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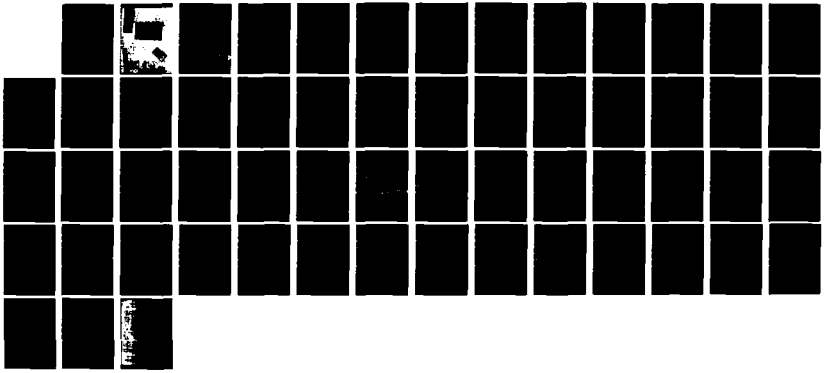

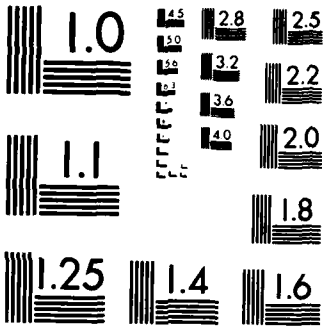

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A CULTURAL RESOURCES RECONNAISSANCE FOR THE WAILUA RIVER HYDROPOWER STUDY WAILUA, PUNA, KAUA'I ISLAND

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by

Francis K.W. Ching (Ed.)

ARCH 14-79

(1)

A CULTURAL RESOURCES RECONNAISSANCE FOR THE WAILUA RIVER HYDROPOWER STUDY

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prepared by

ARCHAEOLOGICAL RESEARCH CENTER HAWAII, INC.

for

UNITED STATE ARMY CORPS OF ENGINEERS

U.S. ARMY ENGINEER DISTRICT, HONOLULU

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The opinions, findings and conclusions expressed in this publication are those of the authors and not necessarily those of the United States Army Corps of Engineers.

ABSTRACT

An archaeological reconnaissance requested by the U.S. Army Corps of Engineers was conducted on nine (9) separate parcels of land in the Wailua River gorge, Wailua and Hanamā'ulu ahupua'a(s), Kaua'i Island as part of the Wailua Hydropower Study. Three (3) agricultural terrace complexes in study Areas E and H and one (1) 'auwai in Area A were located. Feral pig (Sus scrofa) tracks were observed throughout the areas and one Koloa (Anas spp.) was observed in Area B. Relict cultigens (kalo), and Hawaiian forest products (koa, kukui, kī, 'ohe, hau, pū hala) are also present. Major modern disturbances are present in all of the study areas as well. The literature search has shown that without the survival of Hawaiian place names, mo'olelo and ka'ao our present knowledge of Wailua would be very scant. Recommendations include archaeological clearance for all of the study areas, consideration of the impact of the project upon avifauna observed in study Area B and exercising caution to avoid impacting the remaining archaeological sites adjacent to study Areas A, B and south of area H (east end).

ACKNOWLEDGEMENTS

Members of the field crew for this project were Mr. Francis K.W. Ching, Mr. William H. Folk, Mr. Gerald Kamalu Ida and Mr. Warren T. Yoshioka. Gerald Ida and Warren Yoshioka deserve special acknowledgement for their unerring judgement and adeptness in negotiating the steep and densely vegetated slopes and precipices of the Wailua River gorge.

Mr. Brian P. Donahue prepared all the final maps and sketches of the archaeological sites from field notes. His professional skills are gratefully acknowledged.

We would like to thank Mr. David Sox of the U.S. Army Corps of Engineers, for providing maps of the area and arranging access to the properties.

Mr. Ishimoto, of the Construction and Water Supply Division, Līhu'e Plantation, Mr. Gahran and Mr. Penhallow of the Kauai Museum and Mrs. Peters, Head Librarian and the staff of the Kauai Community College Library assisted in the historical literature and map search.

Grateful acknowledgement is extended to Mrs. Diane K. Shimizu for typing this report and Mr. Francis K.W. Ching, President of Archaeological Research Center Hawaii, Inc. for editing it. Mr. Francis Ching's knowledge of the area and access roads helped greatly during the field work. Mr. Ching offered continued support and advice throughout the report preparation.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

INTRODUCTION

This report presents the results of an archaeological reconnaissance in portions of the south fork of the Wailua River, Wailua and Hanamā'ulu ahupua'a(s), Kaua'i Island. The study was requested by the United States Army Corps of Engineers as part of a hydropower feasibility study.

The locations of the study areas designated A through I are shown in Figure 3. Figures 4, 5 and 6 are smaller scale maps of Areas A, E and H respectively, and show the distribution and configuration of the archaeological sites found during the reconnaissance. These latter figures are included in the "Reconnaissance Results" section in addition to brief descriptions of the topography, vegetation and archaeological sites of each study area. Table 1 contains an accession list of the archaeological sites by permanent State of Hawaii system numbers.

A summary of traditional mo'olelo and ka'ao, early westerner's accounts, interpretation of place names, the physical geography of the ahupua'a and the region, and previous archaeological work are presented together in the section "Background".

Consideration of the distribution of the sites, the site types found and posssible reasons for their locations is given in the final section of the report "Conclusions". Following is a glossary and "Bibliography"; this is annotated giving the facility where the reference is available.

Reference to the various tributaries and branches of the Wailua River system are based on the 1963 U.S.G.S. 7.5 minute series topographical maps. Place name differences between the above map and early maps are discussed in "Background". Spellings of place names are from "Atlas of Hawaii" (Armstrong Ed., 1973).

SUMMARY OF RESULTS AND RECOMMENDATIONS

The archaeological reconnaissance reported herein was requested by the United State Army Corps of Engineers as part of the Wailua River Hydropower Study (Figures 1 and 2). Nine (9) separate areas for study were defined by the Corps (Figure 3). Eight (8) areas are located along the south fork of the Wailua River (Areas A through H) and one (Area I) is located along an existing Līhu'e Sugar Company ditch between the Wailua River north fork and Waikoko Stream (a tributary to the south fork). These areas were selected for study because they were presumed to be in a relatively natural state, that is, least affected by modern agricultural activities. The remaining areas that will be crossed by the proposed penstock are presently under sugar cane cultivation and have therefore been extensively modified.

The vegetation in all of the study areas is a mixture of indigenous, Hawaiian introduced and recently introduced cultigens, grasses, herbs, shrubs and trees. The presence in remote areas of cultigens and Hawaiian introduced plants important in traditional Hawaiian domestic and economic activities complements early accounts and ethnographic records concerning the geographical extent of Hawaiian horticultural endeavors and the type localities utilized. This also gives perspective to other Euro-American interpretations such as the undeveloped nature of traditional Hawaiian land use policy.

Archaeological clearance is recommended for study Areas B, C, D, F, G and I because they do not contain positively identifiable modifications of the landscape resulting from prehistoric Hawaiian cultural activities. The modern debris present is of little or no significance to the study of Hawaiian history or archaeology. Historic modification in Areas A and H have impacted sites and in Area E have helped preserve them. However, the sighting of Koloa (*Anas* spp.), a federally listed endangered species, in study Area B during the mating season should be considered by the appropriate State or Federal agency prior to impact of this area.

