

AD-A128 531

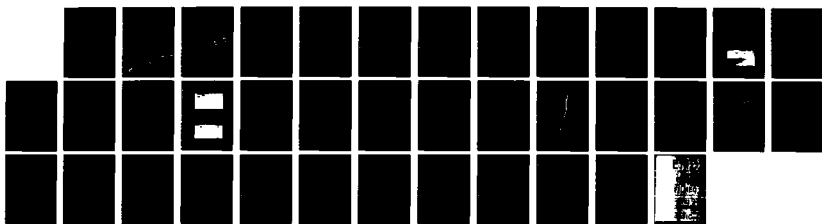
A CULTURAL RESOURCE RECONNAISSANCE OF THE WAIHEA RIVER
FLOOD CONTROL STUD. (U) HAWAII MARINE RESEARCH INC
HONOLULU P K JOERGER ET AL. SEP 79 DACW84-79-C-0812

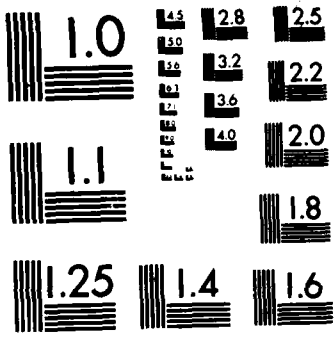
1/1

UNCLASSIFIED

F/G 5/4

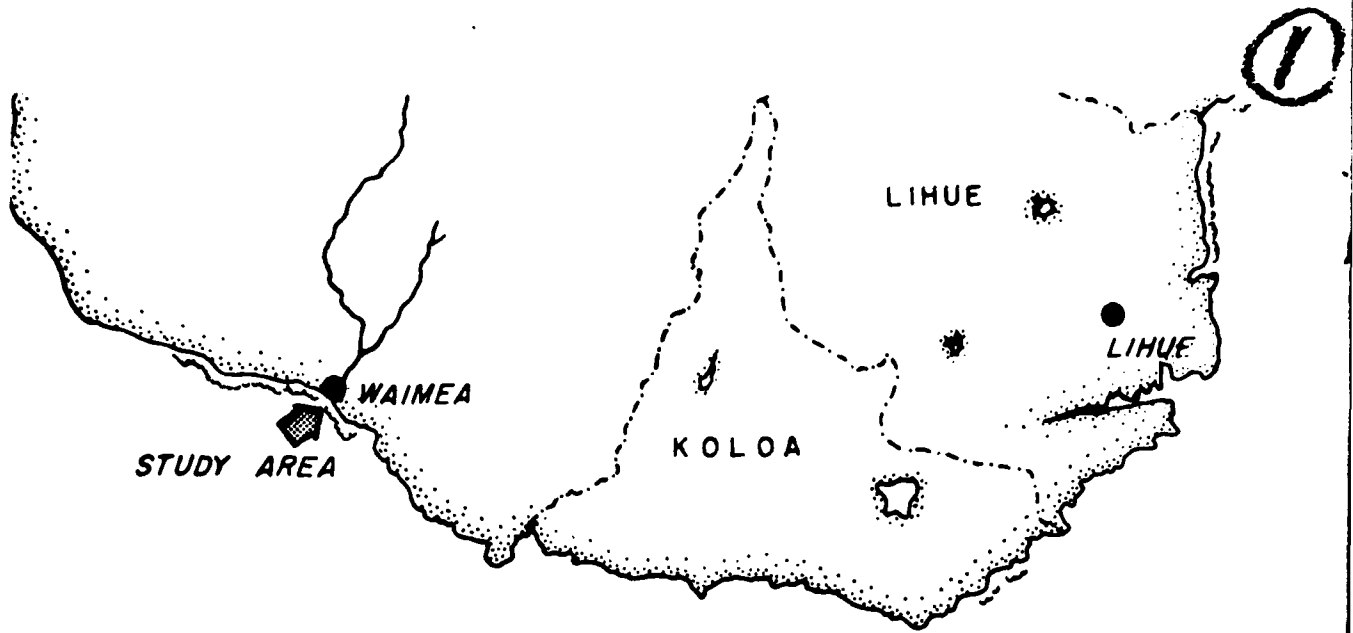
NL





MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

AD A 128531



A Cultural Resource Reconnaissance
 of the Waimea River Flood Control Study Area
 Waimea, Kauai, Hawaii

BY
 PAULINE KING JOERGER
 CHARLES F. STRECK JR.

DTIC FILE COPY

DTIC
 ELECTE
 MAY 18 1983
 H

DISTRIBUTION STATEMENT A
 Approved for public release
 Distribution Unlimited



hawaii marine research

honolulu

83 05 16 100

①

A Cultural Resource Reconnaissance of the
Waimea River Flood Control Study Area,
Kauai, Hawaii

By
P.K. Joerger
C.F. Streck, Jr.

DTIC
SELECTED
MAY 18 1983
H

Prepared for the
Corps of Engineers, Pacific Ocean Division
Department of the Army
Contract No. DACW84-79-C-0012

September 1979

DISTRIBUTION STATEMENT A
Approved for public release:
Distribution Unlimited

Hawaii Marine Research, Inc., Honolulu

TABLE OF CONTENTS :

	Page
INTRODUCTION	1
METHODOLOGY	
Historical Research Methods	4
Archaeological Survey Methods	5
HISTORICAL SECTION;	
General Discussion.	6
The Cook Landing.	8
The Menehune Ditch.	13
ARCHAEOLOGICAL SECTION;	
Description of the Survey Areas	16
Results of the Survey	22
CONCLUSION AND RECOMMENDATIONS;.	29
REFERENCES.	31

Accession For

NTIS GRA&I

DTIC TAB

Unannounced

Justification *for file*

By *[Signature]*

Distribution/

Availability Codes

Dist	Avail and/or	Special
<i>A</i>		




TABLE OF FIGURES

<u>Figure</u>		<u>Page</u>
1	Waimea, Kauai. Location Map.	2
2	Flood Limits for Waimea River and Survey Areas. . .	3
3	Waimea River Mouth and Valley, Kauai, T.H.	6
4	Levee Construction, 1949, on the West Bank of the Waimea River.	11
5	Levee Construction, 1949, on the West Bank of the Waimea River Showing Prior Levee.	11
6	Area 1, Archaeological Reconnaissance Survey of the Waimea River Flood Control Study Area	17
7	Area 1, Cook Landing Site, National Historic Landmark and Parking Area.	18
8	Area 1, Present Levee and Drainage Ditch	18
9	Area 1, Beach Sand and Boulder Fill at the Mouth of the Waimea River.	19
10	Area 1, Partially Eroded Levee and Flood Gate . . .	19
11	Area 2, Archaeological Reconnaissance Survey of the Waimea River Flood Control Study Area	20
12	Area 2, Road Embankment	21
13	Area 2, Current Parking Area and Concrete Piling Culvert	21
14	Area 1, Cook Landing Site Plaque, National Historic Landmark.	23
15	Area 1, Flood Control Gate and Silted in Ditch. . .	23
16	Hawaiian Government Survey Map, Waimea Bay, Kauai .	24
17	Portions of the "Plan of the Town of Waimea, Kauai, T.H.	25

TABLE OF FIGURES

<u>Figure</u>		<u>Page</u>
18	Portions of the Map "Waimea Valley, Bottom Lands, Waimea, Kauai	26
19	Area 2, Faced Basalt Block Retaining Wall of Peekauai (Menehune) Ditch	28
20	Area 2, Peekauai (Menehune) Ditch at South Egress of Survey Area	28

INTRODUCTION

At the request of the Corps of Engineers, Pacific Ocean Division, Department of the Army, Hawaii Marine Research conducted a Cultural Resource Reconnaissance of portions of the Waimea River Flood Control Project, Waimea, Kauai, Hawaii (Figure 1).

The reconnaissance consisted of a literature search and records review, an examination of those portions of the project area depicted in Figure 2 by the archaeologist, and an analysis of historical records pertaining to Peekauai (Menehune) Ditch and the Cook Landing Monument.

The two study areas designated by the Corps of Engineers are referred to below as Areas 1 and 2. Area 1 (Figure 6) extends from the mouth of the Waimea River up to, and seaward of the flood control gates and is approximately 1300 feet long and 60 feet wide. A number of levee improvements are planned for this area. Area 2 (Figure 11) is located at the foot of the Kiki-a-'Ola ridge, where the Peekauai (Menehune) Ditch crosses under a parking area and where proposed roadway improvements are planned.

The objective of this study was to assess the possible impacts of the flood control project on the Peekauai Ditch and the Cook Landing Monument. Both the Peekauai Ditch and the Cook Landing Monument are listed on the State Register of Historic Places and the Cook Landing Monument is also listed on the National Register of Historic Places.

