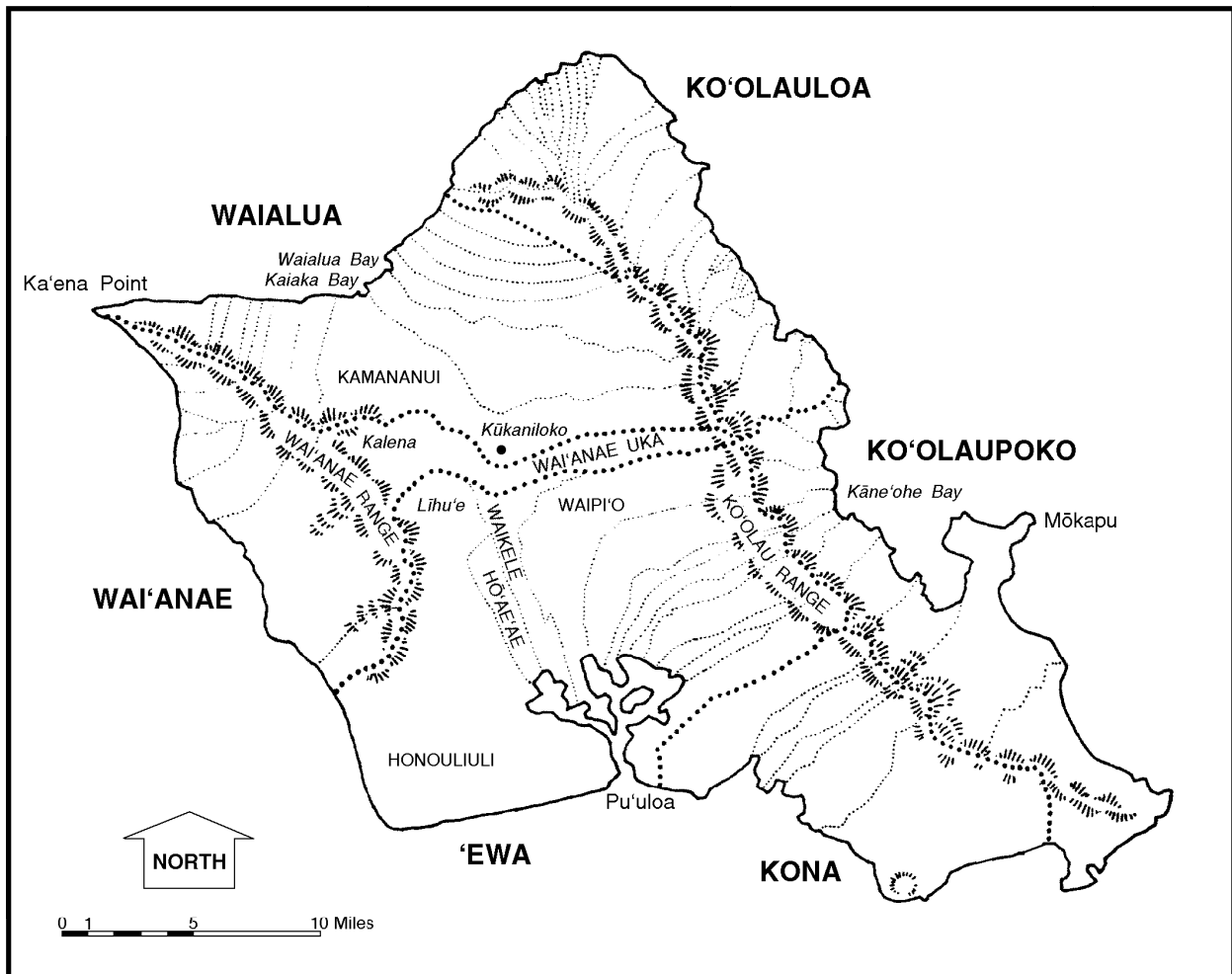


FIG. 6 - Traditional *ahupuaa* boundaries and approximate boundaries of Kūkaniloko. Map adapted from Cordy, 1996: 592 and 599).

Some of the boulders have bulldozer scars and tire marks indicative of the vehicle traffic around and through the site in recent years. The embedded boulders are characterized by waterworn surfaces with surface weathering and a coating of Wahiawa's red dirt (Photo 3). Many of the upper surfaces are marked by smooth depressions (Photo 4). There is no evidence of human workmanship to create these depressions but their uniform presence, symmetry and design suggests that human craftsmanship and generations of usage may have been involved. On several of the boulders, the edges of the stone are fluted with erosional channels from water collecting in the depressions and eroding the edges over time. These stones range from 25cm to 280cm in length.

The mapping, along with the historical records, indicate that several of the boulders are unique and significant. These boulders are discussed using the numbers shown on Figure 8.



Boulder #103. Raised boulder with ovoid plan-view. On the upper, flat surface of the boulder is a petroglyph consisting of incised concentric circles with an incised dot in the center (Photo 5). The outer circle measures about 38cm in diameter. The upper surface of the stone is also marked by fluted “points” along the edges of the stone. It has been suggested that these circles, along with the fluted points, have an astronomical function. A recent fracture has been noted in this stone which appears to be of natural causes.

Boulder #69. This boulder, similar to an upright slab, contains several human forms and circles/arches of unknown age on the flat vertical surfaces (Photo 6). These petroglyphs are lightly pecked and scratched but not deeply incised like the petroglyph on stone #103. There are 5 human forms with triangular bodies on the south-facing side of the stone. Two of the forms have spears and 2 have a circle with a dot in the center located below the right foot. Three additional human forms are found on the west-facing vertical surface of the stone. Recent scratching on the surface of stone #69 is obscuring the detail of some of these petroglyph forms.

Boulder #61. This boulder has a name (KINI?) incised suggesting a historic age.

It is uncertain today which of the boulders actually represents the birthstone used by the chiefesses when giving birth. Some informants point out a boulder present in the complex today while others have indicated that it is at another location nearby. Mr. Kapanaokalani, described as a family member of the ancestral caretakers of Kūkaniloko, stated that the site of “Kūkaniloko” was about a quarter mile from the site of today and located in an area cleared of stone and planted with pineapples. However, he said that all the boulders represent *alii* (Webb, 1925).

Boulder #93 was identified as the birthstone in the 1992 archaeological survey (Henry et al, 1992:21). Another boulder has been identified by the curators (Lenchenko and Makaneole, pers. comm.).

### Sites of the Wahiawa Plateau

To place the site of Kūkaniloko within the larger cultural context of the Wahiawa Plateau, a brief overview of the other significant historical sites and cultural places in the area are discussed below. The Wahiawa Plateau encompasses the 3 districts of Waialua, Waianae, and Ewa. On the central plateau are the *ahupuaa* of Kamananui and Wahiawa in Waialua, Waianae Uka in Waianae, and Waipio, Waikele, Höaeae, and Honouliuli in Ewa. The traditional *ahupuaa* of Waianae Uka that ran from the crest of the Waianae Mountain Range, across the plateau to the crest of the Koolau Mountain Range (Fig. 6). This *ahupuaa* separated the district of Waialua to the north and Ewa to the south. In places, Kaukonahua Stream marks the line between the *ahupuaa* of Wahiawa and Waianae Uka.



PHOTO 3

Central portion of the boulder concentration at Kükaniiloko.  
Note that some boulders appear embedded while other appear to be on the surface.



PHOTO 4

Representative boulder with depression and waterworn edges (Boulder #93).

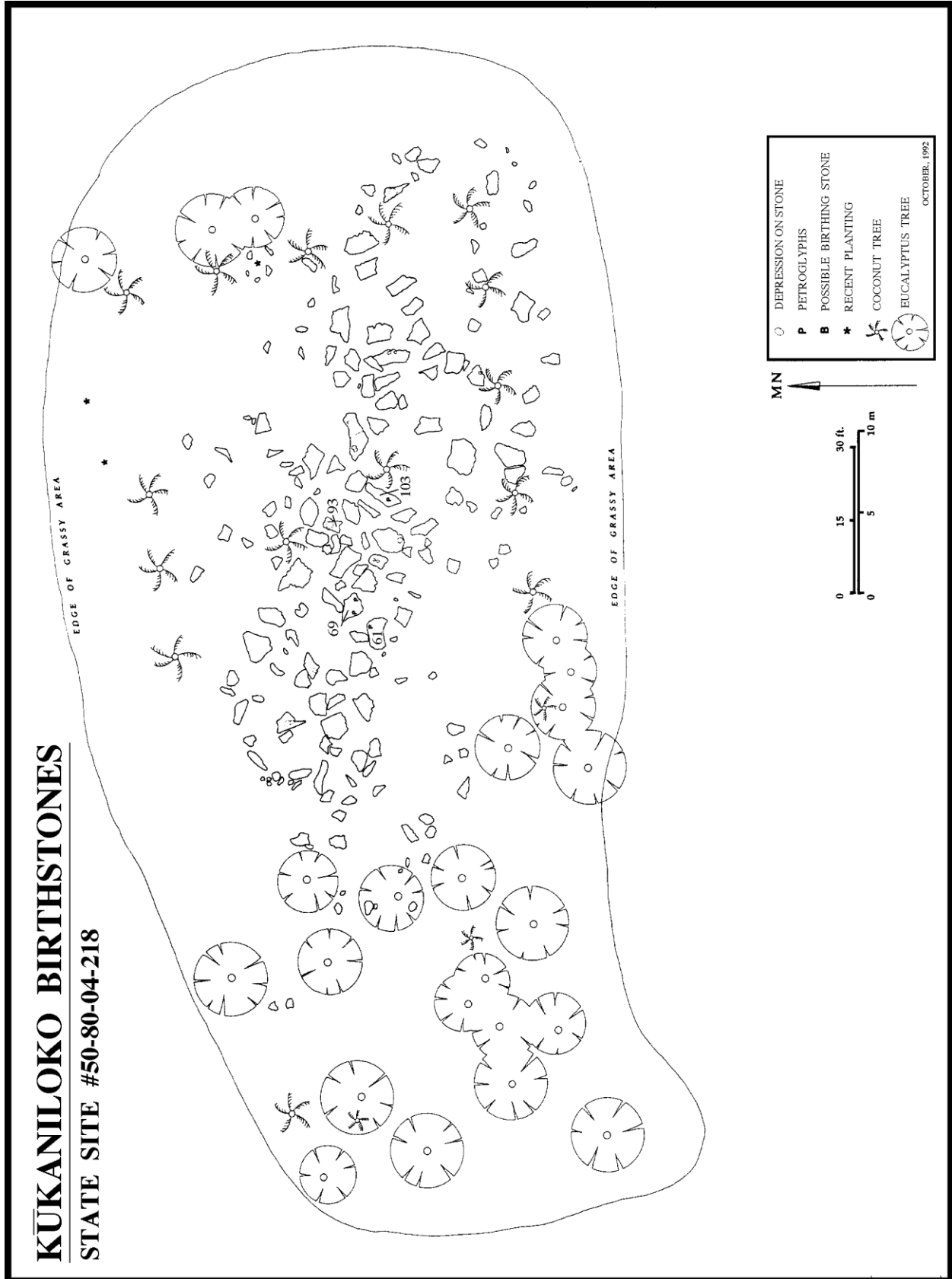


FIG. 8 - Site map of Kūkanihoko Birthstones (State Parks, 1992).



PHOTO 5A  
Boulder #103 showing east-west orientation.  
Concentric circle petroglyph is near the  
center on the upper surface.

PHOTO 5B  
Boulder #103 as viewed from south showing  
the fluted points and grooves along the  
edges. (10/92)







PHOTO 6

Petroglyphs on the south-facing side of boulder #69. Petroglyphs include human forms, circles with dots, and more recent surface scratching. (10/92)

Hoolonopahu Waihau. Referred to as a *waihau heiau*, this site held the sacred drums (*pahu*) that announced the birth of a chiefly child and other features needed to perform the appropriate rituals and support those attending to the birth. The name Hoolonopahu is translated as “sounding of the *pahu* drum”. The sacred drums Öpuku and Hawea announced the birth of the new *alii* and the cutting of the navel cord (McAllister, 1933:137 and Kamakau, 1991:68). After the birth of a child at Kūkaniloko, the child would be taken to Hoolonopahu where the appropriate rituals would be conducted, including the cutting of the navel cord as overseen by the 48 *alii*. Offerings at a *waihau heiau* included pigs, bananas and coconuts but not human sacrifices.