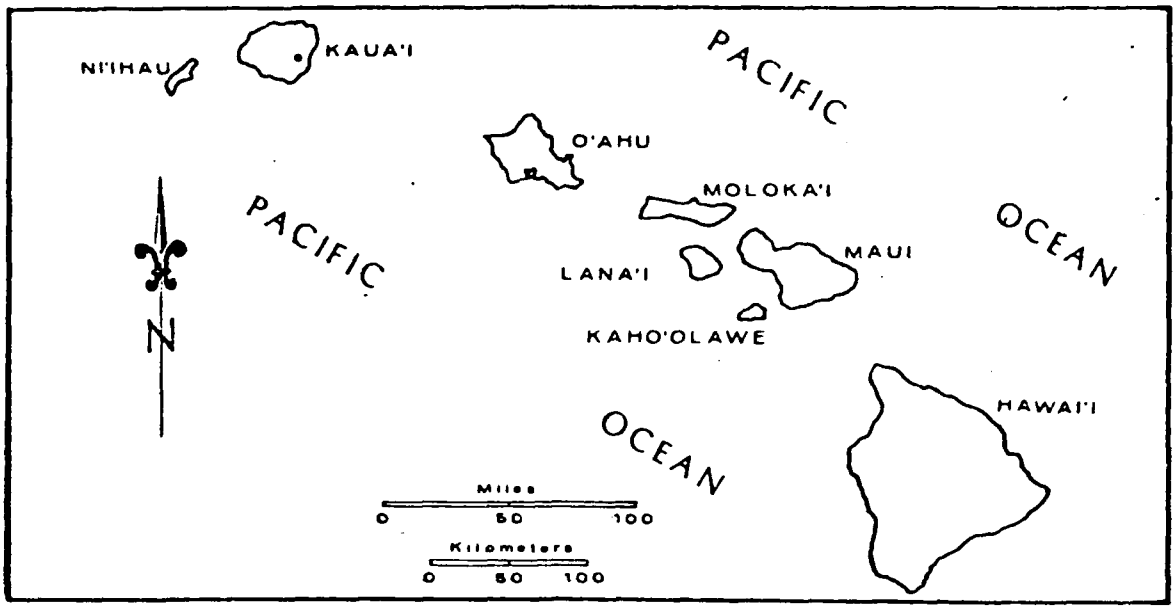


FIGURE 1
Map of the State of Hawai'i

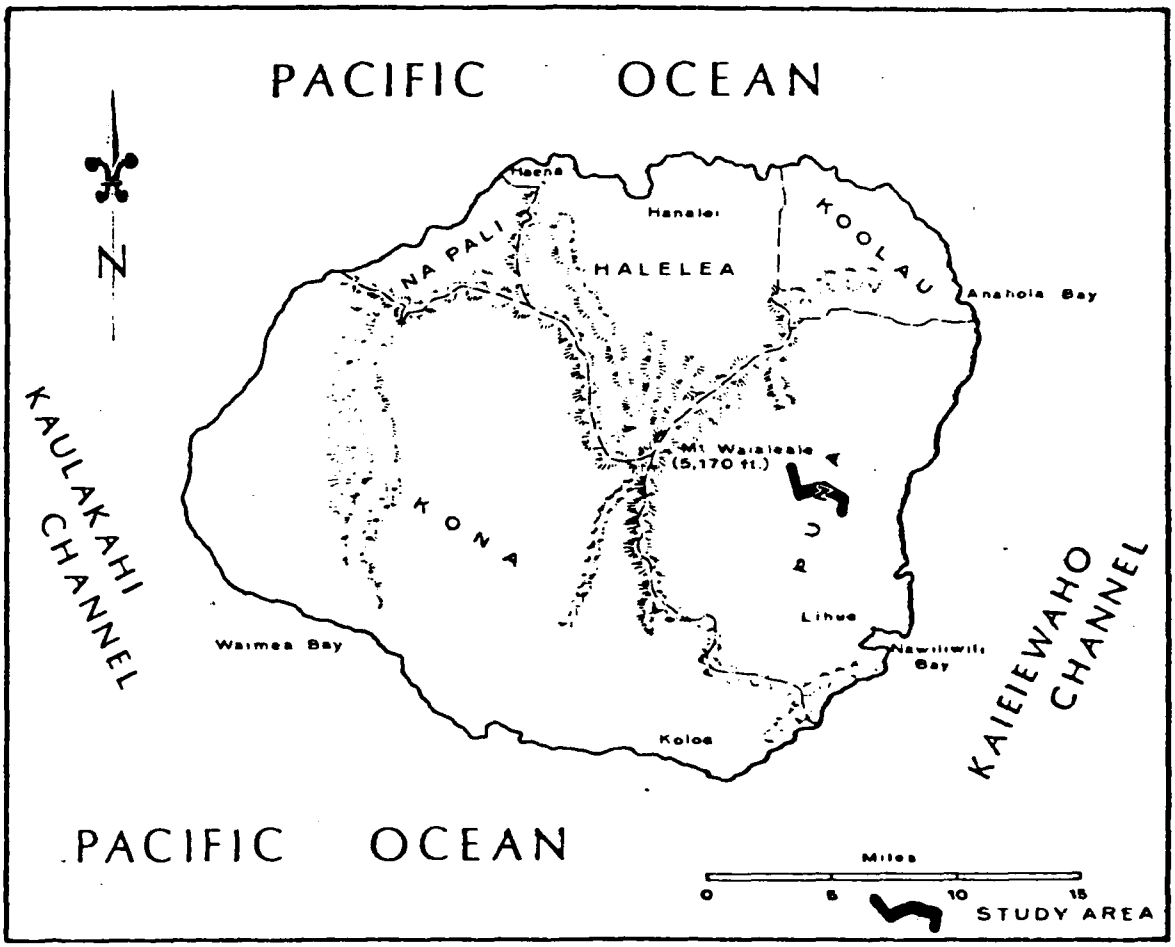
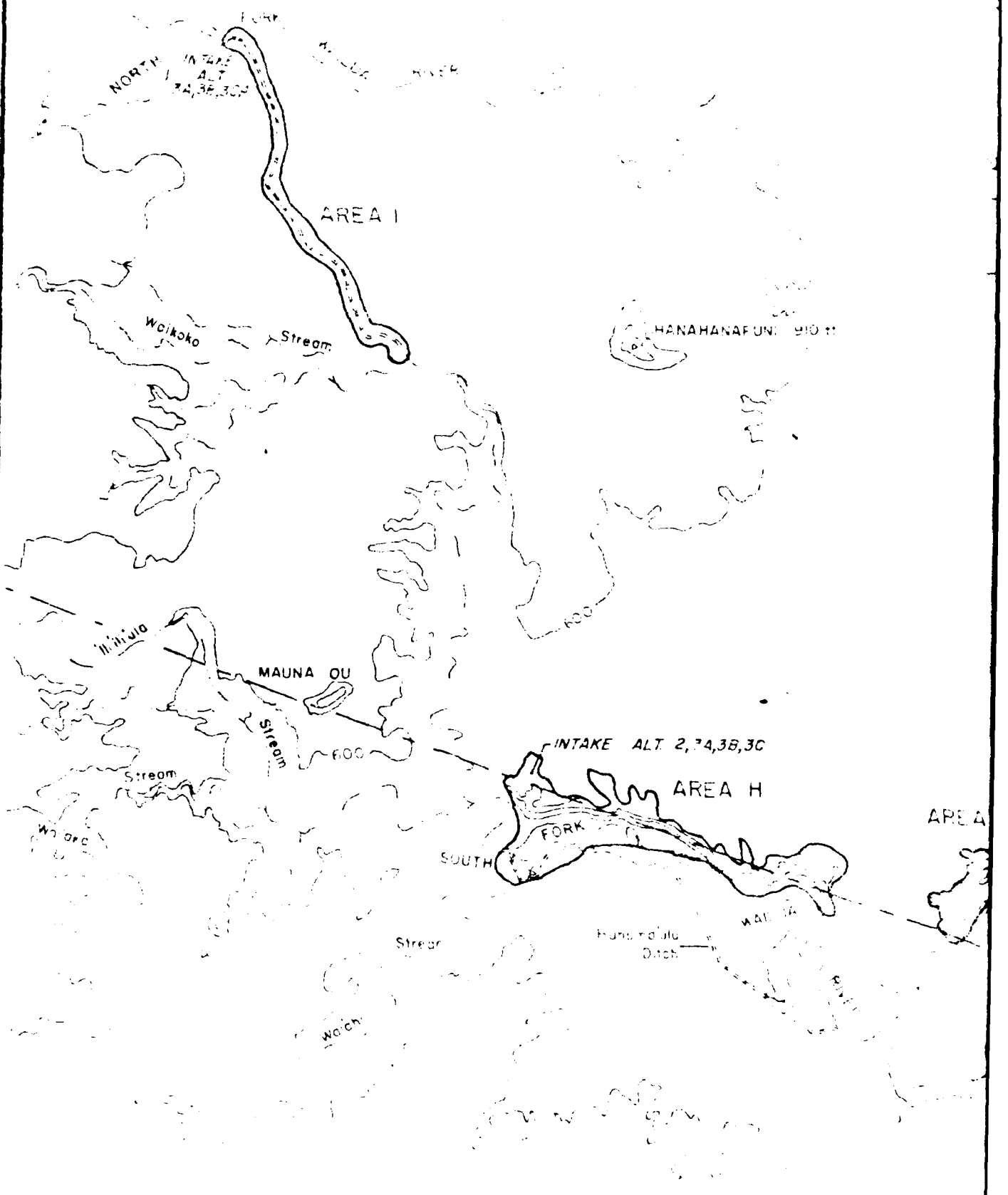
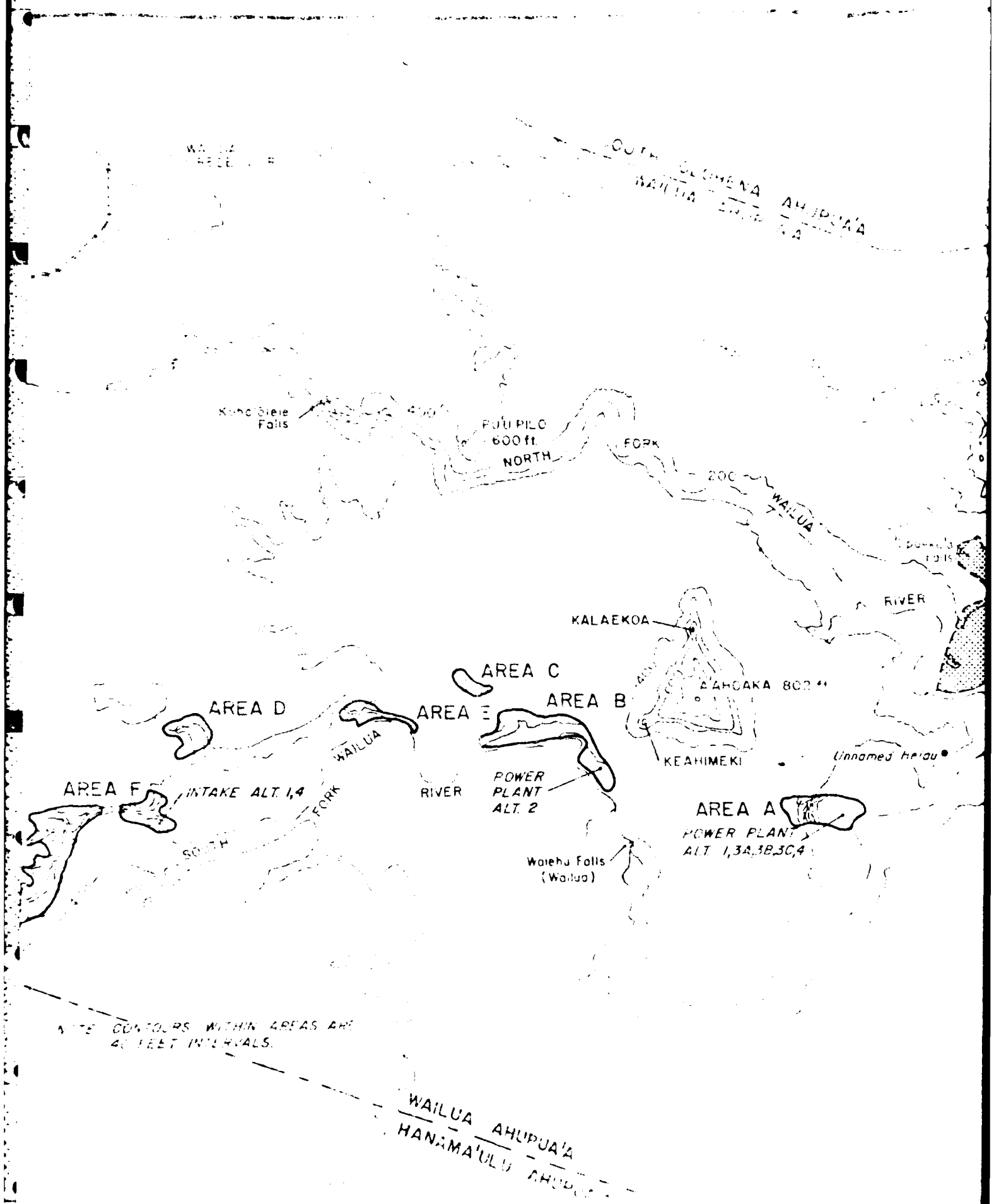
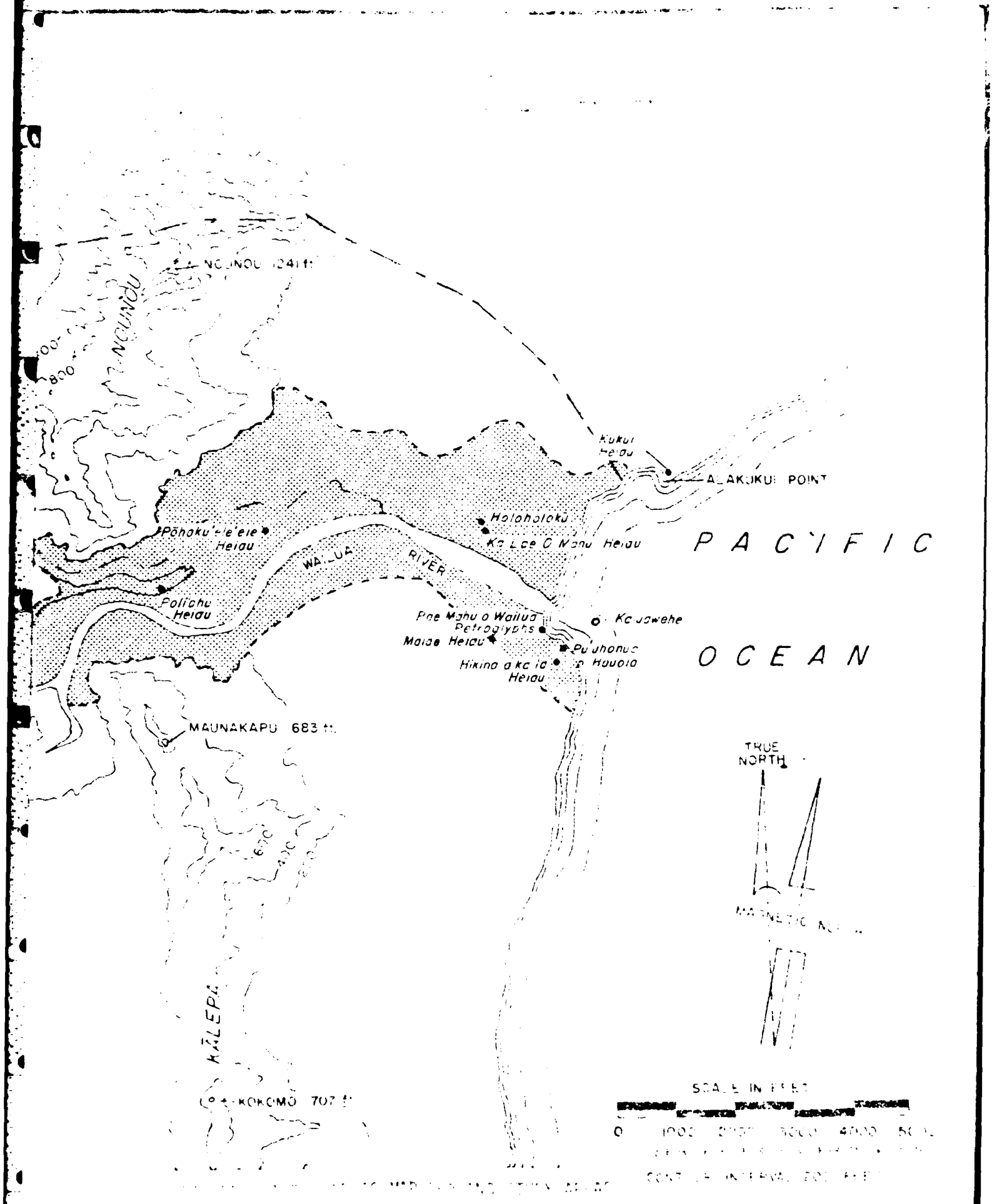


FIGURE 2
General Location Map, Kaua'i Island


AREA I
Waikoko
Stream
HANAHANAPUNI 910 ft
Hilihila
MAUNA OU
Stream
Stream
600
600
INTAKE ALT. 2,74,38,30
AREA H
SOUTH
FORK
AREA A
Stream
Waiahi


Kaholaiele Falls
PUU PILO
600 ft.
NORTH
FORK
200
WAILUA
RIVER
KALAEKOA
AREA C
AREA D
AREA E
AREA B
KEAHIMEKI
Unnamed Heiau
AREA F
INTAKE ALT. 1,4
WAILUA
FORK
SOUTH
RIVER
POWER PLANT ALT. 2
AREA A
POWER PLANT ALT. 1,3A,3B,3C,4
Waiehu Falls (Wailua)
WAILUA AHUPUA'A
HANAMA'ULU AHUPUA'A


NOUNOU 1241 ft
NOUNOU
800
Kukui Heiau
ALAKUKUI POINT
Holoholoku
Ka Lae O Manu Heiau
PACIFIC
Pōhaku Ele'ele Heiau
WAILUA RIVER
Poliahu Heiau
Pae Manu o Wailua Petroglyphs
Ka Lae Wehe
Maiae Heiau
Puuhonua o Hauola
OCEAN
Hikina a ka la Heiau
MAUNAKAPU 683 ft.
TRUE NORTH
MAGNETIC NORTH
KĀLEPA
KOKOMO 707 ft
SCALE IN FEET
0
1000
2000
3000
4000
5000
CONTOUR INTERVAL 200 FEET

Archaeological clearance with no further work is also recommended for study Areas A, E and H although they contain identifiable remnants of Hawaiian agricultural terraces and 'auwai (Table 1). In the case of Area A this consists of a single possible 'auwai which continues northward and eastward. In Area H the sites consist of isolated agricultural terraces that are in a very deteriorated condition. And in Area E, two (2) agricultural terraces are in a fair state of preservation, due primarily to the reduced volume of stream flow because of the tapping of water for sugar cane cultivation around the study area.