159° 45'

22° 15'

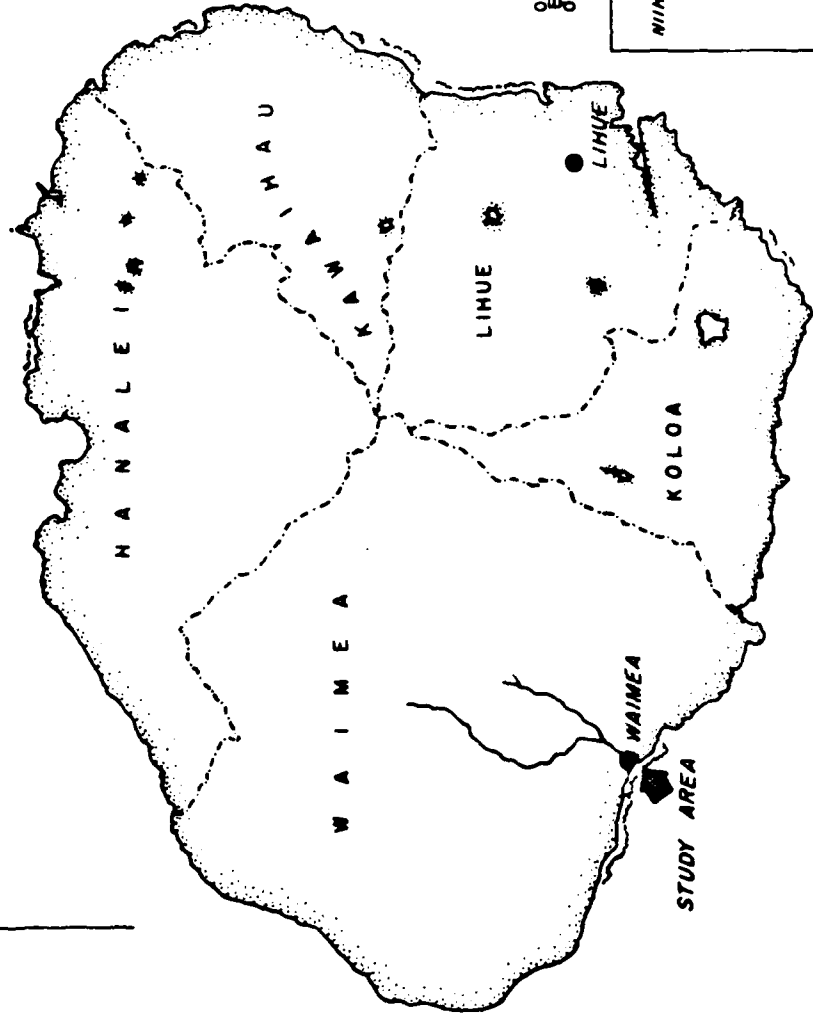


Figure 1. Waimca, Kauai. Location map.

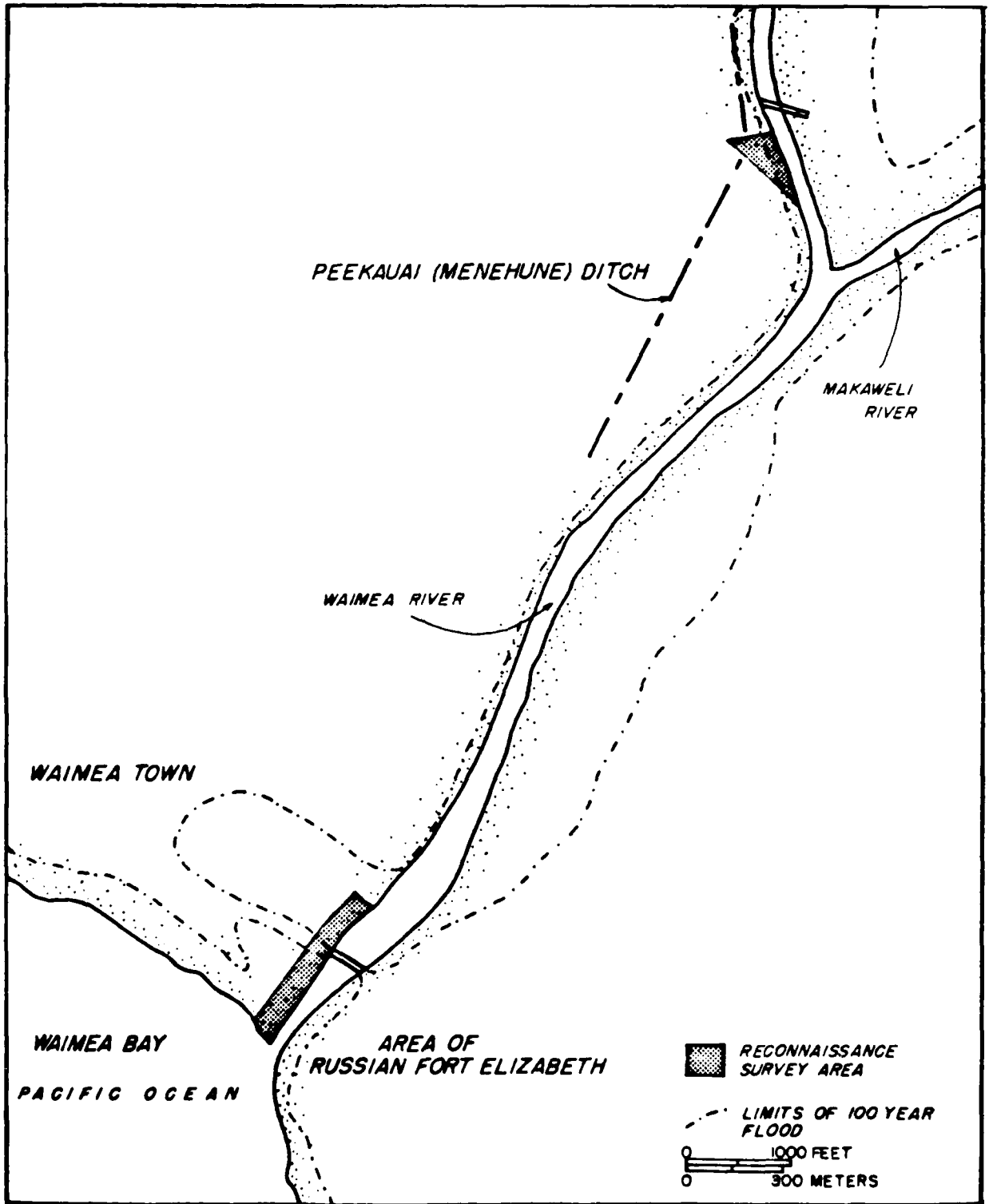


Figure 2. Flood limits for Waimea River and survey areas. (from National Flood Insurance Rate Map, U.S. Department of Housing and Urban Development, 1979).

METHODOLOGY

Historical Research Methods

Standard historical research methods were used in gathering material on the two site areas. Major depositories were visited, the sites examined, informants interviewed and a bibliography prepared.

The Journals of Captain James Cook (Beaglehole, 1967) were reviewed and available charts and engravings examined to determine if the Cook Landing Monument is situated at the actual Cook landing site. Manuscript material, recorded informant interviews and the words of the sesquicentennial celebration of Cook's arrival were also examined.

Literature on the Peekauai Ditch was examined and evaluated and whenever possible all sources were cross-checked with each other and with any original sources for which information may have been taken. The Kauai Historical Society file and those of the Kauai Museum provided important manuscript material; Catherine Stauder assisted by allowing one author (Joerger) to read her unpublished material on the ditch.

The "Statewide Archaeological Site Survey for the Island of Kauai" in the Historic Sites Section of the Department of Land & Natural Resources was also inspected. However, due to the disarray of the material little was gained.

Kuykendall has been quoted as describing the wall of the ditch as 20 feet high (Bennett, 1931:23). In examining the Kuykendall manuscript it was learned that Kuykendall's information came from a 1808 report by William Shalu.

The historian (Joerger) also interviewed Mrs. Aletha Kaohe and Roland L. Gay kama'aina of Waimea. In Lihue, she interviewed Catherine Stauder of the Kauai Museum, Dr. William Kikuchi of Kauai Community College, and Barnes Riznik, director of Waioli Mission House Museum. In Honolulu, the author used the resources of the Archives of Hawaii; the Hawaiian Collection, Hamilton Library, University of Hawaii; the Hawaiian Mission Children's Society Library; the Library of the Hawaiian Historical Society; the Bishop Museum Library; and the records of the Historic Sites Section, Department of Land & Natural Resources, State of Hawaii. Interviews were conducted in Honolulu with Mr. Ralston Nagata, Director, Historic Sites Section, Department of Land & Natural Resources, State of Hawaii, and with Russell A. Apple, Pacific Historian, National Park Service, United States Department of the Interior.

Archaeological Survey Methods

The archaeological reconnaissance survey was undertaken to determine the general nature and distribution of cultural resources in the area. The results of the survey form the basis of recommendations for more intensive research and, possibly, preservation measures. The present survey included:

- 1) An on-the-ground inspection of both designated survey areas. This was done in order to identify all archaeological sites and features.
- 2) A visual inspection of all soil stratigraphic sections exposed either through natural erosion or through human activity. This was done to identify cultural deposits and to determine the natural depositional history of the area.
- 3) A photographic record of all major cultural and physical features within the survey area.
- 4) A cursory inspection of areas immediately adjacent to but outside of the designated reconnaissance area. This was done to clarify and to offer some context for interpreting and assessing those features found within the survey area.
- 5) Limited consultation with local informants and residents to aid in the identification and assessment of the survey areas.

