JUN 23 1997

FILE COPY

FINAL
ENVIRONMENTAL ASSESSMENT
AND
NEGATIVE DECLARATION

HANAPEPE RESIDENCE LOTS, UNIT 1

HANAPEPE, WAIMEA, KAUAI, HAWAII

Submitted in Accordance with
Requirements for Chapter 343, HRS and
Chapter 200 of Title II, Administrative Rules,
Department of Health, State of Hawaii

Prepared for

Hanapepe Development, Inc.

by

Esaki Surveying and Mapping, Inc.

June, 1997

BENJAMIN J. CAYETANO
GOVERNOR
STATE OF HAWAII

KALI WATSON
CHAIRMAN
HAWAIIAN HOMES COMMISSION

JOBIE M. K. M. YAMAGUCHI
DEPUTY TO THE CHAIRMAN

STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS
P.O. BOX 1879
HONOLULU, HAWAII 96805

RECEIVED
97 JUN 17 P3:31
OFC. OF ENVIRONMENTAL
QUALITY CONTROL

June 9, 1997

Mr. Gary Gill, Director
Office of Environmental Quality Control
235 South Beretania Street
Honolulu, Hawaii 96813

Dear Mr. Gill:

Subject: Negative Declaration for Hanapepe Residence Lots, Unit 1, TMK: (4) 1-8-07: 3 (por.) and 18 (por.), Hanapepe, Waimea, Kauai, Hawaii

The Department of Hawaiian Home Lands (DHHL) has reviewed the comments received during the 30-day public comment period on the Hanapepe Residence Lots, Unit 1 Draft Environmental Assessment, which began on April 23, 1997. DHHL has determined that this project will not have significant environmental effect and has issued a negative declaration. Please publish this notice in the June 23, 1997 OEQC Bulletin.

We have enclosed a completed OEQC Bulletin Publication Form, four copies of the final EA, and a diskette with the project description.

Should you have any questions, please contact Mr. Darrell Ing of my staff at 586-3844. Thank you for your assistance in this matter.

Aloha,

for KALI WATSON, Chairman
Hawaiian Homes Commission

Enc. (5)

NEGATIVE DECLARATION
FOR THE

HANAPEPE RESIDENCE LOTS, UNIT 1

HANAPEPE, WAIMEA, KAUAI, HAWAII

Prepared for

Hanapepe Development, Inc.

by

Esaki Surveying and Mapping, Inc.

June, 1997

NOTICE OF NEGATIVE DECLARATION FOR THE DEVELOPMENT OF A RESIDENTIAL HOUSING PROJECT (HANAPEPE RESIDENCE LOTS, UNIT I)

I. IDENTIFICATION OF APPLICANT OR PROPOSING AGENCY

Mark Development, Inc.

II. IDENTIFICATION OF APPROVING AGENCY

Department of Hawaiian Home Lands
State of Hawaii

III. IDENTIFICATION OF AGENCIES CONSULTED IN MAKING ASSESSMENT

A. Federal

FHA

B. State of Hawaii

Department of Accounting and General Services (Survey Division)
Department of Health
Housing Finance and Development Corp.
Department of Land and Natural Resources
Department of Transportation

C. County of Kauai

Planning Department
Department of Public Works
County Housing Agency
Department of Water

D. Others

Citizens Utilities, Kauai Electric Division
Hawaiian Telephone
Gay and Robinson, Inc.
The Gas Company
Habitat for Humanity-Kauai

IV. GENERAL DESCRIPTION OF THE ACTION'S TECHNICAL, SOCIAL AND ENVIRONMENTAL CHARACTERISTICS

A. The Proposed Hanapepe Residential Lots, Unit I project is located in Hanapepe, Kauai (See figure 1). The project site is comprised of two (2) parcels and are identified by Tax Map Key 1-8-07: por 3 and 18.

The project is located above and to the north of the Hanapepe town. Moi Road, which runs approximately one (1) mile from Kaumualii Highway provides the primary access to the project site. No new roadways are necessary since all proposed lots are abutting Moi Road.

These proposed lots were part of a previous project developed for the State of Hawaii, Housing Finance and Development Corporation by Raymond E. Hoe Realtors, Inc. It was included in the Environmental Assessment and Negative Declaration submitted in 1989 under "Hanapepe Heights III". It was later renamed Cliffsides at Hanapepe.

B. Description of the Proposed Action

The project consists of approximately 47 single family residential lots to be developed on an estimated 12 acres of land. Figure 2 shows the preliminary site plan of the subdivision. The site has a State Land Use Classification and County zoning of Ag.

Of the total number of lots, twenty (20) will be reserved for families with incomes at or below 50% of Kauai's median income as determined by the United States Department of Housing and Urban Development and as adjusted for family size. These vacant lots will be administered by the Kauai Habitat for Humanity. House and lot packages will be developed on twenty-seven (27) lots South of Alii Road.

The proposed lots will be marketed into two (2) price ranges:

	Target Groups	Income Ranges	Sales Prices
1.	Hawaiian (50% Blood Quantum)	50% (or less than) Kauai Family Median Income	$42,500 to 58,000
2.	Hawaiian (50% Blood Quantum)	60% to 100% of Kauai Family Median Income	$104,500 to $132,800

Twenty seven (27) house and lot packages will consist of single-family detached dwellings. Units range from 2-bedroom - 1 bath models to 3-bedroom - 2 bath models. General construction will consist of wood frame on concrete slab foundation, double walls, thick butt roof and two car carport.

Improvements to the property will meet Kauai County Public Works standards. Curbs, gutters and sidewalks are not planned in order to minimize development costs. Underground utilities which includes a county sewer system for domestic wastewater disposal are currently planned for the project.

C. Economic Characteristics

The project site is currently owned by the State of Hawaii. It is part of the land transfer to the Department of Hawaiian Home Lands and will be developed by Hanapepe Development, Inc. The developer will develop and market the subdivision with purchasers taking leasehold title to the land.

The total estimated development cost is 4 million. Interim financing will be provided by Central Pacific Bank. Construction start is projected in mid 1997 with completion within one year.

The bulk of the homebuyer financing will come from the State's HULA MAE program, FHA, Farmers Home Loans, Bank of Hawaii Portfolio Loans, (no Commercial Loans with DHHL).

V. SUMMARY DESCRIPTION OF THE AFFECTED ENVIRONMENT

The site has been under sugar cane cultivation for many years and does not have exceptional physical elements, fauna or flora.

VI. ASSESSMENT PROCESS

An Environmental Impact Assessment Report was completed in February 1989 by KH Consultants Inc. for Raymond E. Hoe Realtors, Inc. The Report was completed to fulfill the requirements set forth by the Environmental Quality Commission's Regulations on Environmental Impact Statements and Chapter 343, Hawaii Revised Statues. It included the subject but this portion was not constructed.

An updated Environmental Impact Assessment Report has been prepared by Esaki Surveying and Mapping, Inc.

No significant adverse impacts upon land use patterns, social or economic issues, or physical environmental qualities are indicated by the development of this project.

The proposed project shows no considerable effect upon the environment and does not involve a commitment for larger action(s).

VII. IDENTIFICATION AND SUMMARY OF MAJOR IMPACTS AND ALTERNATIVES CONSIDERED

NO MAJOR IMPACTS are anticipated from the proposed project.

SHORT TERM EFFECTS - During the construction of the project, a certain amount of noise and fugitive dust will be generated which may affect the adjacent housing community. The effects however, should be minimal and can be handled through standard and regulated construction activities and practices. Prevailing northeast tradewinds blows away from the majority of the adjacent homes.

LONG TERM BENEFICIAL IMPACTS - The project will provide single family housing for families who would not otherwise be able to afford such residences.

At completion of the project, air quality for the existing residential community should improve since sugar cane harvesting will no longer be up-wind from the few homes to the south of the project.

VIII. MEASURES TO MITIGATE ENVIRONMENTAL EFFECTS

No severe or significant mitigation measures are required. Minor impacts to the neighboring areas will likely occur during the construction of the Project. The developer will implement standard dust and noise control measures. The developer will also monitor construction activities as an added precaution.

IX. DETERMINATION

A review of the findings and studies indicates that the proposed project will not have any major, short- nor long- term adverse impacts. It is therefore determined by the Department of Hawaiian Home Lands that an Environmental Impact Statement is not required for this project.

X. FINDINGS AND REASONS SUPPORTING DETERMINATION

FINDINGS - there will be no adverse impacts on the environment.

REASONS - the site is suitable for residential development and will lessen existing environmental impacts on the existing community immediately adjacent to the proposed project. The project will also have a major positive impact by providing needed affordable housing to the native Hawaiians.

FINAL
ENVIRONMENTAL ASSESSMENT
AND
NEGATIVE DECLARATION

HANAPEPE RESIDENCE LOTS, UNIT 1

HANAPEPE, WAIMEA, KAUAI, HAWAII

Submitted in Accordance with
Requirements for Chapter 343, HRS and
Chapter 200 of Title II, Administrative Rules,
Department of Health, State of Hawaii

Prepared for

Hanapepe Development, Inc.

by

Esaki Surveying and Mapping, Inc.

June, 1997

ENVIRONMENTAL ASSESSMENT

Proposed Action: HANAPEPE RESIDENCE LOTS, UNIT I

Applicant: HANAPEPE DEVELOPMENT, INC.

Location: HANAPEPE, KAUAI
TMK: 1-8-07: Por. 3 and 18

Determination: EIS REQUIRED _____ NOT REQUIRED __X__

.....

Agencies and Organizations Consulted or Contacted in Preparing This Assessment

Federal	:	Department of Housing and Urban Development
State	:	Department of Health Department of Land and Natural Resources Department of Transportation (Kauai)
County	:	Planning Department Department of Public Works Department of Water County Housing Agency
Others	:	Citizens Utilities, Kauai Electric Division Hawaiian Telephone Company Gay & Robinson, Inc. The Gas Company Kauai Habitat for Humanity

Table of Contents

SECTION I

DESCRIPTION OF THE PROPOSED PROJECT

Hanapepe Development, Inc. proposes to develop Hanapepe Residence Lots, Unit I located at Hanapepe, Waimea, Kauai in the State of Hawaii. The property is also identified by tax map key as 1-8-7: por 3 and 18.

The property is located above and to the north of the Hanepepe town. Moi Road which runs approximately one (1) mile from Kaumualii Highway will provide the primary access to the property. The property is bordered by cane fields to the west, existing residential to the east and south, and Hanapepe Valley (Kapahili Gulch) to the north. (See Figure 1).

As shown in the preliminary subdivision plan (figure 2) the property will be developed in two (2) phases. In total, there will be 47 lots ranging in size from 6,001 to 12,632 square feet. Twenty (20) lots will be reserved for families with incomes not exceeding 50% of Kauai's median income as determined by the United States Department of Housing and Urban Development and as adjusted for family size. These will be administered by the Kauai Habitat for Humanity. Additional qualifications will be the blood quantum requirement for Hawaiian Home Lands.

Twenty-seven (27) lots reserved for the low to moderate income homebuyers will be developed as house and lot packages.

The house and lot packages will consist of single-family detached dwellings ranging from two (2) to three (3) bedrooms with the majority being three (3) bedroom units. The size of the units will range from approximately 752 to 1152 square feet of living area. The smaller units will have 1 to 1-1/2 baths and the larger units will have 2 baths. All units will be one-story in height and feature wood frame on concrete slab foundation, double walls, thick butt roof and one/two car carport.

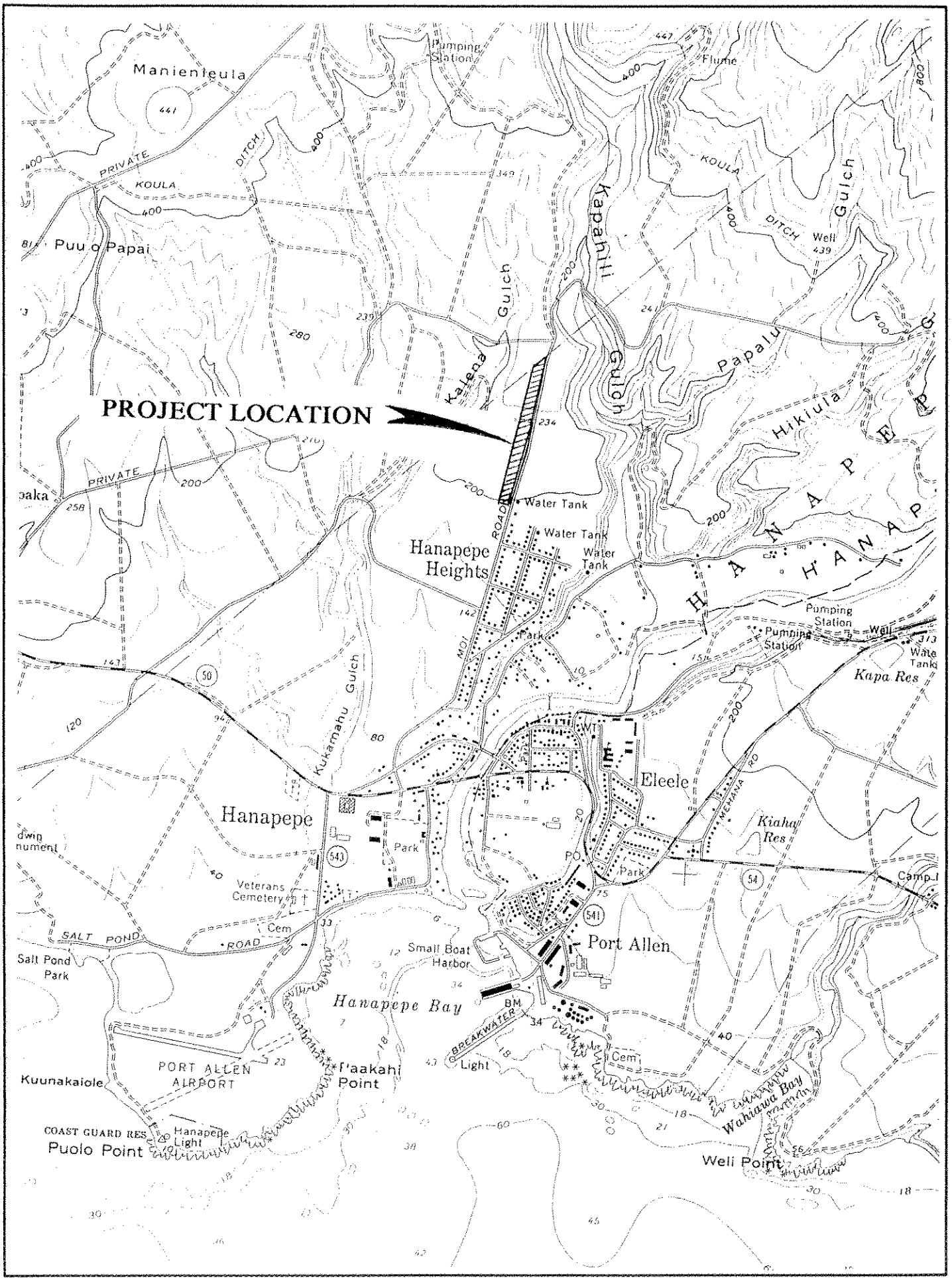
Improvements to the property will meet all Kauai County Public Works standards except that curbs, gutters and sidewalks are not planned in order to minimize development costs. Utilities is planned to be underground. Wastewater will be disposed of through the existing County Sewer System. No recreation facilities are planned.

The Department of Hawaiian Home Lands is negotiating with the State of Hawaii, DLNR the transfer of the subject property. Approximately 358 acres are being transferred to DHHL from DLNR as part of the ceded lands trust settlement. DHHL intends for the remaining land area to stay in sugar/agriculture lease to Gay & Robinson for a long time. DHHL has no current plans, funding or timetable to develop housing on the larger parcel. The term "Unit I" is used by DHHL to distinguish this project from potential future housing. Following acquisition, applicant will develop and market the subdivision with purchasers taking title to the land in leasehold ownership pursuant to DHHL procedures. Houses will be sold at the following prices:

Target Groups	Income Ranges	Sale Prices
1. Hawaiian* (50% Blood Quantum)	50% (or less than) Kauai Family Median Income	42,500 - 58,000
2. Hawaiian (50% Blood Quantum)	60% - 100% of Kauai Family Median Income	104,500 - 132,500

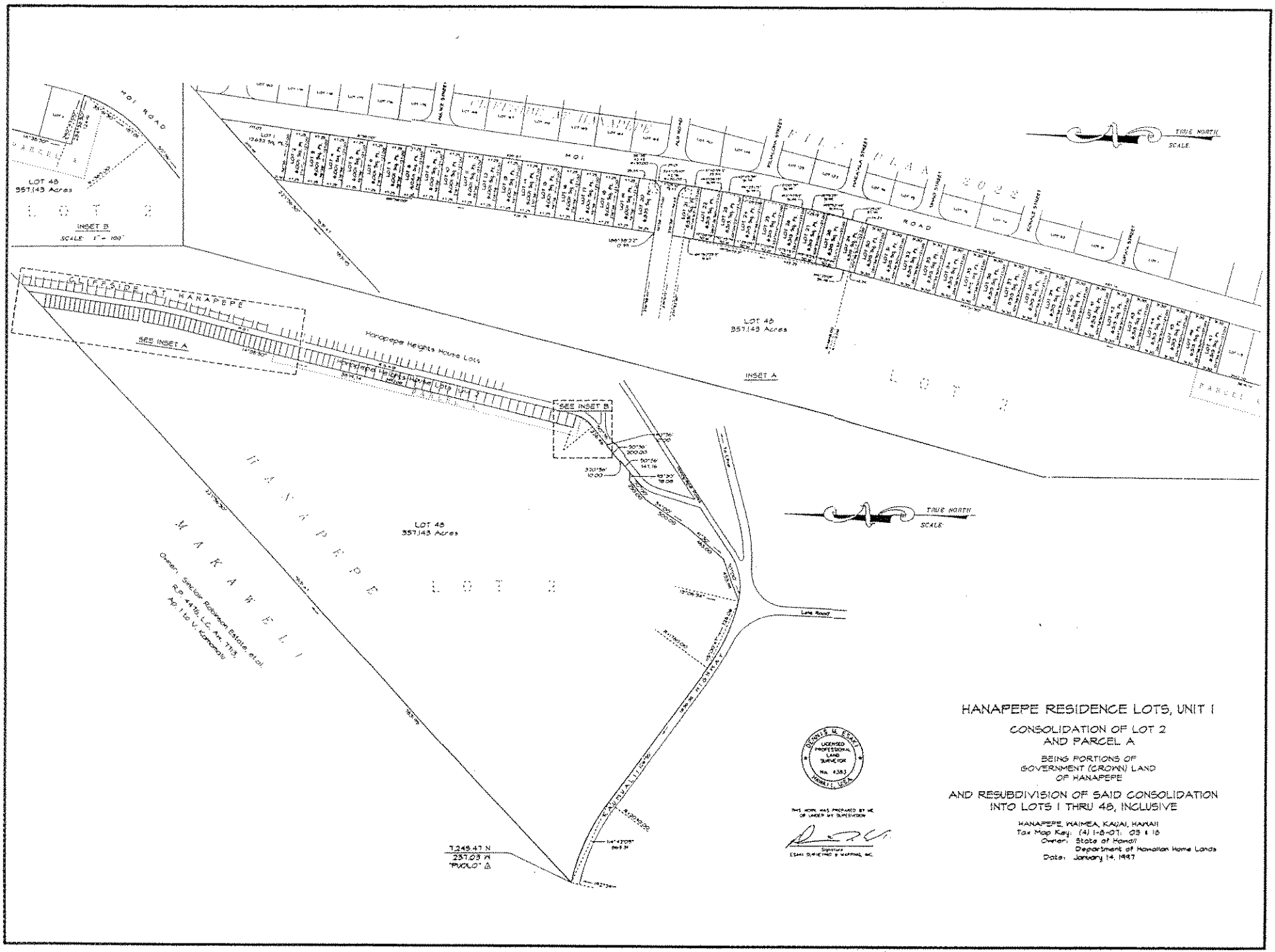
*Self Help Lots

The total estimated development cost is approximately $4 million of which approximately $548,836 has been encumbered by DHHL from "Trust Funds" for infrastructure improvements. Kauai Habitat for Humanity will be using a grant from the County of Kauai's Pakui HOME funds of approximately $400,000 for the self-help houses. Interim financing will be provided by Central Pacific Bank. Construction is projected to start mid-1997 and should be completed in one (1) year.