Hoolonopahu as a *waihau* was a sacred, *kapu* place set aside for rituals but was not necessarily marked by a permanent structure. It is said that *makalei* wood was used in the construction (Daniel Au, pers. comm.). The *heiau* is believed to have been located around 1,300 feet northwest of Kūkaniloko in the area of Kamehameha Highway today (Fig. 9). But by the 1920s, the *heiau* (State Site No. 219) was described as being destroyed and the land planted in pineapple (McAllister, 1933:137).

Kalena. The place name Kalena is also referred to as the “plain of Haleauau” and traditionally encompassed the northwestern portion of the Waianae Uka *ahupuaa* as marked by Puu Kalena on the west to Kaukonahua Stream on the east. This area adjoins Lihue to the south. Both of these areas are noted as the site of several battles during the time of chief Kualii.

Kumakalii Heiau (Site #213). Noted as a large, important *heiau* located in Pukalooa Gulch, not far from Kolekole Pass. Said to have been visited by Kalakaua in the 1870s but destroyed when the stones were used for the construction of the Wahiawa dam (McAllister, 1933: 133-4).

Haleauau (?) Heiau (Site #215). A stepped, platform structure on the side of Pumaialau Gulch that has been largely destroyed by artillery (ibid: 134).

Heiau (Site #217). Located in Kalena Gulch on the land of Mohiaka, this platform structure is said to have a tunnel underneath with burials. Destroyed by artillery (ibid).

Kolekole. Kolekole refers to both the pass in the Waianae Mountain Range and the trail through the pass. It is reported that students of *lua* (dislocating joints and replacement) would practice their art on travelers in the area (notes of J.G. Stokes in Sterling and Summers, 1978: 135).

Kolekole Stone or Hupeloa (Site #214). This large stone located on the Wahiawa side of the pass is said to represent the guardian of the pass (McAllister, 1933: 134). This large stone has been once part of the lava flow on the rim of the Waianae caldera. Rainwater has dissolved the rock to form the deep grooves on the edges. Said to be used for preparation of the bodies of chiefs for burial (Gutmanis, 1986: 22).

Lihue. The place name Lihue is also referred to as the “plain of Leilehua”. This land area traditionally encompassed the southwestern portion of the Waianae Uka *ahupuaa* and the *mauka* portion of the adjacent Honouliuli *ahupuaa*. Within this area is the *puu* named Maunauna.

Oahunui (Site #204). The outline of this stone resembles the island of Oahu. It is said to be located in a gulch near the division line between Ewa and Waialua (old boundary). Oahunui is also the name of a chief of Oahu who fell under the influence of the cannibal chief Lo Aikanaka (McAllister, 1933: 132).

### Natural and Scenic Resources

The natural resources of Kūkaniloko include the stones and the view corridors. These view corridors consist of both scenic and culturally significant features.

#### Boulders

It is uncertain if the concentration of basalt boulders at Kūkaniloko represents a geological feature of the Wahiawa Plateau. Geologists are not sure if the boulders are associated with the bedrock substrate or if they are partially buried boulders in the soil matrix (Glenn Bauer and Ed Sakoda, DLNR-CRWM, pers. comm.). The concentration at Kūkaniloko also reflects the fact that boulders from the other portions of the plateau have been pushed into the gullies and gulches as fields were cleared for the cultivation of pineapple.

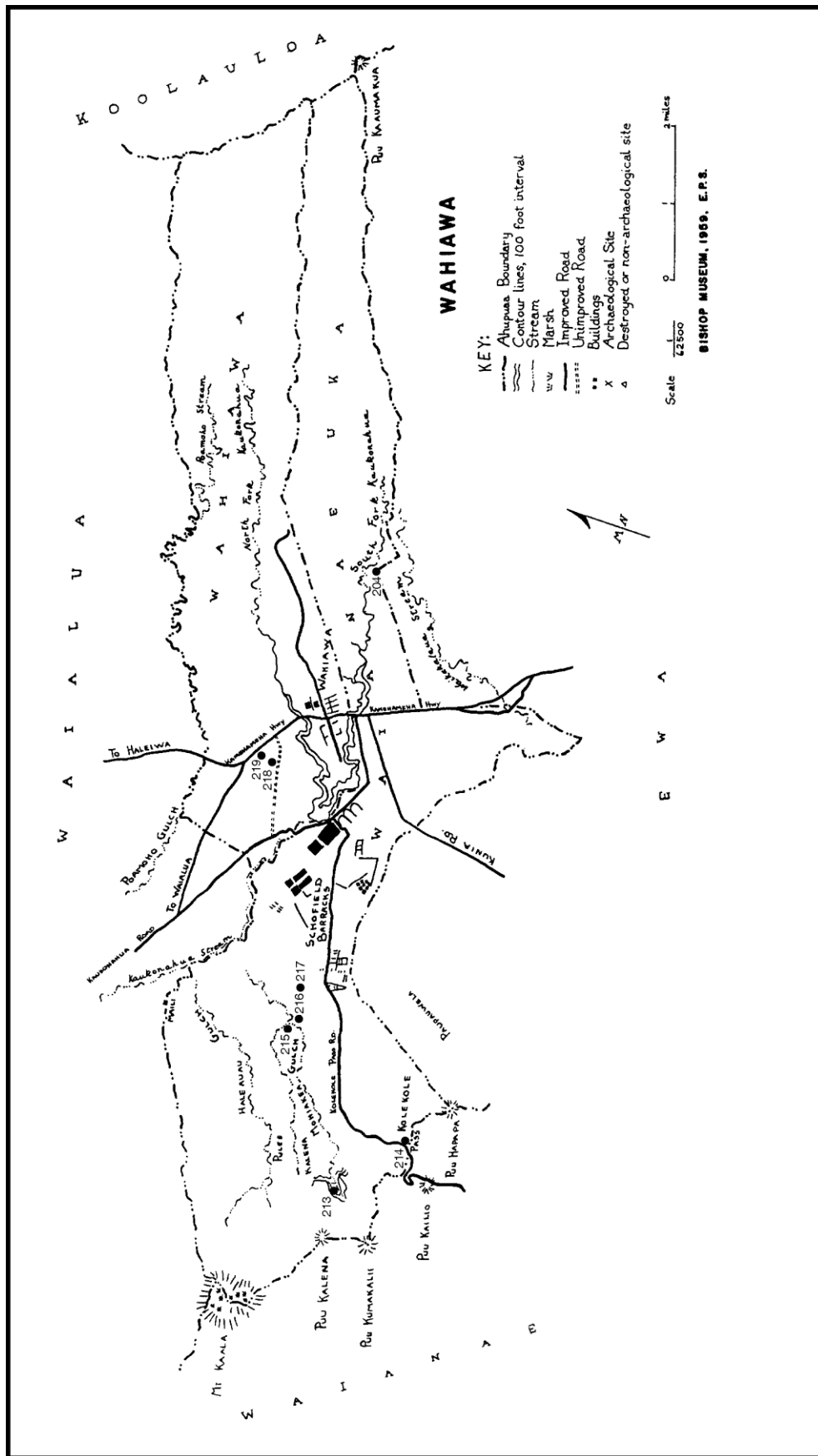


FIG. 9 - 1959 Bishop Museum map showing the locations of Kūkaniloko and Hoolonopahu. Taken from Sterling and Summers, 1978.

## Wahiawa Plateau

The Wahiawa Plateau, also called the Leilehua or Schofield Plateau, is a large open expanse located between the Waianae and Koolau Mountain Ranges in central Oahu. At an elevation averaging 900 feet above sea level, the plateau is noted for its rich red soil and ample rainfall.

Both the Waianae and Koolau Mountain Ranges are the very eroded remnants of shield volcanoes. The lava flows from the Koolau volcano banked against the older and already eroded slopes of the Waianae volcano to form the plateau (Fig. 10). The contact of the Koolau flow with the Waianae volcano is seen along Kaukonahua Gulch Macdonald et al, 1983:420 and Stearns, 1985:115-116). Atop the basalt is a thick layer of alluvium.

### Streams and Gulches of the Wahiawa Plateau

The abundance of rainfall on the Wahiawa Plain has resulted in numerous streams. Over time, these streams have cut and eroded the gulches that transect the Wahiawa Plateau.

Kaukonahua Stream and Gulch. This stream and gulch run east-west to the south of Kūkaniloko before turning north and exiting at Kaiaka Bay. The North and South Forks of Kaukonahua Stream converge at the Wahiawa Reservoir to the south of Kūkaniloko. This was one of the major taro growing areas with terraces on the floor of the gulch.

Poamoho Stream and Gulch. This stream and narrow gulch run east-west to the north of Kūkaniloko before turning north and exiting at Kaiaka Bay.

### Waianae Mountain Range

The Waianae Mountain Range runs northwest to southeast along the western portion of Oahu for a distance of about 25 miles. The eastern slopes of the range abutting the Wahiawa Plateau are less eroded with more colluvium buildup along the lower slopes. Along the length of this mountain range are several peaks and features that have cultural and geological significance.

Mt. Kaala. Kaala is not actually a peak but a subcircular plateau, about a mile across, atop the Waianae Range. Located 9.5 miles from the northwest end of the range and 12 miles from the southwest end, the site is a swampy forest. Kaala is the highest point along the range at 4,025 feet above sea level.

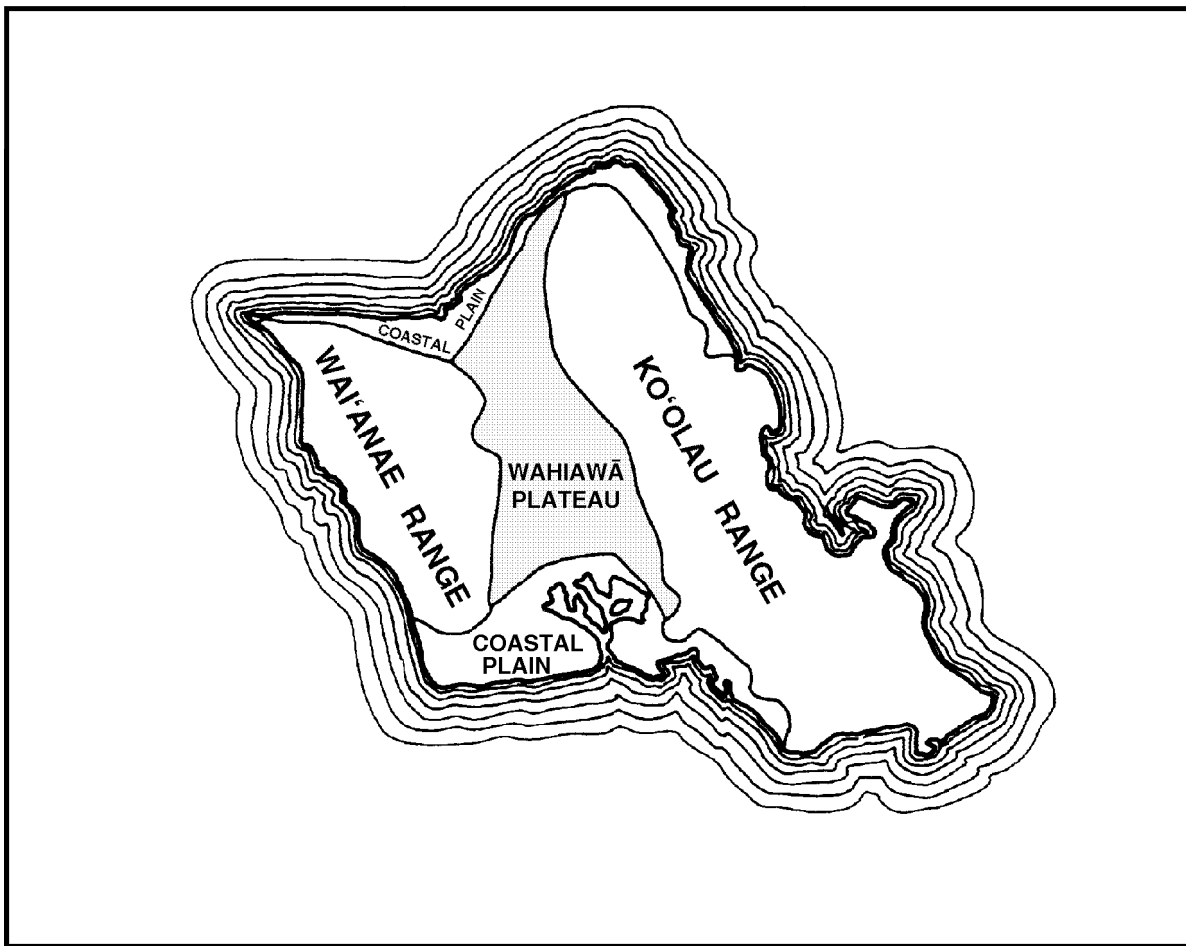


FIG. 10 - Major geomorphic areas of O'ahu showing extent of the Wahiawa Plateau.  
Adapted from Stearns 1985: 11.