HISTORICAL SECTION

General Discussion

The study areas are in Waimea tax district which, in 1975, had an estimated population of 7,400 and near the small town of Waimea, which has stores and shops, churches and Buddhist temples, elementary and a high school, a hospital and other medical facilities, poi mill, post office and bank. Ranches, sugar fields and truck farms are around the town and wet land taro is still grown in the valley inland of the town.

Today Waimea appears to be a quaint rural place twenty-five miles and a hour away from the airport and main city of Lihue, Kauai (Figure 3). Historically, Waimea district has had a much more important role in Kauai and Hawaiian history than its present quiet atmosphere indicates. At one time it was a populous Hawaiian village showing intensive and extensive cultivation with irrigation and terraced constructions and numerous house sites and heiau reflecting a prosperous native community (Bennett 1931).



Figure 3. Waimea River mouth and valley, Kauai, T.H., from southwest, July 4, 1924. Archives of the State of Hawaii.

Waimea was the site of the first anchorage of Captain James Cook, the first recorded contact between Hawaiians and Europeans, and the opening of a world sea route. The islands became an important stopping place on a trans-Pacific trade route and Hawaii, Kauai and Waimea entered a new phase in their history.

As Hawaii changed so did Waimea and until the 1840s the district participated actively in contemporary developments. Traders in the Pacific stopped at Waimea for water, food and supplies. The king and chiefs consequently established semi-permanent residences in the village, had a stone warehouse built and encouraged foreigners to reside on shore. Native Hawaiians left Kauai to travel to China, Europe and the Americas. Foreign powers evinced an interest in the strategic location of the islands. Missionaries arrived to bring Christian civilization to natives.

As a consequence Waimea district has many cultural sites. Taro terraces, irrigation ditches, house sites, heiau, churches, wood and stone residences and a fort built by Russian interests all remain in evidence.

From the 1840s until the 1880s Waimea declined in importance. Few trading ships anchored in the bay. The government port open to foreign commerce was moved from Waimea to Koloa. The native population declined in numbers. A new agricultural enterprise began in the 1870s when a few Chinese arrived in the area and began to grow rice. Thus, beside the taro patches, rice fields became common in the area. It was not until the 1880s when a sugar plantation and mill was started, that the town and district again began to grow and expand. Immigrant labor came to work in the industries and Waimea acquired its population of many ethnic groups typical of Hawaii as a whole.

While the Waimea district contains many significant cultural and historic sites, the study areas include only the Cook Landing Site and a portion of the Peekauai (Menehune) Ditch. The other major sites are farther inland than the study areas or on the east bank of the river.

Nevertheless, the Waimea bottomlands, especially those lands which are influenced by the river and its irrigation ditches and 'auwai must be considered as an integral whole. On the recommendation of Louis S. Wall of the Advisory Council on Historic Preservation, the author met with Barnes Riznik, director of the Waioli Mission House Museum. Mr. Riznik expressed concern for the life of the inhabitants of the valley area near the river and water courses. If changes in the configuration of these water sources for the valley do occur as result of construction planned, he felt that there should be consideration of the homes, buildings, farms and taro patches in the area. He felt that any use or diversion of water which might affect the living styles and agricultural pursuits of the valley must be considered before construction is carried out.

The Cook Landing

On January 18, 1778, Captain James Cook sighted the island of Kauai, the second island sighted in the archipelago. Looking for an anchorage so that he could replenish his supplies, he sailed from the east to the west part of the island. On the 19th he was off Waimea Bay and he spent the day sounding the bay and "standing off and on". On the 20th he sent a party ashore to "look for a land place and fresh water". "About noon Mr. Williamson came on board and reported that he had seen a large pond behind a beach near one of the Villages, which the natives told him was fresh water and that there was anchorage before it." Soon after, Cook

bore down with the ships and anchored in 25 fathom water, the bottom a fine grey owsey sand. The East Point of the road, which as the low point before mention, bore S(51°) E, the west point N(65°)W and the Village where the water was said to be, NEBE distant one mile,.... The Discovery anchored to the Eastward of us [the Resolution] and farther from the shore (Beaglehole 1976, III:1, 267, 269).

The road or anchoring place is on the SW side of the island about 6 miles from the west end, before the Village of Wymoa. So far as we sounded we found the bank all a fine grey sand and free from rocks, except a little to the Eastward of the Village where there spits out a shoal on which are some rocks and breakers, but they are not far from the shore (Ibid:278).

William Bayly, astronomer, described the anchorage as opposite the Waimea River mouth while David Samwell, surgeon, stated that it was off the "Town & River" of Waimea and in sight of a "Mountain lower down & some way inland" called "Bootaberry" or Pu'u ka Pele (Ibid:267).

On January 20, 1778, Cook went ashore, examined the fresh water pond and returned to the Resolution. The next day he went ashore once in the morning when he took a walk up Waimea Valley on the west bank of the river and again in the afternoon when he remained in the vicinity of the provisioning area (Ibid:cxvi, cxvii, 269, 271, 272).

Hawaiian tradition has placed the Cook landing site on the beach seaward of the native village of Waimea. The beach of fine black sand was named Luhi or Keoneluhi. Roland L. Gay, kama'aina of Waimea, referred to the landing as Luhi, which he said was about seventy-five yards northwest of the present pier. The source of the story was found in a Hawaiian mele "'Ai Wale i ka Hinana" (Gay 1970:1, personal communication). Aletha Goodwin Kaohe related that her father, William Kapahukaniolono Goodwin, kama'aina of Waimea, gave the name as Keoneluhi. The translation as "the beach of tiredness" was said to refer to the ancient practice of warriors using the beach as a training area. After running on the sand to strengthen their legs, the warriors would end the exercise tired and weary (Kaohe 1979). As possible indication where Cook anchored, Kaohe pointed out that the

ancient Hawaiian canoe landing was about midway between the river mouth and the pier.

Available maps in the various depositories on Kauai and in Honolulu do not identify place names in Waimea in detail. A brief examination of the "Buke Kakau Paa no ka Mahele Aina" of the Hawaiian Kingdom and the Indices of Land Awards of the Territory of Hawaii turned up some place names but no clear indication of their location. Some information was confirmed. For example, in ancient Hawaii the southwest district of Kauai was named Kona. Waimea was an ahupua'a (sea to mountain land division) in Kona and Kiki-a-'Ola an 'ili (subdivision) in the ahupua'a of Waimea. Other information could not be authenticated. Next to Kiki-a-'Ola there was said to be the 'ili of Paliuli (Kaohe 1979). The name does not appear in the literature searched. Other names have been identified such as the name of the watercourse at the inland end of Study Area 1 (Keaali'i 'Auwai), and "Peekauai" as the name of what is commonly called Menehune Ditch. Peekauai (Kaohe 1979) also referred to a geographic area (Department of the Army, 1978). In the Indices, Peekauai was listed many times in small land grants. Peekauai may have been an 'ili in Waimea though its location is uncertain.

Work on place names of Kauai has been started. Lee S. Motteler has prepared a manuscript "A Guide to Place Names in the Hawaiian Islands, Part 1: Kauai County and the Northwestern Hawaiian Islands." He has listed names and their probable description. Thus, Peekauai is listed as "Peekauai ('ili)" and Luhi as "Luhi ili? (not located)" (Motteler 1974:31). William Kikuchi of Kauai Community College has noted the importance of identifying place names and their specific location.

The lack of such detailed information for Waimea is a tragic cultural loss. Government documents and Hawaiian language newspaper articles may provide information on that subject.

In summary, Cook's landing site has been placed by Cook's journal and Hawaiian tradition as anywhere from the west bank of the Waimea River to about seventy-five yards past the present recreational pier. Without a chart or a drawing of the British ships off Waimea no exact location can be given. The most likely area was not at the west bank of the river but further west on the beach.

In 1928 the recognition of the Cook landing place was to be formally marked during the Territory of Hawaii's sesquicentennial celebration of discovery. During the days of August 15 through 20, the Territory planned activities throughout the islands and Waimea was to be the scene of an international expression of honor to the explorer. On the morning of August 16, 1928, three British cruisers, HMS Brisbane, Dunedin and Cornwall, and the American battleship, USS Pennsylvania, and the interisland steamship, SS Waialeale, arrived off Waimea. A fleet of Japanese fishing sampans flying pennants were in the water to greet the visitors.

Detachments of sailors were landed from the warships at the pier, then still in use as a loading warf for cargo. Sailors and marines, distinguished guests including U.S. Secretary of War, Dwight F. Davis, and President of the

Kauai Historical Society, C.B. Hofgaard, and the public gathered at Hapokele Park in the center of the town of Waimea. During the ceremonies a monument was unveiled "by two little girls". A plaque that had been fixed to a ten-foot lava rock pillar commemorated the landing of Cook.