In Areas E and H the archaelogical remains are disturbed and unimposing and are considered inappropriate for preservation or excavation because there are numerous other functionally and architecturally similar recorded sites (Ching 1968) in a good state of preservation within the bounds of the Wailua State Park that are now preserved for future scientific research and the public. In Area A agricultural terraces shown on Metcalf's (1846) survey map are no longer discernible as a result of bulldozing, flooding and slopewash. However, a portion of these terraces immediately north of the study area are still intact and should be protected from impact during the construction of the power plant as they are prime targets for future scientific research, preservation or reconstruction.

TABLE 1

ACCESSION LIST OF ARCHAEOLOGICAL SITES

Permanent Site Number	Field Number Ching (1968)	Study Area	Recorded Name	Site Function
205	25	A	Mākea	Lo'i complex
206	26	A	-	Rice mill
207	27	A	Konolea	Lo'i complex
208	28	A	-	'Auwai
209	-	E	-	Terrace complex
210	-	H	-	Terrace complex
211	-	H	-	Terrace complex

BACKGROUND

GEOLOGY

Wailua is located on the eastern side of the Island of Kaua'i, semiexposed to the prevailing northeasterly tradewinds. The rainfall averages about 70 inches per year in the area behind the Nounou and Kālepa mountains (Study Area A) to about 100 inches per year in more western (mauka) localities (study Area I) (Macdonald, Davis and Cox: 1960). The whole ahupua'a is situated in the Līhu'e basin, a geologic feature of the island. This large, semicircular depression, 7 to 10 miles across, is bordered on the west by the central Kaua'i mountain range, on the east by the Nounou and Kālepa mountains, on the north by Makaleha ridge, and on the south by Hā'upu range. The basin was actually a caldera formed by the collapse of a large portion of the eastern flank of the main shield volcano that forms the island. This collapse probably occurred late in the Waimea Canyon volcanic series, which formed the original land mass of the island in the Pliocene period. During the second major volcanic series, the Kōloa series, (late Pliocene period), lava flowed over the entire floor of the basin except for Pu'u Pilo, 'A'ahoaka hill, Kālepa and Nounou mountains, remnants of the Waimea Canyon series, which were high enough so as not to be totally buried and exist today as kīpuka (Macdonald and Abbott:1970). Two (2) vents of the Kōloa series near the vicinity of the project area are Kilohana Crater and Hanahanapuni cinder cone (Macdonald, Davis and Cox 1960). A different view as to the origin of the Līhu'e basin is offered by Hinds (1930) who maintains that the depression is a marine platform cut by the erosional forces of wave action combined with fluctuating sea levels and the tilting of the land mass.

SOILS AND DRAINAGE

The soil in the general area has been classed as the Kapa'a-Po'okū-Hāli'i-Makapili association. "Deep, nearly level to steep, well drained and moderately well drained soils that have a fine textured or moderately fine textured subsoil; on uplands . . . (Foote, et al:1972)."

The Wailua River, the largest in the State, and its tributaries comprise the major drainage system for the central area of the Līhu'e basin. The north fork of the river has its source at the base of the central Kaua'i mountains, below Wai'ale'ale and Kawaikini. The major streams flowing into the north fork are Uhau'iole, Keāhua, Kāwī, and Kalama, all originating at the north part of the basin in the southwest portion of Makaleha ridge.

The south fork, which is paralled by most of the project area, is formed by the convergence of several small streams at the western edge of the basin, south of Kawaikini. These are Palikea, Ka'ulu, Waikoko, 'Ili'ili'ula, Wai'aka, 'Iole, Hāli'i and Wai'ahi. The north and south forks meet just west of the gap between the ridges of Nounou and Kālepa. From this junction to the sea, a distance of almost 2 miles, the river is tidal-affected and navigable by small craft. 'Ōpaeka'a Stream, often referred to as the "north fork" also empties into the Wailua River below the north (middle)-south fork junction.

AHUPUA'A

The ahupua'a of Wailua is located in the moku of Puna, between south Olohena to the north and Hanamā'ulu to the south. It is traditionally known to be one of the most sacred places on the island. Powerful ali'i, from legendary through historic times, such as Mo'ikeha, Manokalanipō, Palila, and Kaumuali'i, resided there throughout most of the year (Salisbury 1936) (during the "wet season" they probably moved to Waimea on the dry leeward side of the island).

The name "Wailua" is generally thought to refer to the two (2) main forks of the Wailua River (wai = water, lua = two), however,

Dickey (1916) displays some puzzlement insofar as "this explanation never seems to occur to a native Hawaiian." Some insight may be gained here if one examines the name as one word, which translated means "spirit, ghost; remains of the dead" (Puku'i and Elbert 1971). This may well have possible implications as to the sacred nature of the place.

The general area makai of the Nounou and Kālepa mountains was known in ancient times as Wailuanuiho'ānu*, or "great, sacred Wailua," a place that was kapu to the maka'āinana (Dickey 1916) (see shaded area Figure 3). In this light Wailua was comparable to other localities in the islands such as Waipi'o and Kahalu'u, Hawai'i or Kualoa, O'ahu where ali'i resided, young chiefs were raised and trained and numerous heiau were constructed. In Wailuanuiho'ānu and its vicinity there are no less than eight (8) prehistoric Hawaiian heiau.

HEIAU

Malae Heiau

Also known as Mākaukiu, this heiau sits in a cane field just mauka of Kaumuali'i Highway, at the top of a hill on the south bank of the Wailua River. It is the largest known, existing heiau on the island today measuring 273 feet by 324 feet (Thrum 1906) with walls that once stood 7 to 10 feet high (Salisbury 1936). It is said that Mo'ikeha built this structure during the period that Wailuanuiho'ānu ruled Kaua'i (BPBM Ms. 1885). The companion heiau to Malae is said to be Poli'ahu, situated on a ridge across the river.

Around 1830, soon after the lapsing of the kapu and the arrival of Christian missionaries, Deborah Kapule, wife of Kaumuali'i the ali'i of Kaua'i, tore down the interior walls of the heiau and used the structure as a pen to keep her cattle (Thrum 1906). She was among the first ali'i converts to Christianity, being baptized with Ka'ahumanu and

*After a chief of the same name. The area is also known as Wailuanuilani (Dickey:1916).

others at Kawaiaha'o Church, Honolulu, 1825 (Kamakau 1961). Her actions concerning Malae may have played a role in efforts to move her people from the "old ways" toward the "new religion".

The part of Malae nearest the river is reputed to be the birthplace of Ka'ililauokekoa, the girl made famous in an often told legend of Wailua. She was the granddaughter of the legendary Kaua'i ali'i, Mo'ikeha, and was skilled at surfing and kōnane. In this romantic story she is courted by Kauakahiali'i who lives at Pihanakalani (also known as Hanahanapuni, a cinder cone far up the north fork of the Wailua River, formed during the Kōloa volcanic series) with his mother, the sorceress Waha, and his sister Kahalelehua in a hale made of flowering 'ōhi'a lehua branches and decorated with red feathers (Dickey 1916).

Kauakahiali'i invents the first nose flute ('ohehanoihu)* which he names Kanikāwī and lures Ka'ililauokekoa away from Malae by his skillful playing of it (Salisbury 1936).

Pu'uhonua o Hauola/Hikinaakalā Heiau

This complex is located on the south bank of the river, near its mouth. Hauola was a place of refuge where kapu breakers would find immunity from punishment, and others, safety from the ravages of war. Within its walls at the southern part of it is Hikinaakalā Heiau, a long and narrow structure said to contain the remains of a family killed as punishment for cultivating this sacred ground. Also contained within Hauola is a pōhakupiko, in the crevices of which would be placed the piko or navel cord of new-born infants (Dickey 1915).

*Several small stands of 'ohe Hawai'i, the type of bamboo used in making nose flutes, were observed in and around the project area during the course of field work (refer to "Area and Site Descriptions"-Area I).

Kalaeokamanu Heiau

At the foot of the small hill called Pu'ukī, on the makai side, stands Kalaeokamanu Heiau, thought to be the oldest on Kaua'i. The first human sacrafices on the island were offered here. Also, the first temple drum* was placed here (Kaua'i Historical Society 1934). Its name was Hāwea and was brought to Kaua'i by La'amaikahiki, son of Mo'ikeha. The stone on which sacrifices were placed is called Pā'aikanaka (Ching 1968).

Poli'ahu Heiau

This heiau measures roughly 242 feet by 165 feet with walls 5 feet to 6 feet high (Bennett 1931). This temple is of the luakini class, its outer walls demonstrate the unique style of Kaua'i core fill wall construction in that the core is dirt instead of rock rubble. It is considered to be the personal temple of the ruling chief in that it is located in the area where the ali'i nui(s) compound was situated. It may have been named after Poli'ahu the Hawaiian goddess of snow.

Pōhaku'ele'ele Heiau

Located on the ridge between 'Ōpaeka'a Stream and the Wailua River, only remnants remain of this old heiau. A rock marked with a cross supposedly locates the former position of the temple drum that was sounded on the nights of Lono and Kāne. A little further mauka on this ridge is a stone representing a shark demi-god. Part of this stone was broken off by Hūmānienie who was sent from the Island of

*The Kaua'i Historical Society identifies this drum as a kā'eke, a term generally applied to the percussive instruments of bamboo cut in varying lengths to produce a distinctive note when tamped on the ground. Pahu would more correctly describe a temple drum of a hollowed coconut tree base and shark skin head.

Hawai'i to destroy all idols on Kaua'i. Past this stone is a place called Ka'elialinaakamāhu where the tattooing of Palila, a legendary warrior of Kaua'i, was done. Two (2) stones, one for his head and the other for his body to rest on, marks this spot (Dickey 1916).

Mele'ahaanounou was another heiau in Wailua, and was the first belonging to Wailunuiho'āno. Its specific location is unknown today (BPBM Ms. 1885).

An unnamed heiau was located on the slope of the ridge just behind the Kālepa-Nounou gap. The only reference to it is on an old map by Metcalf (1846). This heiau along with the others makes seven (7), traditionally said to be the number of heiau encountered when traveling up the river to Wai'ale'ale (Ching 1968).

Viewed as a group, the significance of these heiau cannot be overstated. Only a few other places in Hawaii can match the kind of concentration attained in Wailua, needless to say, an important religious and political center in ancient times.

OTHER SITES

Other sites in Wailua of traditional importance include the Paemāhū O Wailua petroglyphs near Hauola. The rocks holding the petroglyphs are said to be the brothers of Maui, who at one time lived in Wailua. Maui, the famous demi-god, is also connected with other geographic features in the area. Several stones in various areas of the river are said to be the fishhook, fishing sinker and canoe of Maui. Stratigraphic markings in the face of the cliff to the north are said to have been made when he hung his malo there to dry after fishing. Maui's home was on a hill just above 'Ōpaeka'a Falls (Dickey 1916).

The Holoholokū birthstones were important in that a child of Kaua'i irregardless of his bloodlines, would not be considered royalty unless he were born here. A chant from the legend of Kawelo expounds this tradition:

"Hanau ke 'lii iloko o Holoholoku-he alii nui;

Hanau ke kanaka ilioko o Holoholoku, he alii no;
Hanau ke alii nui mawaho a'e o Holoholoku, aohe alii, he kanaka ia!"

"The child of a chief born at Holoholoku is a high chief;
The child of a commoner born at Holoholoku becomes a chief, also;
The child of a high chief born outside of Holoholoku is no chief, a commoner he!"