Kolekole Pass. Kolekole Pass is located at the center of volcanic activity for the Waianae volcano and marks the eastern edge of the caldera. Erosion of the western flanks of the Waianae caldera created Lualualei Valley which has been eroding faster than the eastern flanks along the Wahiawa Plateau.

#### Facilities and Surface Features

In 1993, minor improvements were made to the 5-acre parcel after acquisition by the State. In addition to the general grading and leveling of the furrows from pineapple cultivation in the 4.5-acre buffer around the birthstone complex, the dirt road around the site was removed and a small parking area was established.

#### Roadway

A 700-foot long dirt road runs from the Whitmore Avenue intersection to the eastern corner of the 5-acre parcel (refer to Fig. 4). The entry is marked by two large boulders on each side of the roadway. This road drops steeply from Kamehameha Highway to the lower ground level with the birthstone site and pineapple fields. The road is only partially paved off the highway and the steep portion is subject to erosion during heavy rains. A large boulder splits the road into 2 lanes about 200 feet from the intersection and the 2 lanes then join to form a single roadway to the

parking lot (Photo 7). The roadway averages 20 feet in width with a 10-foot wide strip of grass along both sides of the road. Boulders placed about every 30 feet line the sides of the roadway.

### Parking Area

The dirt parking area at the eastern corner of the parcel measures 60 feet on a side (Photo 8). The sides are lined with large boulders that serve as vehicle barriers. A chain along one side of the parking area provides access for service vehicles. This lot can accommodate about 6 cars with additional parking available along the roadway.

### Dirt Platform and Mounds

During the grading, a rectangular platform along the northeastern edge of the parcel was constructed with the extra dirt. This platform measures 60 feet (E-W) by 125 feet (N-S) and is about 5 feet in height. The surface of the platform is grassed with dracaena, banana, *noni*, and *hala* planted along the upper edges.

There are 3 dirt mounds around the perimeter of the site that were also constructed with surplus dirt during the grading (refer to Fig. 4).

- Mound #1 is about 12 feet off the northeast corner of the dirt platform. It is 25 feet in diameter and 15 feet in height.
- Mound #2 is located about 60 feet from the western corner of the parcel. It is 20 feet in diameter and 6 feet high.
- Mound #3 is about 150 feet west of the parking lot along the southern property line. The mound measures about 22 feet in diameter and 8 feet in height.



PHOTO 7

Dirt roadway from the intersection of Whitmore Avenue and Kamehameha Highway looking west towards the Kūkaniloko site. Boulders at entry and center of roadway. (12/98)



PHOTO 8

Parking area delineated with large boulders. Note the dirt platform to the north of the parking area - right edge of photograph. (12/98)

#### IV. INTERPRETIVE THEMES

The themes are the central ideas to be conveyed in the interpretive presentation and the central concepts that the visitor walks away with after visiting an interpretive facility or site. The themes at the Kūkaniloko center around the cultural history of the site and the surrounding Wahiawa Plateau. The scenic views can be appreciated for their natural beauty but many visitors may not recognize the cultural history behind the landscape or how the landscape has changed over the last several hundred years. The purpose of the interpretive materials, then, is to heighten the visitor's awareness about the cultural history of Kūkaniloko and stimulate interest in the resources visible in the view corridors around the Wahiawa Plateau.

##### Cultural Themes

Prior to 1913, the lands of Wahiawa were divided between the Waianae Uka *ahupuaa* in the Waianae District and the Kamananui *ahupuaa* in the Waialua District (refer to Fig. 4). In the pre-contact period, these lands consisted of forest and cultivated areas with crops of taro, sweet potato and yam.

The following chant, dating to sometime after Kamehameha, honors the sacred site of Kūkaniloko: (Gutmanis, 1986:17)

##### *He Mele No Kukaniloko*      *A Song of Kukaniloko*

<i>No Kukaniloko koʻu aloha,</i>	For Kukaniloko is my love,
<i>Ke kupa noho kula a o Kalakoa,</i>	The native born that dwells on the plain of Kalakoa
<i>Kahi hanau hoi o na alii,</i>	Birth place indeed of the chiefs
<i>Wohi hoi a o Hawaii nei;</i>	Highest chiefs ( <i>wohi</i> rank) indeed of Hawaii here
<i>Walea i ke kui lei Ahihi,</i>	Accustomed to stringing wreaths of <i>ahihi</i>
<i>Lei hookipa no ka malihini,</i>	Wreath of entertainment for the stranger
<i>Paa mai uka i ka uhiwai,</i>	Finished from upland in the heavy mist
<i>O ke kehau anu ko ke kuahiwi;</i>	The cold dew of the mountain
<i>Halihali mai ana i ke ala,</i>	Bearing the fragrance
<i>Ke ala o maile Nohoanu;</i>	The fragrance of <i>maile</i> that dwells in the cold
<i>Auau aku i ka wai o Kuaikua</i>	Bathe in the water of Kuaikua
<i>Wai hooheno a na alii;</i>	Cherished water of the chiefs
<i>Na mamo hoi a Kakuhihewa,</i>	The descendants indeed of Kakuhihewa
<i>A na pua a Ka Naʻi Aupuni;</i>	The offspring of the Conqueror of the Realm
<i>Nana i rula mai a pololei,</i>	Who ruled wisely
<i>Me ka ihe laumeki i ka lima;</i>	With the barbed spear in the hand
<i>A he puuwai koa me ka wiwoole</i>	And a brave heart with fearlessness
<i>Imi maluhia no ka lahui;</i>	Seeking peace for the race.
<i>Hui pau ia mai na ailana,</i>	All united are the islands
<i>Mai Hawaii a Niihau</i>	From Hawaii to Niihau
<i>Noho hoomalu ia me ke kaulike</i>	Dwelling in peace with justice
<i>Mamalahoia kanawai;</i>	Mamalahoia is the law
<i>Hainaia mai ana ka puana,</i>	Told is the refrain
<i>No Kukaniloko koʻu aloha.</i>	For Kukaniloko is my love.

Many chiefly activities were centered around Kūkaniloko. The *ahupuaa* of Kamananui was noted as the ceremonial center of the Waialua District (Kirch and Sahlins, 1992: 21). There were 2 *heiau* of the *luakini* class in the *ahupuaa*, Onehana Heiau and Kalakiki on the slopes of Kaala



behind the Waialua Mill (Thrum, 1907: 47). Also in the *ahupuaa* was Kapukapuākea, the *heiau* near Kaiaka Bay, where chief Māilikūkahi was installed by the priests as king of Oahu, ca. 1520-1540. As part of this ceremony, his navel cord was symbolically cut, just as at the birth of a chief (Kamakau, 1991). At the time of Māilikūkahi, it was the way of the Kūkaniloko chiefs to not sacrifice men in the *heiau* (ibid). These chiefs were noted for their reigns of peace, prosperity, and good deeds.

After contact, much of the forest was lost as a result of the sandalwood trade and cutting of trees for firewood to supply the whaling ships. The 19th Century was dominated by ranching activities and the beginnings of sugarcane cultivation while the 20th Century saw the development of major military facilities, such as Schofield Barracks and Wheeler Field. The cultural significance of Kūkaniloko has spanned both the pre-contact and post-contact periods.

1. Theme: Why was Wahiawā selected as such a significant cultural place?

The name Wahiawā is translated as “place of rumbling or roaring”. Beckwith adds that Wahiawā is “frequently visited by thunderstorms, whose manifestations were regarded as the voices of ancestral gods of the heavens welcoming an offspring of divine rank. The drums perhaps simulated the voices of deity” (Beckwith, 1970:377). While it appears that some *alii* chose to live in the uplands around Kūkaniloko, many had moved to the coastal areas and established royal centers at Waikīkī, Kāneohe, and Puuloa (çEwa) before Western contact. However, Kūkaniloko continued to be an important site for chiefly activities.

a. Subtheme: Kūkaniloko marks an upper elevation near the center of Oçahu.

The site of Kūkaniloko is at Kapuahuawa, Wahiawā, Waicalua (Kamakau, 1991: 57). From the Kūkaniloko site, the Waianae Mountain Range is 7 miles west, the Koolau Mountain Range is 9 miles east, the ocean is 8 miles north at Haleiwa and 10 miles south at Pearl Harbor (Kyselka, 1992: 3). The site is situated at an elevation of 900 high above sea level. Being the center of the island, Kūkaniloko is also symbolic of the *piko* or navel and thus, birth.

b. Subtheme: The agricultural fieldsystem could support a population of *kāhuna* and *alii* residing in the Kūkaniloko area.

Several large gulches with perennial streams transect the Wahiawā Plateau. Within these gulches was an extensive system of *loçi* and agricultural terraces. Some of the flat lands between the gulches were also cultivated, especially at the junction of Halemano and Poamoho Streams. There were also extensive fields of sweet potato and yam in pre-contact times (Handy and Handy, 1972:464). Wahiawā is one of the few places where sweet potatoes were irrigated with water diverted from Helemano Stream (ibid). These agricultural lands supported a large population that once lived in the Wahiawā area.

c. Subtheme: The forests of the Waianae and Koolau mountains provided a rich resource base for various forest products.

Before contact, the forests of Wahiawā could probably be characterized as lowland dry and mesic forest with *ōhia*, *koa*, *lama*, and *wiliwili*. In addition to the wood resources,

the forests would have been important for edible and medicinal plants and the birds whose feathers were collected.

In the early 19th Century, sandalwood became a major trade item and was harvested under the direction of the *alii*. Many farmers were forced to leave their fields and cut sandalwood. Some of the largest trees were at Wahiawā and it was difficult to get the cut wood to the beaches (Kamakau, 1961:207).

- d. Subtheme: Lihue on the Wahiawā Plateau was the major royal center of Ewa in the early 1500s.

Lihue, the land area of upland Ewa near the Waianae Range, is noted as a royal center during the reign of the Māweke-Kumuhonua line, circa early 1400s to mid-1500s (Fornander, 1880:88 and Cordy, 1996:598). There is little known about this royal center, including its *heiau* and residential pattern. By the A.D. 1400s, the Ewa district was becoming one of Oahu's most productive with construction of the fishponds of Puuloa (Pearl Harbor) and extensive the agricultural fields on the floodplains, in the valleys and gulches, and on the upland plateau.

- e. Subtheme: Trails across the Wahiawā Plateau linked the settlements and sites of 3 western districts of Oahu: Waialua, Waianae and Ewa.

