DEPARTMENT OF WATER

COUNTY OF KAUAI
P.O. BOX 1706
LIHUE, HAWAII 96766-5706
FAX NO. 245-5813

February 18, 1992

Mr. Brian J.J. Choy, Director
Office of Environmental Quality Control
220 South King Street, 4th Floor
Honolulu, HI 96813

Re: Environmental Assessment and Negative Declaration for the Drilling and Testing of Hanapepe Well No. 4, TMK: 1-8-07:10, Hanapepe, Kauai, Hawaii

The Department of Water, County of Kauai, has reviewed the environmental assessment for the proposed Dilling and Testing of Hanapepe Well No. 4 and has determined that the project will not have any significant impacts on the environment. Based on our determination, we are filing a negative declaration for this project.

Enclosed are four (4) copies of the environmental assessment.

Please contact Mr. Gregg Fujikawa, of my office, at 245-6986 if you have any questions. Thank you.

Raymond H. Sato
Manager and Chief Engineer

GF:at
Enclosures

1992- 03-08- HI-FEA- Hanapepe Drilling Well #4
KA

ENVIRONMENTAL IMPACT ASSESSMENT

AND

NEGATIVE DECLARATION

FOR

DRILLING HANAPEPE WELL NO. 4

HANAPEPE WATER SYSTEM

Hanapepe, Kauai, Hawaii

Job No. 91-5

Proposing Agency:

Department of Water
County of Kauai
P.O. Box 1706
Lihue, Kauai, Hawaii 96766
Telephone: (808) 245-6986

Responsible Official: Raymond H. Sato Date: 2-18-92

Raymond H. Sato
Manager & Chief Engineer

Prepared by:

Fukunaga & Associates, Inc.
1388 Kapiolani Blvd. Second Floor
Honolulu, Hawaii 96814
Telephone: (808) 944-1821

February 1992

I. PROJECT DESCRIPTION

A. Purpose

Existing water well sources in the Hanapepe-Eleele Water System have generally performed satisfactorily in terms of meeting current water demands. However, routine access to the existing well sites have often been hampered by flooding of the Hanapepe River, potentially leaving the system vulnerable to supply disruption. Furthermore, the existing well sites are situated within flood-prone areas and may be exposed to flooding and potential contamination. To address these problems and also to provide additional supply for future growth in the area, the County of Kauai Department of Water proposes to drill and test an exploratory well in order to determine the feasibility of developing a new groundwater source to supplement the existing available municipal water sources for the Hanapepe Water System. The proposed well has been designated as Hanapepe Well No. 4.

B. Background Information

The proposed exploratory well site is located approximately 1000 ft. northwest of an exploratory well drilled by the State of Hawaii in 1961 (State well no. 5634-01) and approximately one mile mauka (north) of an exploratory well drilled by the County of Kauai (State well no. 5534-05) in 1988. Testing of the former wells produced results which were determined to be unfavorable and thus, the wells have since been abandoned. State well no. 5634-01 is currently used by the USGS as an observation well.

C. Proposed Project

The proposed exploratory drilling and testing project will determine if the selected site would be a viable water source for the Hanapepe-Eleele service area. Based on preliminary investigations by the State of Hawaii Department of Land and Natural Resources, the basic scope of work proposed for this project includes the following:

1. Drilling a 20-inch diameter hole for a depth of approximately 485 feet from ground elevation 445 feet to elevation minus (-)40 feet mean sea level (msl); then continuing downward with a 13-inch diameter hole for an additional depth of 160 feet to elevation minus (-)200 feet

msl. Total depth of the drilled hole would be approximately 645 feet.

2. Install approximately 485 feet of 14-inch (inside diameter) solid steel casing (grouted) from the ground level to minus 40 feet msl.

3. Pump test the aquifer from a range of 200 to 1000 gpm.

4. Record and evaluate the field pumping data.

Access to the project site will be through the Hanapepe Heights residential area via Moi Road, and into the sugar cane fields via haul cane roads of the Olokele Sugar Company. Right of Entry agreements must be obtained from the Olokele Sugar Company and Gay and Robinson, Inc. Minimal clearing and grading may be necessary to provide a level foundation for the well drilling equipment off the nearby plantation roadway. Disposal of the waste pump test water may be made into the plantation irrigation ditch if permission is granted.

II. DESCRIPTION OF THE ENVIRONMENT

A. Project Location

The proposed exploratory well site is located north of Hanapepe Town in the Waimea District of the island of Kauai. (See Figure 1.) The well site location has been established at latitude 21° 56′ 11.7" North and longitude 159° 34′ 54.2" West. (See Figure 2.) The site is mauka (north) of the Hanapepe Heights residential area, between Kapahili Gulch and Papalu Gulch, just makai (south) of the Koulu Irrigation Ditch.

B. Land Ownership

The project site is located in a State of Hawaii-owned parcel designated as tax map key (TMK) 1-8-06:02, shown in Figure 3. The land is presently leased to the Olokele Sugar Company and is used primarily for sugar cultivation.

C. Land Classification and Zoning

The project site is situated in land designated for Agricultural use by the State Land Use Commission, as well as the County of Kauai General Plan and Zoning Maps. (See Figures 4 and 5.)

D. Physical Features

1. Topography

The proposed well site has been located by topographic survey (Figure 6), and has been established at coordinates 14811.41 North and 8660.67 East (Reference: Puolo). The ground elevation at the well site is at 443 ft. MSL. The surrounding terrain is sloping downwards towards the south at 20 to 30 percent.

2. Soils

The soil types present in the vicinity of the proposed well site are shown in Figure 7, include:

MhC - Makaweli stony silty clay loam, 6 to 12 percent slopes; low shrink-swell potential, low corrosivity, runoff is medium and erosion hazard is moderate.

MhE - Makaweli stony silty clay loam, 20 to 35 percent slopes; low shrink-swell potential, low corrosivity, runoff is rapid and erosion hazard is severe.

MgD - Makaweli silty clay loam, 12 to 20 percent slopes; low shrink-swell potential, low corrosivity, runoff is rapid and erosion hazard is severe.

NnC - Nonopahu clay, 2 to 10 percent slopes; high shrink-swell potential, low to moderate corrosivity, runoff is medium and erosion hazard moderate.

rRR - Rough Broken Land, 40 to 70 percent slopes; runoff is rapid, geologic erosion is active.

3. Geology

The geologic formations and their interrelationships on the island of Kauai have often been described as complex. However, the subsurface conditions underlying the project site are not predicted to be especially complex. A geologic map of the project area is shown in Figure 8. Geologic formations to be found in the area include lavas from the Waimea Canyon Volcanic Series, Napali formation (Twn) generated during the late Tertiary period, and lavas from the Koloa Volcanic Series (Qkl) formed during the Pleistocene epoch. Also to be found in extensively eroded gulches and valleys are unconsolidated alluvium (Qa); sedimentary deposits from recent geologic activity (erosion/deposition). The proposed well is expected to be penetrating basalts of the Napali Volcanics which is known to be highly permeable and is a primary basal aquifer which carries fresh water at sea level and yield it freely to wells.

4. Climate

The average annual rainfall in the project area is approximately 40 inches per year. The average temperature ranges from a low of 60 degrees to a high of 85 degrees Fahrenheit. The prevailing wind is from the East Northeast.

5. Flood Hazard

The proposed well site is situated on high ground, at elevation 443± and purposely located away from any flood prone areas. (See Figure 9.)

E. Flora and Fauna

Based on available information, there are no endangered species of plants or animals inhabiting the project area.

F. Archaeological Features

Based on available information, there are no known archaeological or historic sites that will be affected by the proposed project. The region has been exposed active sugar cultivation for many years and has already been subject to land *disturbing activities*.

G. The Hanapepe-Eleele Water System

The Hanapepe-Eleele water system is owned and operated by the County of Kauai. The water system currently serves Hanapepe Town and the residential communities of Hanapepe and Eleele. As of 1991, the Hanapepe-Eleele water system served 968 metered customers (545 in Hanapepe and 423 in Eleele), with an annual volume of 220 million gallons (approximately 600,000 gallons per day). The system is supplied by three groundwater wells; Hanapepe Well "A", Hanapepe Well "B", and Hanapepe Well No. 25-1. The Hanapepe-Eleele Water System is shown in Figure 10. Access to the major well sources, Wells "A" and "B" are frequently cut off by flooding of the Hanapepe River.

III. PROBABLE IMPACTS AND MITIGATIVE MEASURES

A. Short Term Impacts

Major short term impacts which can be anticipated as a result of this project are all associated with the construction activity required to drill and test the proposed well. Increased traffic, construction noise, dust and vehicular and equipment emissions can be expected. These impacts will be minimized through conscientious efforts by the contractor and strict enforcement of specified environmental protection provisions by the inspection and construction management team under the direction of the Department of Water. The construction-related impacts will be temporary, and will be confined to the immediate vicinity of the project site.