ESAKI SURVEYING & MAPPING, INC.

FIGURE 1



ESAKI SURVEYING & MAPPING, INC.

FIGURE 2

SECTION II

DESCRIPTION OF THE AFFECTED ENVIRONMENT AND POTENTIAL ENVIRONMENT IMPACTS

A. USES

Existing Conditions: The site was formerly in sugar cane cultivation by Olokele Sugar Company, Ltd. (Olokele) and is part of approximately 358 acres of land being transferred by the Department of Land and Natural Resources (DLNR) to the Department of Hawaiian Home Lands. The seven (7) acres were not replanted after the last harvest in 1996. The balance of lands will still be leased to Olokele Sugar Company, Ltd. for sugar cultivation.

Proposed Actions: See Section 1, Description of the proposed Project.

Potential Impacts and Mitigative Measures: The withdrawal of seven (7) acres land will result in minimal loss in net annual income for Olokele. This area was not replanted by mutual agreement to minimize the impacts on crop damage.

B. CLIMATE

Existing Conditions: Annual rainfall amounts to 20 to 35 inches. Three-fourths of it occurs from October through March. Temperature averages 74 degrees Fahrenheit.

Potential Impacts and Mitigative Measures: The project should not affect macro or micro weather conditions.

C. TOPOGRAPHY AND SOILS

Existing Conditions: Ground elevation falls mauka to makai from a high 262 feet to a low of 193 feet. Cross slope averages 2%. The gentle sloping terrain is marked by the existing agricultural fields to the west and the Cliffside at Hanapepe housing project to the east.

The Soils Conservation Service Map (1972) shows the soil type to be Makaweli Silty Clay (MgB). The MgB poses no severe limitations for urban use. Permeability is moderate. Runoff is slow and the erosion hazard is no more than slight.

Proposed Actions: Grub and grade site to achieve design elevations for roadways and housepads. Construct housepads, drainage improvements and install utility systems. Waterline crossing Moi Road will be bored to minimize pavement damage.

Potential Impacts and Mitigative Measures: Impacts occurring on the physical terrain from development of the project site are expected to be minimal. Since the site is relatively flat, minimum grading will be required. Initially, the site will be grubbed of vegetation and the natural grades altered to meet design requirements. To minimize soil erosion during the construction process, erosion control measures will be designed and implemented in accordance with applicable governmental regulations.

D. SURFACE WATER AND DRAINAGE

Existing Conditions: There is no contributory off-site run-off into the proposed development area. Portion of the run-off street flow into the cane field in the rear (west) and portions flow toward Moi Road (east). Moi Road has a system of drainage improvements.

The property is not in an identified flood area and is designated as "Zone X" on Kauai County's Flood Insurance Rate Map dated March 4, 1987 (revised). Zone X is defined as "Areas determined to be outside 500-year flood plain."

Proposed Actions: Onsite runoff will be directed by the proposed road system. Lots will be graded to slope to Moi Road. Drainage above Alii Road will be directed to the area of the proposed lots and run along the rear of the lots into an existing drainage ditch in the cane field. Drainage along Moi Road below Alii Road will be directed into existing catch basins and run into the same drainage ditch.

Potential Impacts and Mitigative Measures: No direct impacts on drainage should occur. Onsite drainage systems will be designed to County standards to accommodate expected increases in runoff within the development. Houselots will be graded towards the roadway per FHA request.

E. FLORA AND FAUNA

Existing Conditions: The proposed project is not expected to have a significant impact on flora as the site consists primarily of cultivated lands. There are no rare, threatened or endangered vertebrate animal species known to exist on the project site.

Proposed Actions: See Section 1, Description of the Proposed Project.

Potential Impacts: Adverse impacts are not anticipated. The occurring vegetation is common to Kauai and none are considered threatened or endangered.

F. HISTORIC SITES

Existing Conditions: There are no recorded historic features or cultural artifacts on the property.

Proposed Action: None.

Potential Impacts: Should subsurface features or burials be unearthed, work in the immediate area shall cease and professional archaeologists summoned to investigate the find. Applicant also will notify the County of Kauai Planning Department and the State Historic Preservation Officer. Disinternment of grave sites shall comply with Chapter 6E H.R.S.

G. LAND USE CONTROLS

Existing Conditions: The property is classified as Agriculture by the State Land Use Commission, and has a County General Planned designation of Agriculture/Urban Residential. The proposed project is less than fifteen (15) acres and thus is not required to apply to the Land Use Commission for land use change. The Department of Hawaiian Home Lands is exempt from local land use restrictions with regards to density.

Proposed Action: The proposed use of the property will be consistent with the conditions and requirements of the Urban Classification immediately across Moi Street in the Cliffside at Hanapepe Subdivision.

Potential Impacts: The proposed use should not conflict with the zoning of nearby properties. The existing project immediately south of the proposed project is zoned R-6.

H. AIR QUALITY

Existing Conditions: Approximately every 18-months to 24-months the existing residential community (south of the proposed project) are faced with dust and smoke during the harvesting of the cane fields. The land was last harvested in 1996. Occasional dust is also generated by cane haul trucks and other agricultural vehicles and machinery.

Potential Impacts and Mitigative Measures: Ambient air quality may be affected by dust raised during site preparation activities and by exhaust fumes from internal combustion engines. Fugitive dust is an inevitable consequence of soil handling/movement but can be controlled by water sprinkling or application of dust suppressants.

Combustion discharges from construction equipment and vehicles are not anticipated to significantly alter ambient air quality and can be minimized by proper operation and maintenance of all petroleum-fueled equipment. In addition, the prevailing winds can be expected to dilute and disperse exhaust emissions away from existing homes.

All activities shall comply with Air Pollution Control Regulations (Chapter 43) of the State Department of Health and all applicable County ordinances.

At completion of the project, air quality for the existing residential community (south of the proposed project) should improve since cane harvesting will no longer be up-wind from their homes.

I. NOISE

Existing Conditions: The property is currently being impacted by noise from agricultural machinery and vehicles on a periodic basis.

Proposed Actions: Noise levels are expected to increase once construction starts on the property. Maximum sound level would fall in the 85-96 dB(A) range with the latter generated by earth moving and pneumatic impact equipment. Noise should be most pronounced during site work followed by reductions in frequency and duration during actual construction and post construction phases.

Potential Impacts and Mitigative Measures: The project abuts an existing residential development and it is possible that residents may be disturbed by construction noises. Although noise cannot be eliminated entirely and may be thought of as a short-term nuisance, the Contractor will be required to have his equipment equipped with mufflers. The hours of operation will also be regulated.

In the long run, it is anticipated that noises emanating from the completed project would be similar to that of the adjoining residential subdivision.

J. HOUSING

Potential Impacts and Mitigative Measures: According to the Department of Hawaiian Home Lands, the number of families on the wait list on the Island of Kauai is 1,550. The demand for housing on the west side of Kauai is disproportionate to the supply as most of the development of Hawaiian Home Lands has been in Anahola, on the east side of Kauai.

When completed, the proposed Hanapepe Residence Lots, Unit I will provide 27-House and Lot packages and 20-finished lots to families in need of housing in Hanapepe, Kauai.

K. PUBLIC UTILITIES AND SERVICES

1. Access:

Existing Conditions: Access to the project site will be primarily from the existing Moi Road. Moi Road has a Right of Way of 60-feet with a 20-foot paved surface and begins at Kaumualii Highway. Hanapepe Road which also connects to Kaumualii Highway also provides access to Moi Road.

A traffic light will be installed at the intersection of Moi Road and Kaumualii Highway in conjunction with the Cliffside at Hanapepe project.

2. Water:

Existing conditions: Water for domestic use and fire flow is in a 12" waterline fronting the project on Moi Road.

Potential Impacts and Mitigative Measures: The estimated water demand is 18,800 gallons per day. This is based on 47-dwellings at 400 gallons per household per day. Service laterals will be installed by boring across Moi Road. An off-site 500,000 gallon storage tank at an elevation of 360 feet, including the required transmission mains, is presently serving the area. County water is available at the existing source. No additional source or storage is anticipated.

3. Wastewater:

Existing Conditions: There is an existing treatment plant that services the Hanapepe area. The existing adjacent Cliffside at Hanapepe Subdivision Houselots are serviced by treatment plant presently. An existing 8" sewer line runs along Moi Road.

Proposed Actions: A parallel 8" (VCP) sewer line will be constructed on the west shoulder of Moi Road right of way. Sewer laterals will be installed to the proposed lots.

4. Solid Waste:

Existing Conditions: Residential refuse collection services are available at the residential homes immediately adjacent to the proposed project. A truck crew is capable of servicing 600-homes per day. Collected refuse is delivered to a transfer station where the volume of the refuse is reduced by 50% from compaction. The compacted refuse is then hauled to the Kekaha landfill for disposal.

Potential Impacts and Mitigative Measures: It is estimated that the proposed project will generate less than 1/2 ton of refuse per week. Existing refuse collection services as well as the Kekaha landfill should be capable of meeting the additional demand caused by the proposed project.

5. Fire Protection:

Existing Conditions: Fire protection service for the Hanapepe area is currently being provided by the Hanapepe Fire Station. The Kalaheo and Waimea Fire Stations are available under emergency conditions. Four (4) men are assigned to the station with three (3) on duty at all times with Major fire fighting equipment. Response time to the proposed development from the station, a distance of about 1.5 miles, is estimated at 2-3 minutes.

Emergency medical services (to include an ambulance and emergency medical technician) are provided by the Hanapepe Fire Station in conjunction with a private firm which is contracted with the State Department of Health.

6. Police Protection:

Existing Conditions: Police service in the Hanapepe area is provided by the Waimea Police Station. The Waimea Police Station is located at 9735 Kaumualii Highway and is approximately 7-miles from the proposed project site.

Proposed Actions: None

7. Public Schools:

Existing conditions: The public schools servicing the Hanapepe area are Eleele Elementary (K6), Waimea Canyon (K8) and Waimea High (9-12).

Proposed Action: None

8. Utilities:

Existing Conditions: Electrical power and telephone services are available from underground distribution lines on the east side of Moi Road.

Proposed Actions: Construction of underground utilities to the proposed lots.

9. VISUAL EFFECTS:

Existing Conditions: Views from the properties on the opposite side (east) of the proposed development are currently views 3-5' berm overgrown with weeds and tall grass. Behind the berm, sugar is cultivated and the view

will change depending on the stage of cultivation. This will range from barren soil to cane over 10' tall.

Proposed Action: See Section I, Description of the proposed Project.

Potential Impacts and Mitigative Measures: No impact on view from mauka side of project as there are no residences mauka of the property. Most visual impact will be to those lots directly across Moi Road (east). View will change from weeds and cane to one of residential housing of similar densities as the existing community. The DHHL lease requires lessees to maintain front and back yards, potentially improving the streetscape.

SECTION III

ALTERNATIVES TO THE PROPOSED ACTION

No Action

A no action alternative would preclude all short and long-term, beneficial and adverse impacts described in this assessment. This alternative would not achieve State, County and private developer goals of providing housing to low to moderate income households on the Department of Hawaiian Home Lands waiting list.

Alternative sites:

The State of Hawaii, Department of Hawaiian Home Lands have alternative sites that could be developed for residential uses. However, the proposed site is most suited for immediate development due to the available infrastructure cost required for other sites could bring the sales prices of the completed units beyond the reach of the families projected for this proposed project.

SECTION IV

ASSESSMENT PROCESS AND DETERMINATION OF SIGNIFICANCE

Assessment Process

The scope of the project was discussed with the Applicant and representatives of the Department of Hawaiian Home Lands. Information was collected from State of Hawaii departments, County of Kauai agencies and offices, and utility companies. Time was spent in the field evaluating the site and observing conditions in the surrounding area. Based on information obtained from the above references, the Environmental Assessment was prepared.

Determination of Significance and Recommendation

Chapter 200 of Title 11, Administrative Rules of the Department of Health entitled "Environmental Impact Statement Rules" established criteria for evaluating whether an action may have a significant effect on the environment. The relationship of the proposed project to these criteria are discussed below.

1. Involves an irrevocable commitment to loss or destruction of any natural or cultural resources.

   None is anticipated.

2. Curtails the range of beneficial uses of the environment. The loss of cane land should be offset by the provision of shelter for 47-households. Owing to the paucity of significant environmental features and the existing residential zoning of the land the proposed development is considered an appropriate use.

3. Conflicts with the State's long-term environmental policies of goals and guidelines as expressed in Chapter 344, Hawaii Revised Statutes, and any revisions thereof and amendments thereto, court decisions or executive orders.

The project does not conflict with the State's long-term environmental goals, policies and guidelines.

4. Substantially affects the economic or social welfare of the community or State; and

5. Substantially affects public health;

The proposed project will not substantially affect economic or sociological activities. However, it is an implementing action that provides moderate priced housing for a number of State residents who otherwise may not be able to purchase adequate housing. It is believed that owning ones home instills psychological and sociological values which collectively, contributes to neighborhood stability and the community at large.

6. Involves substantial secondary impacts, such as population changes or effects on public facilities.

The proposed project will increase population in the immediate subject area however, it is anticipated that of the 1,550 applicants on the Department of Hawaiian Home Lands waiting list, for Kauai a substantial amount will be from the west side of Kauai.

Public services and facilities are available to serve the proposed project and adverse effects are not anticipated.

7. Involves a substantial degradation of environmental quality.

None is anticipated.

8. Is individually limited but cumulatively has considerable effect upon the environment or involves a commitment for larger actions.

The proposed project does not involve a commitment for larger actions in the immediate area.

9. Substantially affects a rare, threatened, or endangered species (plant and animal) or its habitat.

The site is devoid of rare, threatened, or endangered species (plant and animal) or its habitat.

10. Detrimentally affects air or water quality or ambient noise levels.

Fugitive dust and noises created during construction are unavoidable but can be mitigated by measures identified in this Assessment.

11. Affects on environmentally sensitive area such as a flood plain, tsunami zone, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters.

None is anticipated.

Based on the above criteria, the proposed project should not result in significant adverse environmental impacts. Potential environmental impacts are disclosed sufficiently in this Environmental Assessment and therefore it is recommended that an Environmental Impact Statement is not required.

SECTION V
COMMENTS AND RESPONSES

Public Comments and Responses

The Draft Environmental Assessment (EA) was prepared for the applicant, Hanapepe Development, Inc., by Esaki Surveying and Mapping, Inc. The Draft EA was made available for public review and comment for a thirty (30) day period. A notice was published in the Office of Environmental Quality Control (OEQC) Bulletin on April 23, 1997. The public comment period ended on May 23, 1997.

During the public comment period, comments were received from the Department of Health, Office of Environmental Quality Control. Attached as part of this section is a copy of the comment letter and the response.

BENJAMIN J. CAYETANO
GOVERNOR

GARY GILL
DIRECTOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

235 SOUTH BERETANIA STREET
SUITE 702
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185
FACSIMILE (808) 586-4186

April 23, 1997

Kali Watson
Department of Hawaiian Home Lands
335 Merchant Street #202
Honolulu HI 96813

Attn: Darrell Ing

Dear Mr. Watson:

RE: **Draft Environmental Assessment (EA) for Hanapepe Residence Lots, Unit I**

Please include the following in the final EA:

1. This project includes "Unit I" in its title. Will it be followed by additional units? The EIS law prohibits *segmentation* of larger projects and requires that full disclosure of impacts be made on projects in their entirety. Provide a full analysis and discussion of this and all related projects in the area.

2. The total *project cost* is given at $3.7 million. If any state or county funds are involved they must be disclosed.

3. Include a discussion of *visual impacts* this project will have, including impacts to mauka and makai viewplanes.

4. Include a rendering that shows the final appearance of the project.

If you have any questions call Nancy Heinrich at 586-4185.