Two major trails joined near the fork of Kaukonahua Stream and just west of Kūkaniloko (refer to Fig. 7). The Waialua Trail ran from Waialua, along Kaukonahua Stream, through Waipio and into Ewa. The Kolekole Trail from Waianae crossed the Waianae Range at Kolekole Pass and joined the Waialua Trail near Kūkaniloko.

2. Theme: Status and rank were integral to the Hawaiian social and political systems.

- a. Subtheme: Kūkaniloko was established at a time of economic, social and political development on Oahu.

Based on genealogies, Kūkaniloko may have been recognized as a royal birthsite by the A.D. 1300s. This period of the 1300s was a time of growing social, political, religious, and economic complexity on the island of Oahu (Fornander, 1880). Much of the island was permanently occupied, especially the coastal areas. Forests were removed as agricultural fieldsystems were expanded. Politically, there was the formation of district-based polities with the supra-district of 'Ewa constituting the 3 traditional districts of Ewa, Waianae, and Waialua under the rule of Māweke (refer to Table 1 taken from Cordy, 1996). Socially, the class system was becoming more defined with a greater emphasis on the separation between *alii* and *makaāinana*. This promoted the importance of arranged *alii* marriages and genealogy (birth status). While in the religious system, temple worship was becoming restricted to *alii*.

This was also the time when new cultural practices were being introduced to Hawai'i by Paa and Moikeha who came from Kahiki. These new practices influenced many facets of the social, political, and religious system in Hawai'i.

- b. Subtheme: Kūkaniloko is reported to have been established by chief Nanakaoko and his wife, Kahihokalani, for the birth of their son, Kapawa.

The genealogies of these individuals has been used as the basis for dating the Kūkaniloko site to the A.D. 1300s (HRHP, 1994). Kapawa is noted as the *ali'i* who established the *kapu* for gods and chiefs. In doing so, the mechanisms were set in place for mere mortals to become gods. It appears that Kapawa had some unsavory characteristics that degraded his rule and he may have been deposed by Paaō in favor of the chief Pili Kaaiea from Kahiki (Fornander, 1969II: 20).

- c. Subtheme: A number of significant O'ahu chiefs and chiefesses were born at Kūkaniloko between circa A.D. 1300 and A.D. 1700.

- Kapawa (m) was the first born at Kūkaniloko, ca. 1300. The following chant memorializes Kapawa (Kamakau, 1991:136-137):

<p><i>çO Kapawa, ço ke aliçi o Waiçalua</i>  <i>I hanau i Kūkaniloko</i>  <i>çO Wahiwä ke kahua</i>  <i>çO Lihuçe ke ëwe</i>  <i>çO Kaçala ka piko</i>  <i>çO Kapukapuäkea ka açä</i>  <i>O Kaiaka i Mäeaea</i>  <i>Haçulei i Nukea i Wainakia</i>  <i>IçAçaka i Häleu</i>  <i>I ka laçi malino o Hauola</i>  <i>Ke liçi ço Kapawa hoçi no</i>  <i>Hoçi no i uka ka waihona</i>  <i>Hoçi no i ka pali kapu o nä liçi</i>  <i>He kiaçi Kalähiki no Kakaçe</i>  <i>çO Heleipawa ke keiki a Kapawa</i>  <i>He keiki aliçi no Waiçalua i Oçahu</i></p>	<p>Kapawa, the chief of Waiçalua,          Was born at Kūkaniloko;          Wahiwä the site;          At Lihuçe the placenta,          At Kaçala the navel cord,          At Kapukapuäkea (<i>heiau</i>) the caul,          (<i>Heiau</i>) of Kaiaka at Mäeaea;          He died at Nukea at Wainakia.          Through (the surf of) çAçaka at Häleu,          Through the calm stillness of Hauola,          The chief Kapawa was taken,          Taken upland (in <i>Īao</i>) for laying away,          Taken to the sacred pali of the chiefs,          Kalähiki is the “watchman” of Kakaçe,          Heleipawa was the son of Kapawa,          A chiefly child of Waiçalua, Oçahu.</p>
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TABLE I  
Rulers of O'ahu

Estimated Date			
1300-1320	Māweke		
1320-1340	Muli'ealeali'i	Keaunui	Kalehenui
1340-1360	Kumuhonua	Mo'ikeha	'Olopana
1360-1380	'Elepu'ukahonua	Ho'okamali'i	
1380-1400	Ho'okupohokano (Kahokupohakano)	Kaha'i	
1400-1420	Nāwele	Kūolono	
1420-1440	<b>La'akona</b>	Ma'elo (f)	
1440-1460	Kapae-a-La'akona	Lāulihewa	
1460-1480	Huapouleilei	Kahuoi	
1480-1500	--	Pua'a a Kahuoi	
1500-1520	--	Kūkahia'ililani	
1520-1540	Haka	<b>Mā'ilikūkahī</b>	
1540-1560		Kalona-iki	
1560-1580		Piliwale	
1580-1600		Kūkaniloko (f)	
1600-1620	<b>Kala'imanuia (f) (Kalanimanuia)</b>		
1620-1640	Kū-a-Manuia	Ka'ihikapu-a-Manuia	Ha'o Kekela (f)
1640-1660		<b>Kakuhihewa</b>	Napulanahumahiki Kaea-a-Kalona(f) (Ka-haiao-nui-akaua'ilana)
1660-1680		Kānekapua-a-Kākuhihewa	
1680-1700		Kaho'owahaokalani	
1700-1720		Kauakahi-a-Kaho'owaha	
1720-1740		Kuali'i (Ku-i-ke-ala-i-ka-ua-o-ka-lani)	
1740-1760	Kapi'iokookalani	Peleiōholani	'Elani
1760-1780	Kanahaokalani	Kumulana	
1780-1800		Kāneoneo	Kahahana

- Laa (m) was born at Kūkaniloko, ca. 1420. Accounts talk of Laa going to Kahiki and bringing back Öpuku, the *pahu kächeke* (Kamakau, 1991:109).
- Mäilikūkahi (m) was born at Kūkaniloko, ca. A.D. 1520. Mäilikūkahi was a chief of the Nānāulu line who is remembered as a good chief who brought peace and prosperity.
- Kalanimānuia (f) was born at Kūkaniloko. Kamakau records her birth in A.D. 1100 (1991:57) while Cordy has estimated her birth much later, circa A.D. 1600 based on genealogies. She resided in the Kalāuao *ahupuaa* of Ewa. Her mother was Kūkaniloko and she is noted for building fishponds, rebuilding *heiau*, and maintaining peace (Kamakau, 1991:57).
- Kākūhihewa (m) was born at Kūkaniloko (ca. A.D. 1640) and raised in Ewa. Kākūhihewa was also noted as a chief of peace and prosperity.

d. Subtheme: Kūkaniloko was the name of a chiefess of the *Lö* class.

It is reported that the chiefs of Lihue, Wahiawā and Helemano were called *Lö* chiefs because they preserved their chiefly *kapu* by living in the uplands of Waialua, intermarrying amongst themselves, and avoiding contamination (Kamakau, 1964:5). Lö Kaholi-a-Lale was born in the uplands of Lihue and became highly skilled in spear throwing. The main occupation of the Lihue chiefs was the art of spear throwing (Kamakau, 1991:50). This was also the main occupation of Piliwale, the *moi* of Ewa who belonged to the Kumuhonua line of Kūkaniloko. His eldest daughter was Kūkaniloko who has been dated to the period A.D. 1580-1600 (Cordy, 1996:596). Kapawa was also of this sacred *Lö* class.

3. Theme: Genealogy and birthsite were significant factors in determining one's status.

a. Subtheme: Recognized royal birthsites are limited to Kūkaniloko on O'ahu and Holoholokū on Kauai.

To be born at Kūkaniloko or Holoholokū insured one of high-ranking status and privileges, legitimized their godly status, and maintained the purity of the indigenous royal lineages. These birthsites are believed to be one reason that the O'ahu and Kauai genealogies were recognized as the highest, purist, and most sacred and were referred to as the Nānāulu line. These 2 sites are also noted for their antiquity and their importance extended beyond the island on which they are located. Both of these sites have also been recorded as *puuhonua*, places of refuge (Ii, 1959: 138).

b. Subtheme: To maintain the purity of the royal lineages, male *alii* and *kāhuna* attended and oversaw the birth and the accompanying birth rituals.

Although high-ranking women were born at these birthsites, the only women allowed on the site were the chiefesses giving birth. There were seven days of purification for the chiefess after giving birth. Kamakau reports that 36 chiefs witnessed the birth at Kūkaniloko. Another 48 chiefs oversaw the rituals and ceremonies at Hoolonopahu

Heiau, including purification, the cutting of the navel cord and the beating of the sacred *pahu* drum, Hawea (1991:38).

- c. Subtheme: To insure the sacredness of the birthsite was respected, the site was restricted and overseen by the *kāhuna*.

The hallowed ground of these sites could be delineated with walls and it is believed that a low stone wall defined the southern and eastern side of the Kūkaniloko birthsite (Tom Lenchenko, pers. comm.). Thirteen (13) *kāhuna* are said to have lived in the site area and the *kauwā* (outcasts) were restricted to the southern side of Kaukonahua Stream.

- d. Subtheme: Chiefly status and rank were reflected in a number of social, political, economic, and religious ways (Earle, 1978).

- Recognized genealogy through both the male and female senior lines. With arranged marriages, the rank of offspring could be maintained or built upon through successive generations. Marriage between *alii* lines on different islands had both social and political implications.
- Religiously sanctioned and symbolically marked. Chiefly power was reflected in the presence of royal centers, the *kapu* system, clothing, and burial practices.
- Ownership of group property, such as land, and the right to request food, goods and services. The construction of *heiau* and fishponds under the direction of a high chief (*alii nui*) is an example of chiefly power to recruit and organize a large labor force.
- Responsible for group welfare.

4. Theme: The boulders at the Kūkaniloko also had a significance for astronomy.

Kūkaniloko has been called the Stonehenge of Hawai'i (Kyselka, 1992). From this location, the solstitial and equinoctial positions of the sun could be observed and marked for use as a calendar. For example, the rising of the Pleiades (Makali'i) at sunset marked the beginning of the Makahiki festival (November) which ended 4 months later with the setting of the Pleiades at sunset.

- a. Subtheme: The equinox is marked at Kūkaniloko by the setting of the sun directly behind Mt. Kaala.

The equinox is when the sun crosses the equator twice a year (March 21 and September 23) and day and night are of equal length all over the earth.

- b. Subtheme: The solstice is marked at Kūkaniloko by the setting of the sun at points along the Waianae Range.

On the winter solstice (December 22), the sun sets behind the peak to the south of Kolekole Pass (Puu Kāilio). On the summer solstice (June 22), the sun sets over Mokulēia.

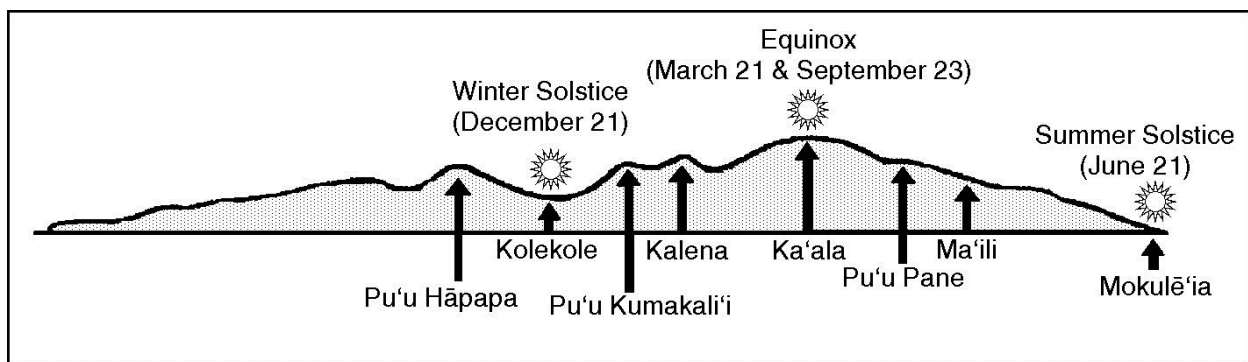


FIG. 11 - Significant astronomical points along the Waianae Mountain Range as viewed from Kūkaniloko.