(Kaua'i Historical Society 1934)

The last person born at Holoholokū is said to be Kaumuali'ili'ili'i, the youngest son of King Kaumuali'i and Queen Deborah Kapule (Lydgate 1916).

Kaluawehe or the King's Highway began just offshore near the mouth of the Wailua River. An ali'i, upon his return from a sea voyage, would come up the "highway" in his canoe until he hit the beach whereupon both man and vessel would be carried up mauka to his hale (Salisbury 1936). The "highway" closely follows the present Poli'ahu Road (Ching 1968).

HISTORICAL INFORMATION

In historic times there are virtually no substantial written accounts or descriptions of Wailua. This, in part, can be traced to the fact that no Protestant mission station was established in or close to the area, a condition that has benefited the reconstruction of history in other locales through the use of journals, diaries, letters, etc.

A check of land awards as a result of the Great Mahele (1848) shows only a total of approximately 75 acres of Wailua awarded to 25 individuals, among them D. Kapule and Iosia Kaumuali'i, wife and son of Kaumuali'i, the last chief of Kaua'i. The rest of this large ahupua'a was kept as Crown Lands or the private lands of Kamehameha III (Kauikeaouli), another testament of the importance and value of the

area at that time.

Handy, in 1935, studied the ahupua'a as an agricultural area. He found extensive agricultural terracing along the lower two miles of the river. However, by 1935 little of the original Hawaiian agricultural staples were being cultivated. Most of the terraces, once in taro, were given over to rice by Chinese farmers along with some limited areas in sweet potato and pasture (Handy 1940).

PREVIOUS WORK

Previous archaeological studies in the Wailua River valley (with one exception) are limited to sites of major significance in Wailuanui ho'ānu (Great Sacred Wailua). The mauka limit of this sacred area is defined by Dickey (1916) as being mounts Nounou on the north and Kapu on the south side of the river about 2,000 feet mauka of Poli'ahu Heiau (Bennett 1931:127, Site 107). Thus, this area includes most of the tidewater portion of the river but does not extend inland to the areas under study. Bennett (1931:128, Site 110) has recorded a site consisting of agricultural terraces in minor stream valleys mauka of Kapa('a) homesteads. These terraces are north of the present study areas but their geographic location is similar as a type locality.

The exception noted above is an archaeological study mauka of Wailuanuiho'āno conducted by Francis Ching (1968) on the alluvial terraces in the Wailua River gorge. This survey covered the north and south forks of the river from Koholālele (Falls) and Waiehu (now Wailua Falls) respectively to the confluence of the north and south forks. The survey recorded four (4) archaeological sites, 205, 206, 207, and 208 on the alluvial terraces where the present study Area A is located. Site 205 is an agricultural terrace complex situated across the river, northeast of Area A that appears on Metcalf's (1846) map indicated as being under rice cultivation and called by the name Mākea. Konole'a is the name given the terrace complex on the west side of the river. This complex is shown by Metcalf (1846 map) as extending through our study Area A (refer to Figure 4) but was present only to the north of Area A

TABLE 2

Selected Place Names Relating to Wailua, Kaua'i

This table is not intended as a comprehensive or definitive study of place names of Wailua. Rather, it should be viewed as a general guide, assembled from major written and recorded sources to give the reader some insights to the cultural background of the area.

'A'ahoaka	A hill, kīpuka of the Waimea Canyon Volcanic Series. Lit. (possibly), crescent-shaped belt or to defy (the) spirit.
Hālī'i	Tributary of S. fork, Wailua River, Lt., strewn.
Hanahanapuni	Cindercone of the Kōloa Volcanic Series. Lit., surrounding warmth. (see Pihanakalani).
Hauola	Pu'uhonua at mouth of Wailua River. Lit., dew (of) life.
Hikinaakalā	Heiau within Pu'uhonua o Hauola. Lit., the rising of the sun.
Holoholokū	Royal birthing place. Lit., to run (and) stand.
'Ili'iliula	Tributary of S. fork, Wailua River. Lit., red pebbles.
'Iole	Tributary of S. fork, Wailua River. Lit., rat. This may have a connection to the legend of Kawelo, who was born at Wailua and whose brother could transform himself into a rat.
Kaholālele	A falls at the 200 foot elevation on the north fork (middle fork) of the Wailua River.
Kalaekoa	Secondary peak on 'A'ahoaka. Lit., (possibly) koa tree point.
Kalaeokamanu	Locality and heiau on the makai end of Pu'ukī. Lit., the crest of the bird.
Kalama	Tributary, N. fork, Wailua River. Lit., the torch or the light.
Kālepa	Ridge, part of the western boundary of Wailuanui-ho'ano. Lit., trade.

Kaluawehe	The King's highway (see text) and surfing spot. Lit., the open pit.
Ka'ulu	Tributary, S. fork, Wailua River. Lit., the breadfruit.
Kāwī	Tributary, N. fork, Wailua River. Lit., (possibly) to press. In the legend of Ka'ililauokekoa, Kauakahiali'i's nose flute was named Kanikāwī (sounding Kāwī).
Keahimeki	Secondary peak on 'A'ahoaka. Lit., the fire pit.
Keāhua	Tributary, N. fork, Wailua River. Lit., the mound. This was also the name of a famous Kaua'i chief.
Kokomo	A peak on Kālepa ridge. Lit., to enter.
Konole'a	Lo'i along S. fork, Wailua River. Lit., (possibly) to invite joy.
Kukui	Heiau at the shore near Wailua-Olohena boundary. Also called Kaikīhaunakā or Kūhua Heiau. Lit., candlenut tree.
Līhu'e	Town and judicial district, east Kaua'i. Lit., gooseflesh. This name was brought over from O'ahu by Kaikio'ewa, the appointed governor of Kaua'i who called his residential compound, around which the present town grew, Līhu'e.
Mākea	Lo'i along S. fork, Wailua River. Lit., once uncultivated land, as for bananas, sweet potato, taro. It is also the name for a variety of taro and 'awa.
Malae	Heiau. Also recorded as Malaea.
Maunakapu	Peak on Kālepa ridge. Lit., sacred mountain.
Mauna'ou	Hill far upland in Wailua. Lit., piercing mountain.
Nounou	Ridge forming part of western boundary of Wailuanuiho'ano. Also known as "Sleeping Giant". Lit., to throw or stone fighting. In legend, Kawelo and 'Aikanaka conflict in a stone throwing battle on this ridge.
'Ōpaeka'a	Falls and stream that flows into Wailua River. Lit., rolling shrimp.

Paemāhū o Wailua	Rocks near Wailua River mouth on which petroglyphs are carved. Lit., homosexual row (of Wailua). The rocks are said to be the brothers of Maui or in another story, men turned to stone by Kapo.
Palikea	Tributary, S. fork, Wailua River. Lit., fair cliff.
Pihanakalani	A legendary spot near the source of the N. fork of the Wailua River. Some say it is another name for Hanahanpuni. Lit., gathering place (of) high supernatural beings.
Pōhaku'ele'ele	Heiau. Lit., black rock.
Poli'ahu	Heiau. Lit., garment (for the) bosom, goddess of snow.
Pu'uki	Small ridge on the north bank of the Wailua River. Lit., ti plant hill.
Pu'upilo	Hill, a kīpuka from the Waimea Canyon Volcanic Series. Lit.. hill (of the) swampy odor or pilo plant hill.
Uhau'iole	Tributary, N. fork, Wailua River. Lit., rat hitting.
Wai'aka	Tributary, S. fork, Wailua River. Lit., laughing water.
Waiehu	Falls on S. fork of Wailua River. Also known as Wailua Falls. Lit., water spray.
Waikoko	Tributary, S. fork, Wailua River. Lit., blood water.

Spellings of these place names, including the placement of macrons (-) and glottal stops ('), were taken mainly from Armstrong (1973) and Pukui, Elbert, Mo'okini (1974). Literal translations are from Pukui, Elbert, Mo'okini (1974), Pukui, Elbert (1971), Beckwith (1970), and others.

during Ching's (1968) survey. Thus the terraces shown by Metcalf (1846 map) at the southwest corner of this alluvial terrace had already been destroyed.

The fourth site (208) is recorded on Monsarrat's (1900) map. This is the 'auwai observed during the present reconnaissance and described in "Reconnaissance Results - Area A".

The legend of Kapunohu and Kemamo cited by Dickey (1916:34) gives the name Kawelowai to a cave beneath the river above Waiehu (Falls). Ching (1968) approximates the location of this place next to the present study Area B and the ford on the sugar company's haul cane road. An archaeological reconnaissance of a similar nature to the present study was conducted by Cordy (1978) in Waihe'e, Maui and Lumaha'i, Kaua'i. There are a number of important differences in terrain, project area size, archaeological sites present and historical records available for the present Wailua study, nevertheless, some hypotheses forwarded by Cordy (1978) are applicable to Wailua (see "Conclusions" this report).

Additional information concerning Hawaiian land use of the Wailua River system and adjacent lands must be deduced from the archaeological and biogeographical data collected during the present study and ethnographic data, the most complete and detailed being Handy and Handy (1972).

RECONNAISSANCE RESULTS

FIELD METHODS

The study areas consist of nine (9) separate pieces of territory along the south fork of the Wailua River. Each area for study was assigned a letter from A through I for convenience during the field work (refer to Figure 3). Area A includes the Power Plant Alternatives 1, 3A, 3B, 3C and four (4) sites and is located approximately 4,000 feet upstream from the confluence of the north and south forks. Area B includes the Power Plant Alternative 2 site. Area F is the site of Intake Alternative 1 and 4. Area H includes the site of Intake Alternatives 2, 3A, 3B, and 3C and area I Intake Alternatives 2A, 3B, 3C and 4. Areas C, D, E and G are sections of undisturbed territory to be crossed by the pipeline. These areas consist of minor stream gullies on the north bank of the Wailua River valley (south fork).

Access to the study areas was facilitated by the network of sugar company roads that allowed us to arrive directly above the study areas, all of which (except area I) are situated on the steep banks and lower alluvial terraces of the river and minor streams.

Each study area was entered on foot and all alluvial terraces were visually inspected by traversing their length and breadth. The steep banks of the valley were checked where ledges or older alluvial terraces were found, along our access routes (from river bottom to cane field above) and where minor stream gullies were present. Two-way radios were used to coordinate and direct the ground movements in the study area. This was necessary because of the dense vegetation, rain and precipitous cliffs in some areas.

Data on the archaeological sites found and on vegetation encountered were recorded in a field notebook. Sketches were drawn showing the configuration of the remains and their relative position to prominent topographical features on U.S.G.S. 7.5 minute series maps. Schematic cross-sections were also drawn for areas where cultural remains were present. Dimensions of the sites were paced off and

translated to feet (1 pace being equal to 3 feet) or estimated when pacing was impossible due to thick stands of hau (Hibiscus tiliaceus). Photographs were not taken (except at the site of the intake in Area H and in a portion of area I) because of the frequent rain and difficulty of climbing through stands of hau and up and down the steep, densely vegetated sides of the valley.