Hapokele, or Hofgaard, Park was probably under water in 1778. The shoreline was at the least at the park and perhaps farther inland. Thus the choice of the park for the monument was made in part with the belief that Cook could have landed there (National Park Service, n.d.). As late as 1969 Russell A. Apple, historian with the National Park Service in Hawaii, wrote that the 1928 site was probably as accurate as possible as a designation of Cook's landing (Apple 1969).

In 1928 another memorial was designated when an area of public land of over six acres was set aside by executive order of the Governor of Hawaii for park purposes to be under the control of the Board of Supervisors of the County of Kauai (Governor of Hawaii 1928:66; Commissioner of Public Lands 1928:50).

A brief survey of materials indicates significant changes in the Waimea River and the beach front of the town. Natural action of floods and ocean, commercial activities, swamp drainage, flood control and the like have been in operation for 200 years.

The river has been subject to periodic floods, some of which have been destructive to the town and its environs. Printed sources and informants indicated that destructive floods occurred in 1826 and 1862, as well as 1921, 1950 and 1951.

Public Works projects also changed the area. About 1921 an embankment was built on the west side of the river about half as high as the present levee (Kaohe 1979). About 1938 the present bridge was constructed obliterating the former road and crossing. In 1949 the Department of Public Works of the Territory of Hawaii undertook important improvements of the river embankment (Figure 4 and Figure 5). In 1951 construction on the existing levee was begun by the County of Kauai. River projects included widening and deepening of the Waimea River in the vicinity of the confluence with Makaweli River and the construction of a 6,400 foot long levee. The flood of 1950 and the widening work removed a ford and crossing used by Kauai people where the Makaweli and Waimea rivers joined (Gay 1970; Figure 11). The filling in of the swamp immediately west and south of the present highway-bridge created the Lucy Wright Park of the County of Kauai. South of the park the breakwater and beach became State of Hawaii land (National Park Service, Ms.). A survey of government documents and papers in the Archives of Hawaii and in the Hawaiian Collection of the University of Hawaii from 1900 to 1959 should be made if a detailed account of construction projects is necessary.

National landmark legislation was passed in the Historic Sites Act of 1935. In 1960 the National Parks Service expanded its efforts as begun under the 1935 act with a National Historic Landmark program to join the preservation efforts of governmental agencies and private organizations



Figure 4. Levee construction, 1949, on the west bank of the Waimea River. Archives of the State of Hawaii.



Figure 5. Levee construction, 1949, on the west bank of the Waimea River showing prior levee on the right. Archives of the State of Hawaii.

and individuals. A landmark is a site having national significance in American history and having exceptional value to the nation as a whole rather than to a particular state or locality (National Park Service 1970). As a consequence the Cook landing at Waimea was studied for designation as a national historic landmark. In 1962, John A. Hussey, regional historian of the National Park Service, visited Kauai and attempted to fix the place of Cook's landing. He wrote in his report that south of the highway bridge was "the most probable landing place" of Cook (National Park Service, n.d.). The rationale appeared to have been that Cook landed close to the river mouth on the west bank. According to National Park Service information:

Following announcement of a site's eligibility by the Secretary of the Interior, the owner is invited to apply for Landmark designation. This takes the form of a certificate signed by the Secretary of the Interior and the Director of the National Park Service together with a bronze plaque attesting to the significance of the site. Both are provided without charge and presented at appropriate ceremonies if the owner desires. (1970)

When the National Historic Preservation Act of 1966 authorized an expanded National Register of historic properties, the National Park Service prepared to publish the National Register. The first edition was made public in 1969. On August 28 of the same year, the Cook landing place was officially recognized by the placement of a plaque on a boulder and the erection of the monument at its present site (National Park Service, n.d.) (Figure 8 and Figure 14). During dedication ceremonies Mrs. Mary Gay, wife of Roland L. Gay, gave a presentation pointing out the historical significance of Cook's arrival (Ibid.).

At the same time as he attended the ceremonies of the unveiling of the monument, Russell A. Apple, then Hawaiian historian for the National Park Service, made a "Biennial Visit Report" about the site. At that time Apple's statements in the report indicated that he did not believe that the Cook Monument was placed accurately. In fact he challenged the accuracy of placing the landing place on the west bank close to the Waimea River mouth. He wrote that the present location was not the actual place of Cook's landing since there had been man-made and natural changes to the Waimea River. He stated that the Waimea community was aware of the problem and would "probably standardize the situation in 1978," the two hundredth anniversary of Cook's arrival (Apple 1969). Roland L. Gay indicated that one reason for the choice of the spot where the boulder is now located was given by Kauai officials as convenience for tourists because it is across the river from Russian Fort Elizabeth (Gay 1979). Aletha Kaohe stated that Mr. Gay was instrumental in procuring the memorial plaque and helping to arrange for its dedication (Kaohe 1979). Both Mr. Gay and Mrs. Kaohe did not consider the present site as "the actual spot" (Kaohe 1979; Gay 1979). Apple preferred the location in Hapokele Park as more authentic.

During the week of January 19 through 21, 1978, the community of Waimea celebrated the 200th anniversary of Cook's arrival. The emphasis at this time was on the ethnic richness of Hawaii's life. Thus not many activities were centered around the landing. On January 20, a pageant, "Welcoming of Captain Cook," was held at Lucy Wright Park. On other occasions however, the National Historic Landmark has been used as a center for community activities (Kaohe 1979).

The Menehune Ditch

For some time the water course known as the Menehune Ditch, Kiki-a-'Ola Ditch, or Peekauai Ditch has been praised for the unique and remarkable quality of its cut and dressed stone. The first written descriptions of the irrigation ditch of ancient Hawaiian construction were by Captain George Vancouver and Archibald Menzies after a visit to Waimea in 1792 (Vancouver 1902, I:376-377; Menzies 1920:289). What was described was a wall of stone and clay built along a cliff side perhaps twenty-four feet high, according to Vancouver, or twenty feet high according to Menzies, which served as a watercourse, the top of which was also a path for travelers to walk inland. The wall was said to have extended around the cliff face (Menzies *ibid.*; Bennett 1931:22-23). In 1804 or 1805 the watercourse was described as "an aqueduct of several miles in length, and upwards of twenty feet high, that leads a large body of water from the heights back, round an almost perpendicular mountain, to water the high parts of the vale. This work is of great antiquity, it is of stone, and constructed with much intelligence." (Shaler 1808:174.) In 1814 or 1815 a foreign resident at Waimea recorded the work of Hawaiians who were to repair the aqueduct (Stauder 1979). By 1845 a visitor referred to "the remains" of the aqueduct of ancient origins (Gilman 1843).

The construction received the designation "Menehune" from its reputed origins in ancient myth and its association with mythical dwarf people of ancient Hawaii. Some early observers thought the work of ancient antiquity, among them William Shaler and Gorham Gilman. By the latter part of the 19th Century when collections of Hawaiian myths and legends were being printed, several versions of the Menehune construction of the ditch appeared. C.B. Hofgaard, who opened a general store in Waimea in the 1880s, gave one version of the legend.

Pi owned the land at Kikiaola on the western side of the river and he wanted to construct a mano or dam across the river, and from the dam a water-course down to Kikiaola. Having settled upon the location for his proposed work, he went up the mountains and made a contract with the Menehunes that were living near Puu Ka Pele to prepare stones for the dam and the watercourse. The Menehunes were partitioned off for the work, some to gather stones and others to cut them. The cutting of the stones was performed at Mokihana on the top of the ridge and some of the stones were left there, some fully cut and others partly cut. All the material was ready in a very little time, and Pi settled upon the night when the work was to be done. When the time came, he went to the point

where the dam was to built and waited. At the dead of the night he hears the noise and hum of the voices of the Menehunes, on their way to Kikiaola, each of whom was carrying a stone. The dam was fully constructed, every stone fitting in its proper place, and also the stone auwai, or water-course, laid round the band at Kikiaola. Before the break of day the work was completed and the water of the Waimea River turned in by the dam into the water-course and through the same on to the flats at Waimea. When the work was done Pi served out food to the Menehunes, which consisted of shrimp, (opae), this being the only kind of meat to be had in sufficient quantity to supply each Menehune with one fish or opae. They were supplied with food at Puu Opae, a hill half way between Waimea and Halemanu, Mr. Knudsen's mountain residence. They were well supplied and satisfied, and at dawn returned to their home in the mountains rejoicing, and the hum of their voices gave rise to the saying: "Wawa ka Menehune i Puukapele ma Kauai, puohu na manu o na loko o Kawainui ma Koolaupoko, Oahu - The hum of the voices of the Menehunes at Puu Ka Pele, Kauai, startled the birds at the pond of Kawainui at Koolaupoko, Oahu" (Bennett 1931:23).

William H. Rice, kama'aina of Kauai in his Hawaiian Legends related a similar story. Ola was, however, the chief who called on his kahuna Pi to summon the Menehune to build the watercourse called Kiki-a-'Ola (Rice 1923:44-46). Thomas G. Thrum, publisher, in his Hawaiian Folk Tales, A Collection of Native Legends identified Pi as the chief of Waimea and he related the saying which Hofgaard used (Thrum 1907:110-111).