Possible impacts of the well testing effort may include temporary fluctuations of the groundwater table in the immediate vicinity of the well site; however, based on initial hydrogeologic studies of the area, these fluctuations should be minimal.

B. Long Term Impacts

Depending upon the results of the exploratory well testing, the Department of Water may decide to proceed with the development of the well into a municipal water supply source. If the source development proceed, the long term impacts would include the acquisition of sufficient amounts of land surrounding the well site for necessary pumping and storage facilities associated with the well development and improved access to the site.

The exploratory well project will involve the irretrievable commitment of public funds, electrical energy, and well construction materials. However, the ultimate result of a favorable exploratory well project would be an improved reliability of the County's Hanapepe-Eleele Water System by providing and additional, more accessible water source.

IV. ALTERNATIVES TO THE PROPOSED PROJECT

A. No Project Alternative

The main alternative to the proposed project would be "no project". This alternative would result in no change of existing conditions. The Hanapepe-Eleele Water System would remain dependent on the existing sources and thus be vulnerable to water outages and potential source contamination.

B. Alternate Site Selection

The proposed well site was selected as the most favorable location in terms of water source production based on prior investigation and evaluation by the State of Hawaii Department of Land and Natural Resources and the County of Kauai Department of Water. However, additional sites may need to be reconsidered if the proposed site proves to be unsatisfactory.

V. AGENCIES CONSULTED

1. State of Hawaii, Department of Land & Natural Resources, Division of Water Resources Management

2. State of Hawaii, Department of Land & Natural Resources, Historic Preservation Division

VI. DETERMINATION

The proposed Hanapepe Well No. 4 well drilling and testing project is not expected to cause significant impacts to the environment in the context of Chapter 343, Hawaii Revised Statues and Section 11-200-12 of the State Administrative Rules. Therefore, it has been determined that a Negative Declaration will be filed.

REFERENCES

1. County of Kauai, Department of Water, Correspondence to State of Hawaii, Commission on Water Resources Management, dated July 15, 1991.

2. Federal Emergency Management Agency, Flood Insurance Rate Map, Kauai County, Hawaii, Panel 180 of 225, Revised March 4, 1987.

3. MacDonald, G.A., D.A. Davis and D.C. Cox, Geology and Ground-Water Resources of the Island of Kauai, Hawaii, Bulletin 13, Hawaii Division of Hydrography, 1960.

4. State of Hawaii, Department of Business, Economic Development and Tourism, The State of Hawaii Data Book 1990 - A Statistical Abstract, November 1990.

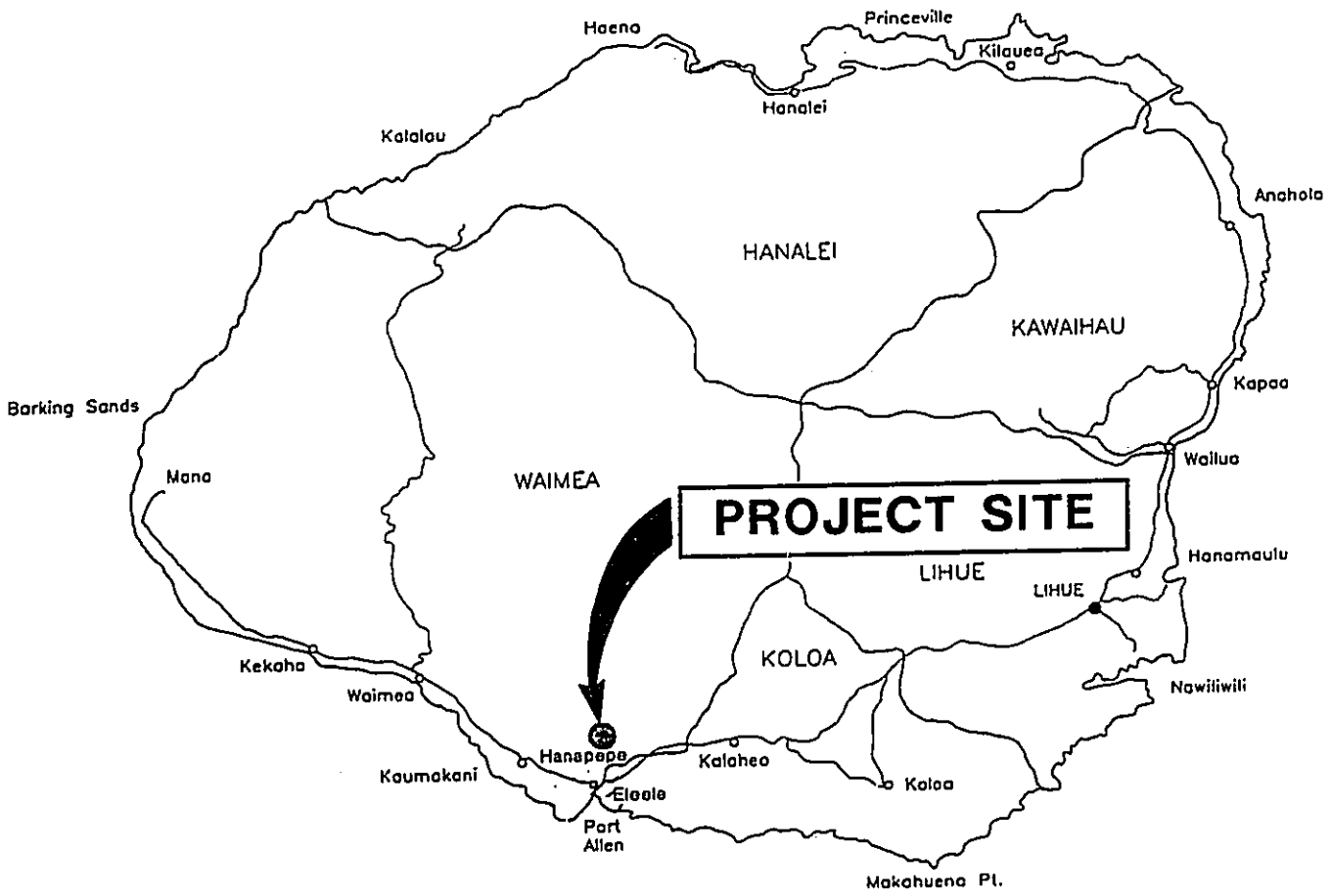
5. State of Hawaii, Department of Land and Natural Resources, Commission on Water Resources Management, Correspondence to County of Kauai, Department of Water, dated August 22, 1991.

6. State of Hawaii, Department of Land and Natural Resources, Commission on Water Resources Management, Correspondence to County of Kauai, Department of Water, dated September 18, 1991.

7. University of Hawaii, Department of Geography, Atlas of Hawaii, The University Press of Hawaii, 1973.

8. U.S. Department of Agriculture, Soil Conservation Service, University of Hawaii Agricultural Experiment Station, Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii, August 1972.