- Equinox (spring and fall) - sun sets at Kaala (March 21 and September 23)
- Summer Solstice - sun sets at Mokulē'ia (June 22)
- Winter Solstice - sun sets at Kolekole (December 22)

- c. Subtheme: Stones may have also played a role in the Hawaiians telling of time of day, season, and latitude.

Several of the stones at Kūkaniloko have fluted edges created by rain solution grooves. These fluted edges could have functioned as pointers, especially on the stone with the concentric petroglyph. It has been suggested that this stone functioned as a compass and to observe the equinox (Kurth and Johnson, n.d.). Perhaps, these stones were also used to mark the birth time and date for a new chief.

### Natural Themes

The natural themes at Kūkaniloko reflect the geology and cultural landscape of the Wahiawā Plateau.

5. Theme: The Wahiawa Plateau represents the interface between the two volcanoes that created O'ahu.

The plateau is delineated by the older Waianae volcanic remnant on the west and the younger Koolau volcanic remnant on the east. The younger Koolau flows about the Waianae Range and are covered by a thick alluvium.

- a. Subtheme: The higher elevation of the plateau is marked by higher rainfall.

At about 900 feet above sea level, Wahiawa is noted for its frequent rain showers and thunderstorms.

- b. Subtheme: The plateau is cut by several streams and gulches.

The major streams of the Wahiawa Plateau are Kaukonahua, Poamoho, and Helemano. Although relatively narrow, the gulches created by these streams were major agricultural areas for taro and sweet potato.

- c. Subtheme: The thick alluvium makes the Wahiawa Plateau a rich agricultural area.

Much of the ethnographic and archaeological information available suggest that the major agricultural areas on the Wahiawa Plateau in the pre-contact period were the gulches and a limited portion of the upper plateau. It appears that much of the upland area remained in forest until the 19th and 20th Centuries.

- d. Subtheme: Are the stones natural or altered by human activity?

This question actually involves 2 aspects that require further research. One is the presence of the rock concentration in this location. It is uncertain if the imbedded boulders are connected to bedrock or if they are “loose” and might possibly have been moved to this central location. The other question involves the fluted points and grooves on the edges of many of the boulders. It is uncertain if these are natural solution grooves from rainwater erosion or if they are manmade modifications. This question plays a role in the interpretation of site function, both as a birthing site and an astronomical site.

- 6. Theme: Peaks along the Waianae Range are important landmarks in the geological history of Oahu.

- a. Subtheme: Mt. Kaala is the highest point along the Waianae Range and the highest elevation on Oahu at 4,025 feet above sea level.
- b. Subtheme: Mt. Kaala is actually a plateau, rather than a peak. This plateau consists of the swampy forest.
- c. Subtheme: Kolekole Pass represents the point of greatest erosion along the range and the eastern edge of the Waianae caldera.



## V. VISITOR ANALYSIS

The visitors to Kūkaniloko Birthstones represent a wide range of ages, backgrounds, and interests. They arrive at the park with different expectations and various levels of appreciation for the scenic, geological, historical, and cultural resources. Many visitors recognize that the park is set aside for the cultural and historical values but do not have much background about the history and cultural traditions associated with the site. Many visitors locate the site through visitor publications and maps. They drive down the entry road, park in the parking lot, get out of their car and walk to the site.

By understanding the visitor, evaluating the existing visitation pattern, and considering the interpretive themes and the sensitivity of the resources to visitation, it is possible to determine:

- Which resources to interpret.
- What themes to present.
- The best means of presentation.
- The preferred visitation pattern for interpretation.

In analyzing the visitor's needs, expectations, and limitations relative to developing this interpretive plan, it is also necessary to look at the existing park visitation, the visitor and program needs, and the visitation changes that can be anticipated if the interpretive program is implemented. Consequently, this plan addresses both the current visitation pattern and the projected changes with the introduction of additional interpretive devices.

### Audience

The current and projected visitors to Kūkaniloko who would benefit from an expanded interpretive program fall into four general categories. These categories reflect differences in cultural and educational background, their knowledge of Hawaii, and their expectations of an interpretive program.

The first group and probably the largest, consists of visitors from outside Hawaii, including the mainland U.S., Japan, Europe, and other foreign countries. Most of these visitors are on vacation and leisure oriented. Many of these visitors are unfamiliar with Hawaiian culture, history, and the physical environment. The information they receive oftentimes comes from tour guides, interpretive materials available at sites, and tourist publications. Those who travel as part of a tour group may also have interpretive information provided by tour guides. The interpretive materials directed toward this group should be very basic without references to complicated concepts. Likewise, the information they are seeking is the "general picture", rather than details and facts that they will not retain.

The second group consists of Hawaii residents. Many of these visitors are also on vacation and leisure oriented. This group has a general knowledge of the natural and cultural history of Hawaii through such venues as school classes, visiting museums, reading of books and articles, and attendance at various cultural and environmental events. The range of knowledge and understanding can vary greatly between the individuals within this group, however. They are seeking a moderate amount of information which they can relate to what they already know or

understand. Oahu residents may also be part of this group as many residents bring friends and family who are visiting the island.

Another visitor group often using parks with natural and cultural resources consists of educational groups, such as school classes, that can range in age from elementary school to adults. Generally, this group seeks more detailed information as part of their learning experience. Oftentimes, they can be provided with information before visiting the site to enhance their knowledge and understanding of the site, its geology, history, and natural environment. Public school classes frequently visit historical parks and cultural sites as part of the curriculum for Hawaiiana in 4th, 7th, and 11th grades.

A fourth group are the cultural practitioners who use the park as a site for training and the perpetuation of cultural traditions. Today, the Kūkaniloko Birthstones site is considered one of the most significant cultural sites on Oahu and used by the Hawaiian community to denote aspects of Hawaii's living cultural history.

Although there are differences among these categories of visitors, there are some similarities in visitor needs, expectations, and limitations. The size and layout of the park creates common needs while many of the expectations are based on information in tourist publications.

#### Needs:

- Parking areas to facilitate visitation.
- Orientation to the cultural site.
- Well-defined paths to a known destination.
- Protocol for visitation of a Hawaiian cultural site.

#### Expectations:

- An outdoor experience to learn about Hawaiian culture and history.
- A scenic opportunity involving a Hawaiian historical site.
- Photographic opportunities.
- Park that enhances the historical and natural setting with minimal modern developments or intrusions.

#### Limitations:

- Most visitors are leisure-oriented and looking for fun and interesting experiences.
- Many visitors arrive in family groups with a range of ages represented.
- Most visitors have a limited knowledge of Hawaiian history, culture, persons, geology, flora, and fauna.

### Visitor Orientation

First-time visitors to Hawaii are often unfamiliar with the island, its natural and cultural history, and the sites. Those travelling by themselves will often obtain orientation information, including sites to visit and how to locate these sites, from the tourist publications and maps. Those travelling in groups often have their orientation and travel itinerary provided by the tour guides. On a smaller scale, visitors seek an orientation to a site locality. At Kūkaniloko, it is important for visitors to understand that they are standing near the center of the island which is of both geographical and cultural importance to the interpretation of the site.

Visitor orientation can also include recommended protocol when visiting a cultural site. For both resource management and cultural respect, visitors should be informed about preferred visitation guidelines. This may include an orientation to cultural sensitive areas which includes information about why an area is sensitive. Examples of such messages include “stay on designated trail” and “do not mark or deface the stones”.

#### Visitor Access

Visitors can arrive at Kūkaniloko through several modes of transportation, including bus, van, car, motorcycle, or bicycle. The majority of individual visitors arrive by rental or private car (an estimated 90% of the total number of vehicles).

Most visitors access the site from the entry road located at the junction of Kamehameha Highway and Whitmore Road. This intersection has a traffic light with a center left-turn lane for those driving north out of Wahiawa town. For vehicles travelling north towards Haleiwa from Wahiawa, there is a directional sign about 500 feet south of the Whitmore Avenue intersection. This Department of Transportation sign points out the following:

**↑WAIALUA  
WHITMORE VILLAGE→  
U.S. NAVAL  
COMMUNICATION STATION**

There are no park name signs along Kamehameha Highway except the HVB warrior sign on the north side of the intersection. This HVB sign reads:

**STATE MONUMENT  
KUKANILOKO BIRTHSTONES**

#### Visitor Counts and Length of Stay

There are currently no accurate visitor counts for the site. A one-day visitor survey was conducted on Wednesday, December 2, 1998, between 9:00am and 12:00pm. No visitors were observed during this period. However, observations made during other staff visits to the site, suggest a daily visitation in the range of 25 to 50 and an annual visitation range of 9,000 to 20,000. Most visitors only spend about 20 minutes at the site. Educational groups and cultural practitioners would be expected to spend closer to an hour if programs are available.

#### Visitation Pattern

The park is not gated and therefore, the site is open 24 hours, everyday of the year. Most visitors arrive between 10:00am and 2:00pm. Many of these visitors are driving through Wahiawa on their way between the Waikiki and Honolulu area and the North Shore. It is believed that many visitors by-pass the site because it is not well-marked on the highway.

When visitors disembark from their vehicles at the parking lot, they proceed to the site entry at the northwestern corner of the parking lot. This locale is marked by the large site name sign and the double row of boulders. They are naturally drawn to the site by the trees that delineate the

site complex. There are no designated trails and visitors are not encouraged to follow any route when visiting the site.

### Visitor Services

The curators, the Hawaiian Civic Club of Wahiawa and the Friends of Kūkaniloko, hosted 3 public tours of the site in 1998 in conjunction with the 100th Anniversary of Wahiawa (May 30, July 7, and August 15). These tours were announced in local newspapers and invitations were sent to special audiences, such as legislators, government agencies, Hawaiian organizations, community organizations, and schools. The participation in these 2-hour tours is shown in Table 2.

TABLE 2  
Interpretive Tours of Kūkaniloko Birthstones State Monument

DATE	# ATTENDING	GROUPS ATTENDING
Saturday May 30, 1998	40	Hawaiian Civic Clubs, Wahiawa Business Association, Wahiawa Centennial Committee, Wahiawa legislators, media
Tuesday July 7, 1998	22	Department of Education teachers, Alu Like, Laau Lapaau practitioners
Saturday August 15, 1998	30	State Parks, Army Corps of Engineers, City Council Representative, Oahu residents and students

Visitor surveys conducted during these tours indicated that many participants were first time visitors from Oahu who wished to learn more about the site and Hawaiian cultural history in general. Many participants also encouraged more interpretation on site, such as signs and brochures.

In addition to these special tours, the curators have presented programs for schools groups and other community organizations upon request.

## **VI. INTERPRETIVE GUIDELINES**

In the planning and design of an interpretive program, there are several guidelines that should be followed. These guidelines are developed to protect and preserve the resources being interpreted and to enhance the visitor experience.

### Purpose of Interpretive Materials

Interpretive materials should be installed only if they contribute to the visitor’s awareness and understanding of a feature. The tendency to overdo the interpretation and present too much information should be avoided. There must be a conscious effort to select those interpretive materials that provoke the visitor’s interest and avoid overwhelming the visitor with too many facts, figures, and complicated concepts. In addition, the interpretation of park resources never justifies the abuse of resources or the disruption of experiences distinctive to the park’s particular resources and values.

1. Interpretive materials should be developed to orient the visitor, stimulate interest, and promote an understanding and appreciation of a resource.
2. Interpretive materials should complement each other, not duplicate.
3. Interpretive materials should present the main interpretive themes but not everything has to be interpreted.
4. Interpretation should directly and subtly convey the primary value of the park resources and the importance of respecting them.

#### Location of Interpretive Materials

The careful placement of interpretive materials is important for maintaining the resource values and view corridors, as well as promoting an effective visitor traffic pattern through the park.