Sincerely,

Gary Gill
Director

c: Craig Watase
Dennis Esaki

BENJAMIN J. CAYETANO
GOVERNOR
STATE OF HAWAII

KALI WATSON
CHAIRMAN
HAWAIIAN HOMES COMMISSION

JOBIE M. K. M. YAMAGUCHI
DEPUTY TO THE CHAIRMAN

STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS
P.O. BOX 1879
HONOLULU, HAWAII 96805

June 17, 1997

Mr. Gary Gill, Director
Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu, Hawaii 96813

Dear Mr. Gill:

Subject: Draft Environmental Assessment (EA) for Hanapepe Residential Housing Project, Unit 1

This is in response to your letter dated April 23, 1997, regarding the subject draft EA. We shall include the following as requested in your letter:

1. **This project includes "Unit I" in its title. Will it be followed by additional units?**
Approximately 358 acres in Hanapepe are being transferred to DHHL from DLNR as part of the 16,518-acre transfer. DHHL intends for the remaining land area to stay in sugar/agriculture lease to Gay & Robinson for a long time. DHHL has no current plans, funding or timetable to develop housing on the larger parcel. The term "Unit I" is used by DHHL to distinguish this project from potential future housing.

2. **The total *project cost* is given at $3.7 million. If any state or county funds are involved they must be disclosed.**
The total estimated development cost is approximately $4 million of which approximately $548,836 has been encumbered by DHHL from its "Trust Funds" for infrastructure improvements. Kauai Habitat for Humanity will be using a grant from the County of Kauai's Paku'i HOME funds of approximately $400,000 for the self-help houses.

3. **Include a discussion of *visual impacts* this project will have, including impacts to mauka and makai viewplanes.**
Visual Effects: [new paragraph, Section II]
Existing Conditions: Views from the properties on the opposite side (east) of the proposed development are currently a three to five-foot berm overgrown with weeds and tall grass. Behind the berm, sugar is cultivated and the view differs depending on the stage of cultivation - ranging from barren soil to ten-foot tall cane.

Proposed Action: See Section I, Description of the proposed project.
Potential Impacts and Mitigation Measures: No impact on view from mauka of the property. Most visual impact will be to those lots directly across Moi Road (east). View will change from weeds and cane to one of residential housing of similar densities as the existing community. The DHHL lease requires lessees to maintain front and back yards, potentially improving the streetscape.

4. **Include a rendering that shows the final appearance of the project.**
[Architects' renderings of the homes added.]

If you have any questions please call Darrell Ing of my staff at 586-3844.

Aloha,

for KALI WATSON, Chairman
Hawaiian Homes Commission

APPENDIX A

PHASE I ENVIRONMENTAL SITE ASSESSMENT
HANAPEPE HEIGHTS, HAWAII 96716

TMK (4) 1-8-07: 03 and 18

Prepared for:

HANAPEPE DEVELOPMENT, INC.
C/O MARK DEVELOPMENT, INC.
3165 WAIALAE AVE. SUITE 200
HONOLULU, HAWAII 96816

Prepared by:

MURANAKA ENVIRONMENTAL CONSULTANTS, INC.
801 MOOWAA STREET
HONOLULU, HAWAII 96817
(808) 848-8866

Project No. 960753

December 18, 1996

PHASE I ENVIRONMENTAL SITE ASSESSMENT
HANAPEPE HEIGHTS, HAWAII 96716

TMK (4) 1-8-07: 03 and 18

Prepared for:

HANAPEPE DEVELOPMENT, INC.
C/O MARK DEVELOPMENT, INC.
3165 WAIALAE AVE. SUITE 200
HONOLULU, HAWAII 96816

Prepared by:

MURANAKA ENVIRONMENTAL CONSULTANTS, INC.
801 MOOWAA STREET
HONOLULU, HAWAII 96817
(808) 848-8866

Project No. 960753

December 18, 1996

PHASE I ENVIRONMENTAL SITE ASSESSMENT
HANAPEPE HEIGHTS, HAWAII 96716

TMK (4) 1-8-07:03 and 18

Prepared for:

HANAPEPE DEVELOPMENT, INC.
C/O MARK DEVELOPMENT, INC.
3165 WAIALAE AVE. SUITE 200
HONOLULU, HAWAII 96816

Prepared by:

MURANAKA ENVIRONMENTAL CONSULTANTS, INC.
801 MOOWAA STREET
HONOLULU, HAWAII 96817

Project No. 960753

December 18, 1996

Mark T. Muranaka, MS, MPH
President

Patrick H. Lineberger
Geologist/Environmental Specialist

TABLE OF CONTENTS

ABBREVIATIONS

ACM	asbestos-containing material
CERCLA	Comprehensive Environmental Response Act
CERCLIS	Comprehensive Environmental Response Compensation and Liability Information System
CFR	Code of Federal Regulations
DOH	State of Hawaii, Department of Health
EPA	US Environmental Protection Agency
ESA	Phase I Environmental Site Assessment
HEER	Hazard Evaluation Emergency and Response
LBP	lead-based paint
LUST	leaking underground storage tank
MEC	Muranaka Environmental Consultants, Inc.
MSDS	material safety and data sheet
NPL	National Priorities List
OSHA	Occupational Safety and Health Administration
PCB	polychlorinated biphenyl
PEL	permissible exposure limit
RCRA	Resource Conservation and Recovery Act
sf.	square feet
TMK	tax map key
TSCA	Toxic Substance Control Act
TSD	treatment storage or disposal
UIC	Underground Injection Control
UST	underground storage tank

1.0 EXECUTIVE SUMMARY

Mark Development, Inc., on behalf of Hanapepe Development, Inc., retained Muranaka Environmental Consultants, Inc. (MEC) to conduct a Phase I Environmental Site Assessment (ESA) on a portion of two properties (tax map keys: [4] 1-8-07:03 and 18), which were located adjacent to the Hanapepe Heights subdivision on the island of Kauai. The ESA was conducted in conformance with the scope and limitations of ASTM Standard Practice E.50.02.2. The purpose of the ESA was to identify any conditions at the site that may present an environmental hazard or liability, as delineated by federal, state, and local statutes and regulations. This report presents the results of the ESA.

MEC examined site history; visible surface and reported subsurface contamination; and the presence of underground storage tanks (USTs), hazardous materials and wastes, polychlorinated biphenyl (PCB) containing equipment, suspect asbestos-containing materials (ACM), and lead-based paint (LBP).

MEC found one environmental concern at the site. The parcels have been used for the cultivation of sugarcane for many years. Activities associated with the production of sugarcane have historically included the use of pesticides, herbicides, and fertilizers. At the same time as the Phase I ESA field survey, MEC collected three representative soil samples from the subject site for pesticide and herbicide analysis. The preliminary laboratory results indicated that arsenic was present in the soil at levels comparable to known background levels. Other pesticides and herbicides tested for were not detected. The results are discussed in the Phase II ESA Soil Survey report which accompanies this report.

MEC concludes that no further site investigations are necessary at the Hanapepe Heights parcels 03 and 18.

2.0 INTRODUCTION

In December 1996, Mark Development, Inc., on behalf of Hanapepe Development, Inc., retained Muranaka Environmental Consultants, Inc. (MEC) to conduct a Phase I Environmental Site Assessment (ESA) on a portion of two properties (tax map keys: [4] 1-8-07:03 and 18) at the Hanapepe Heights subdivision on the island of Kauai. The ESA was conducted in conformance with the scope and limitations of ASTM Standard Practice E.50.02.2. This report presents the results of the ESA.

The purpose of an ESA is to investigate potential environmental liabilities associated with a property and to satisfy potential lenders or assist prospective buyers in satisfying due-diligence requirements. The objectives of this report are to identify any environmental conditions at the site that may present an environmental hazard or liability as delineated by federal, state, and local statutes and regulations.

The scope of the ESA included: a review of the site's history; a review of federal and state databases; and a site inspection. The sampling of water, suspect asbestos-containing material (ACM) and lead-based paint (LBP) was outside the scope of the ESA. Soil samples were collected at the same time as the Phase I ESA field survey, and analyzed for pesticides and herbicides. The results of the soil survey are found in the accompanying *Phase II ESA Soil Survey Report* (MEC Dec. 1996).

3.0 BACKGROUND

3.1 Overview

Both parcels (03 and 18) of the subject site were owned by the State of Hawaii. Parcel 03 was leased to the Gay & Robinson, Inc. for sugarcane cultivation and pasture land. The site is located at Hanapepe Heights, along Moi Road near the south coast of the island of Kauai (Figures A1 to A5, Appendix A). The parcels were designated by TMK numbers (4) 1-8-007: 003 (358.72 acres) and 018 (5.38 acres). The land is zoned as agricultural and residential. (University of Hawaii Press 1983). Hanapepe Heights is a small residential community, located above the town of Hanapepe, which mainly services the sugarcane industry, and to a lesser extent, tourists who pass through the town.

The subject site consisted of a rectangular-shaped, approximately 12 acre-sized section of the total 364.1 acres which made up parcels 3 and 18 (see Figure A5, Appendix A). The Hanapepe Heights residential subdivision was located adjacent to the east and south of the subject site. Sugarcane land was present on the other sides. A growth of young sugarcane covered most of the 12-acre-sized subject site (Appendix B photographs).

3.2 Geology, Hydrology, and Ecology

Kauai is a 2 to 4 million-year-old shield volcano, which is deeply eroded, and partly veneered with much later volcanics (Macdonald and Abbot 1970). The site is situated on the south coast of Kauai at an elevation of about 180 feet above sea-level. The topography is flat and gently slopes towards the south and southwest. The volcanic rocks underlying the soils of the site are part of the lavas of the younger Koloa volcanic series and the older lavas of the Napili formation, and are primarily composed of tholeiitic and alkalic basalts (Macdonald and Abbott 1970).

The soils of the parcels are the dusky-red Mollisols (University of Hawaii Press 1983), which are classified as Makaweli silty clay loam (MgB and MgC) (US Department of Agriculture [USDA] 1972). The Makaweli silty clay loam consists of well-drained soils on uplands which developed in material weathered from basic igneous rocks formed in alluvium derived from basic igneous rock. The topsoil is about 12 inches thick and the subsoil, about 48 inches thick. Slopes typically range between 0 and 12%; permeability is moderate; runoff is slow; and the erosional hazard is slight. The depth to the bedrock is greater than 5 feet. The dominant USDA texture is silty clay, which is gravely in places. The permeability ranges form 0.63 to 2.0 inches per hour. The available water capacity is 0.14 to 0.16 inches per inch of soil. The pH of the soil ranges from 6.1 to 7.3. The shrink-swell potential is low. The Makaweli silty clay loam soils are used for irrigated sugarcane production, pasture, and home sites. The natural vegetation consists of kiawe, lantana, fingergrass, klu, koa haole, and piligrass (USDA 1972).

The average annual rainfall in the area ranges from 30 to 40 inches, with the winter months being the wettest (University of Hawaii Press 1983).

The site lies above the Underground Injection Control (UIC) line (Figure A3, Appendix A). The location of a site in relation to the UIC line determines the criteria used to classify contamination limits for soil and water (40 CFR 144, 145, and 146; State of Hawaii 1992). The nearest drinking water wells are about 1.3 miles upgradient and to the east of the site. The depth to the water table is greater than 5 feet. The Hanapepe Stream, which flows into Hanapepe Bay and the Pacific Ocean, is about 0.5 miles to the southeast (Figure A3, Appendix A).

On September 13, 1995, the DOH updated its policies regarding recommended cleanup criteria at leaking UST sites. The recommended cleanup criteria also depend on the drinking water status of the aquifers. The subject site lies within the Kauai Waimea Aquifer Sector and Hanapepe Aquifer System classification (Figure A4, Appendix A). The site's Aquifer and Status Codes (in parentheses) is 20304111/20304122 (21111)/(21113). The codes indicate that the site overlies two aquifers. The uppermost aquifer has groundwater that is basal (fresh water in contact with sea water) and unconfined in horizontally extensive flank lavas. Beneath the upper aquifer is a basal aquifer that is

confined in dike compartments. The Aquifer Status Code signifies that the upper aquifer is potentially useful for drinking water; is fresh with a salinity of < 250 mg/l Cl^-; and is replaceable, with a low vulnerability to contamination. The Aquifer Status Code for the lower aquifer shows that it is potentially useful for drinking water; is fresh with a salinity of < 250 mg/l Cl^-; and is replaceable, with a high vulnerability to contamination.

4.0 POTENTIAL ENVIRONMENTAL CONCERNS

The presence of any of the following may present or indicate a potential environmental concern at a site.

4.1 Underground Storage Tanks

Underground storage tanks (USTs) are used mainly to store petroleum products. They can however, leak and contaminate the groundwater, and can expose communities to airborne contaminants, which may pose a threat to human health and the environment. The US Environmental Protection Agency (EPA) and State of Hawaii strictly regulate the use of USTs (40 CFR 280; State of Hawaii 1992). The owners and operators of USTs must register the tanks with the Hawaii State Department of Health (DOH) and the Kauai Fire Department. USTs that are currently in use must meet the specified standards for leak detection, corrosion protection, and spill and overfill prevention. In addition, tank systems that are no longer in use must undergo closure in compliance with DOH regulations (State of Hawaii 1992).

4.2 Hazardous Materials

The Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA, Section 101, 14) lists substances that are considered hazardous materials. EPA considers the materials to be hazardous because of their potential to harm public health and the environment.
The Hazard Communication Standard (29 CFR 1910.1200), commonly called the *Employee's Right to Know Law*, requires that Material Safety Data Sheets (MSDS) be available for persons working with or around hazardous materials. MSDSs provide information about hazardous materials and include descriptions of chemical compositions, storage requirements, and first aid procedures to be used in the event of exposure.

4.3 Hazardous Wastes

EPA regulates hazardous waste under the Resource Conservation and Recovery Act (RCRA), and has compiled a list of hazardous wastes (40 CFR 261). Organizations and individuals that generate waste are responsible for determining whether their waste is hazardous. The degree of regulation is dependent upon the type and amount of waste generated. Organizations that improperly generate, treat, store, dispose of, or transport hazardous waste may be subject to fines levied by the State of

Hawaii and EPA, as poor management of hazardous waste can lead to air, soil, surface water, and groundwater contamination.

4.4 Polychlorinated Biphenyls

Polychlorinated biphenyls (PCBs) are synthetic chemicals that belong to a class of chemicals known as chlorinated hydrocarbons. They are excellent insulating liquids and coolants. Prior to 1979, they were widely used in electrical equipment, such as insulators, capacitors, and electromagnets. PCBs are harmful because they bioaccumulate (build up) in the tissues of living organisms. It is suspected that they cause long-term toxic effects in humans. They are also considered to be a bioirritant, causing discomforts such as skin rashes, jaundice, headaches, and fatigue. In response to the growing evidence of the danger posed by PCBs (and other chemicals), Congress enacted the Toxic Substance Control Act (TSCA) in 1976. TSCA directed EPA to regulate all chemicals that present "an unreasonable risk of injury to health or the environment" (40 CFR 761). In 1976, EPA issued regulations prohibiting the processing, distribution and use of PCBs, except in sealed systems. EPA also established strict regulations for the disposal of PCBs in approved incinerators or chemical waste landfills.

4.5 Asbestos-containing Materials

Asbestos is the name of a class of fibrous magnesium-silicate minerals. It was frequently used in building materials such as floor tiles, roofing felts, ceiling tiles, and pipe insulation. If inhaled, asbestos mineral fibers can cause respiratory diseases and cancer. Under the EPA *National Emission Standards for Hazardous Air Pollutants* (NESHAP) regulation (40 CFR part 61), a material containing asbestos is considered a regulated asbestos-containing material (ACM) when it contains greater than one percent (>1%) of asbestos mineral fibers by volume, as determined by polarized-light microscopy. Regulations do not require the removal of ACM from buildings; however, state and federal regulations do require the removal of all friable ACM prior to the demolition or renovation of buildings.

4.6 Lead-based Paint

Lead is a chemical element that can combine with other substances to form lead compounds. The compounds are used in many different processes and substances, including lead smelting, lead pigment manufacturing, printing, paint pigments and drying agents. Lead can enter the body through inhalation and ingestion. It is transported through the blood stream and is deposited in organs and tissues. Lead is poisonous and can damage the central-nervous-system, the urinary system, and blood-forming system. It can be lethal if ingested in high doses. The OSHA permissible exposure limit (PEL) for lead in air, is 50 mg/m^3 over an 8-hour period.

Lead-dust is produced through the abrasion of LBP painted surfaces, and also during paint removal (when sanding or scraping). It also forms when LBP exterior surfaces oxidize when exposed to rain and ultraviolet light.

In 1973, the Consumer Product Safety Commission established the maximum permissible levels of lead in paint to be 0.5% by weight. In 1978, this level was lowered to 0.06%. Regulations do not require the removal of LBP from buildings.

5.0 DATA COLLECTION

The principal tasks undertaken to determine the presence of potential environmental concerns are described below, with an explanation of the relevant methodology in each case.

5.1 Review of Site History

This was performed to identify:

- Past and present uses, and owners of the site.
- Any documented environmental incidents that have occurred at the site.

5.1.1 Past and Present Uses, and Owners of the Site

MEC reviewed historical tax records, dating from 1959 to the present, at the City and County of Honolulu, Department of Finance, Real Property Division, Tax Maps Section to identify the previous owners and lessors, and uses of the site.

5.1.2 Documented Environmental Incidents, Citations and Inspections

On December 4, 1996, MEC wrote to the Hawaii State Department of Health (DOH), Environmental Management Division for documented environmental incidents and previous or pending environmental regulatory actions that may have occurred at the site; the Kauai Fire Department (KFD) for information on any type 41 hazardous material and waste spills that may have occurred within a 0.25-mile radius of the site; and Kauai Electric for information on the polychlorinated biphenyl (PCB) status of the transformers that were found located adjacent to the subject site.

5.2 Review of Federal and State Databases

MEC reviewed federal and state databases to determine the presence of potential subsurface soil and groundwater contamination.

5.2.1 Identification of Underground Storage Tanks

The DOH *Underground Storage Tank Registration List* (DOH 1995b) was examined to identify any former or existing underground storage tanks (USTs) on the site or on its adjoining properties. MEC also reviewed the DOH *Active Leaking Underground Storage Tank List* (DOH 1995a) for leaking USTs (LUSTs) within a 0.5-mile radius of the site.