FIGURES

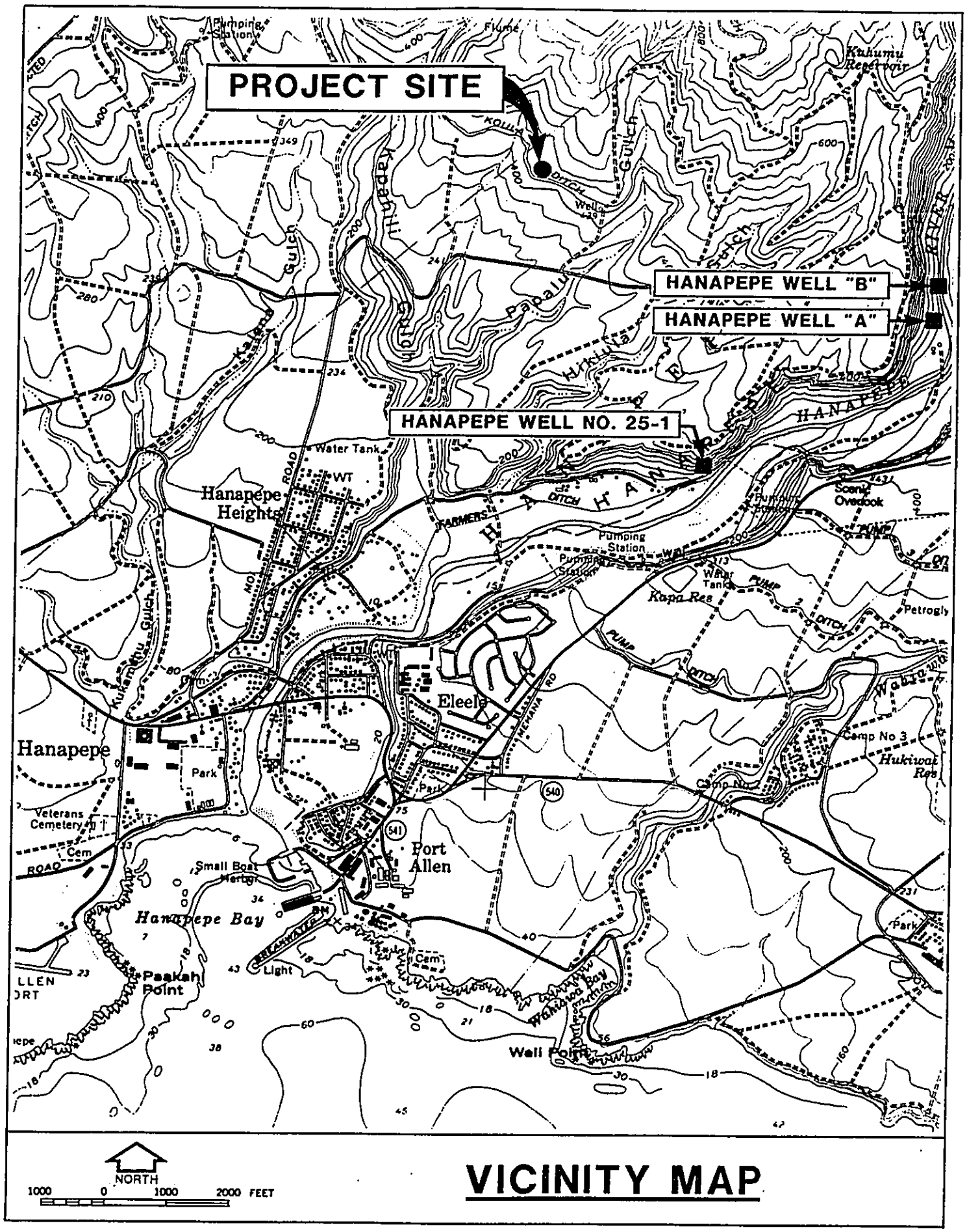


ISLAND OF KAUAI

ISLAND MAP

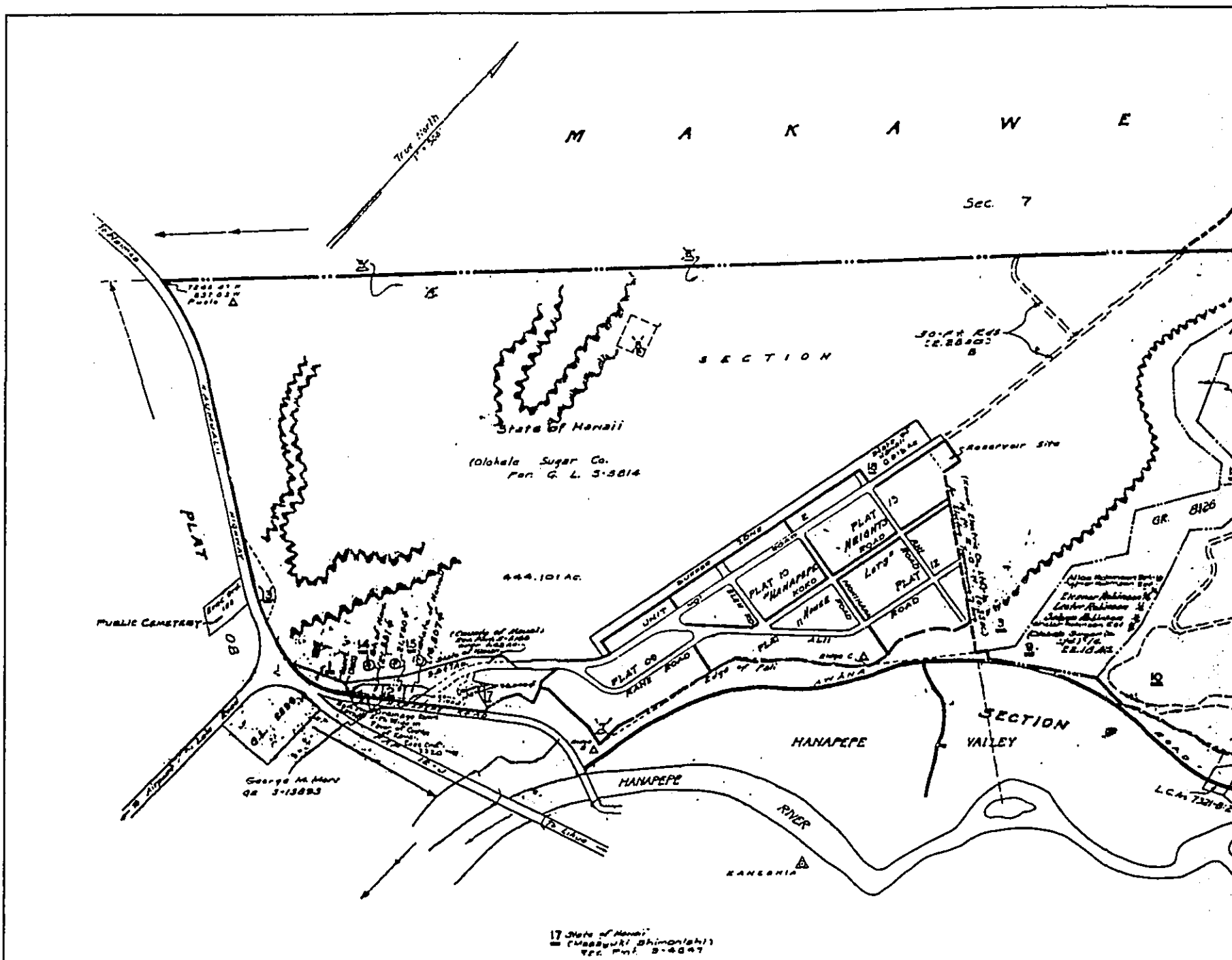
NO SCALE

FIGURE 1



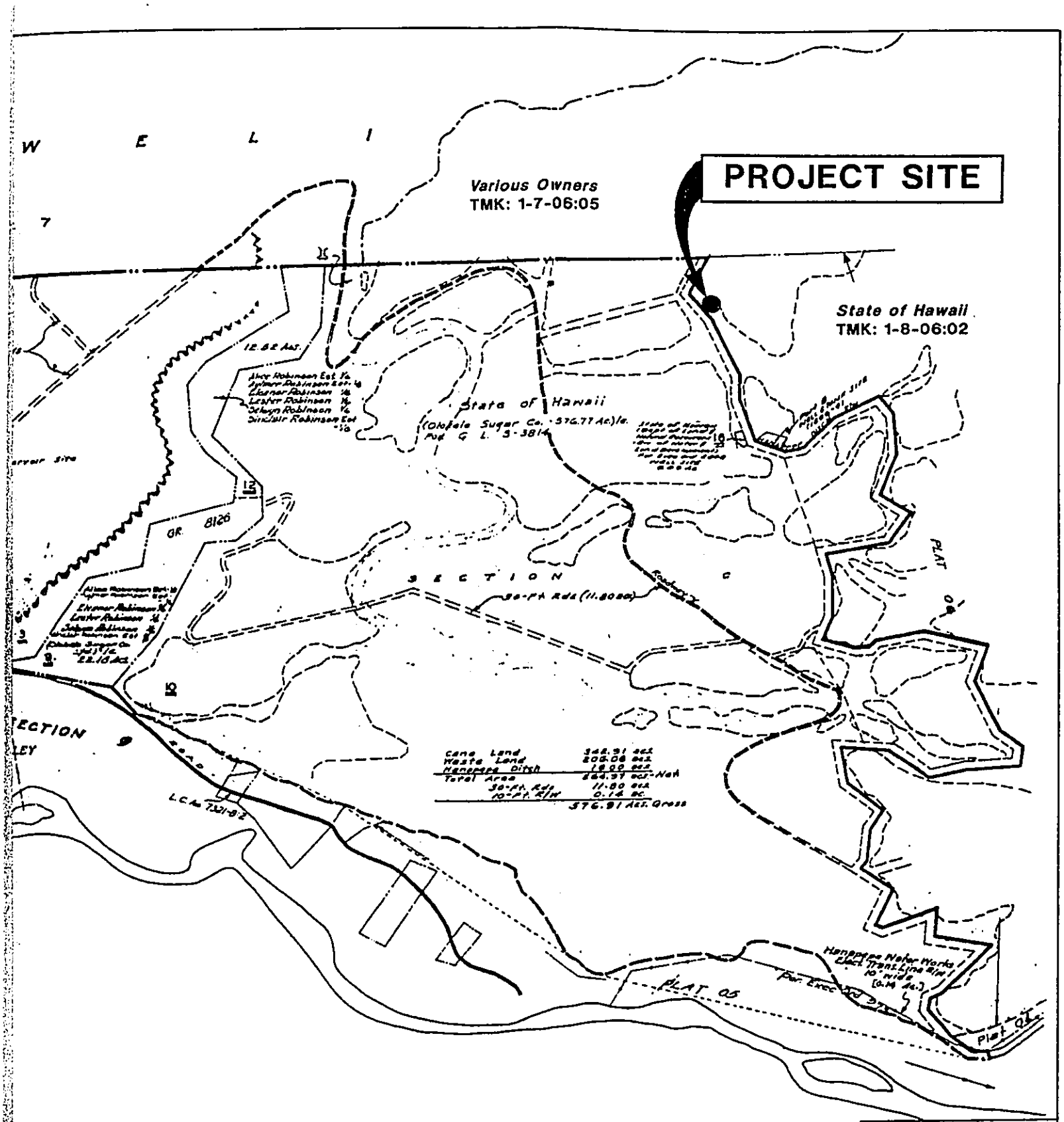
VICINITY MAP

FIGURE 2



LAND OWNERSHIP

POR. OF HANAPEPE, WAIMEA, KAUAI



NERSHIP