1. Interpretive materials should not impact or overpower the resources.
2. The location for the interpretive materials should be selected so that it provides a good view of the feature without impacting the view. This is especially true where there are major photographic opportunities.
3. The location should be selected to direct the visitor traffic and assist with resource management.

#### Standardization of Interpretive Materials

State Parks has made an initial effort to standardize the design of interpretive materials developed within the state park system.

##### Guidelines for Interpretive Signs (Outdoor Exhibits)

From the previous sign projects in various state parks, the following guidelines have been established:

1. The use of durable and vandal resistant signage is recommended, such as fiberglass embedment and porcelain enamel. However, the other important factors are the cost of replacement and the range of graphic options (photographs, original artwork, and the use of color).
2. A standard panel size of 2 by 3 feet in a horizontal format is recommended at lookouts and historic sites where the sign should not obstruct the viewing of the feature being interpreted.
3. Orientation maps should be included in the panels. These maps should be simplified and easy to understand with an easy to read type.
4. A footer band on the sign panel should have the “boilerplate” that includes the park name, the State seal, State of Hawaii, Department of Land and Natural Resources, and Division of State Parks. Any assisting agency or organization should also be recognized.

5. Text should be in black ink and an effort should be made to use the following colors in addition to black and white:
  - PMS 467 (sand) for background tint
  - PMS 470 (terra cotta) for header and footer bands
  - PMS 5435 (blue-grey)
  - PMS 556 (grey-green)
6. The signs should encourage the use of traditional Hawaiian place names and diacritical marks.
7. The metal frames should have a coating of brown paint to blend in with the outdoor environment.

#### Guidelines for Interpretive Brochures

Brochures are intended to provide more detailed information than is available in signs. Brochures are often designed to accompany a site visit but may also be taken off-site by the visitors to be read at their leisure. The major concern with brochures is that they do not become litter and that there is a means of maintaining a supply.

1. Folded size should measure 8.5” by 3.75”.
2. Front panel should include park name in bold print.
3. Back panel should include “boilerplate” with State seal, State of Hawaii, DLNR, Division of State Parks, address and telephone number of the district park office.

## VII. INTERPRETIVE TECHNIQUES

Once the interpretive themes have been developed and the visitor pattern identified, it is possible to evaluate which interpretive techniques can best present these themes and accommodate the visitation. An interpretive program can be a passive one where the visitor is presented information through signs, brochures, and displays or it can be an active, personal program utilizing such methods as interpretive talks, guided tours, and interactive demonstrations. The lack of interpretive staff at Kūkaniloko Birthstones indicates the need to concentrate on more passive interpretive techniques. However, the curators offer an opportunity to develop active program elements, such as interpretive talks and site tours, on a pre-arranged basis for schools and groups.

The proposed interpretive devices are intended to orient the visitor to the cultural site, to develop the setting for interpreting the cultural history, and share the biological and natural resources that contribute to the cultural landscape. The interpretive devices will be placed in such a way that they do not impose upon the historical and cultural setting.

### Interpretive Signs

A series of 2 to 3 interpretive signs are recommended in an area off the parking area or possibly on the raised dirt platform along the eastern side of the parcel. Easily visible to visitors embarking from their vehicles, these signs will provide the visitor with information with which to start their visit and better understand the cultural significance of the Kūkaniloko Birthstones site.

Signs are designed to be a concise presentation of an interpretive theme through the use of easy to understand graphics and short amount of text. Signs become semi-permanent features in the park and maintenance is generally minimal. Replacement signs should be readily available in the event of vandalism and/or weathering.

To preserve and interpret the cultural view corridors and the birthstone site, it is proposed that the signs be set back from the site, a distance of 150 to 200 feet. By placing the signs on the raised platform, the viewing of the site is enhanced. Signs should be placed in a horizontal format to promote interpretation of the views and site (Fig. 12).

Three signs are initially recommended for installation at the site. The key elements of these signs are discussed below and shown in the mock-ups of the signs (Figs. 13-15):

Sign #1: **KŪKANILOKO: The Birthplace of Alii.** In traditional Hawaiian society, the status and rank of an individual were based on genealogy. To be born of high-ranking *alii* parents at a recognized birthsite such as Holoholokū on Kauai and Kūkaniloko on Oahu where the birth was witness by other high-ranking chiefs and accompanied by traditional ceremonies and rituals, helped assure a child of his or her royal status.

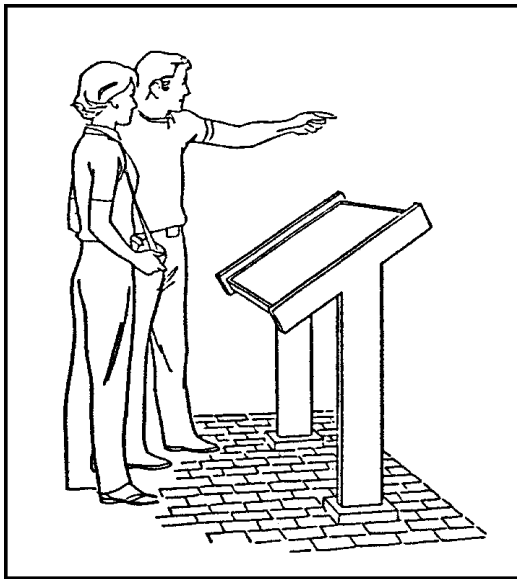


FIG. 12a: Horizontal sign unit placed in the ground.

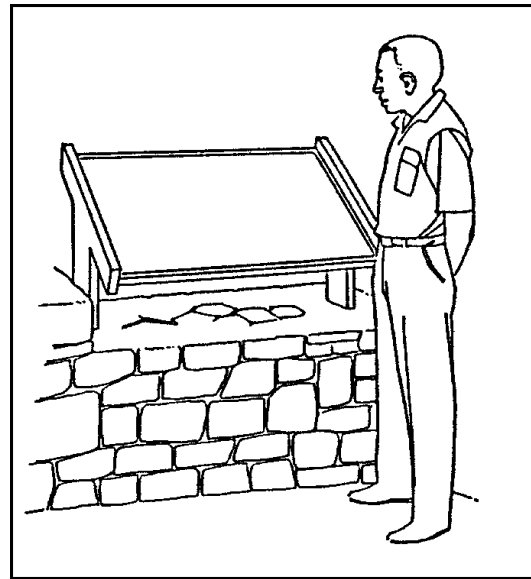


FIG. 12b: Horizontal sign unit placed in a rock wall.

Graphic element: Rendering of the site at the time of a royal birth with the presence of the 36 chiefs who witnessed the birth.

Graphic element: Inset map of the Wahiawa Plateau showing place names mentioned in the text.

Text element #1: Significance of rank and status in Hawaiian society and how birth at Kūkaniloko enhanced and assured a high ranking status.

Text element #2: Chant memorializing Kapawa, first-born at Kūkaniloko.

Sign #2: **WAHIAWÄ: The Sacred Uplands.** The Wahiawa Plateau, located in the uplands near the center of the island of Oahu, was the center of *alii* activities.

Graphic element: Rendering of the Kūkaniloko site with the Waianae Range in the background.

Graphic element: Inset map of Oahu showing location of Kūkaniloko, the neighboring ahupuaa and districts, and other culturally significant locations.

Text element: The significance of Wahiawa, including Kūkaniloko, as both a geographical and cultural location on Oahu.

Text element: Respect and preservation message: *E mälama no këia mua aku* (preserve Hawaii's past for the future).

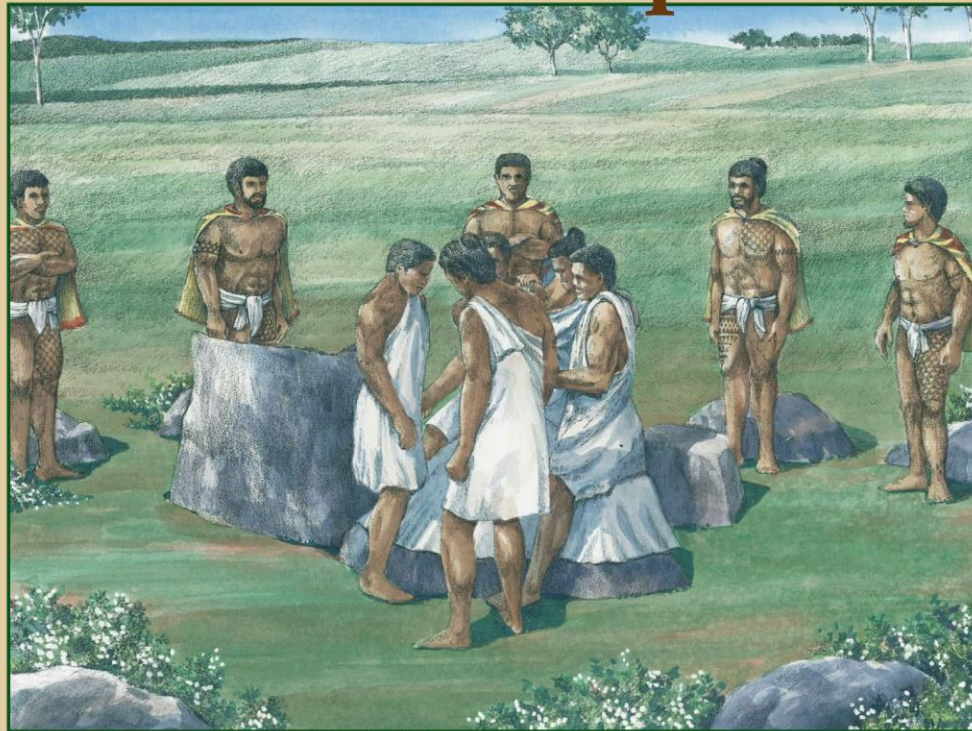


# KŪKANILOKO: Birthplace of Ali'i

Beginning with the birth of Kapawa in the 1300s or possibly earlier, Kūkaniloko became recognized as the royal birthsite on O'ahu. Birth at Kūkaniloko assured a child high-ranking status and the privileges of this status. It also maintained the purity of the royal lineages which gave chiefs their godly status and the right to be leaders.

The birth of the child at Kūkaniloko was witnessed by 36 chiefs. Then, the child was taken to the nearby *waihau heiau* called Ho'olonopahu where purification rites and the cutting of the umbilical cord were overseen by 48 chiefs. Beating of the sacred drums at Ho'olonopahu announced the royal birth.

Kūkaniloko was used as a royal birthsite into the 17th Century. Several renown chiefs, such as Mā'ilikūhahi and Kākuhihewa, were born here. The reign of these chiefs was marked by good deeds, peace, and prosperity.



Ali'i (chiefs) witnessing the birth of a child at Kūkaniloko.

A child born in the presence of the chiefs was called *he ali'i, he akua, he wela* -- a chief, a god, a blaze of heat.

*E mālama no kēia mua aku*  
PRESERVE HAWAII'S PAST FOR THE FUTURE  
Please respect this site and help us protect it by not disturbing the stones.

The following chant memorializes Kapawa, first born at Kūkaniloko:

*'O Kapawa, 'o ke ali'i o Wai'alua  
I hana'u i Kūkaniloko  
'O Wahiawā ke kahua  
'O Lihū'e ke ʻēwe  
'O Ka'ala ka piko  
'O Kapukapuākea ka a'a  
'O Kaiaka i Māeaea  
He keiki ali'i no Wai'alua i O'ahu*

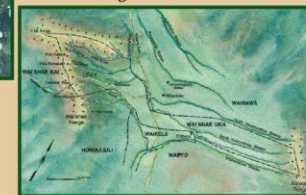
Kapawa, the chief of Wai'alua, Was born at Kūkaniloko; Wahiawā the site; At Lihū'e the placenta, At Ka'ala the navel cord, At Kapukapuākea (*heiau*) the caul, (*Heiau*) of Kaiaka at Māeaea; A chiefly child of Wai'alua, O'ahu.