5.2.2 Identification of Hazardous Waste Sites

The US Environmental Protection Agency (EPA) Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) list (EPA 1995) was reviewed to identify any CERCLIS sites or National Priorities List (NPL) sites within a 1-mile radius of the site, and any landfill and solid waste disposal sites within a 0.5-mile radius of the site. The NPL ranks and prioritizes hazardous waste sites that are eligible to receive funds from the *Superfund* program and become *Superfund* sites. The presence of CERCLIS sites within 1 mile of the property may indicate potential subsurface soil and groundwater contamination.

5.2.3 Identification of Hazardous Waste Generator Sites

The EPA Resource Conservation and Recovery Act (RCRA) Notifier's List (EPA 1994) for hazardous waste generator sites was reviewed to: identify any hazardous waste treatment, storage, or disposal sites within a 1-mile radius of the site; and to identify any hazardous waste generators on or adjacent to the site.

5.2.4 Identification of Documented Hazardous Materials Releases and Chemical Spills

The DOH Hazardous Evaluation Emergency and Response (HEER) records (DOH 1994) were reviewed to identify any documented hazardous material releases or chemical spills that may have occurred on the site and/or its adjoining properties.

5.3 Site Visit

MEC conducted a site inspection on November 27, 1996. The following potential environmental concerns were examined:

5.3.1 Visible Surface Contamination

Visible surface contamination may be an indication of an ongoing or past release of oil or hazardous materials. MEC documented any visible surface contamination at the site, such as stained or discolored soil and stressed vegetation, and noted any unusual odors.

5.3.2 Underground Storage Tanks

MEC inspected the site for UST indicators, such as dispenser units, fill ports, vent pipes, monitoring wells, and concrete pads.

5.3.3 Hazardous Materials and Wastes

MEC visually identified hazardous materials and hazardous wastes on-site. The hazardous waste handling and disposal practices were noted.

5.3.4 Polychlorinated Biphenyls

MEC identified any electrical transformers, switches, and capacitors that may contain PCBs. The examination of individual fluorescent light fixture ballasts for their PCB-status was beyond the scope of the ESA.

5.3.5 Asbestos-containing Materials (ACM)

MEC inspected the subject site for suspect ACM. Sample collection was beyond MEC's scope of work.

5.3.6 Lead-based Paint (LBP)

MEC inspected the subject site for suspect LBP. Sample collection was beyond MEC's scope of work.

6.0 OBSERVATIONS AND RESULTS

The results of the ESA are presented in Sections 6.1 to 6.3.

6.1 Site History

An aerial photograph (USDA 1972) showed that the subject site was under sugarcane cultivation in 1965. The property across Moi Road to the south and east was residential. Apparently, part of parcel 18 was created to act as a buffer zone between the newly created adjacent residential area and the portion of parcel 03 which retained it's use as sugarcane land (see TMK map (1) 1-8-07).

6.1.1 Past and Present Uses, and Owners of the Site

Parcel 03

The City and County of Honolulu Tax Office records for parcel 03 began on April 2, 1959.

In April of 1959, the 451.52 acre parcel was owned by the Territory of Hawaii; was leased to the Gay & Robinson, Inc.; and subleased to the Olokele Sugar Co., for the purpose of sugarcane cultivation.

On Dec. 31, 1960, the lease expired.

A portion (0.471 acres) of the parcel was transferred to parcel 36 on Nov. 20, 1962. The size of parcel 03 decreased to 451.04 acres. The parcel was owned by the State of Hawaii.

On Nov. 23, 1962, 2.21 acres were transferred to parcel 03. The size of parcel 03 increased to 453.169 acres.

On Nov. 27, 1962, parcel 03, was leased by the State of Hawaii, to the Gay & Robinson, Inc. for the purpose of sugarcane cultivation.

The parcel size was revised to 455.45 acres in 1963.

On Oct. 15, 1964, the parcel was listed as 458.06 acres; owned by the State of Hawaii, and leased to the Olokele Sugar Co.

By April 3, 1974, 3.74 acres was taken out of parcel 03 to decrease the size to 444.101 acres.

By the tax year 1988, the 444.101 acre parcel was listed as owned by the State of Hawaii and leased to the Olokele Sugar Co. for the purpose of sugarcane cultivation.

On Jan. 31, 1989, the permit to cultivate sugarcane was canceled. By Feb. 1, 1989, the State of Hawaii then rented the parcel back to the Olokele Sugar Co.

The size of parcel remained at 444.101 acres until Jan. 10, 1991, when it was subdivided and portions were dropped into other new parcels. The size of parcel 03 was then listed as 362 acres; owned by the State of Hawaii; and leased to the Olokele Sugar Co. for the cultivation of sugarcane.

On Dec. 29, 1992, 3.28 acres were excluded from the parcel to construct a road. The size of parcel 03 decreased to 358.72 acres.

On April 15, 1994, the permit to use parcel 03 by the Olokele Sugar Co. was canceled.

On May 1, 1994, the 358.72 acre parcel was owned by the State of Hawaii who leased it to the Gay & Robinson, Inc. for the purpose of sugarcane cultivation.

The present owner of the 358.72 acre parcel 03 is the State of Hawaii, who continue to lease it to Gay & Robinson, Inc. for the purpose of sugarcane cultivation.

Parcel 18

The City and County of Honolulu Tax Office records for parcel 18 began on October 13, 1970.

October 13, 1970, parcel 18 (13.959 acres) was created out of parcel 03. The State of Hawaii was the owner of parcel 18.

April 3, 1974, a portion of parcel 18 (7.144 acres), was subdivided into lots to create new parcels for residential use. The size of parcel 18 decreased to 6.815 acres. The State of Hawaii retained ownership of the parcel.

In 1992, parcel 18 was listed as being co-owned by the State of Hawaii and the Housing Finance & Development Corp. The parcel also changed in size to 5.38 acres.

In 1993, the State of Hawaii was listed as the owner of the 5.38 acre parcel.

The State of Hawaii was listed as the owner of parcel 18 at the time of this report. A portion of Parcel 18 is shown on the TMK map as a "buffer" zone between the adjacent State owned (leased to Gay & Robinson, Co.) parcel 03 and the residential development adjacent to the north side of Moi Road.

6.1.2 Environmental Incidents, Citations and Inspection at the Site

At the time of writing this report, the DOH had not responded to MEC's request for documented previous or pending environmental regulations and environmental incidents that may occurred on the subject site. MEC will forward the response when it is received.

On December 12, 1996, the Kauai Fire Department (KFD) responded to MEC's request for records of any Type 41 hazardous material incidents that may have occurred within a 0.25-mile radius of the subject site. According to the response letter, there have been no type 41 incidents within 0.25 miles of the subject site since 1993. The KFD does not have records of incidents prior to 1993. The response letter is located in Appendix C.

6.2 Review of Federal and State Databases

The review of the federal and state databases is presented in Sections 6.2.1 to 6.2.4.

6.2.1 Underground Storage Tanks

There were no listed USTs on or adjacent to the site subject site (DOH 1995b). There were no LUST sites listed on or within a 0.5-mile radius of the property (DOH 1995a).

6.2.2 Hazardous Waste Sites

There were no CERCLIS hazardous waste site within a 1-mile radius of the property. There were no CERCLIS landfills within a 0.5-mile radius of the site or any National Priorities List or *Superfund* sites within a 1-mile radius of the property.

6.2.3 Hazardous Waste Generator Sites

The EPA RCRA Notifier's List does not list any hazardous waste treatment, storage or disposal (TSD) sites within a 1-mile radius of the site. There were no RCRA sites on the subject site. There were no RCRA hazardous waste generator sites on or adjacent to the site.

6.2.4 Chemical Waste Spills

The DOH Hazard HEER records do not list any hazardous material releases that have occurred on the site or its adjoining properties.

6.3 Site Visit

MEC conducted the ESA site inspection on November 27, 1996. At the time of the inspection the subject site was under sugarcane cultivation (Figures B1-B9, Appendix B). There were no structures on the 12 acre subject site. There was a residential development along Moi Road to the south and east of the site (Figure A4, Appendix A; Figures B1 and B2, Appendix B). There was an irrigation well on the portion of parcel 03, adjacent to Moi Road and Kupa'a Road (Figure B6, Appendix B).

6.3.1 Surface Contamination

MEC did not observe any gross surface contamination or stained soil at the site or on the areas adjacent to the site. There were no unusual odors noted. There was a large patch of dead weeds and grass along Moi Road near the intersection of Aulike St. (Figure B8, Appendix B). There were a few small areas of dead weeds within the sugarcane field (Figure B9, Appendix B). These areas of dead grass and weeds appeared to have been the result of selective weed control since sugar plants located adjacent to the dead weeds were not affected.

6.3.2 Underground Storage Tanks (UST)

There were no UST components, such as dispenser units, fill ports, vent pipes, and concrete pads seen present on the 12 acre subject site.

6.3.3 Hazardous Materials and Wastes

MEC did not observe hazardous materials or regulated wastes nor any agricultural chemicals or fertilizers being used on the site. However, since the subject has been used for the cultivation of sugarcane, agricultural chemicals and fertilizers were likely to have been applied to the crops in the past.

6.3.4 Polychlorinated Biphenyls (PCBs)

There were three pole-mounted transformers located on the adjacent property near the intersection of Moi Road and Kupa'a Street (Figure B7, Appendix B), and one pad-mounted transformer

located near the intersection of Moi Road and Aulike Street (Table 2). On December 4, 1996, MEC wrote to Kauai Electric Company (KEC) requesting information on the PCB-status of the transformers (Appendix C). On December 11, 1996, KEC responded to MEC's request. None of the transformers contained PCBs. The response letter is located in Appendix C.

Table 2: Suspect PCB-containing Transformers

Location	Type	ID No.	PCB status
Fronting 4950 Moi Road Hanapepe Heights, Hawaii 96716	3 Pole-mounted	78027 78026 78032	No PCBs
Near corner of Moi Road and Aulike St. Hanapepe Heights, Hawaii 96716	1 Pad-mounted	SS917301	No PCBs

There were no fluorescent light fixture associated with the subject site.

6.3.5 Asbestos-containing Materials

There were no suspect asbestos-containing materials at the subject site.

6.3.6 Lead-based Paint (LBP)

There were no suspect LBP materials at the subject site.

6.3.7 Other Potential Concerns

MEC examined the parcel for other environmental concerns which may not be classified as hazardous materials or wastes, but which may generate health concerns.

Until recently, the subject site and the surrounding areas were used for the cultivation of sugarcane for many years. During the site visit, sugarcane was growing on the property. It is likely that the activities associated with the production of sugarcane included the use of pesticides, herbicides, and fertilizers. These chemicals include Ametryn, Diuron, and Atrazine, which account for approximately 86 percent of the herbicides applied state wide (Hawaii Sugar Planters Association 1991). Pentachlorophenol and arsenic, which are both pesticides, are listed as hazardous waste chemicals under RCRA, were also widely used until 1982. It is not known however, whether any of these chemicals are present in the soil.

In order to address this concern, Mark Development, Inc., on behalf of the Hanapepe Development, Inc., retained MEC to collect soils samples from the properties at the same time as

the Phase I field survey, for pesticide and herbicide analysis. At the time of this report, the laboratory results for the soil collected on the subject site were not available.

A discussion of the findings will be found in the accompanying Phase II ESA Soil Survey Report.

7.0 ENVIRONMENTAL CONCERNS AND RECOMMENDATIONS

MEC found one environmental concern associated with the 12 acre subject site which comprised a portion of parcel 03 and parcel 18. The owners and personnel at the property should be aware of the findings documented throughout this report.

Pesticide and herbicide chemicals could potentially be present in the soil at the site since the parcels have been used for the cultivation of sugarcane for many years. In response to this concern, Mark Development, Inc., on behalf of the Hanapepe Development, Inc., retained MEC to collect soils samples from parcels 03 and 18 at the same time as the Phase I field survey. The preliminary laboratory results indicated that arsenic was present in the soil at levels comparable to known background levels. Other pesticides and herbicides tested for were not detected. A discussion of the findings are in the accompanying Phase II ESA Soil Survey Report.

MEC concludes that no further site investigations are necessary at the Hanapepe Heights parcels 03 and 18.

The conclusions, observations, and recommendations made in this report are based on the conditions of the property at the time the survey was conducted. MEC accepts no responsibility for the inaccuracy or inapplicability of any part of this report which may be attributable to a change in the condition of the property after the survey was conducted or attributable to property conditions which were not readily accessible or observable at the time of the survey. In addition, we accept no responsibility for inaccurate or missing information provided by existing documents.

8.0 REFERENCES

American Society for Testing and Materials. *Standard E.50.02.2. Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process.* ASTM E.50.02 Subcommittee on Environmental Assessments for Commercial Real Estate. Working Document December 1, 1992.

City and County of Honolulu. Real Property Ownership Records. *Forth Tax Division Field Book.* Tax Map (4) 1-8-07: 03 and 18. Real Property Assessment Division, 1996.

Code of Federal Regulations. *Occupational Safety and Health Standards.* Title 29, Part 1910. Washington DC: U.S. Government Printing Office, 1989.

Code of Federal Regulations. *Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks.* Title 40, Part 280. Washington DC: U.S. Government Printing Office, 1990.

Code of Federal Regulations. *Identification and Listing of Hazardous Waste.* Title 40, Part 261. Washington DC: U.S. Government Printing Office, 1990.

Code of Federal Regulations. *Polychlorinated Biphenyls; Notification and Manifesting for PCB Waste Activities; Final Rule.* Title 40, Part 761. Washington DC: U.S. Government Printing Office, 1989.

Code of Federal Regulations. *National Emission Standard for Hazardous Air Pollutants (NESHAP), Asbestos Regulations.* Title 40, Part 61, Subpart M. Washington DC: U.S. Government Printing Office, July, 1991.

Hawaii Sugar Planters Association, Honolulu, Hawaii, 1991.

Macdonald, G. A. and A. T. Abbott. *Volcanoes in the Sea.* University of Hawaii Press, Honolulu, 1970.

Mink, J. F. and S. L. Lau. *Aquifer Identification and Classification for the Island of Kauai: Groundwater Protection Strategy for Hawai'i.* Water Resources Research Center, University of Hawai'i at Manoa, Technical Report No. 186, 1992.

State of Hawaii, Department of Health, *Underground Injection Control Program. Hanapepe Quadrangle.* United States Department of the Interior, Geological Survey, 1983.

State of Hawaii, Department of Health, Underground Storage Tank Section. *Active Leaking Underground Storage Tank Listing.* State of Hawaii, Department of Health, January, 1995a.

State of Hawaii, Department of Health, Underground Storage Tank Section. *Underground Storage Tank Registration List.* State of Hawaii, Department of Health, February, 1995b.

State of Hawaii, Department of Health, *Hazard Evaluation and Emergency Response Spill Data List.* State of Hawaii, Department of Health, 1994.

State of Hawaii, Department of Health, *Underground Injection Control Program.* United States Department of the Interior, Geological Survey, 1983.

United States Environmental Protection Agency, *Region 9 CERCLIS List for the State of Hawaii*, 1995.

United States Environmental Protection Agency, *Region 9 R9M Database*, November, 1994.

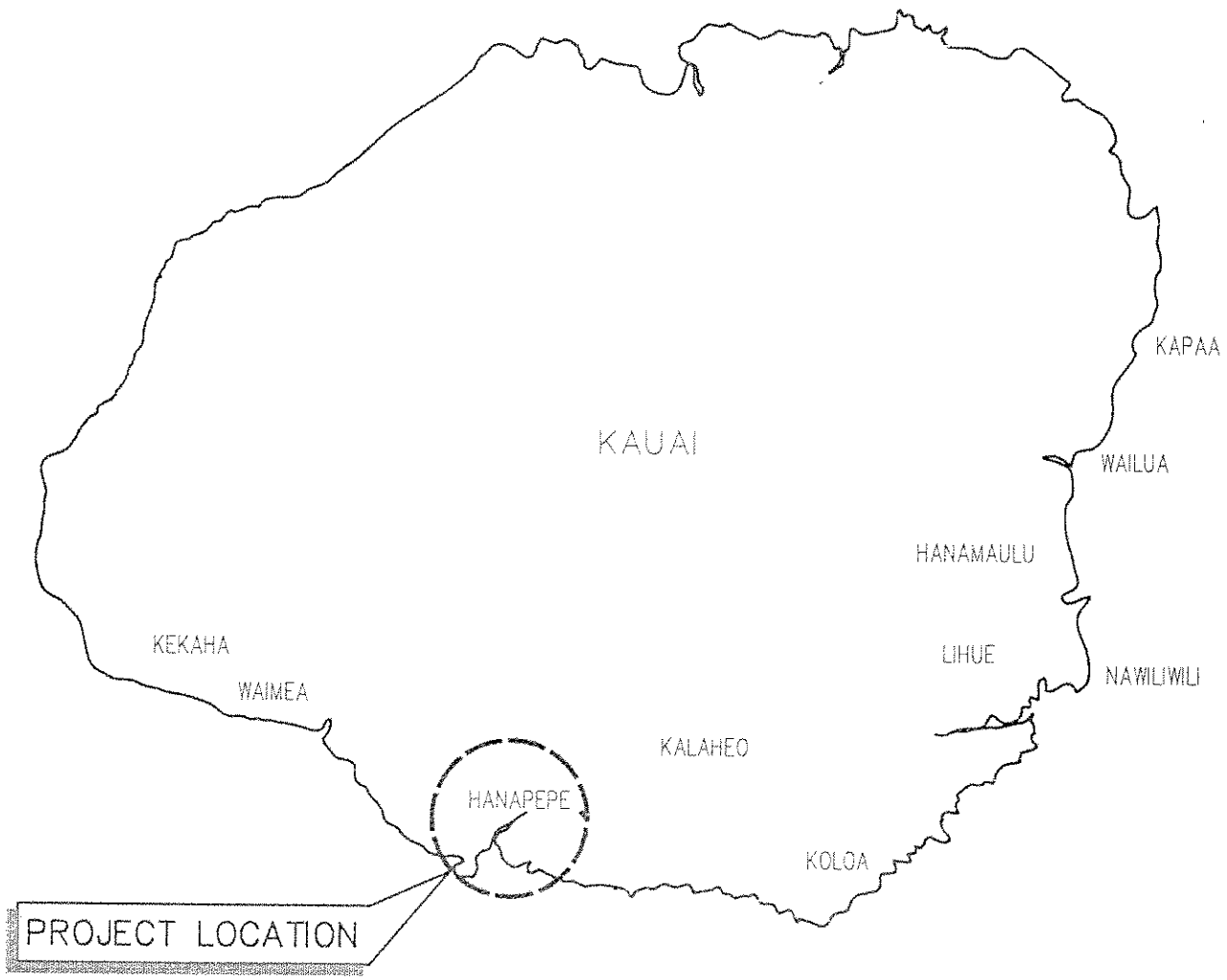
United States Department of Agriculture, Soil Conservation Service, in cooperation with The University of Hawaii Agricultural Experiment Station. *Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii.* Washington DC: U.S. Government Printing Office, 1972.