Parcels Dropped: 4,5,6,10,11,13,a.

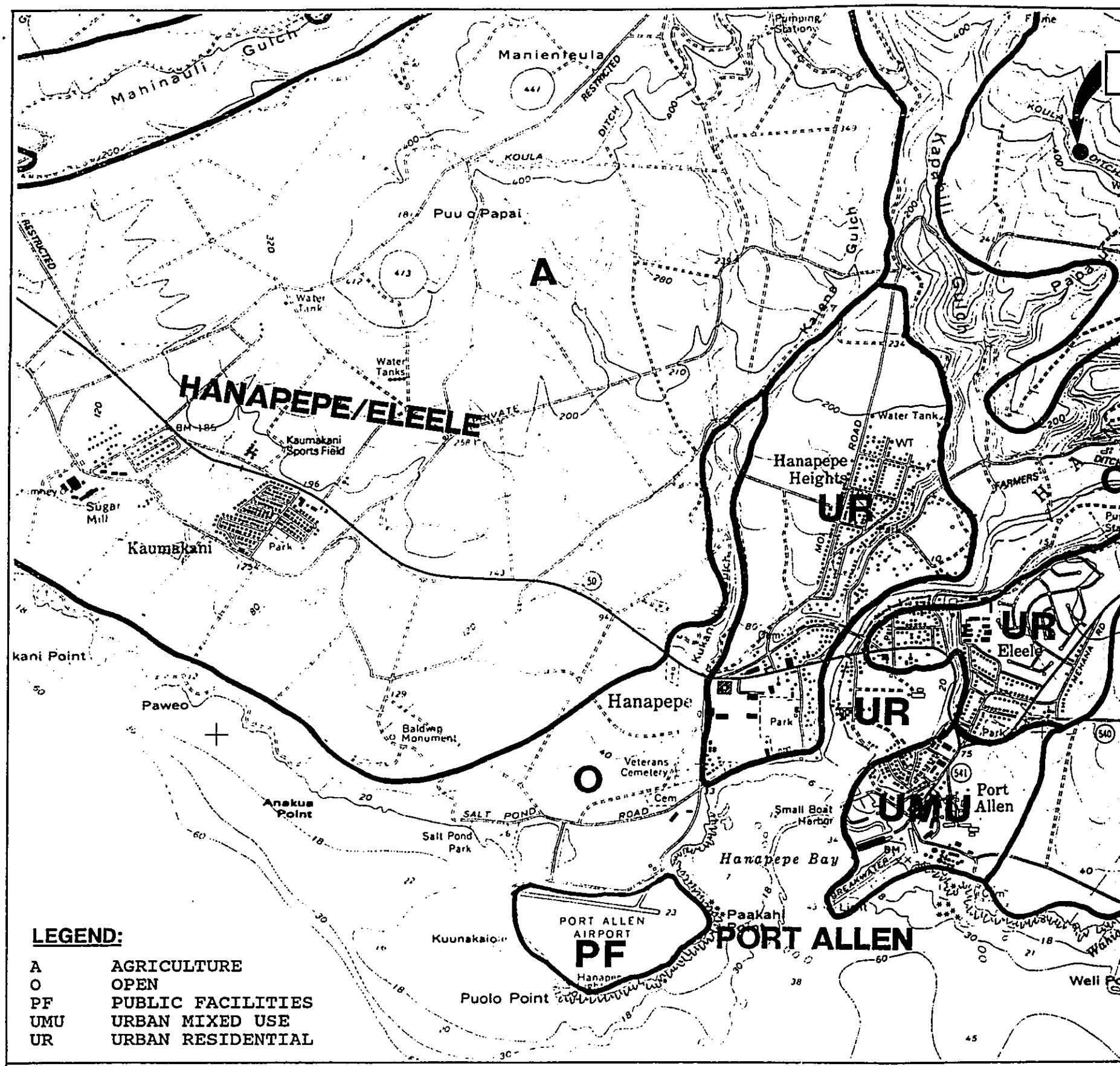
SUBJECT TO CHANGE

TAXATION MAPS BUREAU
TERRITORY OF HAWAII
TAX MAP

FOURTH		DIVISION
ZONE	SEC.	PLAT
1	8	07

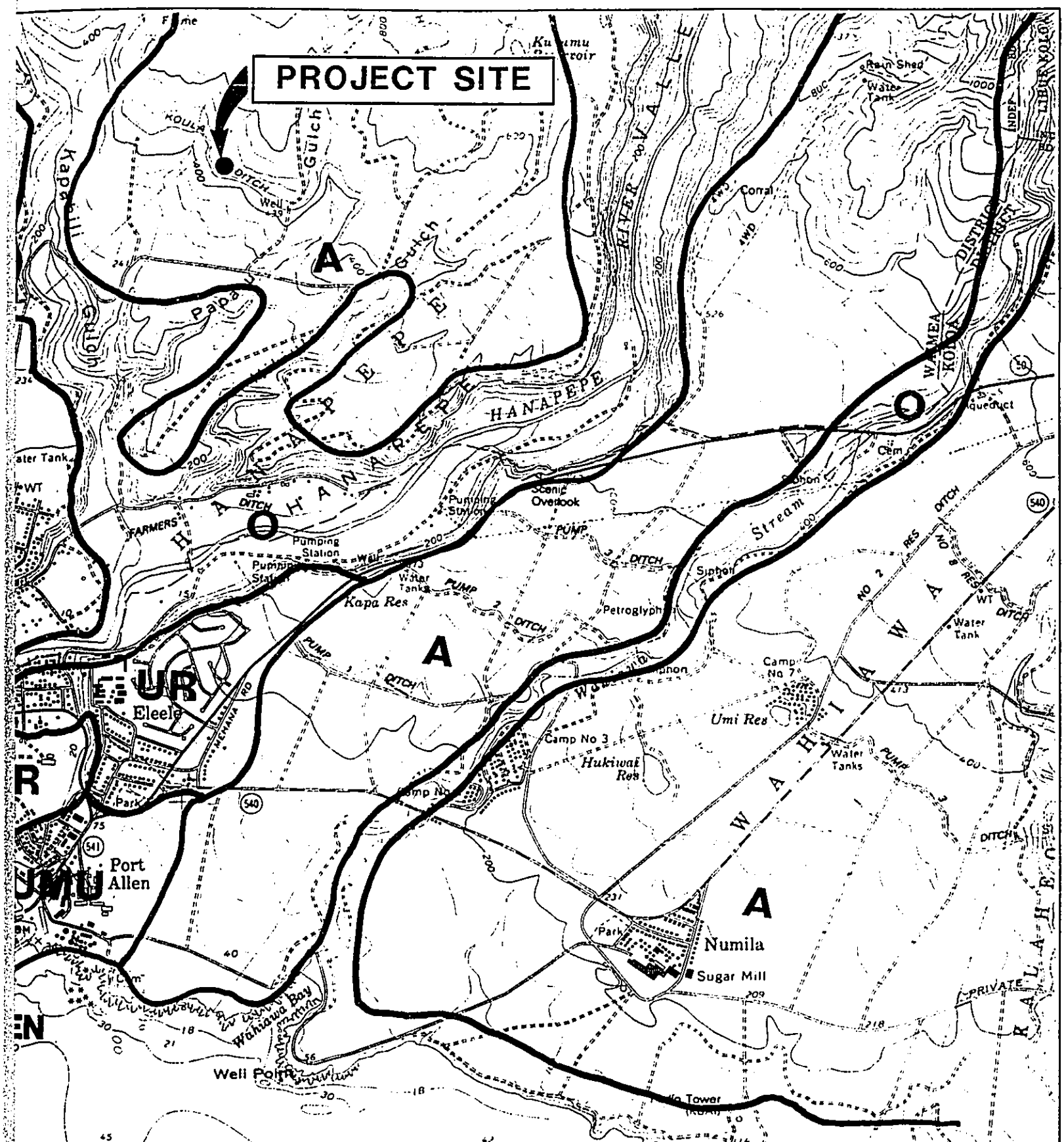
CONTAINING PARCELS
SCALE: 1 in. = 500 Ft.