This chant records important places on the Wahiawā Plateau:

**Lihū'e** in 'Ewa was noted as a royal center, circa 1400-1500.

**Ka'ala** is the highest peak along the Wai'anae Range at 4,025 feet.

**Kapukapuākea Heiau** at Kaiaka on the North Shore is where chief Mā'ilikūhahi was installed as O'ahu king (*mo'i*), circa 1500.



## KŪKANILOKO BIRTHSTONES STATE HISTORIC SITE



STATE OF HAWAII  
Department of Land & Natural Resources  
Division of State Parks



HAWAIIAN CIVIC CLUB OF WAHIAWĀ  
& FRIENDS OF KŪKANILOKO  
A Volunteer Curator Organization



WAHIAWĀ HOSPITAL  
ASSOCIATION

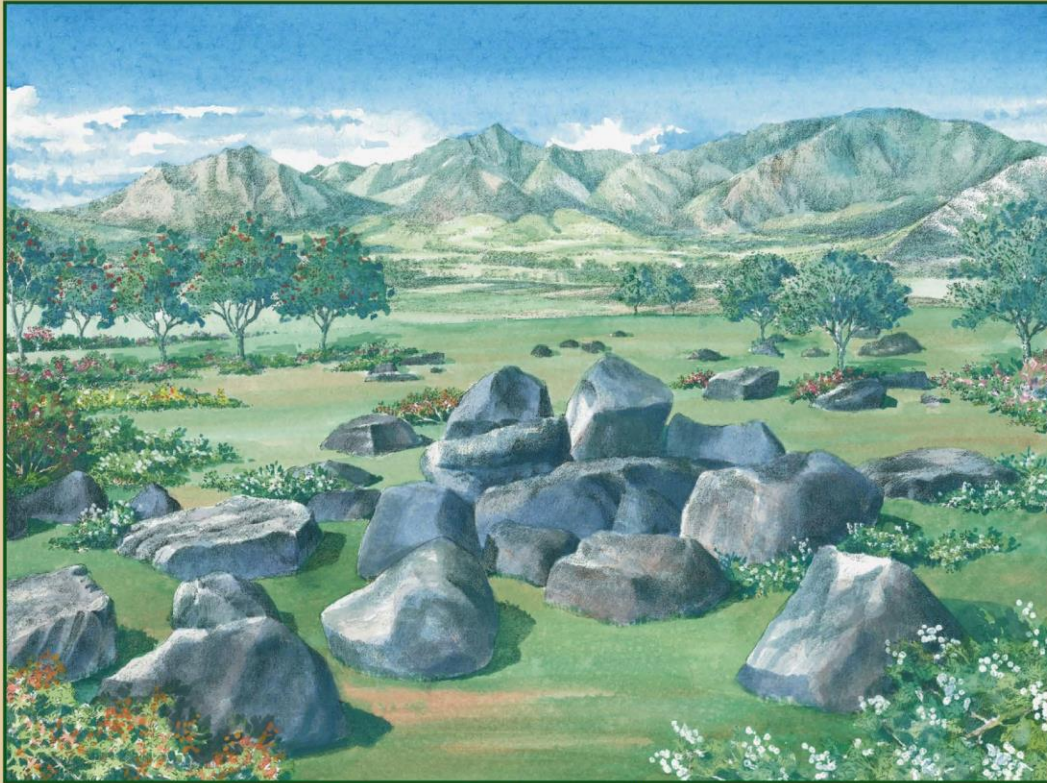


WAHIAWĀ COMMUNITY  
AND  
BUSINESS ASSOCIATION

FIG. 13 - Interpretive Sign #1: Kūkaniloko.



# WAHIAWĀ: The Sacred Uplands

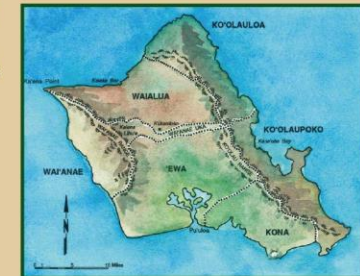


Artist's rendering of the birthsite, circa 1700. In the distance is the Wai'anae Range with the peaks known as Kūmakali'i, Pu'u Kalena, and Mount Ka'ala. According to oral tradition, when viewed from a distance, these features create an image of a pregnant woman known as "wahine hāpai".

Wahiawā is within the central upland plateau of O'ahu as defined by the Wai'anae and Ko'olau Mountain ranges. These cool uplands were once covered with a forest of 'ōhi'a, koa, and fragrant kupukupu ferns. Three political districts of old O'ahu extended onto this plateau - Wai'anae, Waialua, and 'Ewa.

These uplands were a place where chiefs were born, where famed chiefs lived, and where key battles for the control of O'ahu were fought. The royal birthsite of Kūkaniloko and the associated heiau (temple) of Ho'olonopahu were within the Waialua district. Nearby was the royal center of Lihu'e within the lands of Wai'anae Uka. To the south were the houses and fields in the uplands of the 'Ewa district. Major trails crossed the island in this area.

It is said that Wahiawā (place of rumbling) was where thunderstorms, the voices of the ancestral gods, welcomed an offspring of divine rank. Being the center of the island, Kūkaniloko was also symbolic of the piko (navel cord) and thus, birth.



## KŪKANILOKO BIRTHSTONES STATE HISTORIC SITE



STATE OF HAWAII  
Department of Land & Natural Resources  
Division of State Parks



HAWAIIAN CIVIC CLUB OF WAHIAWĀ  
& FRIENDS OF KŪKANILOKO  
A Volunteer Curator Organization



WAHIAWĀ HOSPITAL  
ASSOCIATION

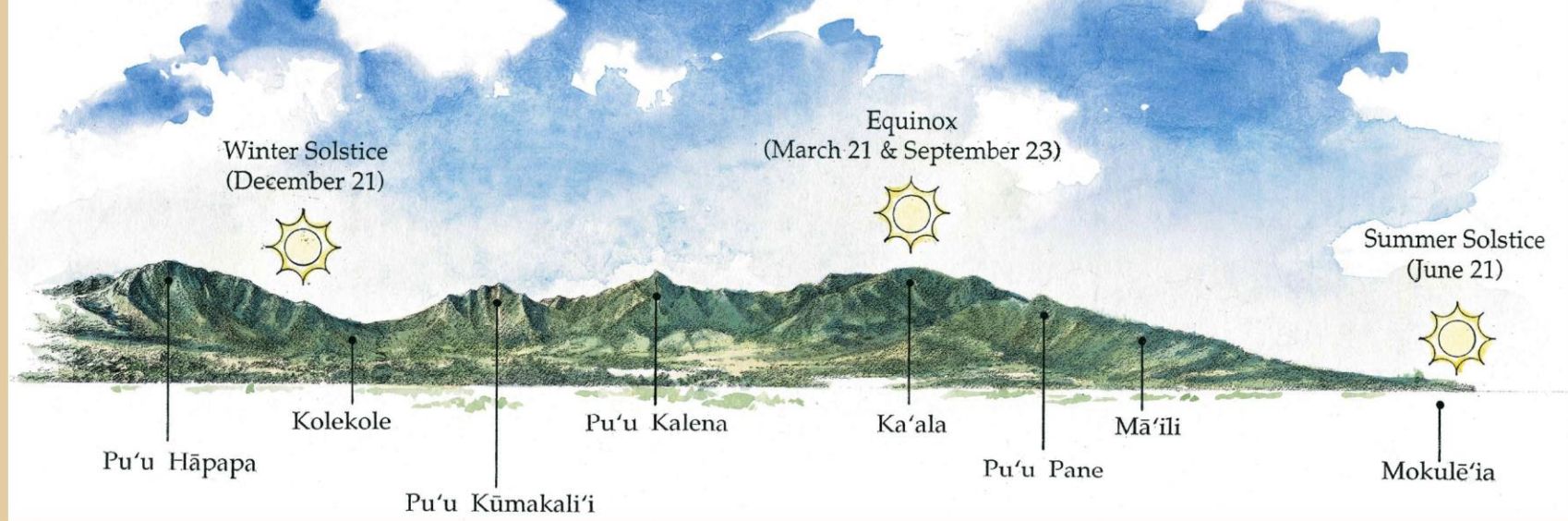


WAHIAWĀ COMMUNITY  
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FIG. 14 - Interpretive Sign #2 - Wahiawā: The Sacred Uplands.



# MARKING TIME AND PLACE



Hawaiians used the sun, moon, planets, and stars in relationship to features in the landscape to mark time and place. The rising of the star cluster called the Pleiades (Makali'i) at sunset marked the beginning of the Makahiki each November. This was a time of peace and games that ended four months later.

From here at Kūkaniloko, the setting of the sun at peaks (*pu'u*) along the Wai'anae Range could be observed and used as a calendar. Some of the stones at Kūkaniloko may have been used as reference points to observe the sun setting behind Mt. Ka'ala at the equinox. Was the birth of a new *ali'i* also marked in relationship to this calendar?

A knowledge of the heavens is key to Hawaiian navigation and travelling vast distances over the ocean. Around 1200 A.D., Makali'i passed directly over Kūkaniloko once each day. Such an event would be used by Polynesian navigators to mark the location of islands. The shadows cast by the fluted edges on some of the stones may have also served as pointers, similar to a compass, for navigation.

## KŪKANILOKO BIRTHSTONES STATE HISTORIC SITE



STATE OF HAWAII  
Department of Land & Natural Resources  
Division of State Parks



HAWAIIAN CIVIC CLUB OF WAHIAWĀ  
& FRIENDS OF KŪKANILOKO  
A Volunteer Curator Organization



WAHIAWĀ HOSPITAL  
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FIG. 15 – Interpretive Sign #3: Marking Time and Place.

Sign #3: **MARKING TIME AND PLACE.** The Hawaiians used the stars, constellations, and the rising and setting of the sun relative to stationary landmarks to mark the time of year and teach navigational techniques. At Kūkaniloko, the equinox is marked relative to Mt. Kaala and the winter solstice is marked relative to Kolekole Pass.

Graphic element: Panoramic rendering of the Waianae Range marking landmarks and astronomical events.

Text element: How the Hawaiians used the stars, constellations, and the rising and setting of sun to mark time and place for keeping track of the seasons and for navigation. The petroglyph boulder will not be highlighted to avoid potential vandalism concerns.

### Brochure

A brochure is an interpretive device that can provide more detailed information than a sign. Although a brochure can be designed for use while visiting the site, it can also be read at the visitor's leisure during or after the park visit. A brochure should be a mix of graphics and text to assist in orientation and awareness about the cultural history of Kūkaniloko.

A brochure is recommended for distribution by interpreters during interpretive talks and guided tours of the site.

### Interpretive Trails

There is currently no designed trail at the site and visitors are free to follow any route they choose when visiting. Because of concerns about vandalism, it may be best not to point out individual stones. Boulder #103, the diamond shaped stone with the fluted edges and concentric circle petroglyph, is relevant to the discussion in sign #3. However, because of the past problems in Hawaii with damage to petroglyphs and the past history of stone damage at Kūkaniloko, it was decided not to highlight this boulder in the text and graphics of the sign.

## **VIII. CONCEPTUAL INTERPRETIVE LAYOUT**

The best viewing angle for interpretation is west from the eastern side of the parcel. This view corridor encompasses much of the larger cultural area known as Kūkaniloko, as well as, the complex of stones with the Waianae Range in the background (refer to Photos 1 and 2). For this reason, it is recommended that the signs be placed on the eastern edge of the site to incorporate

this culturally significant view corridor. The signs could either be placed atop the dirt platform to the north of the parking area or on the lower ground surface off the northwestern corner of the dirt platform (Fig. 16). While the birthstones complex is visible from either location, the trees at the site obscure viewing of portions of the Waianae Range, especially Mt. Kaala (Photo 9).

It is proposed that all the signs be placed in one location and oriented with the viewing to the west. The signs should be kept in a horizontal format to facilitate viewing of the site and the view corridor. It is recommended that the standard 2 post frames be placed directly in the ground without the construction of a concrete slab or other surface platform (refer to Fig. 12). This will allow some flexibility in the event that the signs need to be relocated in the future as a result of further planning and site design. However, if a dirt area around the base of the signs is created in the future, it may be necessary to re-assess the need for surfacing.