The Menehune tradition has added an interesting dimension to the physical site. The association of the myth and the stonework may be a relatively recent one.

The name of the ditch was identified as Kikia'ola (Kiki-a-'Ola) in Rice's version of the myth. Peekauai was given as the name of the ditch by William Goodwing according to Kaohe (Kaohe 1979). A Republic of Hawaii document dated June 3, 1896, referred to "the Peekauai water course" (Peekauai Watercourse Hui 1896). The name also appears on the map shown in Figure 18.

The stones which were used for the irrigation ditch along side the road immediately inland of Study Area 2 were said to be remnants of the Menehune Ditch. Wendell C. Bennett in his Archaeology of Kauai wrote that the "dressed stone blocks and their jointing are unique features of Hawaiian stone work" (Bennett 1931:23). The stones visible now were marked by a plaque placed above the ditch in 1928 as part of a program to acknowledge historic sites throughout the Territory of Hawaii (Kauai Historic Society files) and may form the top of the ancient wall resting on about twenty feet of similar stones beneath the road's surface. Stauder doubts that there is such a wall (Stauder 1979).

The area has been changed considerably since the description of Vancouver. In the 1890s a "horse road" was built "on the bank of the

Peekauai water-course at Kīkī-a-'Ola" (Peekauai Watercourse Hui 1896). Soon afterwards, a government road replaced the "horse road". Sugar plantation construction also changed the aqueduct. Around the turn of the century Waimea Plantation built an irrigation ditch and used a tunnel through the cliff to carry water from the inland area to the lowlands (Hofgaard 1920,1922). No evidence of a wall around the cliff face remained. In 1924, more plantation improvement to ditch and road changed the area and destroyed more of the ancient Hawaiian ditch (Broadbent 1924).

Ditch stones from the ancient site have also been said to have been used in and around Waimea. Menehune Ditch stones are said to have been used in the building of the Protestant Church, called the Foreign Church, in the Kekaha Plantation Mill and the Waimea Ice Works (Hofgaard 1920). Other stones were used by a Waimea stone cutter for tombstones, by one of Waimea's sheriffs for a stone wall in front of his home, and the like (Kaohe 1979).

ARCHAEOLOGICAL SECTION

Description of the Survey Areas

The two areas surveyed during this archaeological reconnaissance are described separately and dealt with as discrete units.

Area 1. This is a rectangular strip of land running along the west bank of Waimea River from the beach line to a point north of the Kaumuali'i Highway bridge into Waimea Town (Figure 6). The survey area stretches 1300 feet (c. 390 meters) inland from the river mouth and is approximately 60 feet (c. 18 meters) wide, yielding a total area of 1.73 acres (c. 0.7 hectare). Topography within this area is very flat, seemingly exhibiting a "typical" alluvial floodplain. This strip of land lies directly across the river from the old Russian Fort Elizabeth, a National Register Site, and affords a good viewing location of that site for visitors to the area. It also contains the National Historic Landmark commemorating Captain James Cook's landing at Waimea Bay (Figure 7).

The area is one of mixed alluvial silt deposits and calcareous beach sands with a fair amount of basalt boulder fill, particularly in the area seaward of the highway bridge. A reinforced concrete retaining wall, with one tributary drainage ditch located next to the bridge approach ramp, runs along this section of the river bank for about 350 feet (Figure 8). The immediate mouth of the river, however, is not reinforced in such a manner (Figure 9). The river bank inland of the bridge (about 300 feet) is lined with a heavily eroded earthen and piled basalt rubble levee (Figure 10). It is adjacent to a residential section of Waimea Town, while most of the seaward section is a county park.

Area 2. This survey area is located approximately 1.25 miles (c. 2.0 kilometers) inland at the base of Kīkī-a-'Ola ridge on the west bank of the Waimea River (Figure 11). It measures approximately 204 by 250 feet (c. 61 by 75 meters) and covers about 1.13 acres (c. 0.46 hectare). The Peekauai (Menehune) Ditch passes through a concrete drainage pipe beneath a paved and packed earth roadbed within the survey area. The survey area lies at an elevation of approximately 15 to 25 feet (c. 4.5 to 7.6 meters) above mean sea level; Kīkī-a-'Ola ridge rises another 200 feet (c. 61 meters) in an almost vertical cliff face. The area is mostly under paved surface (Figure 12 and Figure 13) while some unidentified grasses and shrubs grow along the river bank and some thickets of koa-haole (Leucaena glauca) are at the base of the ridge. The south corner of the survey area is presently under banana cultivation.

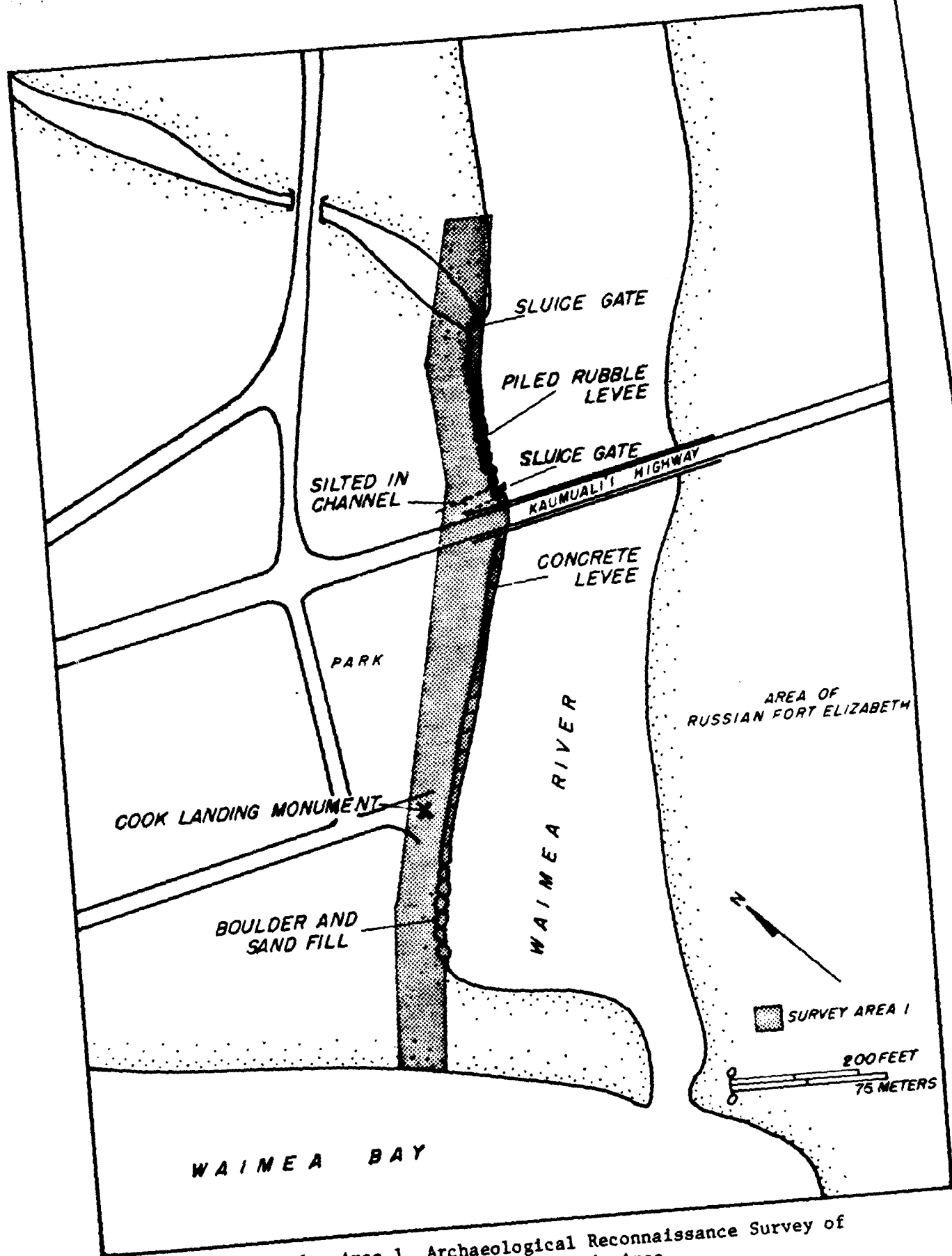


Figure 6. Area 1, Archaeological Reconnaissance Survey of the Waimea River Flood Control Study Area.

Figure 7. Area 1, Cook Landing Site, National Historic
Landmark and parking area to the south.

Figure 8. Area 1, present levee and drainage ditch
looking from the base of the Kaumuali'i Highway
bridge to the south.

Figure 9. Area 1, beach sand and boulder fill at the mouth of the Waimea River, looking to the south.

Figure 10. Area 1, partially eroded levee and the same flood gate looking to the south.