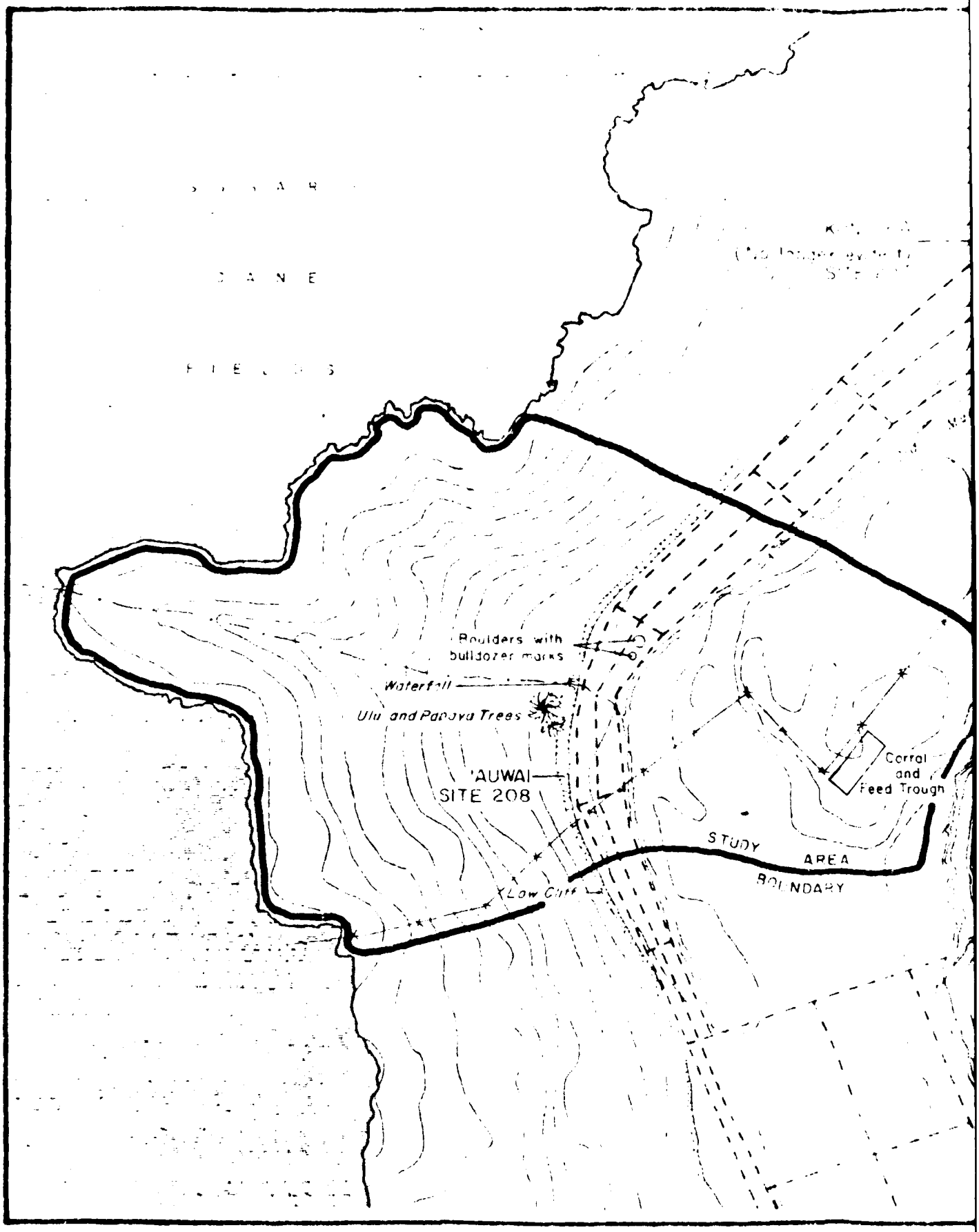
Each of the nine (9) study areas are described below. These descriptions include a discussion of the access route used, the vegetation encountered, the natural configuration of the area, the location and configuration of the archaeological sites and the modifications that identify them as such.

AREA AND SITE DESCRIPTIONS

Area A

Area A (Figures 4 & 5) was entered from the south side. This involved traversing the steep (approaching 85%) slope in the vicinity of the pasture fenceline shown. Near the valley bottom a low cliff, ranging from 15 feet to over 25 feet high was encountered. At the base of this cliff is a level terrace-like 'auwai feature (Site 208) approximately 10 feet wide and an estimated 40 feet above the valley bottom. Both the cliff and the terrace extend along the south and west margins of the valley floor. Near the northwest extreme of the study area a minor stream trickles over the low cliff and pools upon the terrace then escapes southward finally flowing down the bank to the valley floor in the vicinity of the fenceline. A few young 'ulu (Artocorpus communis) trees and two (2) male papaya (Carica papaya) trees are growing on the terrace bank in this vicinity. Prominent vegetation on the slopes above include occasional ki (Cordyline terminalis), patches of lau'ae (Polypodium phymatodes), guava (Psidium guajava), java plum (Eugenia spp.), kukui (Aleurites moluccana) and hau.

The valley floor consists of an old meander of the river that runs along the western edge and an alluvial terrace bounded on the west,


Boulders with bulldozer marks
Waterfall
Ulu and Papaya Trees
'AUWAI SITE 208
Low Cliff
Corral and Feed Trough
STUDY AREA BOUNDARY

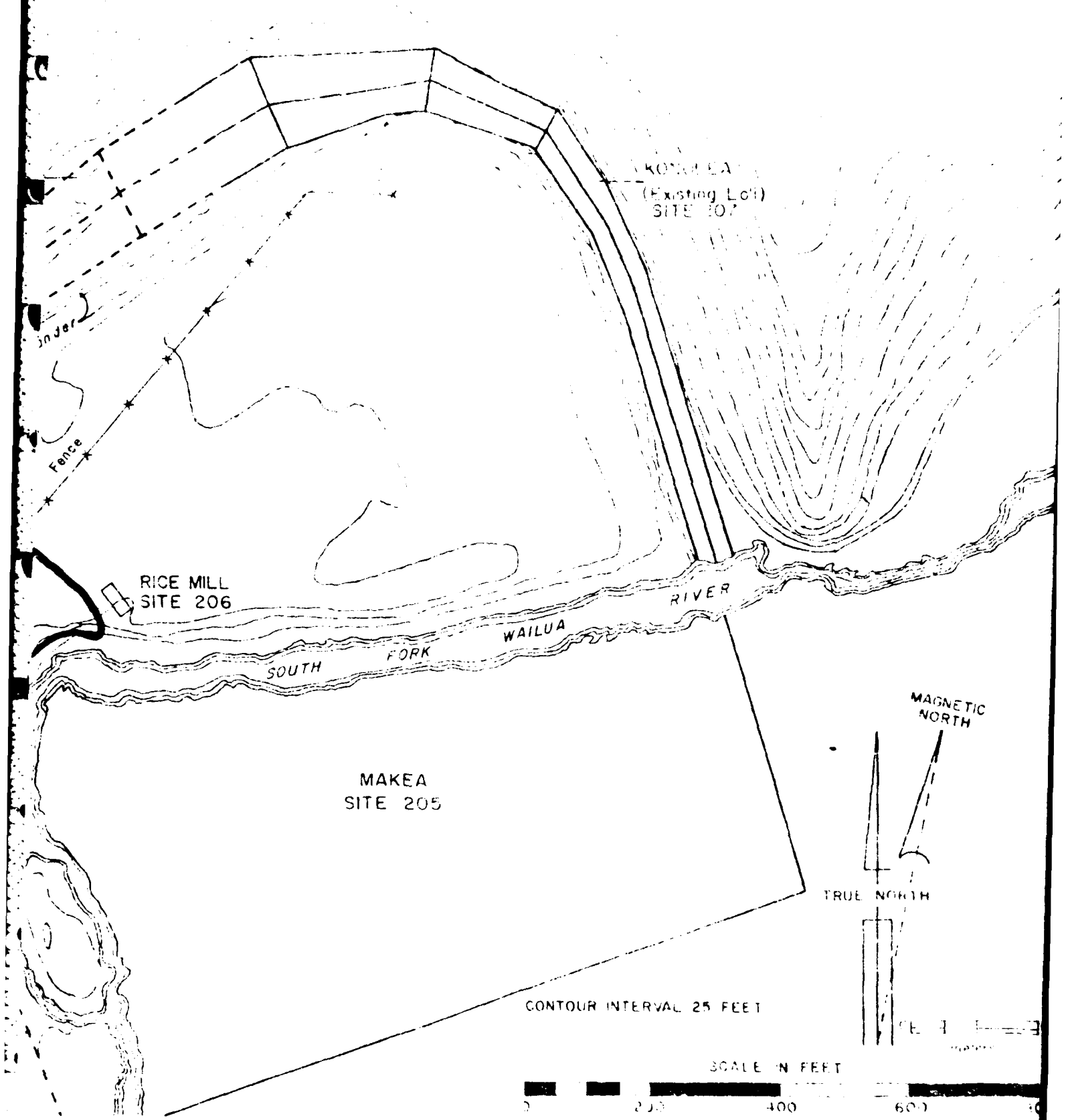


FIGURE 4 STUDY AREA A SHOWING ARCHAEOLOGICAL SITE
IN THE STUDY AREA AND VICINITY.

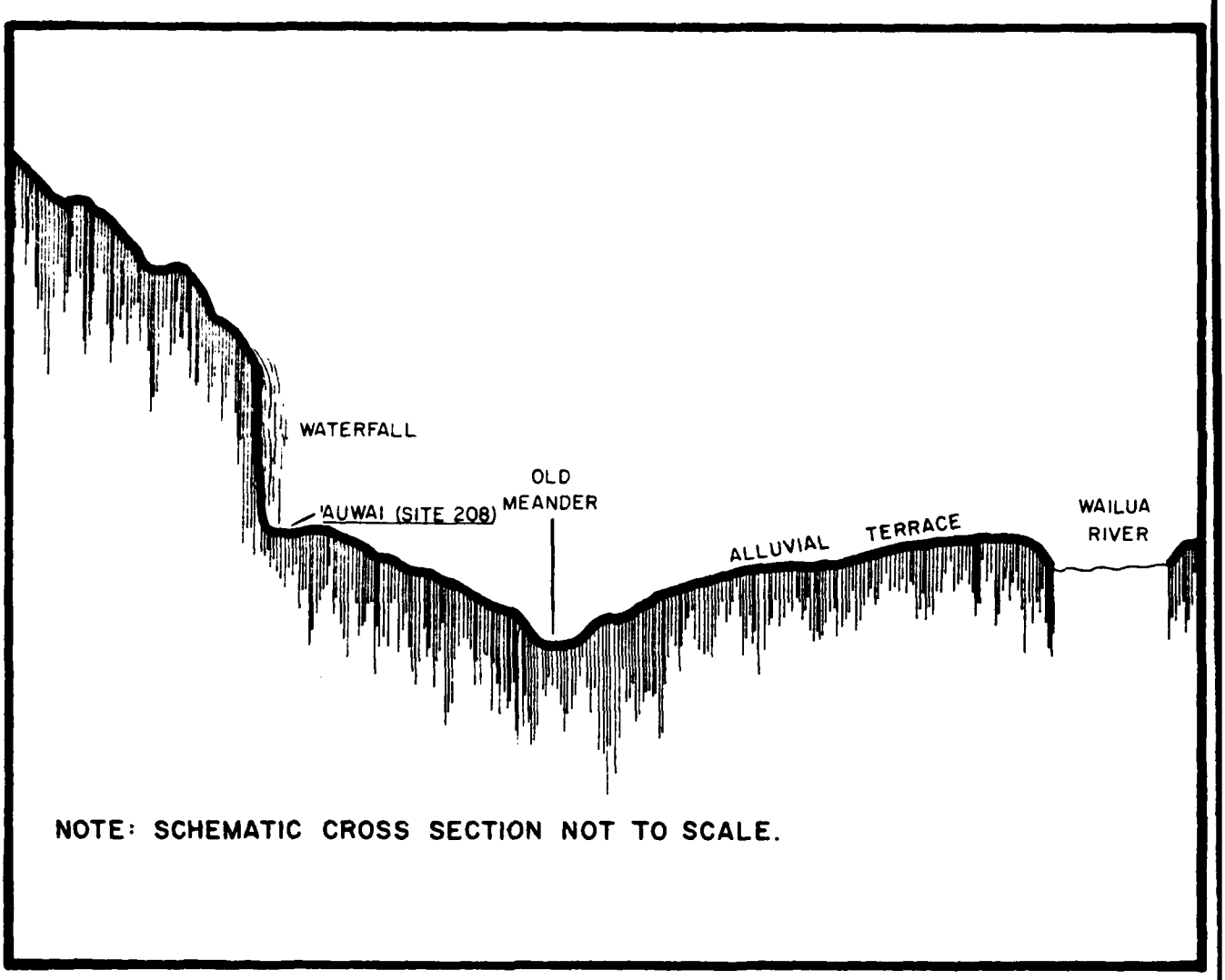


FIGURE 5 SCHEMATIC CROSS SECTION OF AREA A.

south and north by the old meander and on the east by the present river. This terrace is elevated about 20 feet to 30 feet above the river bed. These parts of the study area have been previously bulldozed for pasture improvement and presently support grazing animals.

Archaeological features in Area A consist of only Site 208 ('auwai). North of the study area agricultural terrace complexes are present on the west (Site 207) and east (Site 205) sides of the river (Ching 1968). The Site 207 terraces were present in the study area prior to alterations of the land (Metcalf 1846:map) for grazing, however, no discernible surface traces of these terraces remain in the study area.

Area B

Area B is situated along the north bank of Wailua River's south fork. It extends from the ford about 1,000 feet upstream from Wailua Falls northward and westward to a minor stream bed that originates in the cane fields near the Hanamā'ulu airstrip. Area B was entered from the minor stream bed originating in Area C (below). The northern, mauka portion of this area slopes steeply and is heavily vegetated with low trees (primarily java plum) completely overgrown with an exotic vine. The southern area boundary (i.e., the river bank) is low and wide, subject to inundation during periods of increased flow of the river. This portion of the study area is heavily vegetated with spreading stands of hau reaching 40 feet to 60 feet high and being so dense that we were forced to climb through the hau in order to continue down stream. Numerous young (1 foot to 8 feet tall) 'ōhi'a'ai (Eugenia malaccenis)) trees were noted growing from the swampy ground within the stands of hau. These plants are probably growing from seed washed down by the river or thrown from the road north of Area B as no large, old 'ōhi'a'ai were seen in the vicinity. Many of these trees were flowering. No archaeological sites were found.