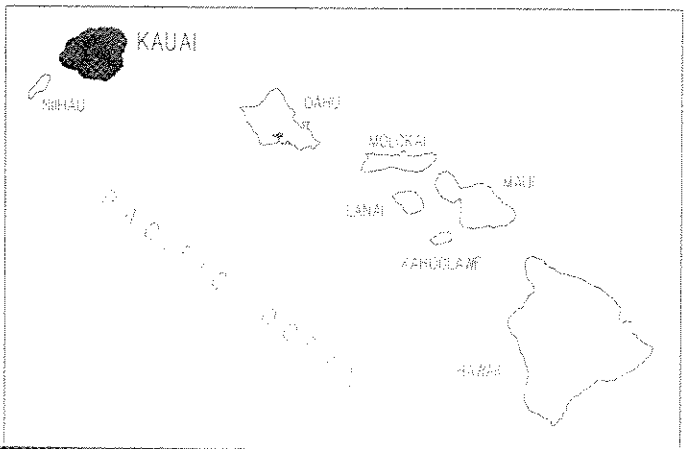
University of Hawaii Press, *Atlas of Hawaii.* 2nd edition, p.62, 1983.

APPENDIX A

SITE MAPS

MURANAKA ENVIRONMENTAL CONSULTANTS, INC.
801 Moowaa Street
Honolulu, Hawaii 96817





MURANAKA
ENVIRONMENTAL CONSULTANTS, INC.

HANAPEPE HEIGHTS
PHASE I SITE ASSESSMENT
HANAPEPE, KAUAI, HAWAII

VICINITY MAP

SURVEYED BY:	CHECKED BY:	DATE:	JOB NO.
PHL	MTM	DEC 1996	960753
DRAWN BY:	APPROVED BY:	FIGURE	A1
JTM	MTM		

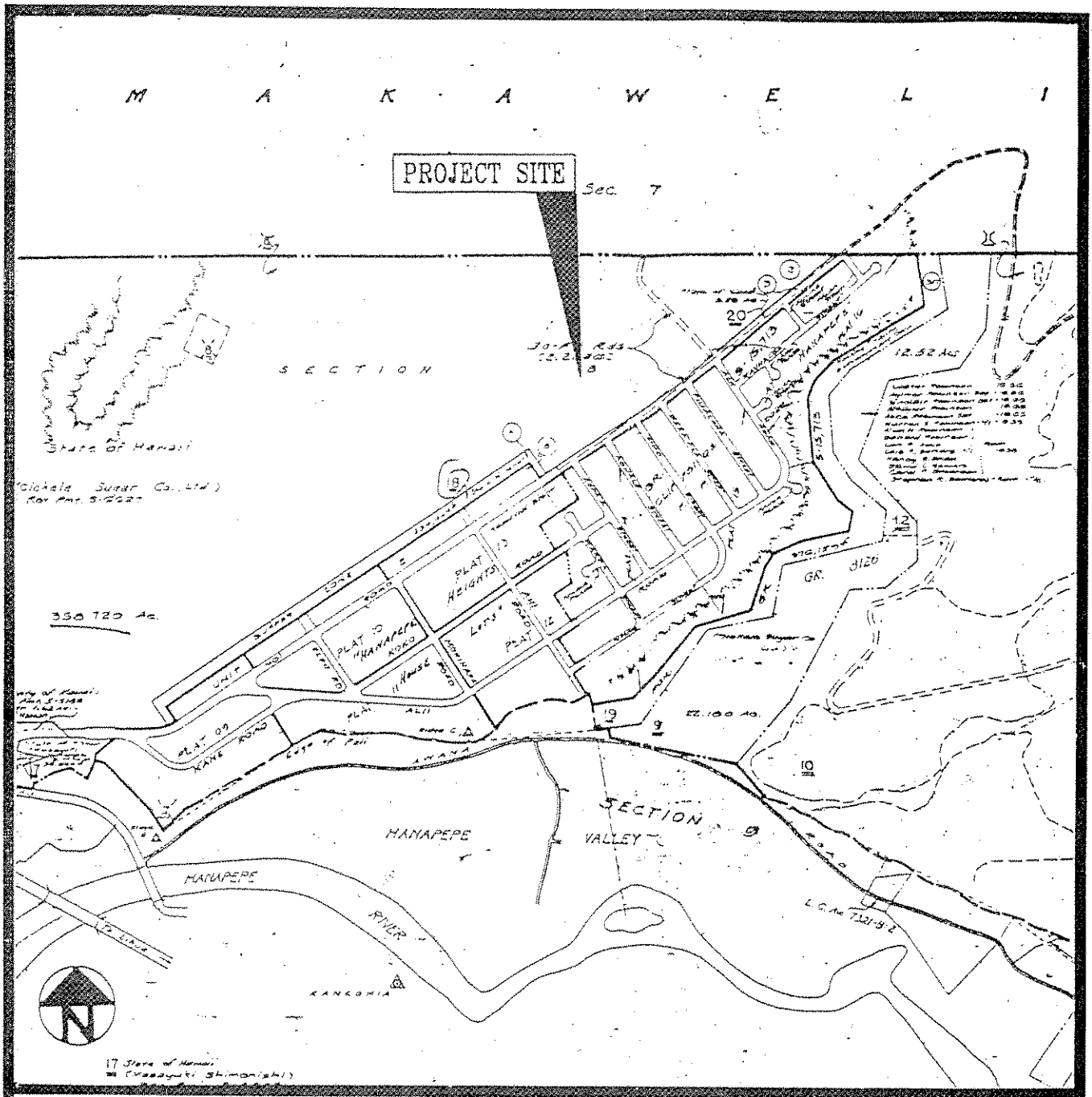


FIGURE A2 - LOCATION OF HANAPEPE HEIGHTS, HANAPEPE, KAUAI, HAWAII

Source: *TMK MAP, 1996*

PROJECT 960753
MURANAKA ENVIRONMENTAL CONSULTANTS, INC.

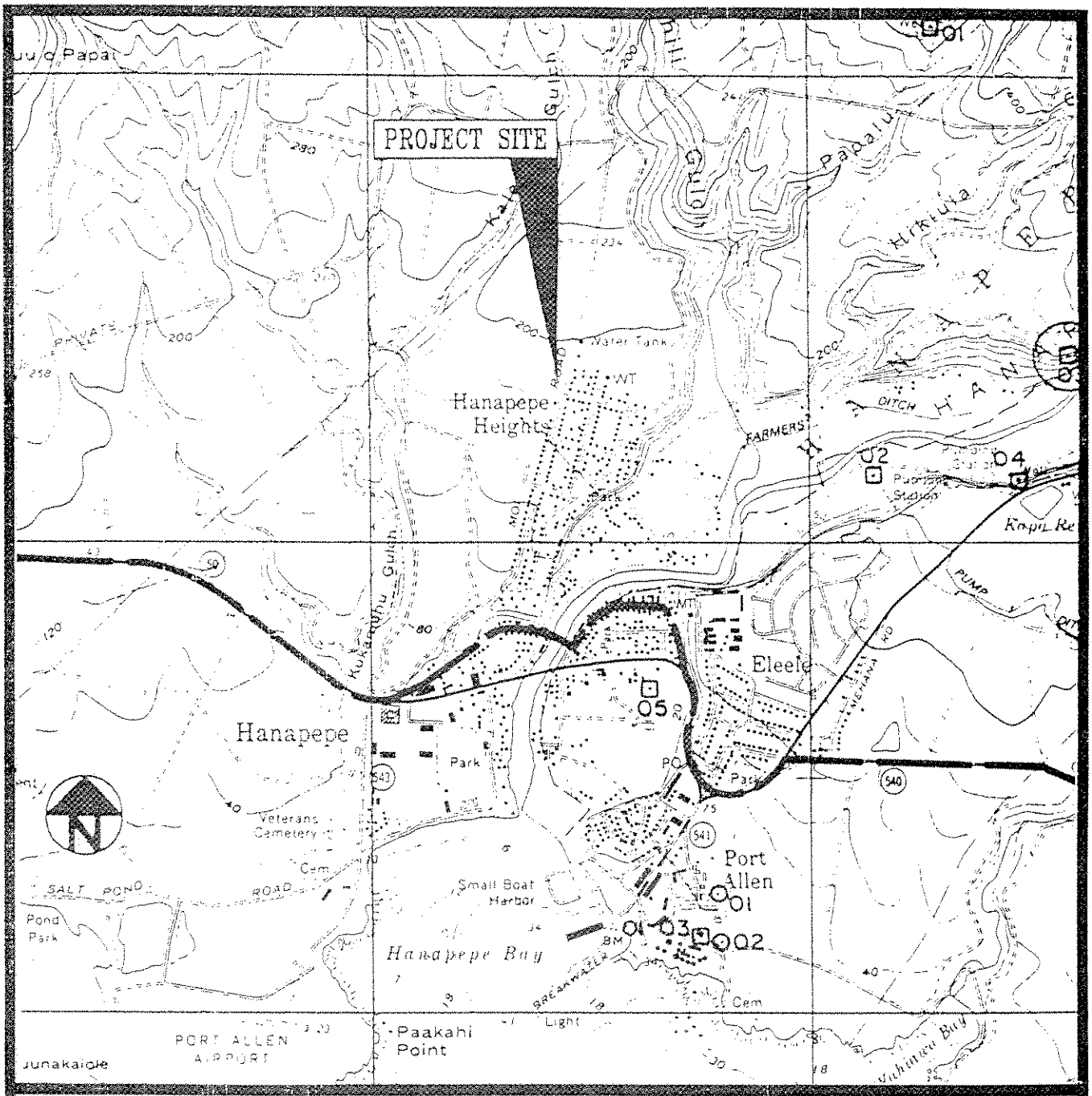


FIGURE A3 - TOPOGRAPHY AND UNDERGROUND INJECTION CONTROL LINE

SCALE 1:24 000

Source: *UNITED STATES GEOLOGICAL SURVEY MAP, 1983*

PROJECT 960753

MURANAKA ENVIRONMENTAL CONSULTANTS, INC.

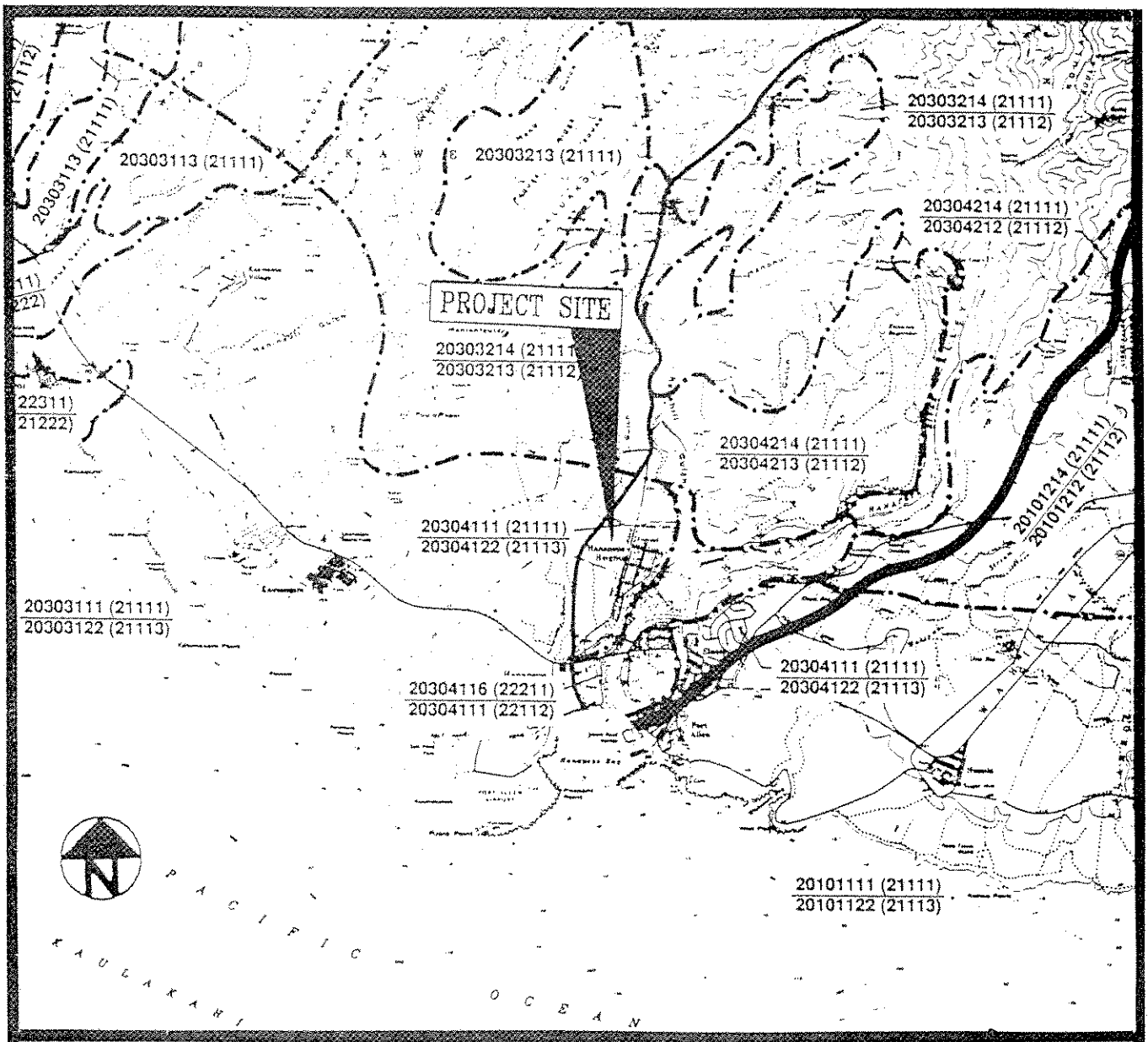
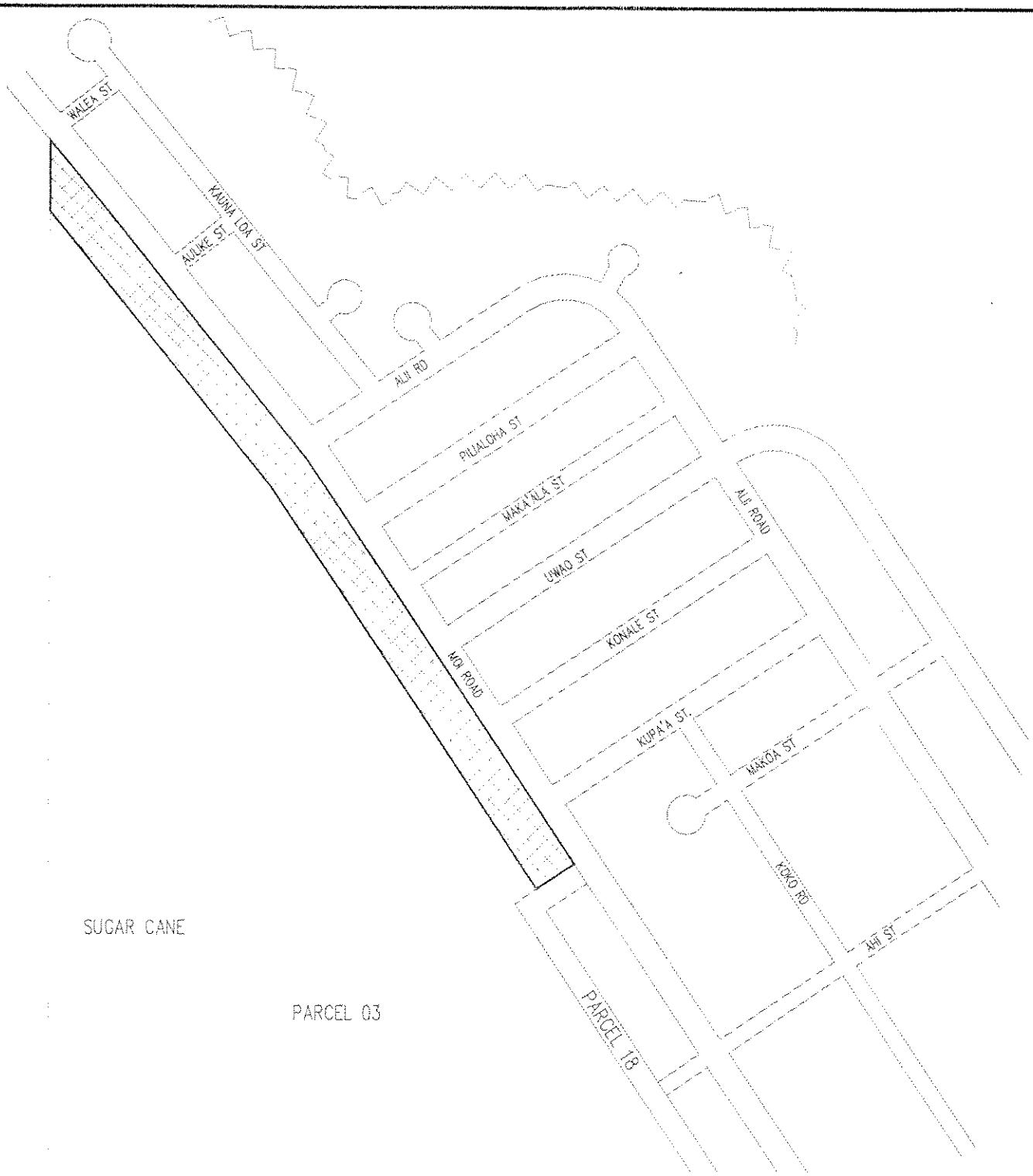


FIGURE A4 - AQUIFER CLASSIFICATION MAP, HANAPEPE, KAUAI, HAWAII

Source: *Mink and Lau (1992)*

PROJECT 960753
MURANAKA ENVIRONMENTAL CONSULTANTS, INC.