FIGURE 3



GENERAL PLAN - KAUAI C

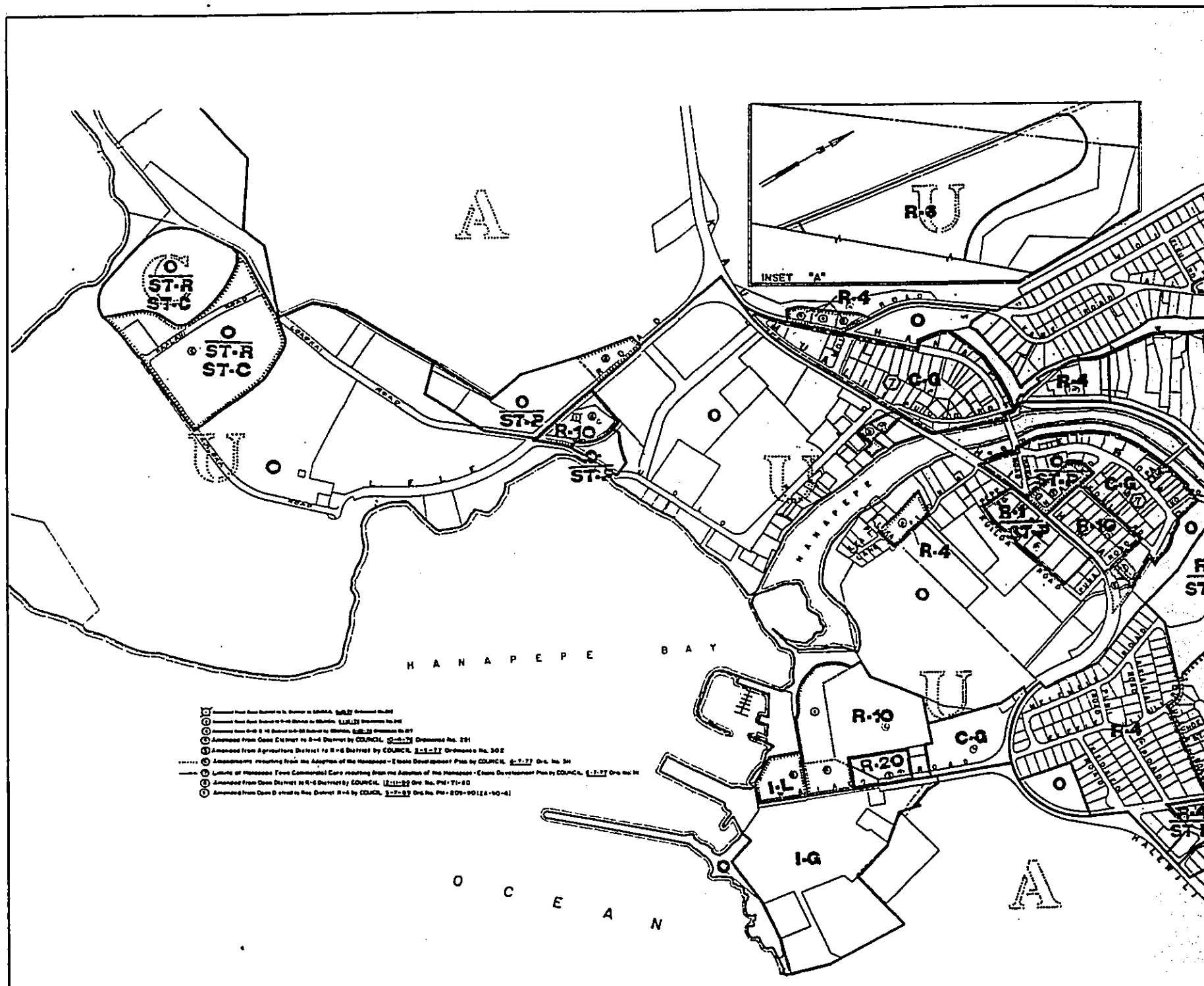
SCALE: 1" = 2000'



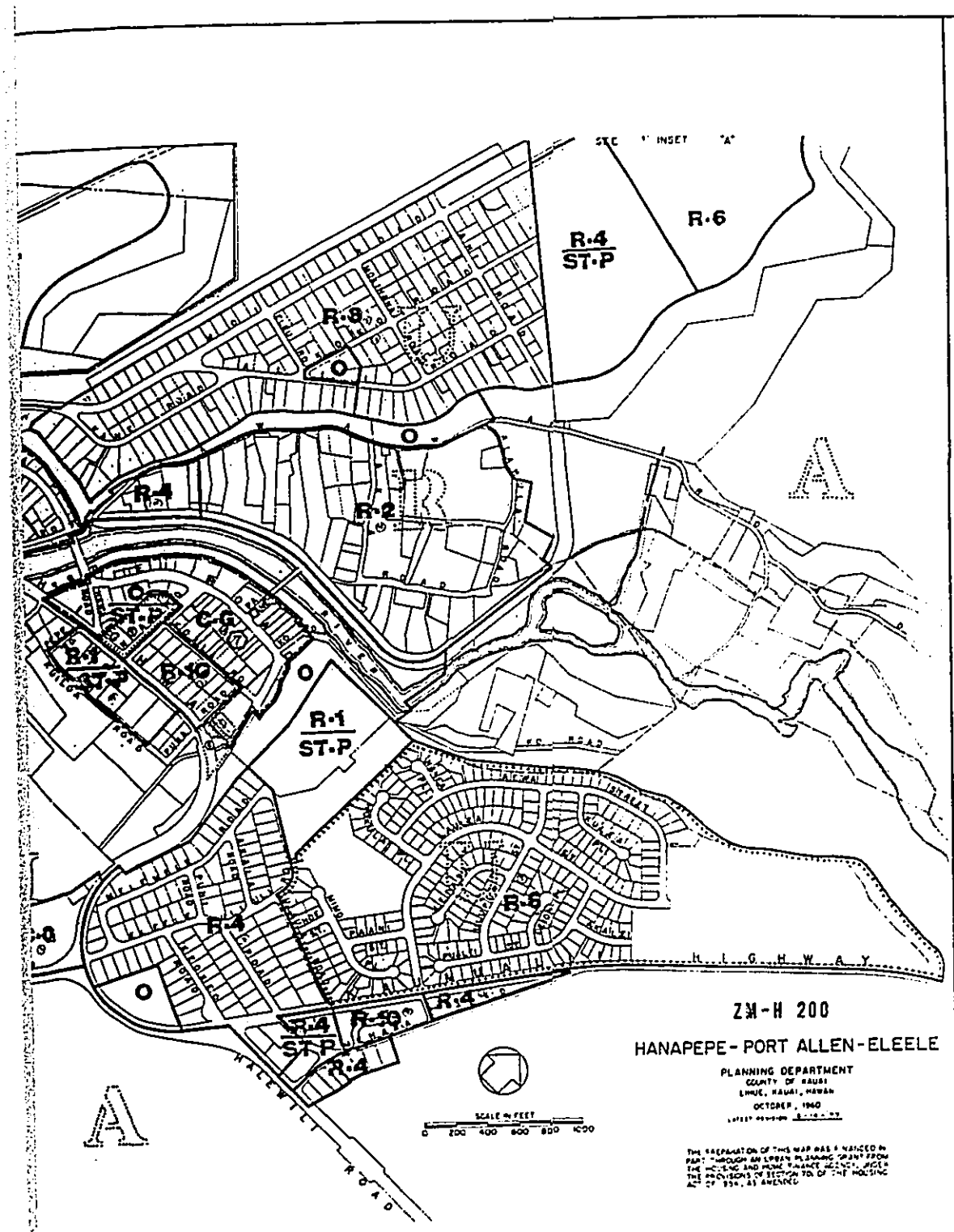
N - KAUAI COUNTY

ALE: 1" = 2000'