The makai one-third of Area B is covered with a thick growth of grass (probably Panicum purpurasens) ranging from 3 feet to 6 feet

high. No archaeological sites could be found beneath this dense vegetative cover and it is probable that the area was disturbed during construction of the haul cane road and ford.

A single, large alluvial gravel bar in study Area B is notable for its contrasting vegetation. This gravel bar is located in the makai portion of Area B where the river takes a sharp U-turn and is vegetated with 50 feet to 60 feet tall exotic Acacia spp. trees with a understory of honohono (Commelina nudiflora) grass and abundant wild yam vines. No archaeological sites were found, however, during the reconnaissance a koloa (Anas app.) flushed from the honohono grass.

Area C

Area C the upper reaches of a minor stream, is a narrow gully surrounded on the north, west and south by existing cane fields. Access was gained from the cane field road along the north side of the area. A large mango tree (Mangifera indica) marks the west end of Area C and clumps of mai'a (Musa spp.) are probably cultivated by sugar company employees. The mai'a are growing on a narrow terrace of boulders among which is buried an old automobile, evidence of modern age and mechanized construction for the terrace resulting from cane field clearing. A path was found which leads to the gully bottom where a large stand of bamboo (possibly Bambusa vulgaris var. aureo-variegata) is growing in the trickling stream. Across the stream bed about 5 to 10 small kalo (Colocasia esculenta) plants were found growing in swampy ground but no other evidence of human activity, such as archaeological sites or other cultivated plants, were found in Area C.

Area D

Area D is situated in a minor stream gully immediately makai ofthe sugar company reservoir collecting runoff from the pu'u

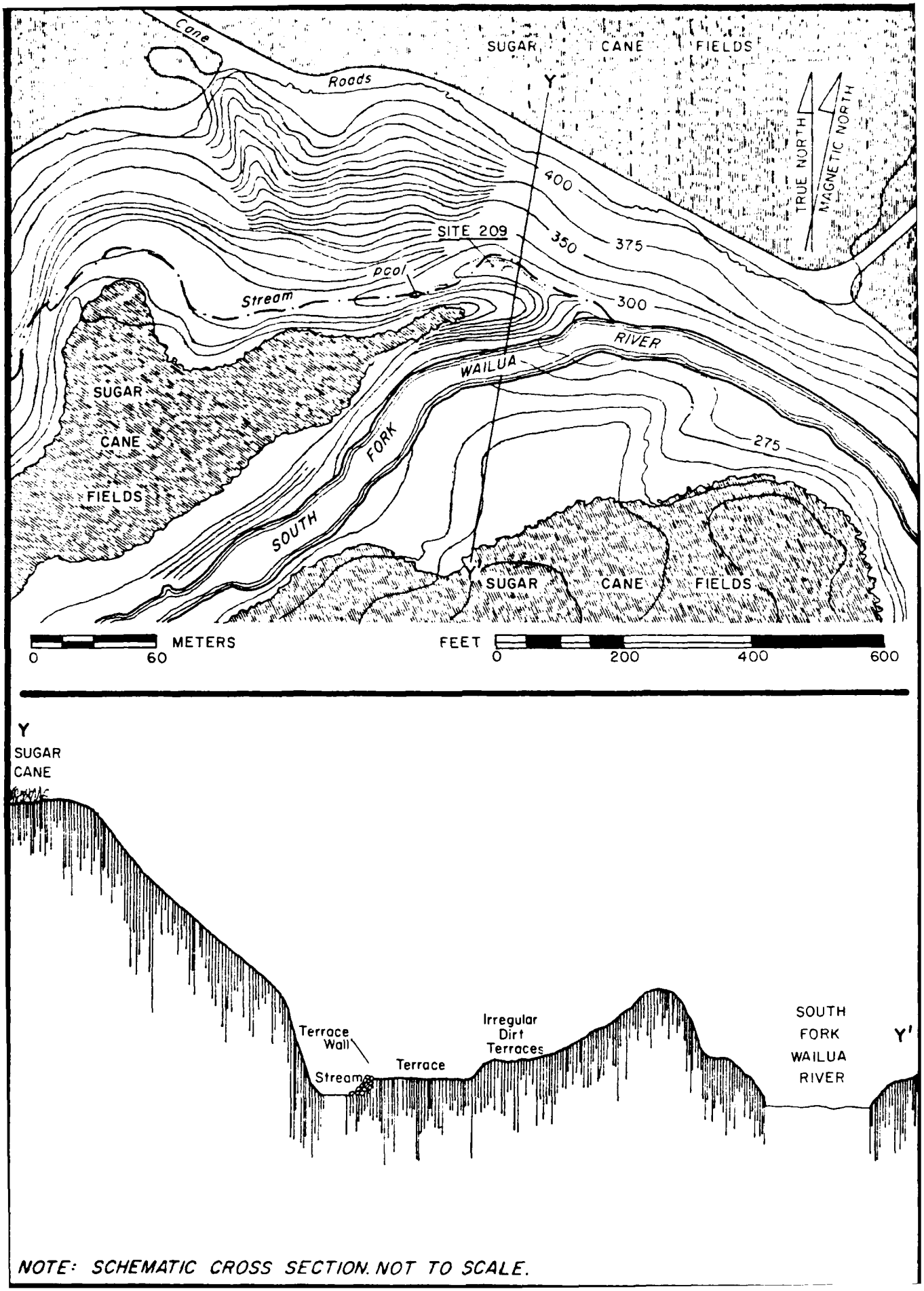
Hanahanapuni. This study area was entered from the northeast side accessed by a cane field road bordering the gully.

The vegetation in this area is predominantly waiawī (Psidium cattleianum f. lucidum), trees of 10 feet to 15 feet in height growing 0.5 feet to 1 foot apart. The ground is wet and soft on the north side of the stream and on the south side gives way to swampy conditions with some areas under standing water. Here the vegetation gives way to a predominance of pū hala (Pandanus odoratissimus) in the swampy areas and expanses of uluhe (Dicranopteris linearis) on the gully sides with occasional 'ohi'a lehua (Metrosideros collina) on the slopes or along the edge of the cane field.

No Hawaiian archaeological sites were found in this area although irregular concrete blocks were found in the stream bed adjacent to the road which passes on the makai side of the reservoir above the study area. These were probably a part of the reservoir having since been left in situ and consequently destroyed by heavy overflow of the reservoir. Pig tracks were also noted in this area.

Area E

Study Area E (Figure 6) encompasses the extreme lower section (at its point of confluence with the Wailua River south fork) of the same minor stream that is part of study Area D (above). This area contains remnants of two (2) agricultural terraces (Site 209) in the stream bottom with remains of a terrace retaining wall discernible (refer to Figure 5). Access was gained from the sugar company road along the north side. This bank of the gully is heavily vegetated and our access route from the northwest was obscured by a thick growth of vines. Access from the northeast is not possible due to a shear cliff over 60 feet high. Near the stream bottom the dense vegetation opens into a wide alluvial terrace on the north side of the stream with an overstory of kukui (Aleurites moluccana) trees and ground cover of honohono grass. Inspection of this terrace did not reveal any conclusive evidence of human modification and immediately upstream a dense


Cane
Roads
SUGAR CANE FIELDS
Y
TRUE NORTH
MAGNETIC NORTH
400
350
375
SITE 209
pool
Stream
300
RIVER
WAILUA
SUGAR
CANE
FIELDS
FORK
275
SOUTH
Y'
SUGAR CANE FIELDS
METERS
0
60
FEET
0
200
400
600
Y
SUGAR
CANE
Terrace
Wall
Stream
Terrace
Irregular
Dirt
Terraces
SOUTH
FORK
WAILUA
RIVER
Y'
NOTE: SCHEMATIC CROSS SECTION. NOT TO SCALE.

stand of hau chokes both banks and the stream bed. However, makai of the upper terrace a second bi-level alluvial terrace on the south bank of the stream retains a set stone wall that extends for approximately 100 to 150 feet along the stream bed. The makai portion of the retaining wall is interrupted by a large mango tree and further makai a section of the wall has been washed out by stream flow. This terrace ranges from about 12 feet to 24 feet wide and is bordered on the south by a low narrow ridge with irregular, unfaced dirt terraces stepping down to the larger walled terrace. Relict kalo plants were noted along the mauka edge of the terrace adjacent to the stream. A conglomeration of boulders in the stream may be the remains of a dam for raising the water level of the stream for diversion into the terrace, however, evidence of 'auwai upon the terraces is not discernible.

A few flowering 'ōhi'a'ai trees are present in the valley bottom and few ki plants are present on the steeper slopes. Pū hala is common on the steep slopes of the gully and surmounting the cliff areas.

Area F

Area F is situated on the south fork of Wailua River south of study Area D (discussed above). The area is bisected by an existing sugar company road oriented east-west. The north bank of the river gorge is predominantly pali (cliff) which drops 60 feet to 100 feet from the road to the river. Native vegetation along the top of this pali consists mostly of pū hala and hau with various low shrubs comprising the understory. North of the road through the study area a low pali (20 feet to 30 feet high) borders the cane field to the east. Above this pali the ground continues at a steep slope to cane fields above and on the west. The strip of uncultivated land is barely 200 feet wide, is densely vegetated with a mixture of native and exotic low trees and shrubs and no archaeological sites are present here on the north of the cane road nor on the south between the road and the river gorge.