If the signs are placed on the dirt platform, it will be necessary to create a ramp feature to get to the top of the platform. The slope on the central western side of the platform could be modified for this purpose. However, the steepness and potential for a muddy surface creates some concerns for visitor safety and access, especially those individuals that may be less mobile.

Therefore, placement of the signs on the lower ground surface off the northwestern corner of the parking area is preferred. The placement of the 2 or 3 interpretive signs in this location should not affect the placement of the park name sign located off the western side of the parking area. In the future, it is recommended that this 6-foot high metal sign be replaced with a lower (3-foot high) wooden sign that is less obtrusive to the viewing of the site.

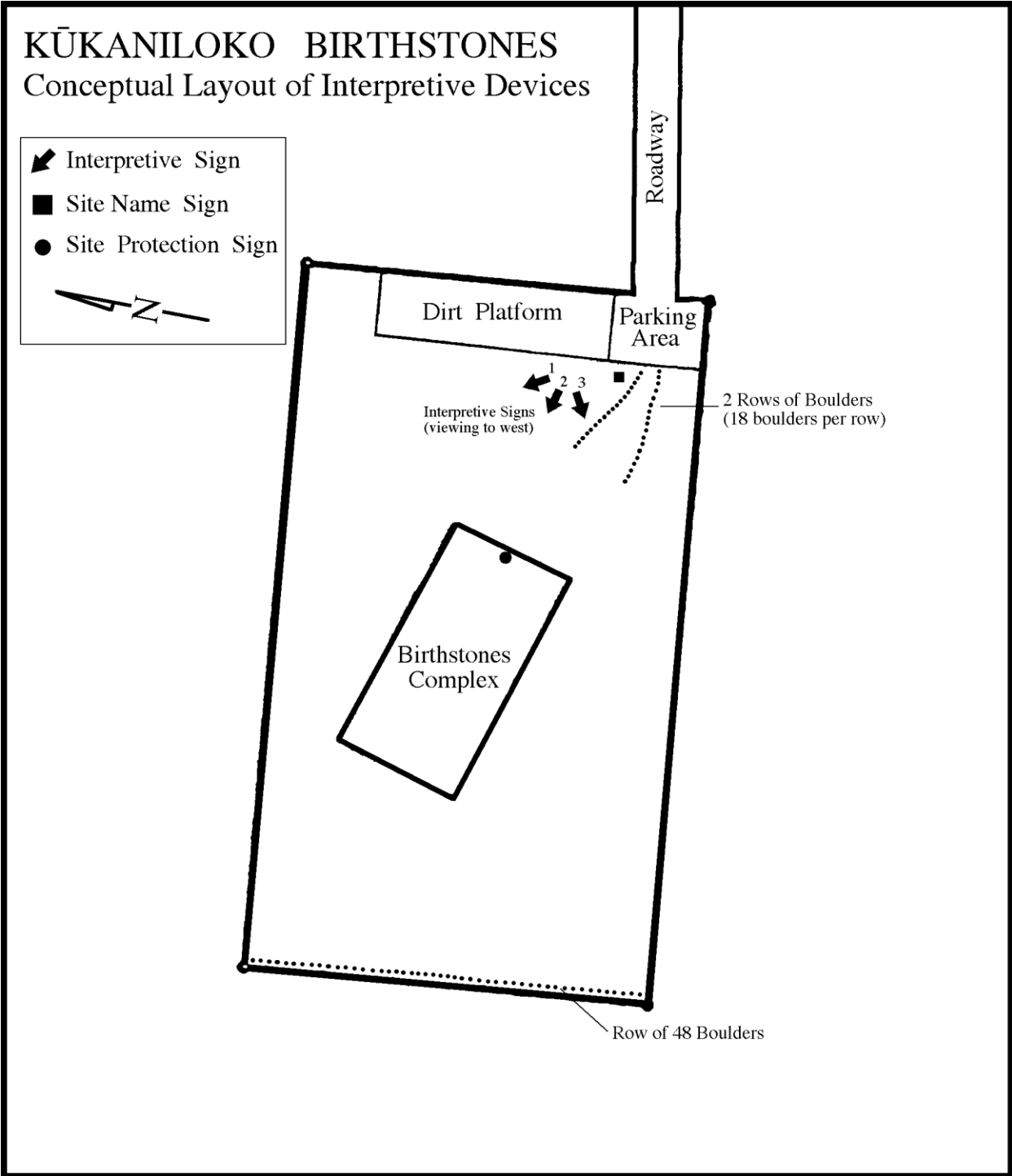


FIG. 16 - Conceptual layout for interpretive devices proposed at Kūkaniloko Birthstones.



PHOTO 9

View corridor from the dirt platform and parking area west toward the Waianae Range  
Kolekole Pass is visible as the dip in the range but Mt. Kaala is blocked by the trees.

## IX. IMPLEMENTATION AND PARAMETERS FOR DEVELOPMENT

Establishing an interpretive program within a state park is dependent on several factors, including funding, staffing, and program priorities. Installing and maintaining interpretive materials within a park setting requires a consideration of other parameters such as weather conditions, vandalism, and maintenance costs.

### Funding

This project was facilitated by the donation of community funds for the production of 2 interpretive signs. Funds were provided by the Wahiawa Hospital Association and the Wahiawa Community and Business Association to cover the costs of the artwork, the production of the signs, and the framing. The State Parks Interpretive Program (Äina Hoomalu Special Fund) supported this project with staff time and hopes to fund production of the third sign panel.

TABLE 3  
Project Cost Estimates and Scheduling

PROJECT ELEMENT	CONSULTANT	ESTIMATED COST	SOURCE OF FUNDS	TARGET DATE
Interpretive Plan	State Parks			March 1999
Interpretive Design • Graphics • Text • Layout	Jim Park	\$1,500	Wahiawa Community & Business Association (2 panels)	April 1999
Sign Production	Contractor – Subject to Bid	\$1,800	Wahiawa Hospital Assoc. (2 panels)	Start: May 1999 Completion: June 1999
		\$700	State Parks (1 panel)	
Framing	Contractor – Subject to Bid	\$600	Wahiawa Hospital Association (2 frames)	June 1999
		\$300	State Parks (1 frame)	
Installation	State Parks	\$100	Wahiawa Hospital Association	July 1999
<b>TOTAL</b>		<b>\$5,000</b>		

### Staffing

There is no State Park staff assigned to Kükāniloko Birthstones State Monument and interpretive signs were selected because they are a passive technique that does not require on-site staffing. A curatorship agreement was developed in 1997 between State Parks and the Hawaiian Civic Club of Wahiawa and the Friends of Kükāniloko. The curators provide assistance with maintenance of the signs and site area, as well as, providing interpretive services on a pre-arranged basis.

### Maintenance of Interpretive Devices and Materials

The greatest threats to interpretive signs and outdoor exhibits are weather and vandalism. The outdoor signs will not be in a covered setting and will be subject to sun and heat that can fade



colors. Under these conditions, it is anticipated that the signs will need to be replaced in 3-5 years if they are made of the fused PVC or fiberglass embedded materials. Interpretive signs are vandal-resistant but not vandal-proof. Therefore, there is a possibility of replacement before the scheduled time as a result of vandalism.

The framing for the signs will be designed for easy replacement. The sign panels themselves can be relatively inexpensive to replace if adequate copies are produced in advance. The curators and State Park personnel will be requested to monitor the condition of the signs and determine when replacement is necessary.

### Selective Tree Removal

In order to enhance the view corridor and protect the stones of the site, it is recommended that at least 7 coconut trees be removed from the site. These trees were planted too close to the stones around 1970 and falling coconuts and fronds now threaten the preservation of the site. The trees recommended for removal are shown in Figure 17.

The trees will be cut with hand tools and removed in a manner that prevents the falling of coconuts, fronds, and trunk sections onto the stones. Any machinery will be kept to the outer edge of the site complex. The work will be monitored by a State Parks archaeologist.

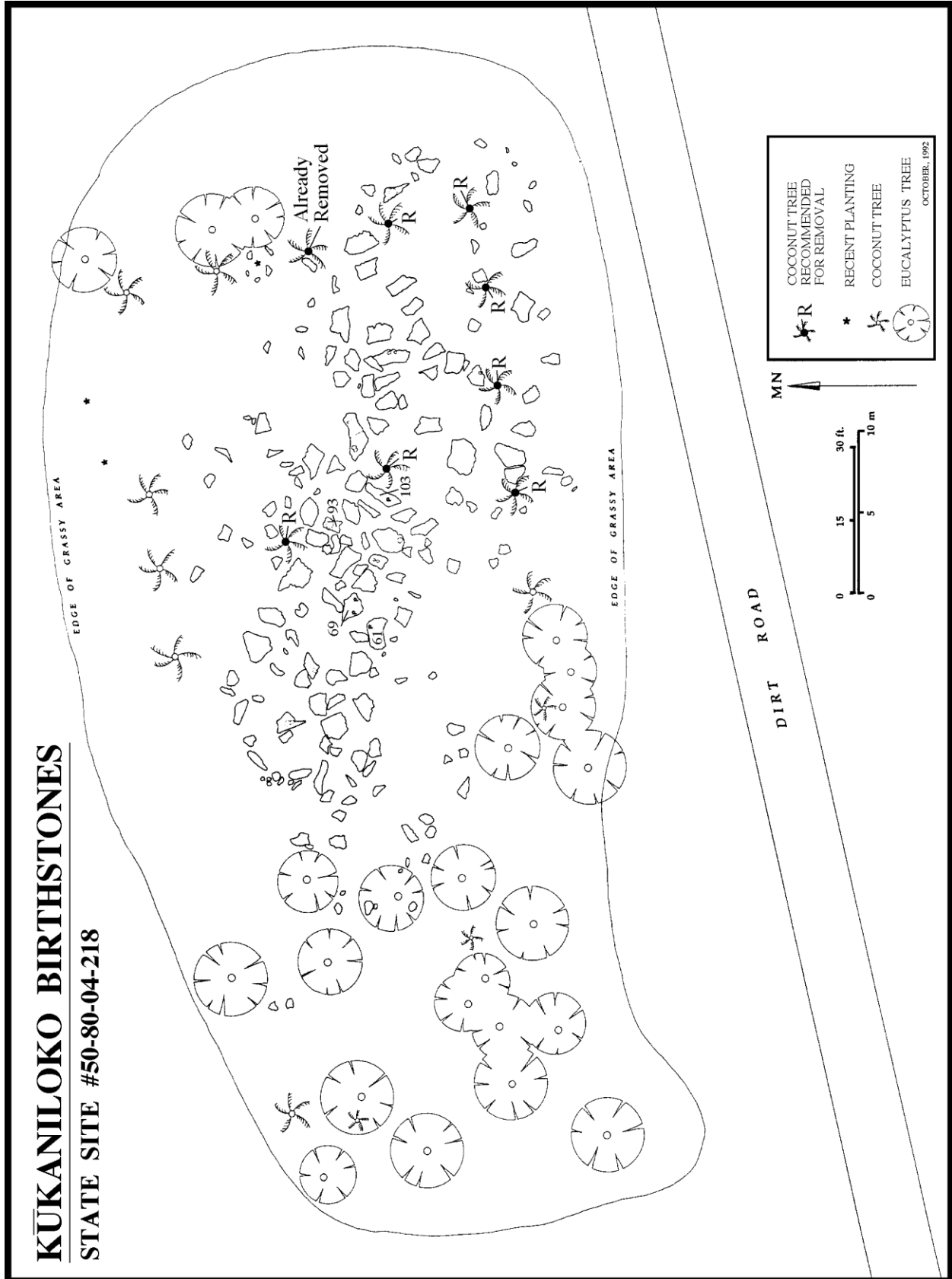


FIG. 17 Coconut trees recommended for removal.

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