FIGURE 4



ZONING DISTRICTS - COUNTY



LEGEND

ZONING DISTRICTS

RESIDENTIAL DISTRICT

RESORT DISTRICT

COMMERCIAL DISTRICT

INDUSTRIAL DISTRICT

AGRICULTURE DISTRICT

OPEN DISTRICT

SPECIAL TREATMENT DISTRICT

SPECIAL PLANNING AREA

PROJECT DISTRICT

STATE LAND USE DISTRICTS

ACCEPTED BY COUNTY OF KAUAI

ACCEPTED BY COUNTY OF KAUAI
HANAPEPE-ELEELE DEVELOPMENT PLAN

S - COUNTY OF KAUAI

FIGURE 5

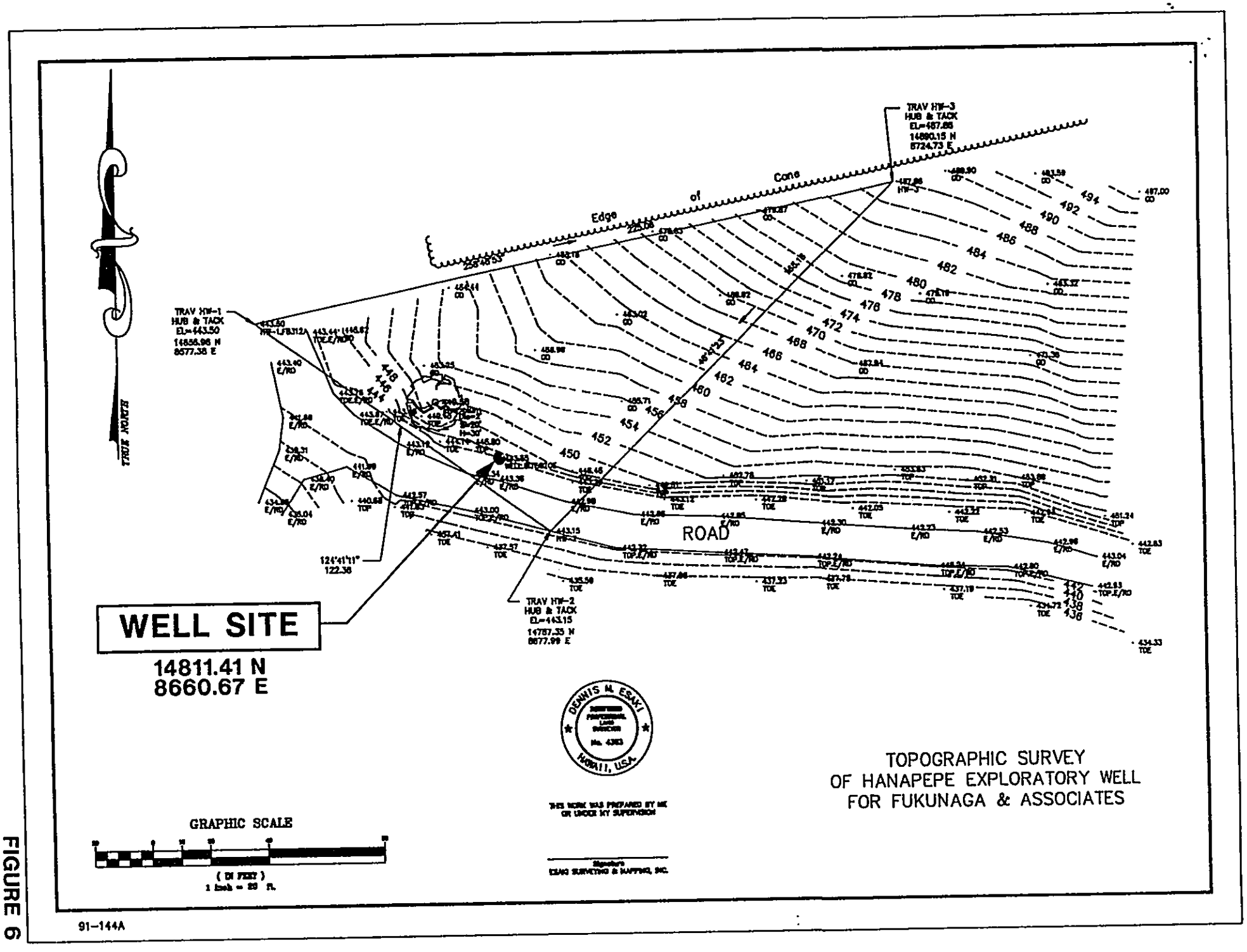
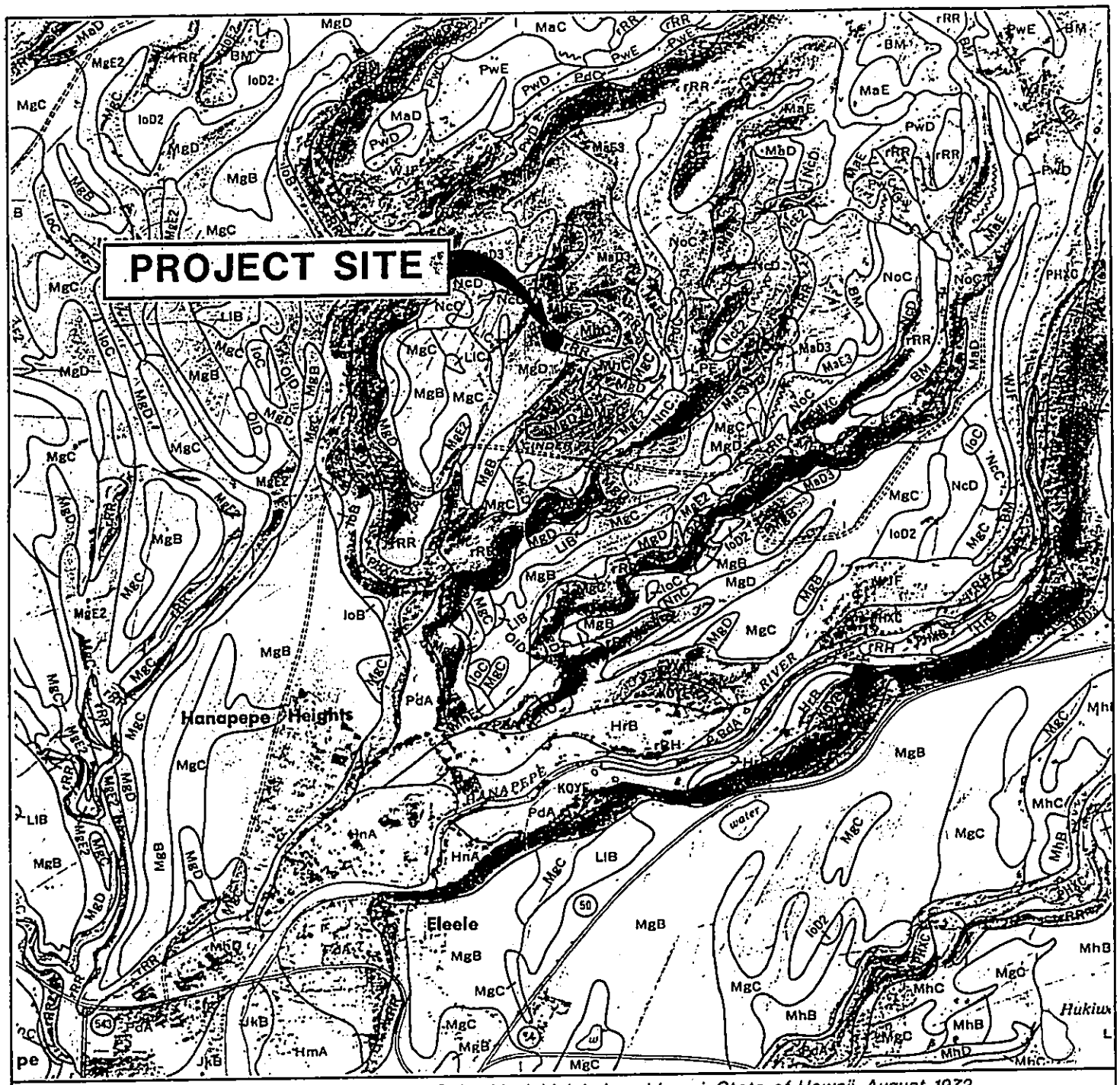


FIGURE 6

91-144A



SOURCE: Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii, August 1972.