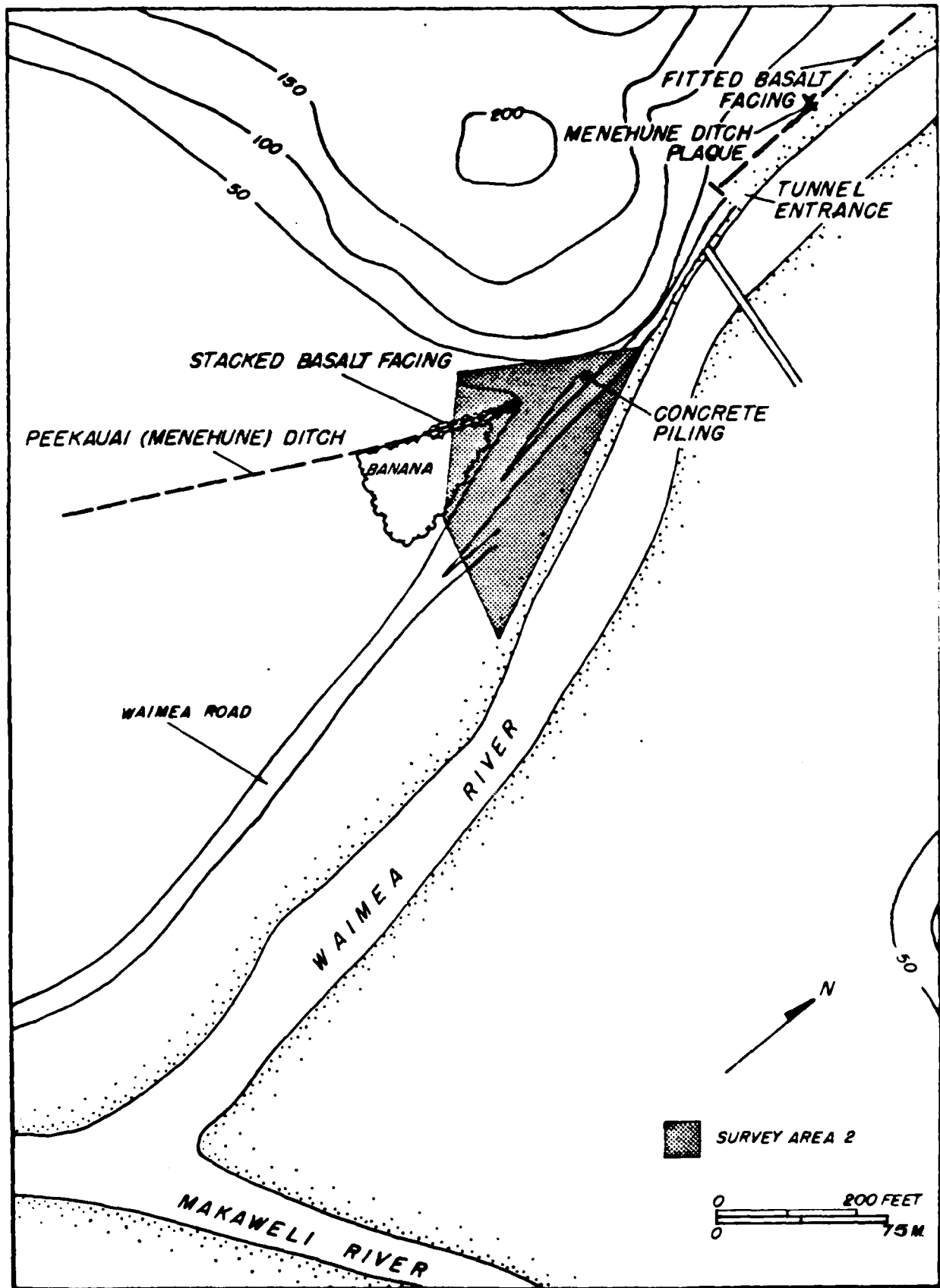


Figure 11. Area 2, Archaeological Reconnaissance Survey of the Waimea River Flood Control Study Area.

Results of the Survey

The results of the survey are summarized below in separate discussions of the two reconnaissance survey areas.

Area 1. On the seaward side of the Kaumuali'i Highway bridge, a few exposed stratigraphic sections seem to indicate recent fill with an overlay of mixed alluvial sediment and calcareous sand (Figure 9). This inferred sequence seems to agree very well with local informant testimony, and photographic, cartographic, and written records of this area prior to 1954 (Ching 1975; U.S. Army 1954; Historical Survey, this report). The areas most prone to flooding in the lower portions of the Waimea River alluvial plain (Figure 2) are those which roughly correspond to the shore and/or beach line, and river banks during this period of time. The seaward section of the survey area was modified through the construction of a reinforced concrete retaining wall and by the addition of sand and boulder fill most recently completed by the Territory of Hawaii and the County of Kauai from 1949 to 1954 (Figure 2 and Figure 3)(U S. Army 1954). No archaeological sites were found in this recently created area. It does include the National Historic Landmark plaque commemorating the Landing of Captain Cook, but it is unlikely that this plaque is located at the actual spot he landed at Waimea (Historical Section, this report)(Figure 14).

The area north (inland) of the highway bridge contains a partially eroded concrete and basalt rubble levee with two flood control sluice gates incorporated into the construction. These gates are wooden with metal flap gates located on the river side of the structure. One gate is located almost immediately adjacent to the highway bridge and is at the head of a heavily silted 'auwai (ditch) or channel which seems to have been truncated through construction of the current bridge approach (Figure 15). Another gate stands further upstream at the confluence of a deep, free-flowing stream or 'auwai and the Waimea River. The levee is built up to about two feet (c. 0.6 meters) above the surface of the neighboring residential area (Figure 10). No archaeological sites were identified in this portion of the survey area. Prior to the initial levee construction, which was begun in 1907 and continued for at least 40 years, this area seems to have been part of the river bed and an over-bank swamp. Three maps (Figures 16, Figure 17, and Figure 18) show the progressive alteration of the lower Waimea River watercourse between 1885 and 1917. The two 'auwai, or ditches, were constructed during the initial stages of this operation, probably for drainage of an interior area formerly used for wet taro and, later, for rice cultivation (U.S. Army 1954). This area was in residential use by 1917. Levee construction was done in conjunction with the filling in of a small channel between the "Konohiki" (Figure 16) island (Kokee-Ailana) and the river bank, thus constricting the river bed.

Figure 14. Area 1, Cook Landing Site plaque, National
Historic Landmark.

Figure 15. Area 1, flood control gate and silted in ditch
north of the Kaumuali'i Highway bridge to the northeast.