SITE MAP
NOT TO SCALE

MURANAKA
ENVIRONMENTAL CONSULTANTS, INC.

HANAPEPE HEIGHTS
PHASE I SITE ASSESSMENT
HANAPEPE, KAUAI, HAWAII

SITE MAP

SURVEYED BY:	CHECKED BY:	DATE	JOB NO.
PHL	MTM	DEC 1996	960753
DRAWN BY:	APPROVED BY:	FIGURE	A5
JTM	MTM		

APPENDIX B

PHOTOGRAPHS

MURANAKA ENVIRONMENTAL CONSULTANTS, INC.
801 Moowaa Street
Honolulu, Hawaii 96817

Photographs taken November 27, 1996.

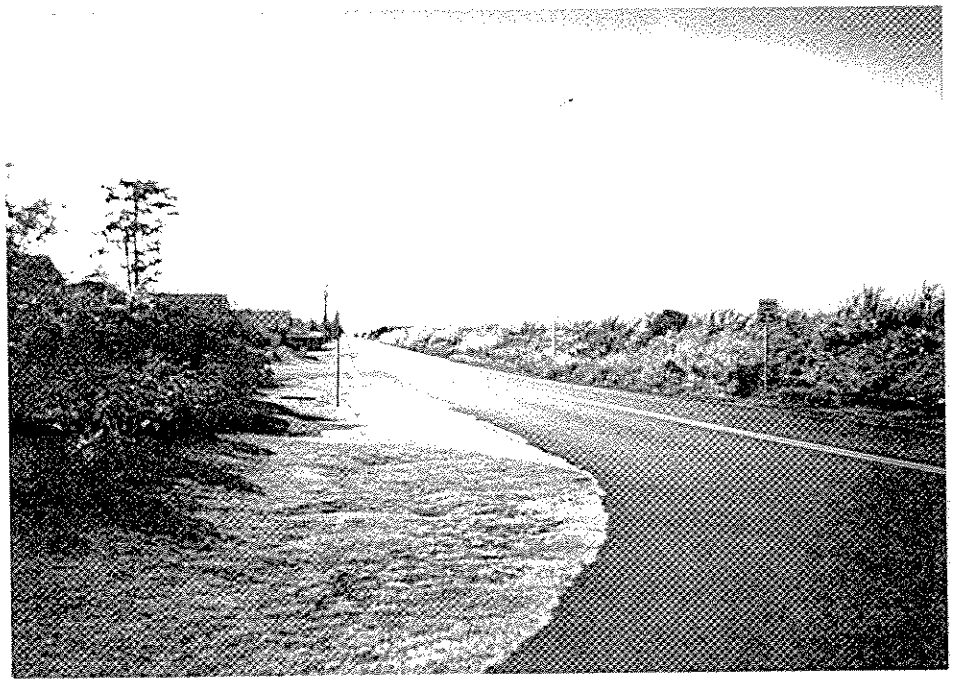


Figure B1 Moi Road as viewed to the south. The subject site was located to the west (the right) of Moi Rd.

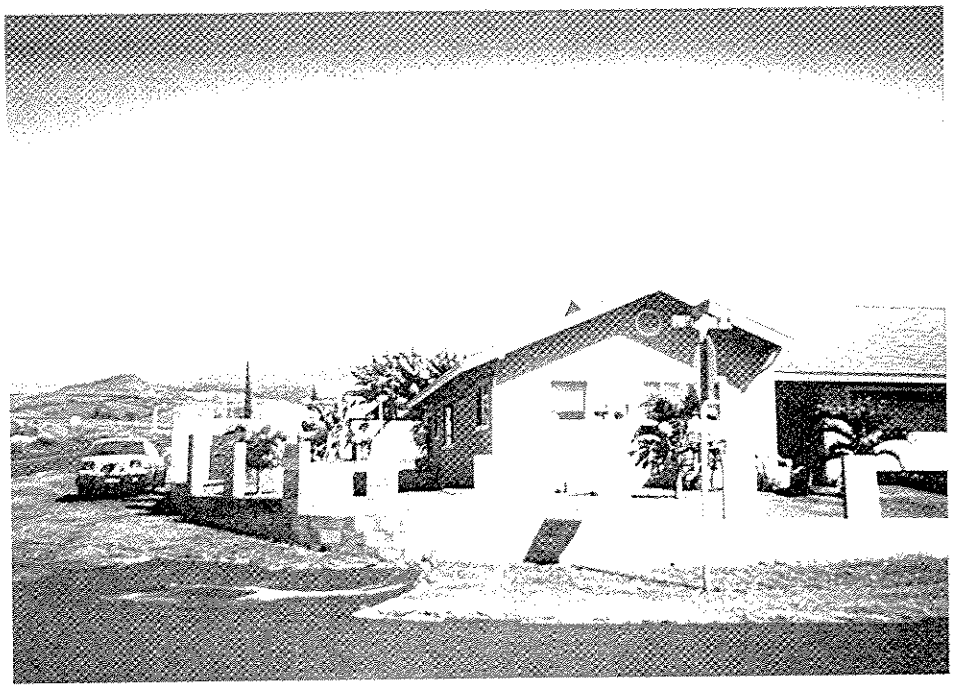


Figure B2 A portion of the Hanapepe Heights residential development that was located adjacent to the subject site along Moi Road.

Figure B3 Parcels 03 and 18 were overgrown with sugarcane.

Figure B4 A portion of parcels 03 and 18 as viewed to the south.

Figure B5 The soil of parcels 03 and 18 was dark reddish brown.

Figure B6 A sugarcane irrigation well was located on the subject site next to the intersection of Moi Road and Kupa'a St.

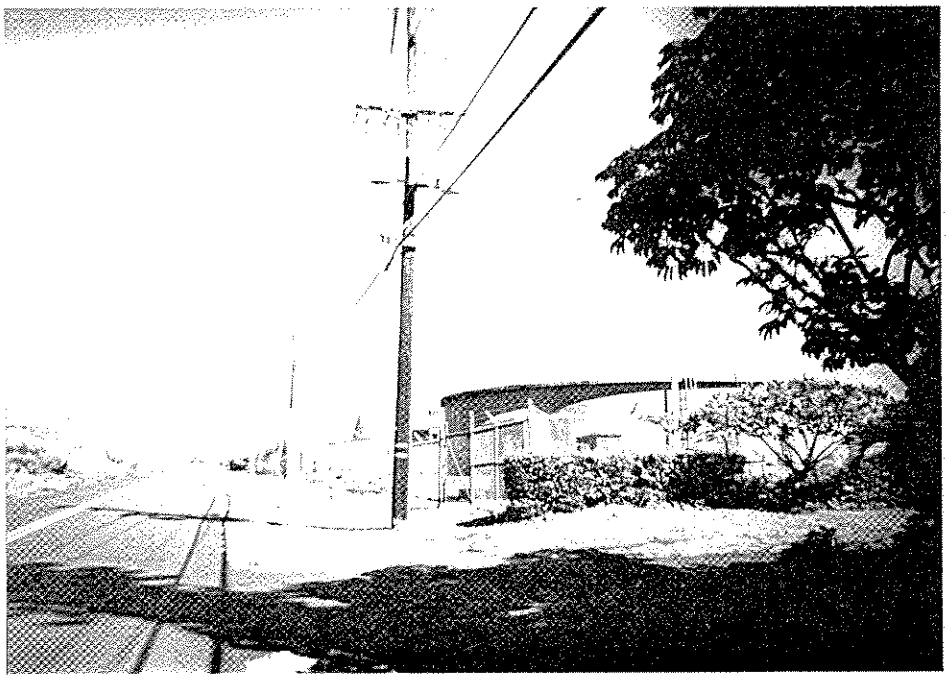


Figure B7 The three pole-mounted transformers that were located along Moi Road and adjacent to parcel 03 by Kupa'a St.

Figure B8 Dead grass and weeds were present along a portion of Moi Road near the intersection with Aulike St.

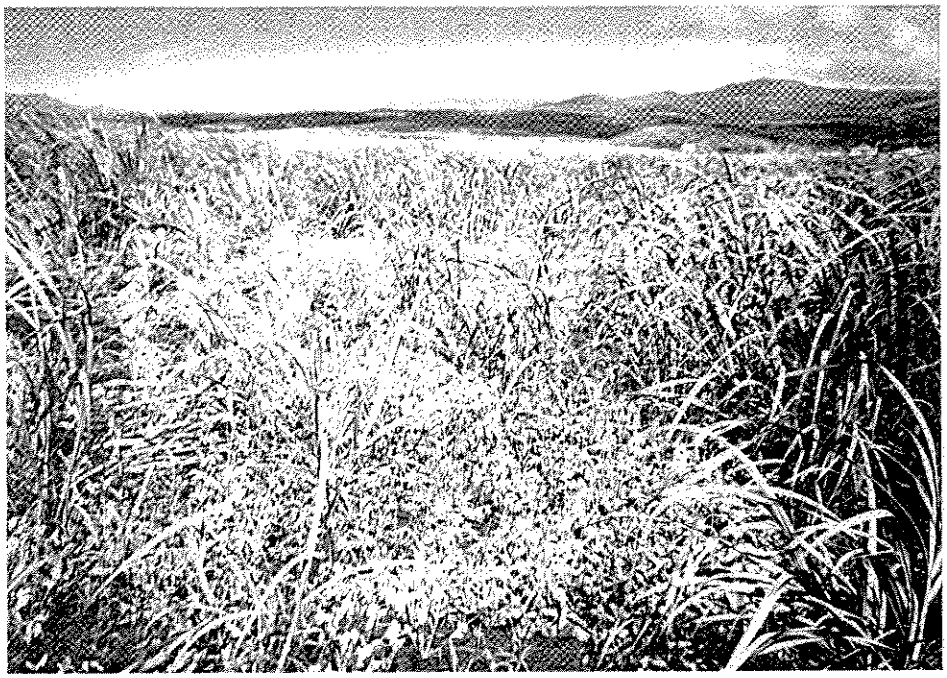


Figure B9 Dead weeds were present in various places in the sugarcane field of parcel 03. These appeared to be the result of selective weed control.

APPENDIX C

CORRESPONDENCE

MURANAKA ENVIRONMENTAL CONSULTANTS, INC.
801 Moowaa Street
Honolulu, Hawaii 96817

MURANAKA
ENVIRONMENTAL CONSULTANTS, INC.
P.O. Box 4341 • Honolulu, Hawaii 96812
(808) 848-8866 • Fax (808) 847-5267

December 3, 1996

State of Hawaii
Department of Health: Environmental Management Division
919 Ala Moana Boulevard
Honolulu, Hawaii 96814

Attn: Thomas Arizumi

Re: Request for Public Records
MEC Project Number: 960753

Dear Mr. Arizumi:

We are requesting information on any past or pending environmental regulatory actions for two parcels located along Moi Road, Hanapepe Heights, Kauai, Hawaii 96716, which are designated as tax map key numbers (4) 1-8-07:(parcels) 03 and 18. Parcel 03 is presently leased to the Gay & Robinson, Inc. by the owners, the State of Hawaii, and parcel 18 is owned by the State of Hawaii. The land is currently being cultivated in sugar cane. There are no CERCLIS sites listed in the February 1, 1995, USEPA's List within one mile of the site. There are no hazardous waste spills on or adjacent to the property listed in the HEER Spill Log dated 1994. There are no RCRA sites listed within 1 mile of the site. Enclosed is a 8.5" x 14" tax map with the site outlined.

Thank you for your assistance. If you have any questions or comments about our request, please contact me at 848-8866.

Sincerely,

Patrick H. Lineberger
Environmental Specialist

enc. (1)

MURANAKA
ENVIRONMENTAL CONSULTANTS, INC.
P.O. Box 4341 • Honolulu, Hawaii 96812
(808) 848-6866 • Fax (808) 847-5267

December 4, 1996

Kauai Fire Department
4233 Rice Street
Lihue, Hawaii 96766
Attn: Alejandro Lomosad, Fire Chief

Re: Hazardous Material Spills
MEC Project Number 960753

Dear Chief Lomosad:

We are requesting information on any HAZMAT Type 41 spills (spills, leaks without ignition) which may have occurred on or within a one-quarter mile radius of a portion of two parcels located along Moi Road, Hanapepe Heights, Kauai, Hawaii 96716, which are designated as tax map key numbers (4) 1-8-07:(parcels) 03 and 18. Parcel 03 is presently leased to the Gay & Robinson, Inc. by the owners, the State of Hawaii, and parcel 18 is owned by the State of Hawaii. The land is currently being cultivated in sugar cane. Enclosed is a locus map of the site with an approximate one-quarter mile radius encircling it.

Thank you for your assistance. If you have any questions, please call me at (808) 848-8866.

Sincerely,

Patrick H. Lineberger
Environmental Specialist

enc. (one, Map of site)

MARYANNE W. KUSAKA
MAYOR

DAVID K. SPROAT
FIRE CHIEF

COUNTY OF KAUAI

FIRE DEPARTMENT
4223 RICE STREET
LIHUE, KAUAI, HAWAII 96766

December 12, 1996

TO :Patrick H. Lineberger,
Environmental Specialist

FROM :David K. Sproat,
Fire Chief

SUBJECT :Type 41 Hazardous Materials Spills
Moi Rd., Hanapepe Heights, Kauai, HI

Dear Mr. Patrick H. Lineberger,

Incident reports dated before 1993 were lost due to water damage incurred from hurricane Iniki in September of 1992. Our incident reports, dating back to 1993, indicates **NO Type 41 (spills, leaks without ignition) hazardous materials responses** within a one-quarter mile radius of both parcels indicated.

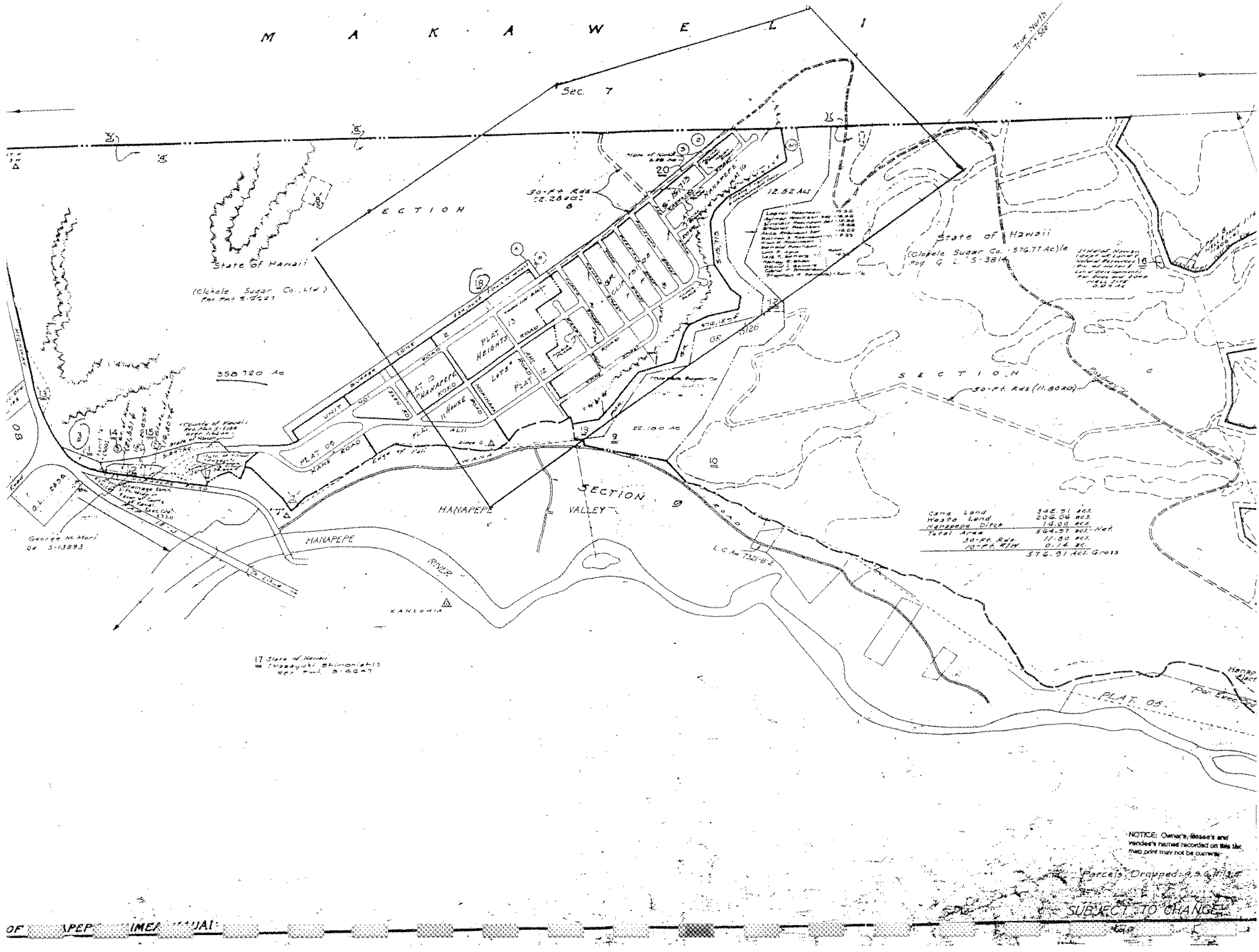
In reference to the attached map, because the majority of land in question is used for agricultural purposes (sugar cane fields), we have no control over equipment servicing and refueling procedures practiced by the land owner/user. Should a spill or leak occur on this agricultural parcel, the Fire Department is usually not notified unless it results in a fire or personnel injury. Unreported incidents of this nature will not be reflected in our incident reporting system.