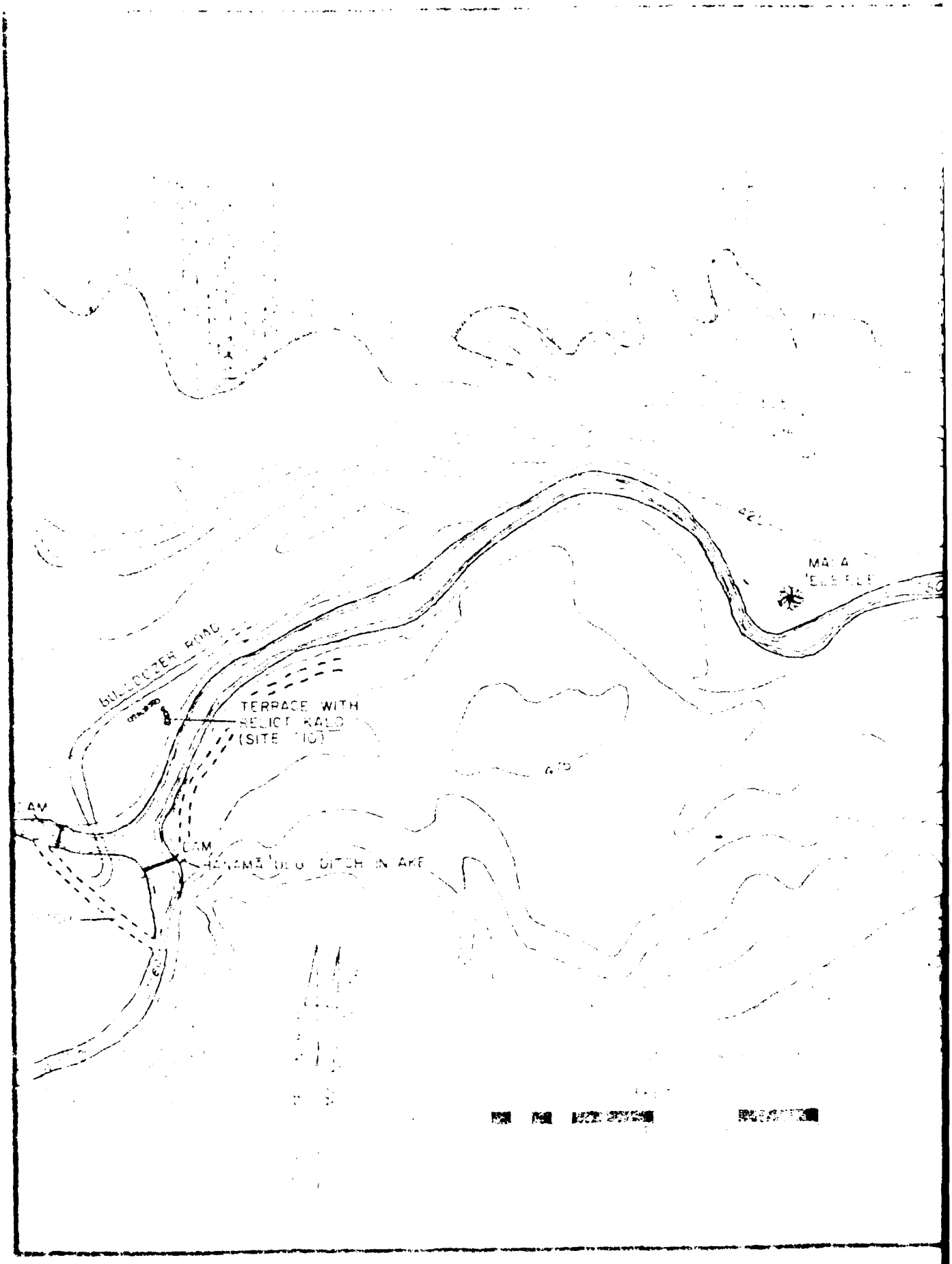
Area G

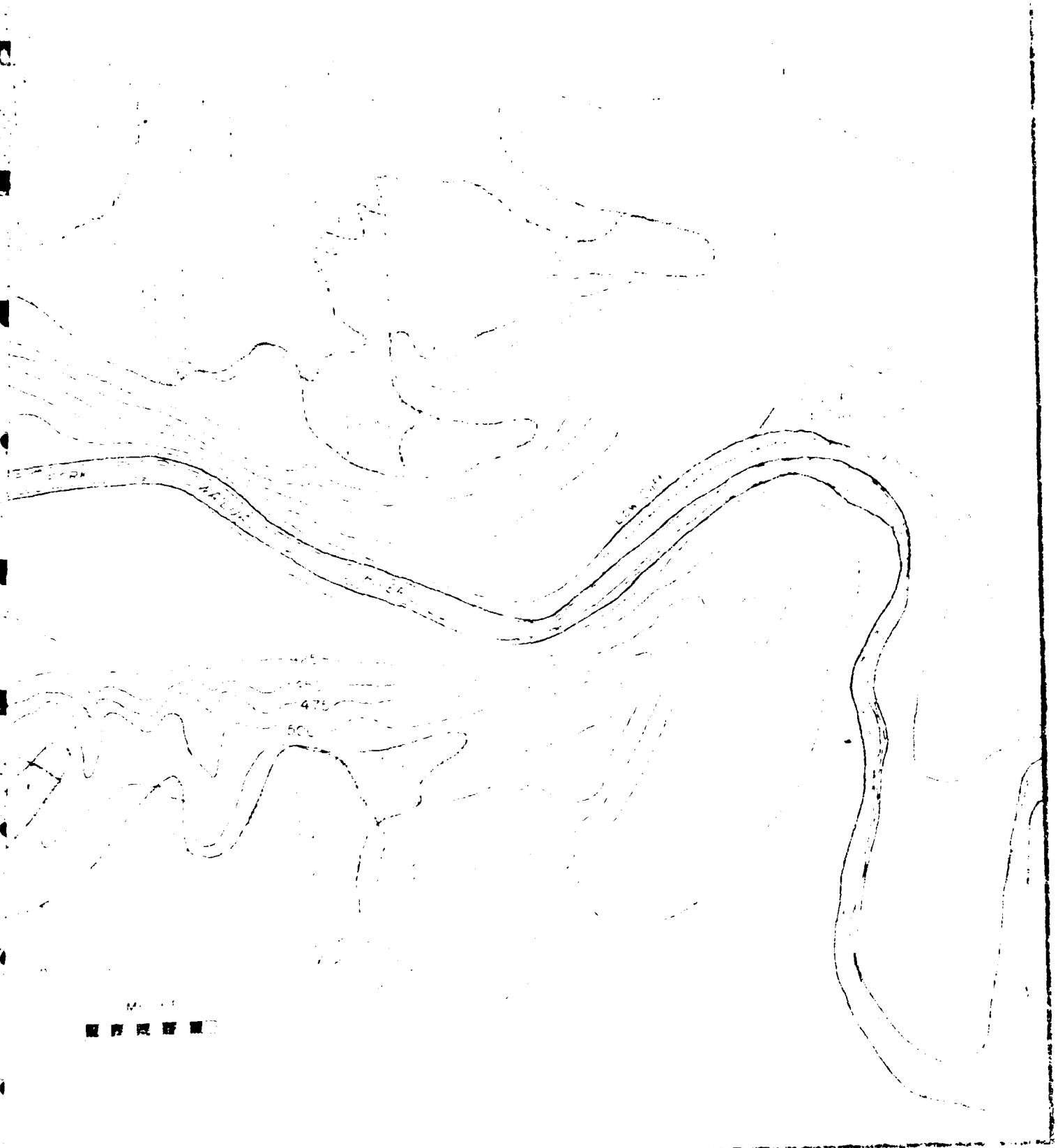
Area G begins a few hundred feet west of Area F (above) and extends along the north bank of the gorge of the south fork. The area includes a portion three minor stream channels all of which are very steep, narrow gullies which drop precipitously in places beneath extensive growth of uluhe. The upper limits of these gullies, vegetated with hau, waiawī and some kukui, were inspected but the lower extremes and the sides of the primary gorge were inaccessible. No archaeological sites were found.

Area H

Area H (Figures 7 and 8) is situated in the bottom of the south fork gorge and extends approximately 6,000 feet makai from the confluence of 'Ili'ili'ula and Wai'ahi Streams, southeast of Mauna 'Ou (refer to Figure 3). The mauka extreme includes the dams and intake for the Hanamā'ulu Ditch system.

Access to the study area was gained from the northwest, down a narrow and rocky, minor stream bed originating at the edge of the cane fields above the gorge. The dam area was inspected first. We were able to cross 'Ili'ili'ula between the dam and its point of confluence with Wai'ahi as the stream flow is diverted to Wai'ahi Stream and the Hanamā'ulu ditch intake by a short deep ditch excavated through the ridge between the two rivers. Bulldozer tracks were noted in the dry section of 'Ili'ili'ula Stream bed and cuts in the ridge between the streams, as well as a short section of bulldozer road paralleling the river along the north bank are a result of construction of the dams and ditches. The route of access of the bulldozer could not be discerned, however, it is probable that access was gained from the south bank of the river. No evidence of prehistoric use of the ridge between the rivers could be discerned beyond the presence of numerous wild yams growing in the area.


BULLDOZER ROAD
TERRACE WITH
RELICT KALO
(SITE 10)
MA'A
'ELE'ELE
LAM
LAM


475
500

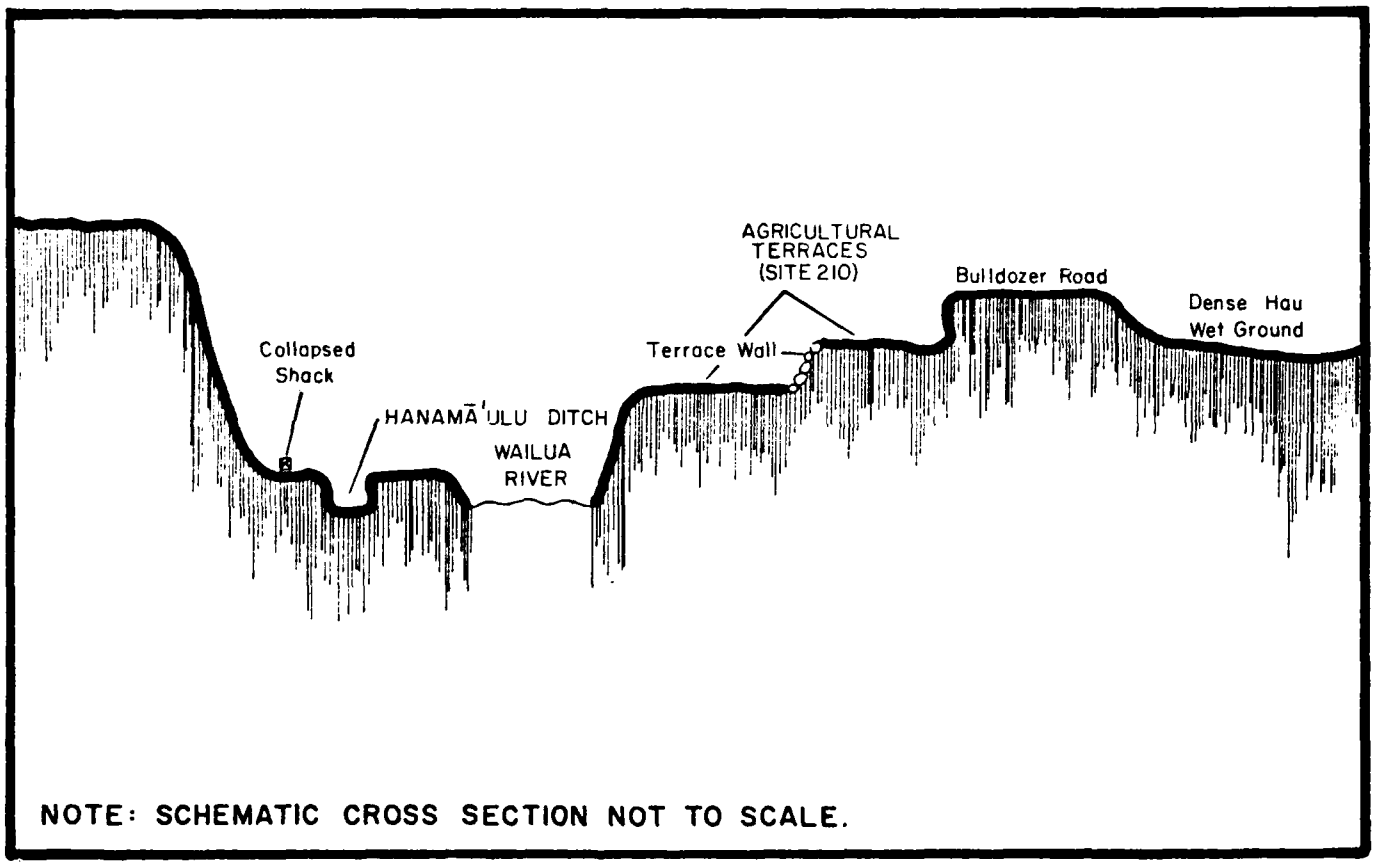


FIGURE 8 STUDY AREA H SHOWING ARCHAEOLOGICAL SITES.

Along the north bank, below the confluence of the streams, an elevated (approximately 20 feet to 30 feet above the present river) alluvial terrace contains remnants of agricultural terraces. This complex (Site 210) is bounded on the south by the river, on the north and east by a low (about 15 feet high) verticle cliff and on the west by the bulldozer road where it crosses 'Ili'ili'ula Stream. The cultural remnants consist of a very deteriorated terrace retaining wall about 2 feet high that parallels the low cliff on the north thus creating a long (about 200 feet) narrow (maximum 12 feet wide) terrace 2 feet above the larger terrace area. The larger terrace has a short (about 15 feet) 1 foot to 2 feet high, north-south oriented retaining wall situated near the makai end of the terrace. Twenty (20) to 40 relict kalo plants are present on the larger terrace near this wall. A linear depression running makai on the larger terrace, adjacent to a narrow terrace at the cliff base may have been an 'auwai but was not traceable in a mauka direction. Water for these terraces may have come from the minor stream by which we gained access to the river, however, the bulldozer road has apparently obliterated structural remains beyond the immediately definable terraces.

Makai of the sites described above, the north bank steepens abruptly and is disected by another minor stream. We were able to cross above the 40 foot high pali on the river's edge by climbing up, crossing the minor stream bed and then dropping down to the next alluvial terrace. The descent to this second alluvial terrace (gravel bar) was made more difficult by dense stands of hau. This vegetative cover opened on to a continuous, deep grass understory and overstory of giant, exotic Acacia spp. trees (about 70 feet to 80 feet high) upon the alluvial terrace. This terrace is separated from the north bank of the gorge by a narrow boulder strewn secondary river channel that although dry during this reconnaissance (a period of relatively low river flow) isolates the alluvial terrace from the north bank during periods of high water.

Inspection of this terrace resulted in the discovery of a discontinuous and very deteriorated 2 foot high bank along the south side of the terrace. The condition of the bank and the generally low

elevation of the entire terrace relative to the river (5 feet to 6 feet) precludes positive identification. Near the makai extreme of the terrace is a clump of four (4) or five (5) mai'a plants. These are tentatively identified as mai'a 'ele'ele based on the dark-red to black variegated trunks. None were in flower. This alluvial terrace terminated (makai end) at a sheer pali in excess of 90 feet high in the vicinity of the powerline showin in Figure 3. Thus we were obliged to ascend the north bank to the cane fields above and reenter this study area makai of the powerline and pali.