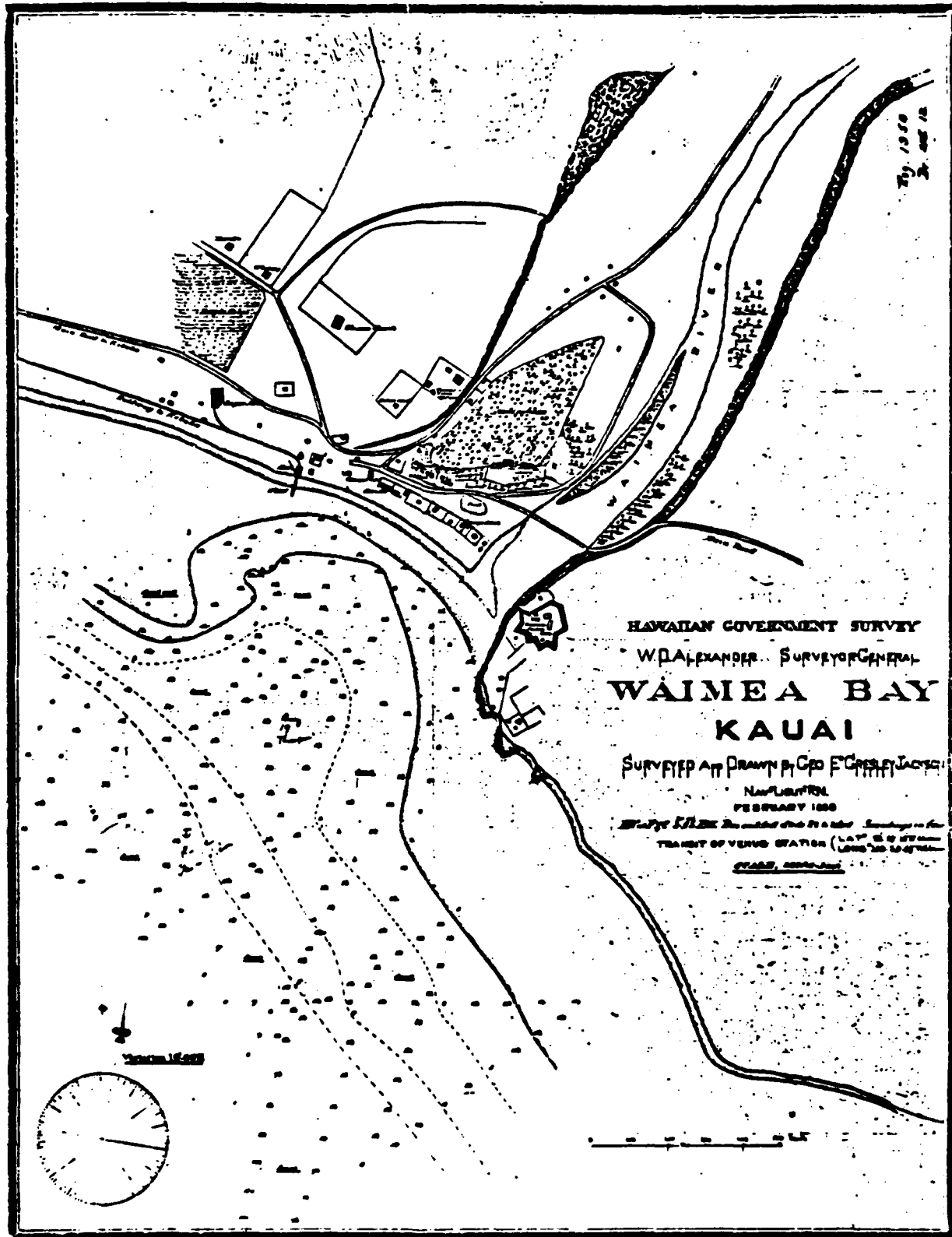


Figure 16. Hawaiian Government Survey Map, Waimea Bay, Kauai, by G.E.G. Jackson, February 1885.

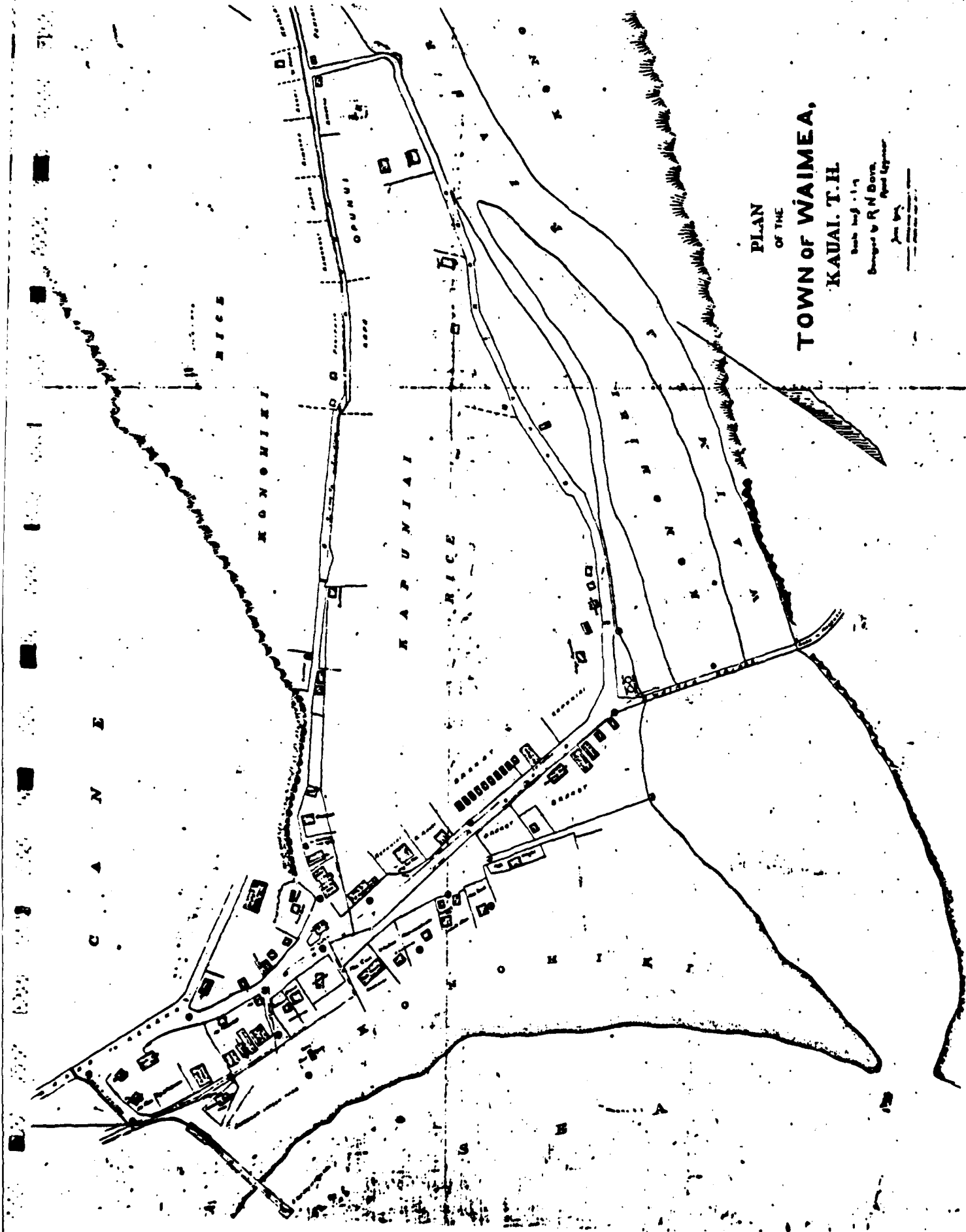


Figure 17. Portions of the "Plan of the Town of Waimea, Kauai, T.H.," by R.N. Boyd, June 1902.

Area 2. Since most of the survey area is under road paving and highway embankment, the only archaeological feature present is a portion of the Peekauai (Menehune) Ditch, which is on the State of Hawaii Register of Historic Places. This 'auwai or Hawaiian irrigation ditch (an 'auwai is defined as any kind of water-carrying ditch or channel showing human modification or construction) is of major importance toward the understanding of Hawaiian agricultural technology and organization during the pre-Contact (pre-1778) period.

The portion of the Peekauai Ditch included within the survey area however has been extensively modified through realignment of the water-course and destruction of the original construction (Figure 13). The ditch was apparently realigned during the 1920s as witnessed by a Mr. Broadbent, who reported in 1924 that portions of the Menehune Ditch were exposed by the building of the "new" ditch and road (Stauder 1979:4).

Evidently original, in situ portions of the ditch are visible along the west side of the present road north of the point of Kīkī-a-'Ola (Figure 19). The retaining walls in this portion of the ditch are of faced and fitted basalt slabs of unusual type (eg. Bennett 1931:106). The water from the ditch then enters a tunnel bored through the ridge bedrock and passes beneath a paved and packed earth roadbed through a concrete drain pipe. The water is visible about 10 feet (about 3 meters) below the surface through a concrete piling or culvert built at the edge of the paved road surface. Passing out of the paved area, the ditch enters presently cultivated fields and differs in form. Multiple stacked basalt chunks form the retaining wall which stands to a height of 1.6 feet (c. 50 centimeters)(Figure 20). It was not ascertained whether this is a recent or original in situ construction.




Figure 19. Area 2, faced basalt block retaining wall of Peekauai (Menehune) ditch looking to the west.