The Department of Health, Division of Environmental Health Services on Kauai may also be of assistance with your inquiry on this matter.

Should you have further questions please feel free to call me at (808) 241-6500 or contact Captain Dennis Furushima at (808) 241-6510.

Respectfully submitted,

David K. Sproat, Fire Chief
Kauai Fire Department


M A K A W E L I
Sec. 7
SECTION
State of Hawaii
(Olokele Sugar Co., Ltd.)
358.720 Ac
PLAT 10
HANAPEPE KOKO
PLAT 13
HEIGHTS
PLAT 11
PLAT 08
12.52 Acs
State of Hawaii
SECTION 9
HANAPEPE
VALLEY
HANAPEPE
RIVER
KANLOHIA
SECTION
22.100 Ac
George N. Mori
PLAT 05
Cane Land 342.51 acs.
Waste Land 206.06 acs.
Hanapepe Ditch 16.00 acs.
Total Area 564.57 acs. Net
30-ft Rds. 11.80 acs.
10-ft R/W 0.14 ac.
576.51 Acs. Gross
NOTICE: Owner's, lessee's and vendee's names recorded on this tax map print may not be current.
SUBJECT TO CHANGE

MURANAKA
ENVIRONMENTAL CONSULTANTS, INC.
P.O. Box 4341 • Honolulu, Hawaii 96812
(808) 848-8866 • Fax (808) 847-5267

December 3, 1996

Kauai Electric
P.O. Box 278
Eleele, Hi 96705
Attn: Daryl Yasutake

Re: Transformers located along Moi Road, Hanapepe Heights, Hawaii 96716
MEC Project Number 960753

Dear Mr. Yasutake:

We are requesting information of the PCB status on the following pole- and pad-mounted transformer located along Moi Road. A tax map is enclosed with the location of the transformers marked.

Location	Type	ID Number
Fronting 4950 Moi Road, Hanapepe Hts., Hawaii 96716	3-pole-mounted	87027 787026 787032
Near intersection of Moi Road and Aulike St., Hanapepe Hts., Hawaii 96716	pad-mounted	SS917301

Thank you for your assistance. If you have any questions, please call me at 848-8866.

Sincerely,

Patrick H. Lineberger

Patrick H. Lineberger
Environmental Specialist

enc.(1)

CITIZENS UTILITIES

KAUAI ELECTRIC DIVISION

4463 PAHEE STREET • LIHUE, HAWAII 96766-2032

December 11, 1996

Mr. Patrick H. Lineberger
Muranaka Environmental Consultants, Inc.
P.O. Box 4341
Honolulu, HI 96812

Re: Your letter of December 3, 1996, PCB Status of Distribution Transformers

Dear Mr. Lineberger,

Our records indicate the following PCB contents in transformers of interest;

1. 4950 Moi Rd	No 78027	ND	Tested 1/5/93
	No 78026	ND	Tested 1/5/93
	No 78032	ND	Tested 1/5/93
2. Moi & Aulike	No SS917301		No PCB from Mfg.

Please note that we have taken the liberty of transposing the first two numbers of 87027 to make it 78027 to be consistent with our records of transformers located at 4950 Moi Rd.

Please call me at 808-335-6257 should you have any questions or wish to discuss this matter.

Very Truly Yours,

Norman Takashiba

APPENDIX B

PHASE II ENVIRONMENTAL SITE ASSESSMENT
SOIL SURVEY
HANAPEPE HEIGHTS, HAWAII 96716

TMKS: (4) 1-8-07: 03 and 18

Prepared for:

HANAPEPE DEVELOPMENT, INC.
C/O MARK DEVELOPMENT, INC.
3165 WAIALAE AVE., SUITE 200
HONOLULU, HAWAII 96816

Prepared by:

MURANAKA ENVIRONMENTAL CONSULTANTS, INC.
801 MOOWAA STREET
HONOLULU, HAWAII 96817
(808) 848-8866

Project No. 960753.1

December 20, 1996

PHASE II ENVIRONMENTAL SITE ASSESSMENT
SOIL SURVEY
HANAPEPE HEIGHTS, HAWAII 96716

TMKS: (4) 1-8-07: 03 and 18

Prepared for:

HANAPEPE DEVELOPMENT, INC.
C/O MARK DEVELOPMENT, INC.
3165 WAIALAE AVE., SUITE 200
HONOLULU, HAWAII 96816

Prepared by:

MURANAKA ENVIRONMENTAL CONSULTANTS, INC.
801 MOOWAA STREET
HONOLULU, HAWAII 96817
(808) 848-8866

Project No. 960753.1

December 20, 1996

PHASE II ENVIRONMENTAL SITE ASSESSMENT
SOIL SURVEY

HANAPEPE HEIGHTS, HAWAII 96716

TMKS: (4) 1-8-07: 03 and 18

Prepared for:

HANAPEPE DEVELOPMENT, INC.
C/O MARK DEVELOPMENT, INC.
3165 WAIALAE AVE., SUITE 200
HONOLULU, HAWAII 96816

Prepared by:

MURANAKA ENVIRONMENTAL CONSULTANTS, INC.
801 MOOWAA STREET
HONOLULU, HAWAII 96817
(808) 848-8866

Project No. 960753.1

December 20, 1996

Mark T. Muranaka, M.S., M.P.H.
President

Patrick H. Lineberger
Environmental Specialist

TABLE OF CONTENTS

1.0 EXECUTIVE SUMMARY

Muranaka Environmental Consultants, Inc. (MEC) has conducted a Phase II Environmental Site Assessment (ESA) soil survey of a 12-acre portion of the properties [TMKs (4) 1-8-07: 03 and 18] located at Hanapepe Heights, on the island of Kauai, for Hanapepe Development, Inc., C/O Mark Development, Inc. The purpose of the site assessment was to determine whether there were pesticide or herbicide residues in the soil that may present an environmental hazard or liability.

The possible presence of agricultural pesticides and herbicides in the soil was a concern because of it's use in the cultivation of sugarcane for many years. The proposed use of the subject site is for residential housing.

MEC collected and analyzed three soil samples from the 12-acre portion of the two parcels. Arsenic was found in all of the three collected soil samples at concentrations between 18.6 mg/kg and 28.5 mg/kg, within the range of known background levels. Other types of pesticides and herbicides were not detected in any of the soil samples.

Since arsenic occurs at concentrations within known background levels, and none of the other types of pesticide and herbicide chemicals were detected, MEC recommends no further action is needed at the Hanapepe Heights properties.

2.0 INTRODUCTION

This report presents the results of a Phase II Environmental Assessment (ESA) soil survey of a 12-acre portion of two properties located along Moi Road, Hanapepe Heights, Hawaii, Tax Map Key numbers: (4) 1-8-07: 03 and 18. Muranaka Environmental Consultants, Inc. (MEC) conducted the site investigation for the Hanapepe Development, Inc., C/O Mark Development, Inc. The two parcels were owned by the State of Hawaii. Parcel 03 was leased by the Gay & Robinson, Inc. for the purpose of sugarcane cultivation and pasture land.

2.1 Purpose and Scope of Work

The purpose of the ESA was to determine if there were pesticide and herbicide residues at the site that may present an environmental hazard or liability.

The scope of work for the ESA included the collection and analyses of three soil samples for laboratory analysis, and a written report of the results.

3.0 BACKGROUND

Both parcels (03 and 18) of the subject site were owned by the State of Hawaii. Parcel 03 was leased to the Gay & Robinson, Inc. for sugarcane cultivation and pasture land. The site is located at Hanapepe Heights, along Moi Road near the south coast of the island of Kauai (Figures A1 to A5, Appendix A). The parcels were designated by TMK numbers (4) 1-8-07: 003 (358.72 acres) and 018 (5.38 acres). The land is zoned as agricultural and residential. (University of Hawaii Press 1983). Hanapepe Heights is a small residential community, located above the town of Hanapepe. The town of Hanapepe mainly services the sugarcane industry, and to a lesser extent, tourists.

The subject site was a 12-acre, rectangular-shaped section of the total property which consisted of approximately 364.1 acres, making up parcels 3 and 18 (see Figure A5, Appendix A). The Hanapepe Heights residential subdivision was located adjacent to the east and south of the subject site. Sugarcane land was present on the other sides. A growth of young sugarcane covered most of the 12-acre-sized subject site (Appendix B photographs).

3.1 Geology, Hydrology, and Ecology

Kauai is a 2 to 4 million-year-old shield volcano, which is deeply eroded, and partly veneered with much later volcanics (Macdonald and Abbot 1970). The site is situated on the south coast of Kauai at an elevation of about 180 feet above sea-level. The topography is flat and

gently slopes towards the south and southwest. The volcanic rocks underlying the soils of the site are part of the lavas of the younger Koloa volcanic series and the older lavas of the Napili formation, and are primarily composed of tholeiitic and alkalic basalts (Macdonald and Abbott 1970).

The soils of the parcels are the dusky-red Mollisols (University of Hawaii Press 1983), which are classified as Makaweli silty clay loam (MgB and MgC) (US Department of Agriculture [USDA] 1972). The Makaweli silty clay loam consists of well-drained soils on uplands which developed in material weathered from basic igneous rocks formed in alluvium derived from basic igneous rock. The topsoil is about 12 inches thick and the subsoil, about 48 inches thick. Slopes typically range between 0 and 12%; permeability is moderate (ranges from 0.63 to 2.0 inches per hour); runoff is slow; and the erosional hazard is slight. The depth to the bedrock is greater than 5 feet. The dominant USDA texture is silty clay, which is gravely in places. The available water capacity is 0.14 to 0.16 inches per inch of soil. The pH of the soil ranges from 6.1 to 7.3. The shrink-swell potential is low. The Makaweli silty clay loam soils are used for irrigated sugarcane production, pasture, and home sites. The natural vegetation consists of kiawe, lantana, fingergrass, klu, koa haole, and piligrass (USDA 1972).

The average annual rainfall in the area ranges from 30 to 40 inches, with the winter months being the wettest (University of Hawaii Press 1983).

The site lies above the Underground Injection Control (UIC) line (Figure A3, Appendix A). The location of a site in relation to the UIC line determines the criteria used to classify contamination limits for soil and water (40 CFR 144, 145, and 146; State of Hawaii 1992). The nearest drinking water wells are about 1.3 miles upgradient and to the east of the site. The depth to the water table is greater than 5 feet. The Hanapepe Stream, which flows into Hanapepe Bay and the Pacific Ocean, is about 0.5 miles to the southeast (Figure A3, Appendix A).

On September 13, 1995, the DOH updated its policies regarding recommended cleanup criteria at leaking UST sites. The recommended cleanup criteria also depend on the drinking water status of the aquifers. The subject site lies within the Kauai Waimea Aquifer Sector and Hanapepe Aquifer System classification (Figure A4, Appendix A; Mink and Lau 1992). The site's Aquifer and Status Codes (in parentheses) is 20304111/20304122 (21111)/(21113). The codes indicate that the site overlies two aquifers. The uppermost aquifer has groundwater that is basal (fresh water in contact with sea water) and unconfined in horizontally extensive flank lavas. Beneath the upper aquifer is a basal aquifer that is confined in dike compartments. The Aquifer Status Code signifies that the upper aquifer is potentially

useful for drinking water; is fresh with a salinity of < 250 mg/l Cl^-; and is replaceable, with a low vulnerability to contamination. The Aquifer Status Code for the lower aquifer shows that it is potentially useful for drinking water; is fresh with a salinity of < 250 mg/l Cl^-; and is replaceable, with a high vulnerability to contamination.

A more detailed description of the two parcels can be found in the Phase I Environmental Site Assessments prepared for the same parcels for the Hanapepe Development, Inc., C/O Mark Development, Inc., by MEC (MEC Dec. 1996).

4.0 DATA COLLECTION

The principal tasks undertaken to determine the presence, if any, of potential pesticide and herbicide residues on the site are described below, with an explanation of the relevant methodology in each case.

4.1 Soil Sampling

Muranaka Environmental Consultants, Inc. collected three soil samples from the property on November 27, 1996. The sample location diagram (Figure A5) is located in Appendix A.

MEC used a stainless-steel soil sample spoon to collect the soil samples from the surface to depth of 1 foot below surface grade. The samples were placed into separate, pre-cleaned, 8-ounce, glass jars. The soil in the glass jars was compacted to the rim to reduce pore space. The sample containers were labeled and placed in a cooler packed with *Gel Ice*. The soil samples were delivered to the MEC laboratory for shipment. Disposable vinyl gloves were used between each sample collection to prevent cross contamination. The equipment used in the sample collection activities was decontaminated prior to and between each sample.

On December 2, 1996, the samples were sent to an independent laboratory for analysis. The laboratory received the samples on December 3, 1996. MEC received the preliminary laboratory results on December 19, 1996. See Appendix D for the chain-of-custody documentation.

4.2 Laboratory Analysis

The three samples (960753.1-01, 960753.1-02, and 960753.1-03) were analyzed for the following pesticide and herbicide chemicals:

- ametryn and atrazine using EPA method 619;
- diuron using EPA method 632;
- pentachlorophenol using EPA method 8040;

- arsenic using EPA method 6010; and
- the organochloride pesticides using EPA method 8080 for the following pesticides: chlordane, heptachlor, heptachlor epoxide, endrin, lindane, methoxychlor, and toxaphene.

The herbicides ametryn, diuron, and atrazine account for approximately 86 percent of the herbicides applied statewide. Pentachlorophenol and arsenic, which are both listed as hazardous waste chemicals under the Resource Conservation and Recovery Act of 1976 were also widely used prior to 1982 (Hawaii Sugar Planters Association 1991). The organochloride pesticides were also widely used throughout the state.

5.0 RESULTS, DISCUSSION, AND RECOMMENDATIONS

The laboratory results are summarized in Table 1 and the laboratory reports are located in Appendix C.

Measurable levels of arsenic were detected in the three soil samples collected on the site. Sample 960753.1-01, collected 60 feet to the west of the intersection of Moi Rd. and Aulike St. contained 28.5 mg/kg (ppm) of arsenic; sample 960753.1-02, collected 60 feet to the west of the intersection of Moi Rd. and Pilialoha St., contained arsenic at 18.8 mg/kg (ppm); and 960753.1-03, collected 60 feet from the intersection of Moi Rd. and Uwao St., contained arsenic at 18.6 mg/kg (ppm).

Arsenic is a naturally-occurring element, but is usually found combined with other elements such as oxygen, chlorine, and sulfur (inorganic arsenics), or with carbon and hydrogen (organic arsenics). The main use of arsenic is as a preservative for wood to make it resistant to rotting and decay, and to make several types of insect and weed killers (ATSDR 1991). Arsenic occurs naturally in soil with levels from 0.1 to 55 mg/kg (Adriano 1986). Background levels above 10 mg/kg occur in about 20% of untreated soil types (Conway, 1982). Background concentrations of arsenic in Hawaiian soils have been reported to range between 5-10 mg/kg (HEER Nov. 2, 1995). The values of arsenic detected for the soil samples collected from the subject site can be assumed to be representative of the background levels of arsenic.

Since arsenic occurs at concentrations within known background levels, and none of the other chemicals were detected, MEC recommends no further action is needed at the 12-acre portion of the Hanapepe Heights properties, parcels 03 and 18.

Table 1
Laboratory Summary Report

Date Sampled: November 27, 1996
Date Analyzed: December 4-18, 1996

Sample Number	960753.1-01	960753.1-02	960753.1-03	Laboratory Detection Limit
Sample Depth (feet)	0-1	0-1	0-1	-
Compound (mg/kg or ppm)	-	-	-	-
Atrazine	ND	ND	ND	0.03
Ametryn	ND	ND	ND	0.03
Diuron	ND	ND	ND	0.025
Chlordane	ND	ND	ND	0.013
Heptachlor	ND	ND	ND	0.0025
Heptachlor Epoxide	ND	ND	ND	0.0025
Endrin	ND	ND	ND	0.0025
Lindane	ND	ND	ND	0.0025
Methoxychlor	ND	ND	ND	0.0075
Toxaphene	ND	ND	ND	0.038
Arsenic	28.5	18.8	18.6	6.2
Pentachlorophenol	ND	ND	ND	1.0

mg = milligrams; kg = kilogram; ppm = parts per million; ND = sample analyzed below the laboratory detection limit.

6.0 REFERENCES

MEC reviewed the following documents during the course of this assessment:

Adriano, D. C. *Trace Elements in the Terrestrial Environment*. Page 46. Springer-Verlag. New York, 1986.

ASTDR. *Toxicology Profile for Arsenic*. U.S. Department of Health & Human Services, Public Health Service, Agency for Toxic Substances and Disease Registry. Atlanta, Georgia. October 1991.

City and County of Honolulu. Real Property Ownership Records. *Forth Tax Division Field Book*. Tax Map (4) 1-8-07: 03 and 18. Real Property Assessment Division, 1996.

Code of Federal Regulations. *Identification and Listing of Hazardous Waste*. Title 40, Part 261. Washington DC: U.S. Government Printing Office, 1990.

Conway, R. A. *Environmental risk Analysis for Chemicals*. Pages 493-496. Van Nostrand Reinhold Company. New York, 1982.

HEER (State of Hawaii, Department of Health, Hazardous Evaluation and Emergency Response Section). *Personal Communication*. November 2, 1995.

Hawaii Sugar Planters Association, Honolulu, Hawaii, 1991.

Macdonald, G. A. and A. T. Abbott. *Volcanoes in the Sea*. University of Hawaii Press, Honolulu, 1970.

MEC. *Phase I Environmental Site Assessment, TMKS (4) 1-8-07:03 and 18. Hanapepe Heights, Hawaii, 96716*. December, 1996.

Mink, J. F. and S. L. Lau. *Aquifer Identification and Classification for the Island of Kauai: Groundwater Protection Strategy for Hawai'i: Technical Report No. 186*. Water Resources Research Center, University of Hawai'i at Manoa. February 1992.