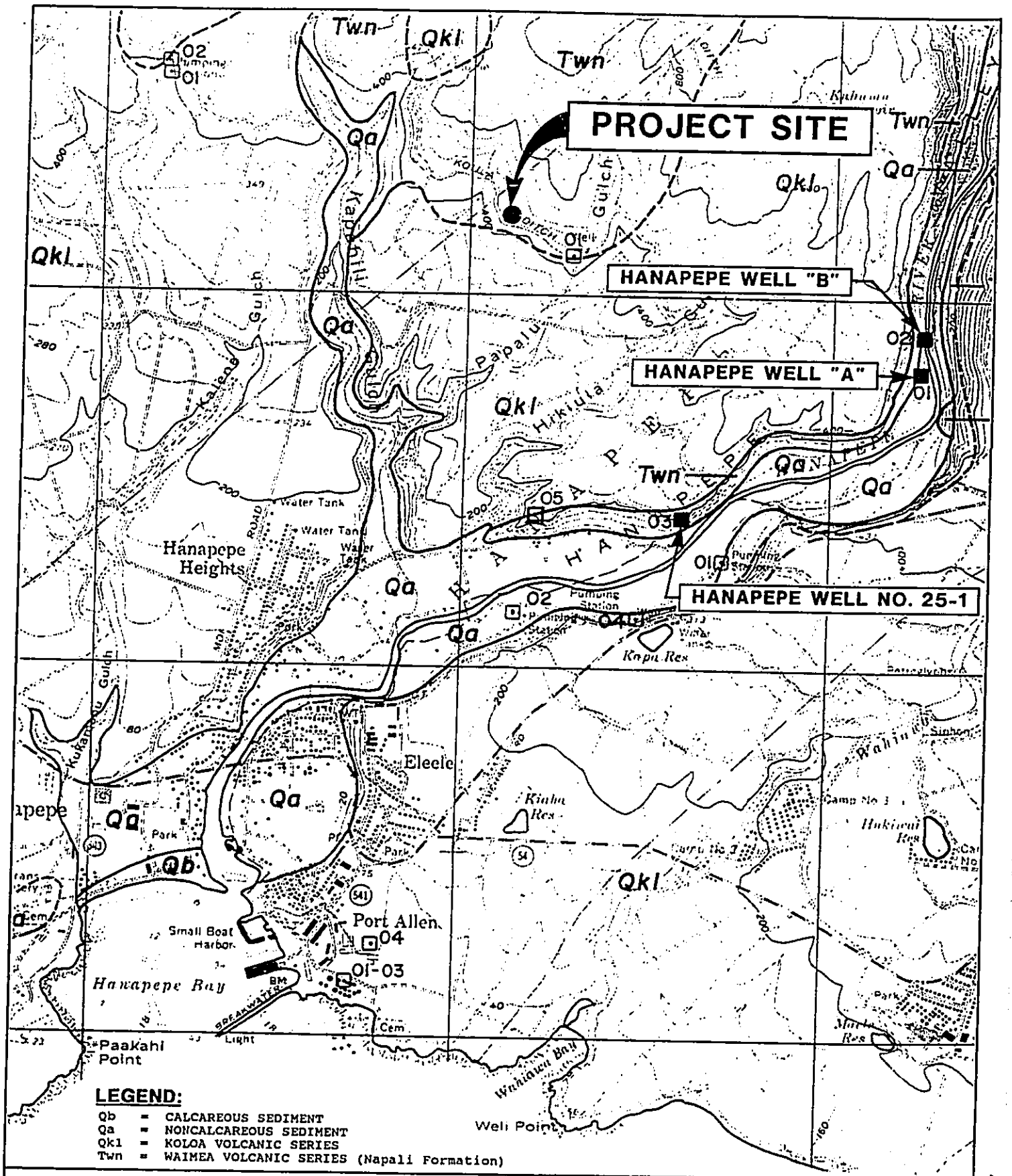
LEGEND:

BM	= BADLAND-MAHANA COMPLEX
HmA, HnA, HrB	= HANALEI SILTY CLAY; PEATY IN PLACES; SILTY LOAM
IoB, IoC, IoD2, IoE2	= IOLEAU SILTY CLAY LOAM AND SILTY CLAY
JkB	= JAUCAS SAND
KOYE	= KEKAHA SILTY CLAY OR CLAY; EXTREMELY STONY IN PLACES
LhC, LlB, LlC	= LIHUE SILTY CLAY; GRAVELLY IN PLACES
MaD, MaD3, MaE, MaE3	= MAHANA SILT LOAM AND SILTY CLAY LOAM
MgB, MgC, MgD, MgE2	= MAKAWELI SILTY CLAY LOAM AND SILT LOAM
MhB, MhC, MhD, MhE	
NcC, NcD, NcE2	= NIU SILTY CLAY LOAM AND SILTY CLAY
NnC, NoC	= NONOPAHU CLAY AND SILTY CLAY
OlD	= OLI SILT LOAM; BEDROCK
PdA, PdC, PHXC	= PAKALA STRATIFIED CLAY LOAM, VERY FINE SANDY LOAM, SILT LOAM, AND SILTY CLAY LOAM; EXTREMELY STONY IN PLACES
PwC, PwD, PwE	= PUU OPAE SILTY CLAY LOAM AND SILTY CLAY
rRH	= RIVERWASH
rRR	= ROUGH BROKEN LAND
rRO	= ROCK OUTCROP
WJF	= WAIAWA CLAY; BEDROCK

SOIL SURVEY MAP

SCALE: 1" = 2000'

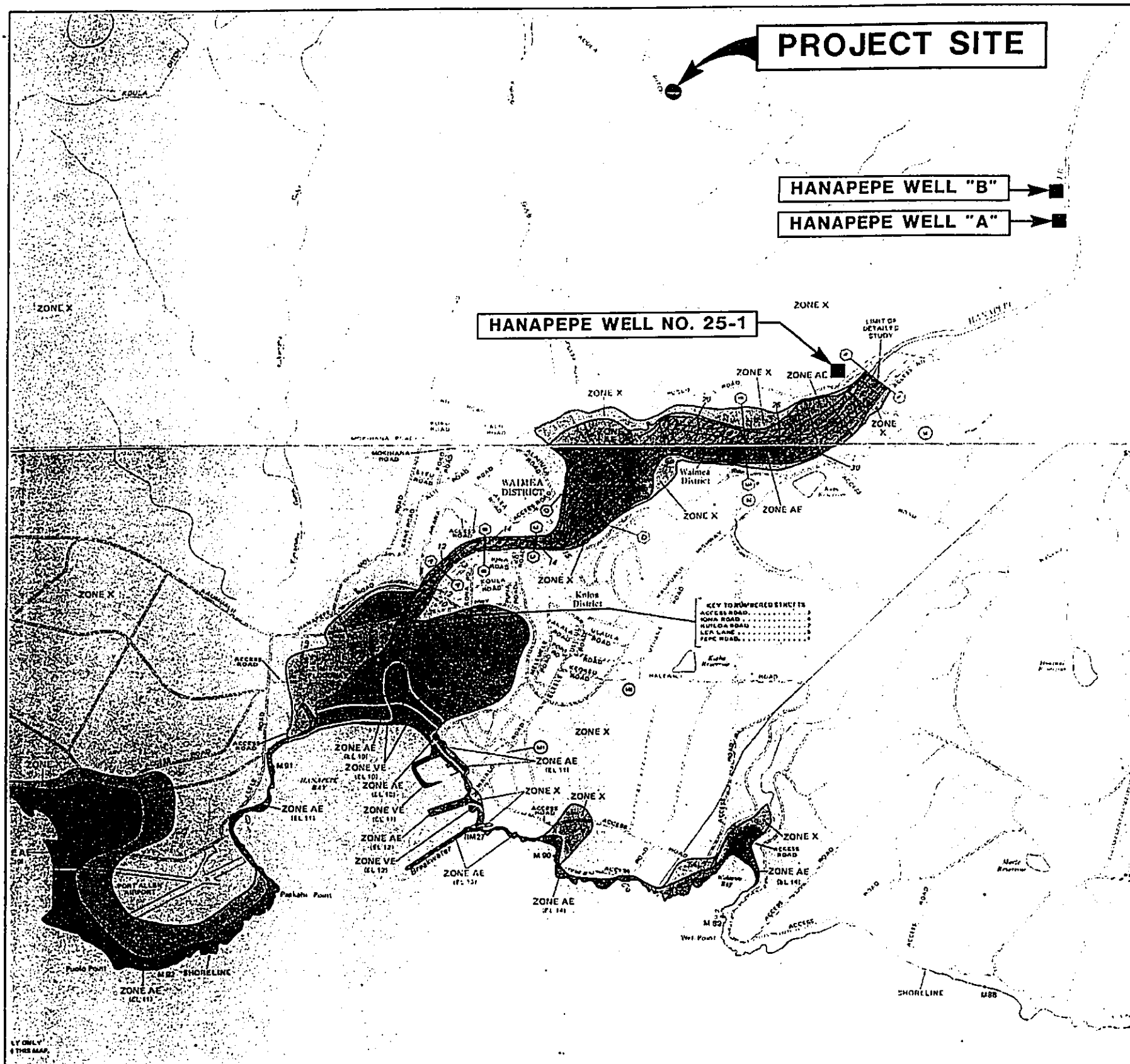
FIGURE 7



GEOLOGIC MAP

SCALE: 1" = 2000'