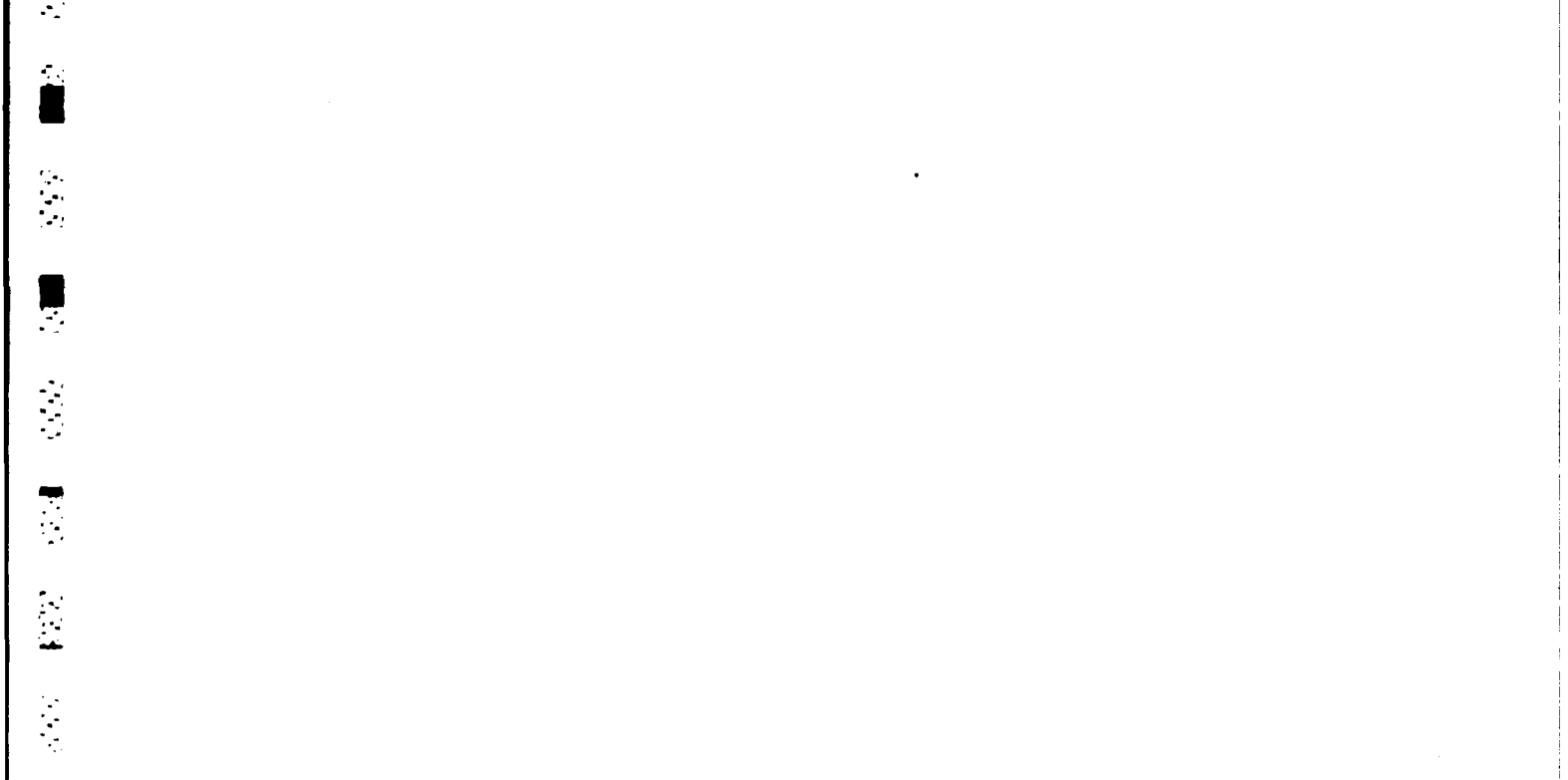


Figure 20. Area 2, Peekauai (Menehune) ditch at south egress of survey area, looking to the northeast.

CONCLUSIONS AND RECOMMENDATIONS

Assessment of the archaeological potential of the two survey areas included in this Waimea River Flood Control Study and recommendations for approaching them are presented below. These are forwarded as general recommendations which would allow for the probable maximum amount of data to be retrieved from these areas.

Area 1. No features of apparent archaeological significance were identified within this area. It is mostly a recently-formed land surface and thus would contain no undisturbed archaeological deposits of significance. The only recommendations as to archaeological management of this area would be for monitoring of any alteration of the surface, particularly in the area north of the highway bridge. Since this portion of the survey area was at one time partly swamp, there may be some cultural deposits preserved in situ. A photographic record of all landform modifications performed during flood control diversion alternatives should be kept.

The actual site of the plaque commemorating the landing of Captain Cook is most likely not historically correct. However, since its placement and dedication in 1968, it has attained local historical importance and become a visitor attraction. Movement or replacement of this marker should be done, if necessary, with these conditions in mind.

Area 2. This area will have to be approached in a much different manner than Area 1. The primary cultural resource within the survey area which may be affected by any flood control diversion alternatives is the Peekauai Ditch. Although this has been extensively modified and realigned within the proposed impact area, information of potential archaeological significance is still likely to be garnered from any further modification of the present land surface. The importance of the Peekauai Ditch to Hawaiian prehistory is undeniable (eg. Bennett 1930, 1931) and as such is eligible for inclusion on the National Register of Historic Places. Much controversy surrounds the origin of this construction (see Historic Section), and any further construction within this area should allow for archaeological study of this problem. In addition, any landform modification is quite likely to disturb other forms of cultural deposits. This area of the Waimea River Valley has many other prehistoric Hawaiian sites, particularly agricultural features such as taro terraces and 'auwai systems (Belt, Collins and Associates, Ltd. 1979; Bennett, 1931; Ching 1973). There is a possibility that some of these may be disturbed through modification of the present land surface.

Pending a determination of eligibility of the Peekauai (Menehune) Ditch for the National Register of Historic Places, it is recommended that the following minimal steps be taken should construction impact any archaeological resources within this area:

- 1) Transit location and detailed mapping of all exposed and currently in situ portions of the Peekauai Ditch in and immediately adjacent to the proposed impact area.
- 2) Intensive archaeological monitoring of any construction or realignment within the survey area to detect any of the original ditch alignment, to be followed by a carefully planned program of management, which might include preservation, stabilization, and/or salvage.
- 3) Maintenance of a photographic record of all stages of modification.

Completion of these procedures will allow for a more thorough understanding of ancient Hawaiian agricultural activities and technology, as well as benefit and enrich the local history of the Waimea Valley.

REFERENCES

- Apple, Russell A.
1969 Biennial Visit Report. In National Park Service, Honolulu Regional Office files.
- 1979 Personal Communication. August 10, 1979, Honolulu, Hawaii.
- Bates, G.W.
1854 Sandwich Island notes. New York.
- Beaglehole, J.C. (editor)
1967 The Journals of Captain James Cook. Vol. III, Part 1. Cambridge.
- Belt, Collins, and Associates, Ltd.
1977 Waimea-Kekaha Regional Development Plan and Supplement. 9 September 1977, Honolulu, Hawaii.
- Bennett, Wendell C.
1930 Kauai Archaeology. Papers of the Hawaiian Historical Society 17:53-62.
- 1931 Archaeology of Kauai. B.P. Bishop Museum Bulletin 80, Honolulu.
- Broadbent, Mr.
1924 Remarks to Kauai Historical Society. Kauai Historical Society Minutes Books, May 19, 1924.
- Ching, Francis K.W., Jr.
1973 Statewide Archaeological Site Survey for the Island of Kauai. Archaeological Research Center Hawaii, Inc., Lawai.
- 1975 Preliminary Report on Archaeological and Historical Research at Fort Elizabeth, Phase I, Waimea, Kona, Kauai Island. Archaeological Research Center Hawaii, Inc., Lawai.

- Commissioner of Public Lands
1928 Annual Report to the Governor and the Legislature
of the Territory of Hawaii.
- Department of the Army, United States
1954 Review of Reports on Waimea River, Kauai, Territory
of Hawaii. Corps of Engineers, San Francisco District.
August 1954.
- 1978 Waimea River Flood Control, Kauai, Hawaii, Reconnaissance
Report. Corps of Engineers, Pacific Ocean Division,
PODED-PJ, 21 September 1978.
- Gay, Roland L.
1970 Waimea Reminiscences. Ms. on file, Kauai Historical
Society, September 27, 1970.
- 1979 Personal Communication. July 31, 1979, Waimea, Kauai.
- Gilman, Gorman D.
1843 A Trip to Kauai. Ms. on file, Hawaiian Historical
Society.
- Governor of Hawaii
1928 Annual Report to the Secretary of the Interior.
- Handy, E.S.C. and E.G. Handy
1972 Native Planters in Old Hawaii. B.P. Bishop Museum
Bulletin 233. Honolulu.
- Hofgaard, C.B.
n.d. Paper on Waimea. Ms. on file, Kauai Historical Society
Files, Vol. I.
- 1920 Remarks to Kauai Historical Society. Kauai Historical
Society Minutes Book, July 26, 1920.
- 1922 Remarks to Kauai Historical Society. Kauai Historical
Society Minutes Book, March 13, 1922.
- Kaohe, Aletha
1979 Personal Communication. August 1, 1979, Waimea, Kauai.
- Kikuchi, William K.
1979 Personal Communication. August 1, 1979, Lihue, Kauai.

- Kuykendall, Ralph S.
n.d. New Light on the Relation between Kaumuali'i and Kamehameha. Ms. on file, Kauai Historical Society.
- Mottler, Lee S.
1974 Guide to Placenames in the Hawaiian Islands, Part 1: Kauai County and the Northwestern Hawaiian Islands. Ms. Honolulu.
- Nagata, Ralston
1979 Personal Communication. August 10, 1979, Honolulu, Hawaii.
- National Park Service
n.d. National Survey of Historic Sites and Buildings, Cook Landing Monument. Ms. on file, Honolulu Regional Office.
- 1970 The National Historic Landmarks Program. Pamphlet, Honolulu Regional Office.
- Peekauai Watercourse Hui
1896 Petition to the Honorable Minister of the Interior, Republic of Hawaii, June 3, 1896. Copy on file, Kauai Museum.
- Rice, William H.
1923 Hawaiian Legends. Honolulu.
- Riznik, Barnes
1979 Personal Communication. August 1, 1979, Lihue, Kauai.
- Shaler, William
1808 The Aqueduct at Waimea, Kauai, in 1804. In American Register or General Repository of Histor, Politics, and Science. Vol. III, Part 1 for 1808. Philadelphia.
- Stauder, Catherine S.
1972 The So-called Menehune Ditch. Ms. on file, Kauai Museum.
- 1979 Personal Communications. July 31, 1979 and August 1, 1979. Lihue, Kauai.
- Thrum, Thomas G.
1907 Hawaiian Folk Tales: A Collection of Native Legends. Chicago.

END

FILMED

6-83

DTIC