The study area was reentered by way of the minor stream gully at the northeast end of Area H. The sides of this gully are very steep and heavily vegetated with hau, pū hala, waiawī and various shrubs and weeds. 'Ie'ie (Freycinetia arborea), a native liana was also observed. The stream bed is narrow and rocky. This minor stream does not flow directly into the river below rather it terminates on a 40 foot high, roughly 60 feet wide, swampy terrace where a large mango tree is growing along with the hau and waiawī. Heading directly for the river we encountered a 15 foot to 20 foot high pali below which a lower terrace could be seen. Heading in a makai direction along the top of this pali an access route to the lower terrace was found and the terrace reconnoitered.

The terrace is roughly level and is 10 feet to 20 feet above the present river directly below the south boundary. This terrace is vegetated with dense hau and wild yams, a few 'ōhi'a'ai and a few kī plants are interspersed beneath. Along the north edge (the intermediate pali) of this lower terrace is the remnant of a low (2 feet) discontinuous agricultural terrace retaining wall that forms a 10 foot to 15 foot wide terrace (Site 211) against the base of the pali. These terraces are similar in characteristics to those found in the mauka extreme of Area H (discussed above) except that no additional terrace walls nor kalo plants were found.

Area I

Area I is the most mauka of the study areas and contains a man made ditch that collects water from the north fork of Wailua River and delivers it to the Hanamā'ulu ditch intake on the south fork via Waikoko Stream. A gaging station access road runs along the northeast side of this ditch (except the southernmost 2,000 to 3,000 feet) providing access to the study area.

No evidence of cultural remains was found in Area I aside from the ditch, gaging station and road, two (2) stands of 'ohe (probably Melocanna baccifera), two (2) large stands of palepiwa (Eucalyptus spp.) or Melalenca leucadendra (paper bark) of the family Myrtaceae. These stands are located on the north side of the downstream end of the ditch and on the south side of the upstream end near the gaging station. They are planted in straight rows, probably by forestry personnel experimenting with various introduced trees for industry. The 'ohe noted above is located near the gaging station at the north end of the area and is of the Hawaiian variety in that nodes are about 18 inches apart and the walls of the stalk, thin. This is the type of 'ohe used in making pū'ili (bamboo rattle) and 'ohehanoihu (nose flute).

CONCLUSIONS

The information compiled from early accounts and the recording of Hawaiian oral history (Wilkes 1848; Thrum 1907; Dickey 1915 and 1916; Lydgate 1916; Salisbury 1936; Beckwith 1970), early land and geologic survey maps (Metcalf 1846; Monsarrat 1900; Marshall 1910; Wall 1923), previous archaeological research (Bennett 1931; Sloggett 1934; Ching 1968), ethnographies (Handy 1940; Handy and Handy 1972) and government records (Indices of L.C. Awards 1929) constitute a substantial body of data relating to Wailua, Kaua'i. The data is, however, weighted towards sites located along the coast and the tide-water portion of Wailua River with the following exceptions:

1) Bennett's (1931) Site 110 in Kapa'a mauka (type locality).
2) Ching's (1968) Survey.
3) House sites shown on Marshall's (1910) Geologic Survey Map of Kaua'i Island.
4) Oral history - place names and mo'olelo.

The present study has located three (3) additional agricultural terrace complexes along the south forks between Waiehu (Falls) and the Hanamā'ulu ditch intake at the confluence of 'Ili'ili'ula and Waiawa Streams.

The data resources (above) are sufficient for making some general statements. According to Hawaiian oral history, Wailua was the most politically and religiously important ahupua'a of Kaua'i (refer to "Background"). Archaeological evidence for this could be inferred from the numerous heiau, if we use Cordy's (Kelly 1978:62) criteria for determining political centers with corresponding dense populations. However, this clearly is not appropriate for Kaua'i considering that Kōloa ahupua'a has no less than 14 heiau. Obviously Cordy is assuming that all heiau are contemporaneous; an assumption for which there is no factual evidence. Rather mo'olelo and other oral history are evidence against Cordy's assumption. Futhermore, population estimates based on

number of heiau and size of heiau is equally assuming because an ali'i nui ruled the ali'i ai moku and thereby the entire populous of the island. Thus, people from any community (as defined by Cordy in Kelly 1978:1) could be and were called upon to participate in the construction of heiau or other public works projects (Ching 1981 personal communication).

The Līhu'e basin is a relatively unique geologic feature in the Hawaiian Islands. The Wailua River that drains the central portion of this basin is comprised of an extensive system of youthful gorges cut into a nearly level plain. Thus it differs considerably from the amphitheater type valley in that the vast majority of territory in Wailua (ahupua'a) uka is level, deep volcanic ash dissected by inumerable minor streams and creeks. This type area was, in fact, better suited and more valuable for exploitation by means of swidden type forest plantings, irrigated and dry-land cultivation and natural resource collection (Handy and Handy 1972:470). It is unfortunate that all evidence of Hawaiian land use outside the river and stream gorges has been obliterated and will always be an uncontrollable variable in statistical analyses of site distribution within the ahupua'a.

The archaeological sites located by the previous and present studies show that the alluvial terraces within the primary gorge of the Wailua River were also utilized. The present reconnaissance has shown that there are three (3) major exploitable zones (excluding the river) situated in the river system. These are: 1) three (3) levels of alluvial terraces, 2) minor, tributary stream bottoms, and 3) the steeper slopes of the gorge. The steep slopes support pū hala, 'ōhi'a lehua (Metrosideros collina), laua'e, hau, kī and 'ie'ie. The uppermost terraces capture water from the minor streams on the gorge flanks, are swampy and presently support hau primarily, however, it is assumed that these terraces were also utilized to raise other cultigens. The upper terraces are generally 30 feet or more above the present level of the river. The middle level terraces of the primary gorge and minor, tributary stream bottoms were definitely modified and utilized for raising cultigens, evidenced by constructed terrace remnants and relict kalo (cultigen). These terraces are generally 10 feet to 30 feet above

the present river and may have been watered by 'auwai or minor stream flow or seepage. The lower alluvial terraces range from 1 or 2 feet to 10 feet above the present river. They are small boulder or gravel bars and are presently subject to total inundation or separation from the river bank during maximum flow of the river. This flooding is a result of increased siltation since tapping and damming of the river for cane cultivation and probably did not occur prior to these changes. No definable modification or remnant structures were located on these lower terraces, however, banana, wild yam, and kukui are present on one or more of these terraces suggesting their previous use as resource areas.

In lieu of the terrain contrasts between amphitheater valleys and the Wailua River gorge, the limited extent of archaeological research in Wailua and the irretrievable loss of data from lands under modern cultivation, the existing data appears to support Cordy's (Kelly 1978:56) formula on site types and their distribution. However, broad generalizations based on reconnaissance or even survey data are subjective at best. The framework (Kelly 1978:66) for testing and interpreting settlement and demographic expansion is workable for the ahupua'a type socio-political system. Consideration of the colonization-exploration period, that may account for some of the early coastal sites and the possible necessity and desirability during this early period of inland resources has been overlooked by Cordy. That is some early coastal sites may not represent permanent settlement of the area and some early inland camp sites should be expected.

GLOSSARY

ahupua'a	Largest land unit within a district (moku); were self sufficient economic units extending from the mountains to the outer reef - where there was a reef, or a half mile to a mile to sea - where there was no reef; so called because the boundaries of these land units were marked by a cairn of stone (ahu) on which a pig (pua'a) or other tribute was laid as a tax to the ruling chief (ali'i nui).
'Aikanaka	An ancient high chief of Kaua'i.
ali'i	Chief; a member of the ruling class (nobility) in ancient Hawaiian society.
ali'i 'ai moku	Chief that rules over a moku or district.
ali'i nui	Ruling chief.
alluvial	A mode of sediment deposition, i.e., deposited by streams.
'auwai	A constructed ditch, usually for irrigation purposes.
avifauna	The birds or the kinds of birds of a region, period or environment.
cultigen	A cultivated organism of a variety or species for which a wild ancestor is unknown.
Great Mahele of 1848	An event in the "reformation of the land system in Hawaii" that "separated and defined the undivided land interests of King Kamehameha III and the high-ranking chief and konohiki(s)." This was carried out by the Board of Commissioners To Quiet Land Titles comprised of five commissioners appointed by King Kamehameha III. (Chinen 1974).
hale	House or building.
hau	A lowland tree, often found growing along streams (Hibiscus tiliaceus).
heiau	Hawaiian temple.
honohono	This work is used in the text to generally characterize several species of creeping grasses.
in situ	In an original or natural position.

Ka'ahumanu	Favorite wife of Kamehameha I, who later married Kaumuali'i, King of Kaua'i. She was also at one time Kuhina nui or executive officer of the kingdom.
ka'ao	A traditional Hawaiian fictional story.
kāeke	Or Kā'eke'eke. Bamboo pipes, varying in length with one end open. A player held one vertically in each hand tapping them down on a mat or the ground with the resulting tone varying according to the length of the bamboo (see footnote in text).
Kahiki	Tahiti or a general term describing any foriegn country.
kalo	Taro (Colocasia esculenta).
Kamehameha III Kauikeauoli	The third ruling monarch of the Kamehameha dynasty over the Kingdom of Hawaii.
kapu	Prohibited, forbidden, off limits; sacred, consecrated.
Kapule, Deborah	Wife of Kaumuali'i and Queen of Kaua'i. Deborah was her baptismal name, she being an early convert to Christianity. Ha'akulou was her Hawaiian name.
Kaumuali'i	The last ruling chief of Kaua'i previous to the unification of all islands under the rule of Kamehameha I.
Kawelo	A heroic chief of Hawaiian legend who was born at Hanamā'ulu, Kaua'i. Some of his exploits take place in Wailua such as his battle with 'Aikanaka at Nounou.
kī	The ti plant (Cordyline terminalis).
kīpuka	Variation of change of form, as a calm area in rough seas, a clearing in a forest, or, as used in the text, a remnant of older volcanic activity surrounded by later lava flows.
koloa	General term for duck (Anas spp.). The Hawaiian duck was sometimes called koloa maoli or native duck.
kōnane	A traditional Hawaiian game similar to checkers.
konohiki	Land manager (headman) of an ahupua'a.
kukui	Candlenut tree (Aleurites moluccana).
laua'e	A fern (Polypodium phymatodes). Its fragrance, when crushed, resembles that of the maile, and is famous on Kaua'i.

liana	A climbing plant that roots in the ground.
lo'i	Wet taro lands as opposed to kula lands, that was used for dry land farming.
mai'a	General term for all types of bananas. Another descriptive word follows to denote the specific variety such as mai'a'ele'ele.
maka'āinana	Commoner; the largest class of people in ancient Hawaiian society.
makai	Towards the sea.
mauka	Towards the uplands.
middle fork	The old term, as seen on historic maps, for what is today called the north fork of the Wailua River (see north fork).
Mo'ikeha	The grandson of Maweke who came to Hawai'i from Kahiki. His brother was Olopana, chief of Waipi'o, Hawai'i. Mo'ikeha became the ali'i nui of Kaua'i, inheriting the title from his father-in-law Puna.
moku	To divide, land district.
mo'olelo	A traditional story that is based on what the Hawaiians believed to be historical fact.
north fork	A name, often found on old maps, used to identify what is known today as 'Ōpaeka'a Stream, the northern most of the three large tributaries of the Wailua River. What is known today as the north fork was then called the middle fork.
'ohe	General name applied to all varieties of bamboo. Use in this text refers to 'ohe Hawaii (Bambusa vulgaris var. aureo variegata) or 'ohe kahiki (Schizostachyum glaucifolium).
'ohehanoihu	Nose flute.
'ōhi'a'ai	Mountain apple tree (Eugenia malaccensis).
'ōhi'a lehua	A native tree (Metrosideros collina).
palepīwa	All species of Eucalyptus trees. The name literally means to ward-off fever because the leaves were prepared medicinally for that purpose.

pali	cliff; precipice.
Palila	A demigod, chief and warrior of Kaua'i. Some of his exploits are related in legends of Wailua. He later became the ruling chief of Hilo.
piko	Umbilical cord, navel.
pōhaku piko	A significant boulder or outcrop, in the crevices and vesicles of which are ceremoniously placed the piko of new born infants, secured by a pebble or section of the pū hala fruit.
pū hala	Pandanus tree. Also known simply as hala.
pu'u	Any kind of protuberance from a pimple to a hill.
pu'uhonua	Place of refuge, asylum.
site	A discreet structure (including sinkholes) which contains evidence of construction or modification.
slope wash	Sheet erosion or the material transported by sheet erosion.
terrace complex	Two or more separable (for purposes of analysis), relatively level areas arranged in a step-like order to conserve moisture or to minimize erosion for planting.
uka	Uplands.

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