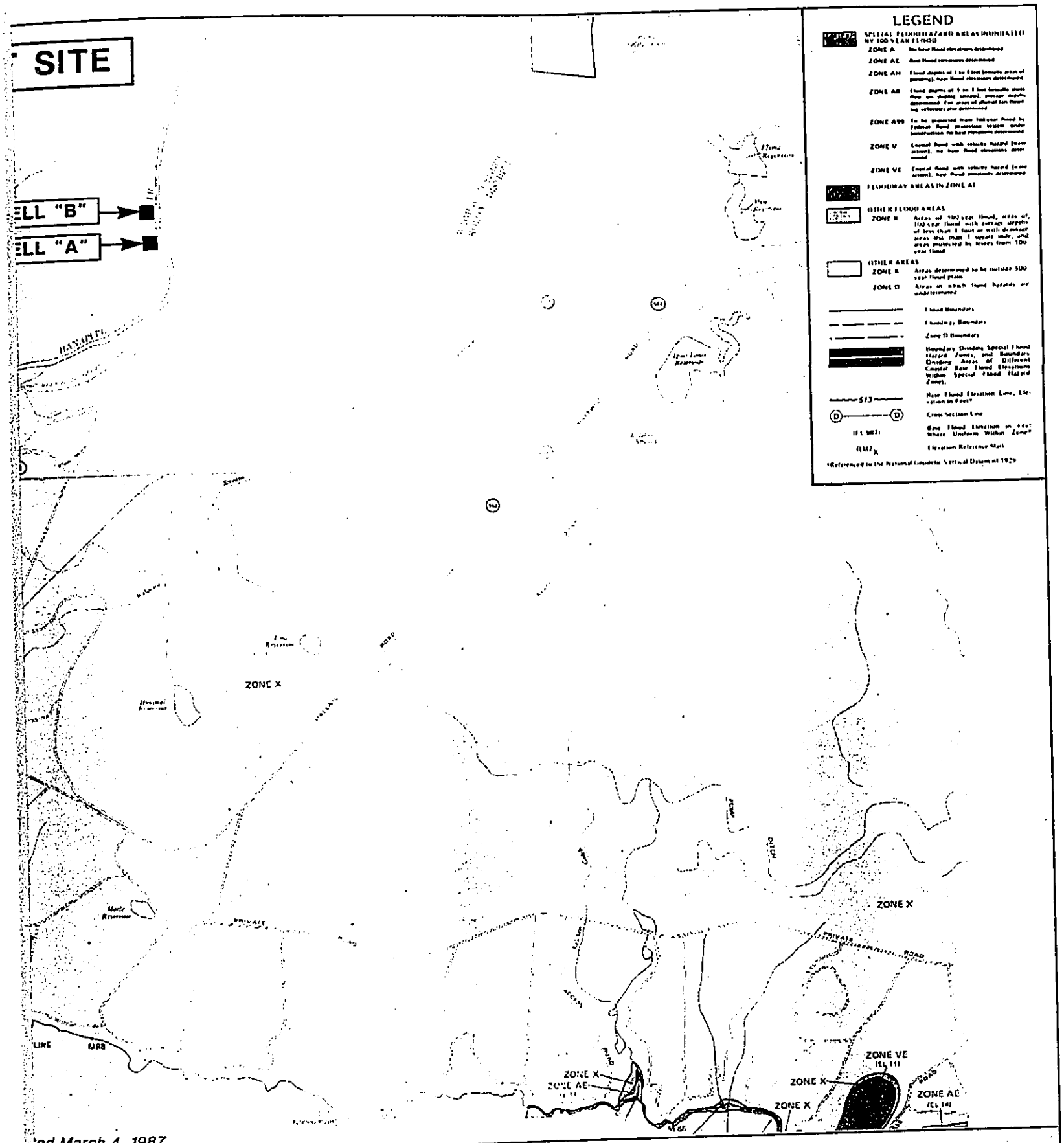
FIGURE 8



SOURCE: National Flood Insurance Rate Map, Kauai County, Community-Panel Nos. 150002 0180 C and 150002 0190 C, dated March 4, 1987.

FLOOD INSURANCE RA

APPROXIMATE SCALE: 1" = 2000'



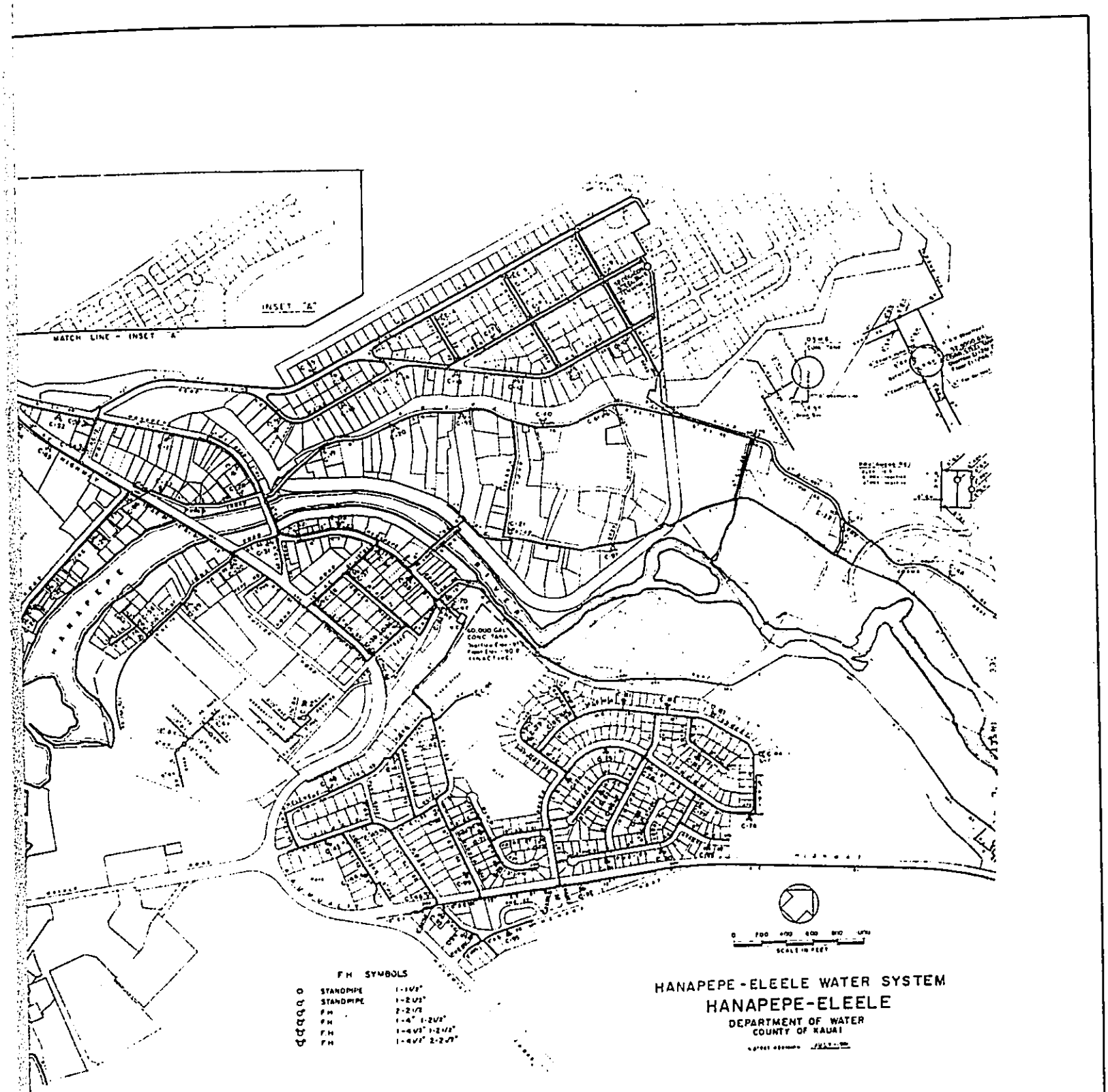
ed March 4, 1987.

ANCE RATE MAP

ATE SCALE: 1" = 2000'

FIGURE 9

HANAPEPE-ELEELE WA



ELE WATER SYSTEM

FIGURE 10