State of Hawaii, Department of Health, *Underground Injection Control Program. Hanapepe Quadrangle*. United States Department of the Interior, Geological Survey, 1983.

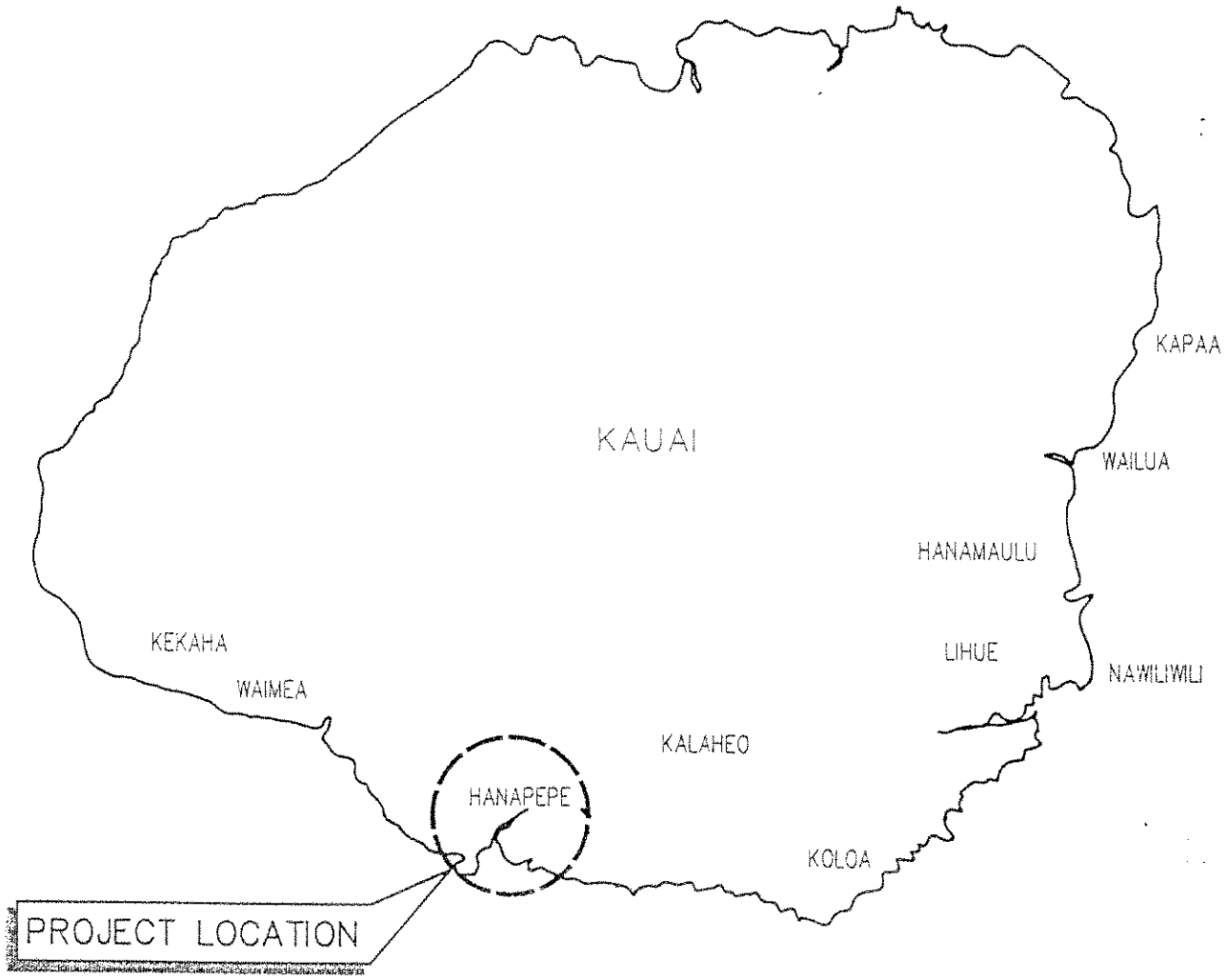
United States Department of Agriculture (USDA), Soil Conservation Service, in cooperation with The University of Hawaii Agricultural Experiment Station. *Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii*. Washington DC: U.S. Government Printing Office, 1972.

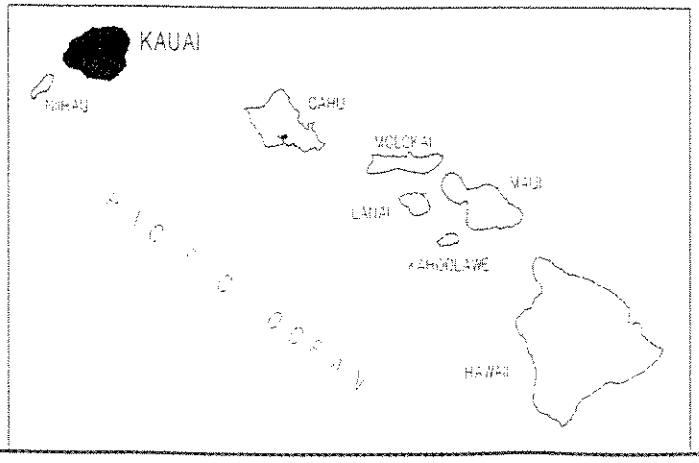
University of Hawaii Press, *Atlas of Hawaii*. 2nd edition, p.62, 1983.

APPENDIX A

MAPS

MURANAKA ENVIRONMENTAL CONSULTANTS, INC.
801 Moowaa Street
Honolulu, Hawaii 96817





MURANAKA
ENVIRONMENTAL CONSULTANTS, INC.

HANAPEPE HEIGHTS
PHASE II SITE ASSESSMENT SOIL SURVEY
HANAPEPE, KAUAI, HAWAII

VICINITY MAP

SURVEYED BY:	CHECKED BY:	DATE	JOB NO.
PHL	MTM	DEC 1996	960753.1
DRAWN BY:	APPROVED BY:	FIGURE	A1
JTM	MTM		

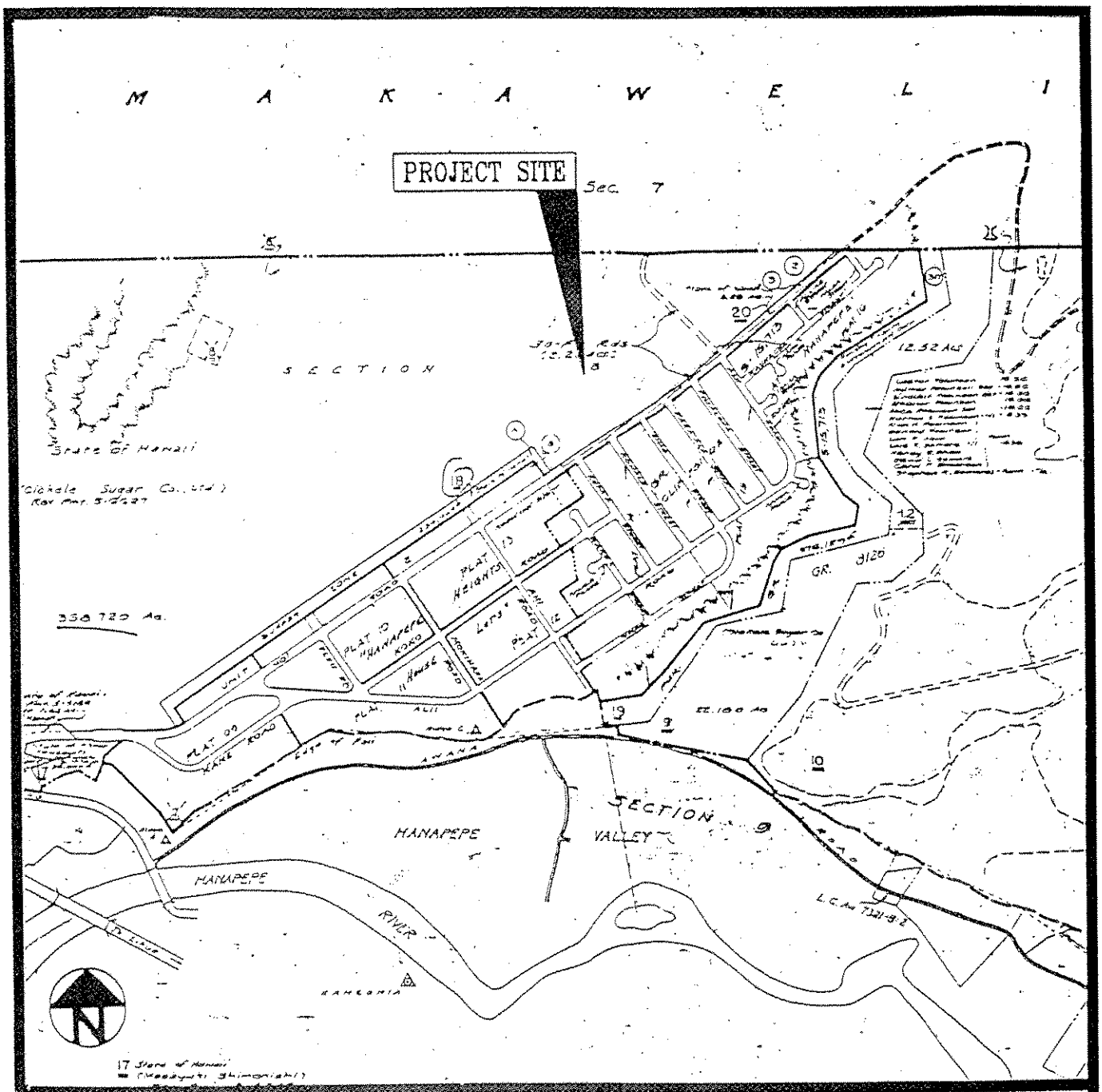


FIGURE A2 - LOCATION OF HANAPEPE HEIGHTS, HANAPEPE, KAUAI, HAWAII

Source: *TMK MAP, 1996*

PROJECT 960753.1
MURANAKA ENVIRONMENTAL CONSULTANTS, INC.

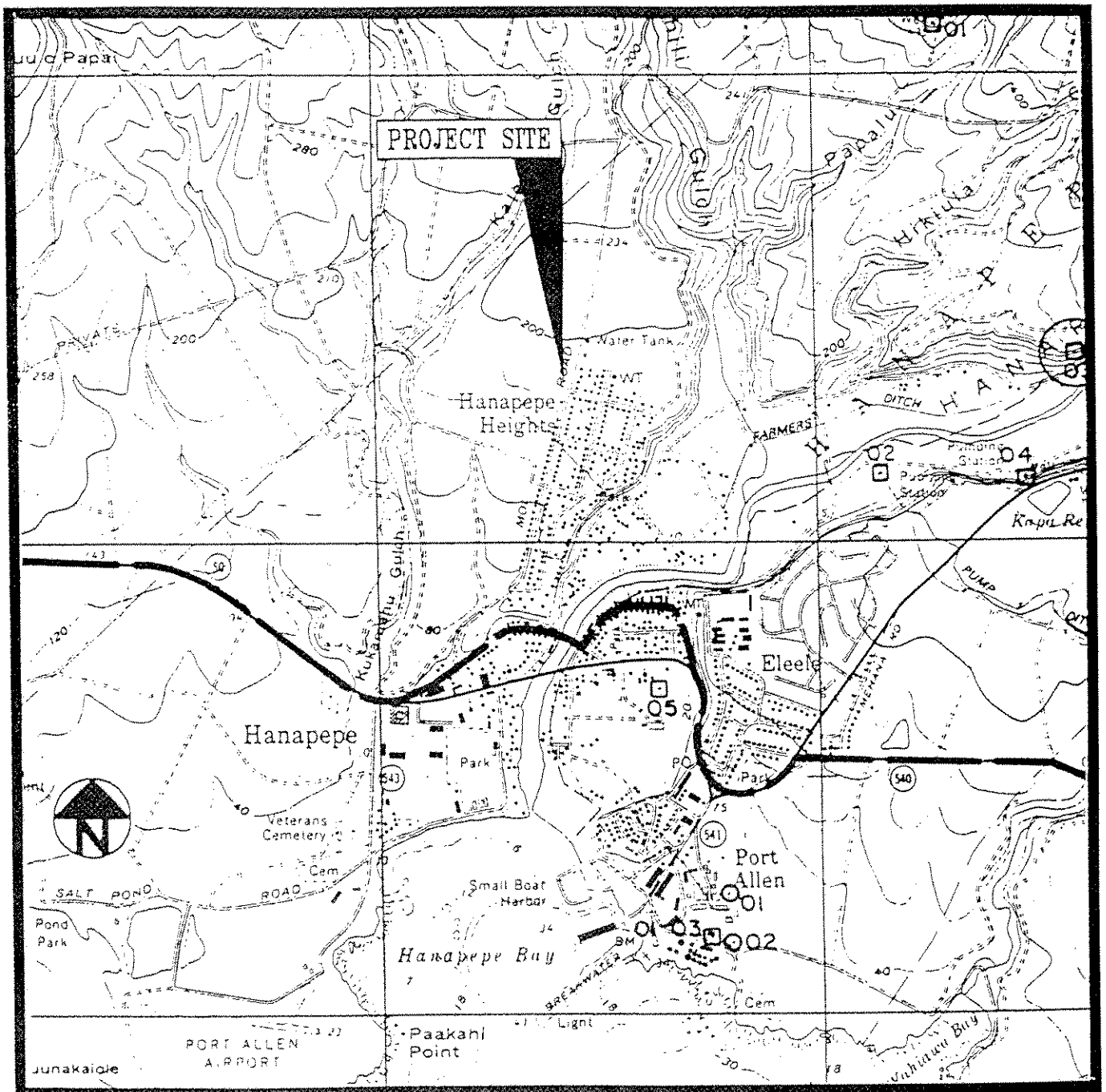


FIGURE A3 - TOPOGRAPHY AND UNDERGROUND INJECTION CONTROL LINE

SCALE 1:24 000

1 0 1 MILE

⊙ Injection well

⊡ Other well

⊡ Drinking source

UIC LINE

Source: *UNITED STATES GEOLOGICAL SURVEY MAP, 1983*

PROJECT 960753.1

MURANAKA ENVIRONMENTAL CONSULTANTS, INC.

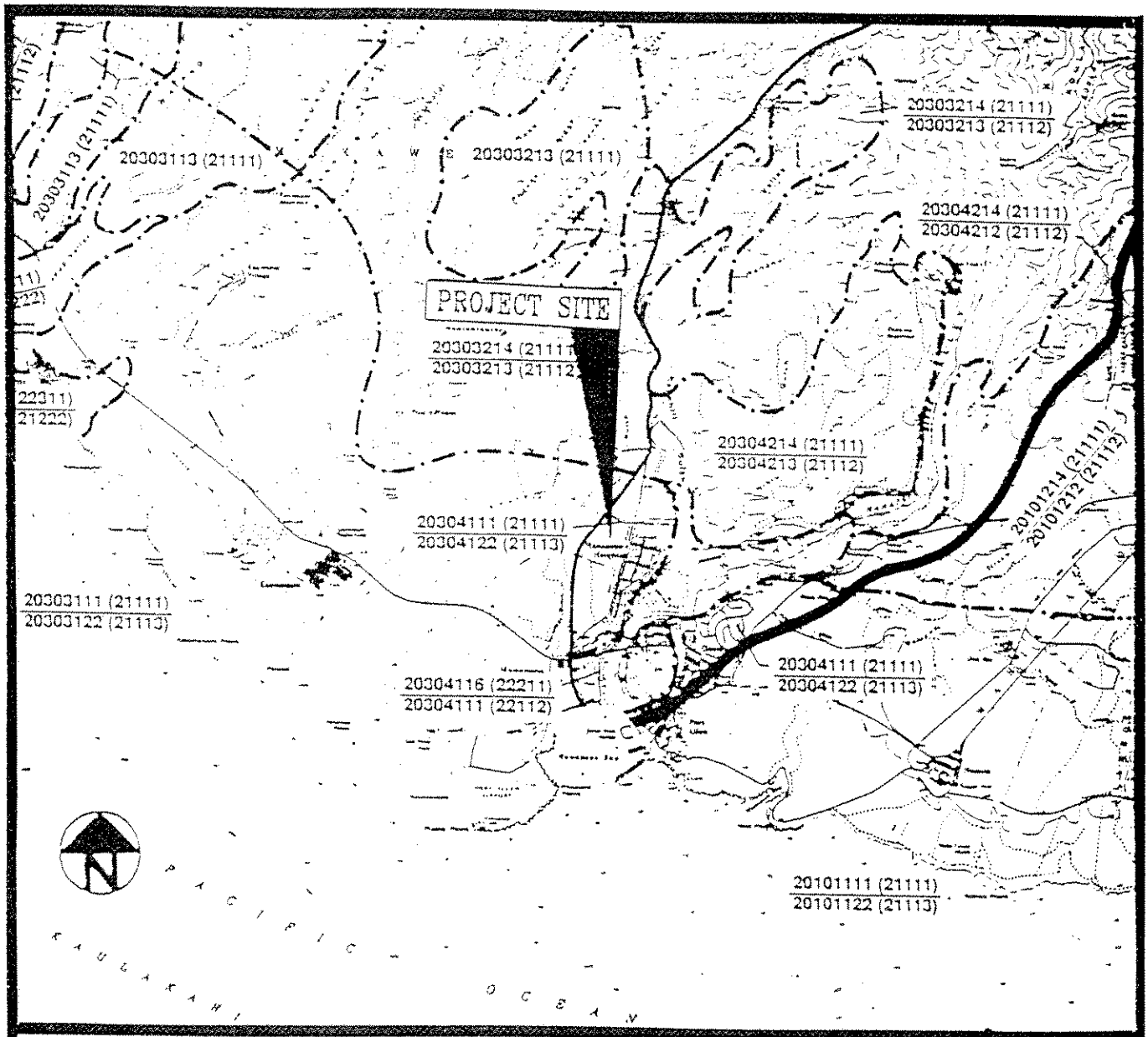


FIGURE A4 - AQUIFER CLASSIFICATION MAP, HANAPEPE, KAUAI, HAWAII

0 1 2 Miles

0 1 2 3 Kilometers

Sector

Aquifer System

Aquifer Type

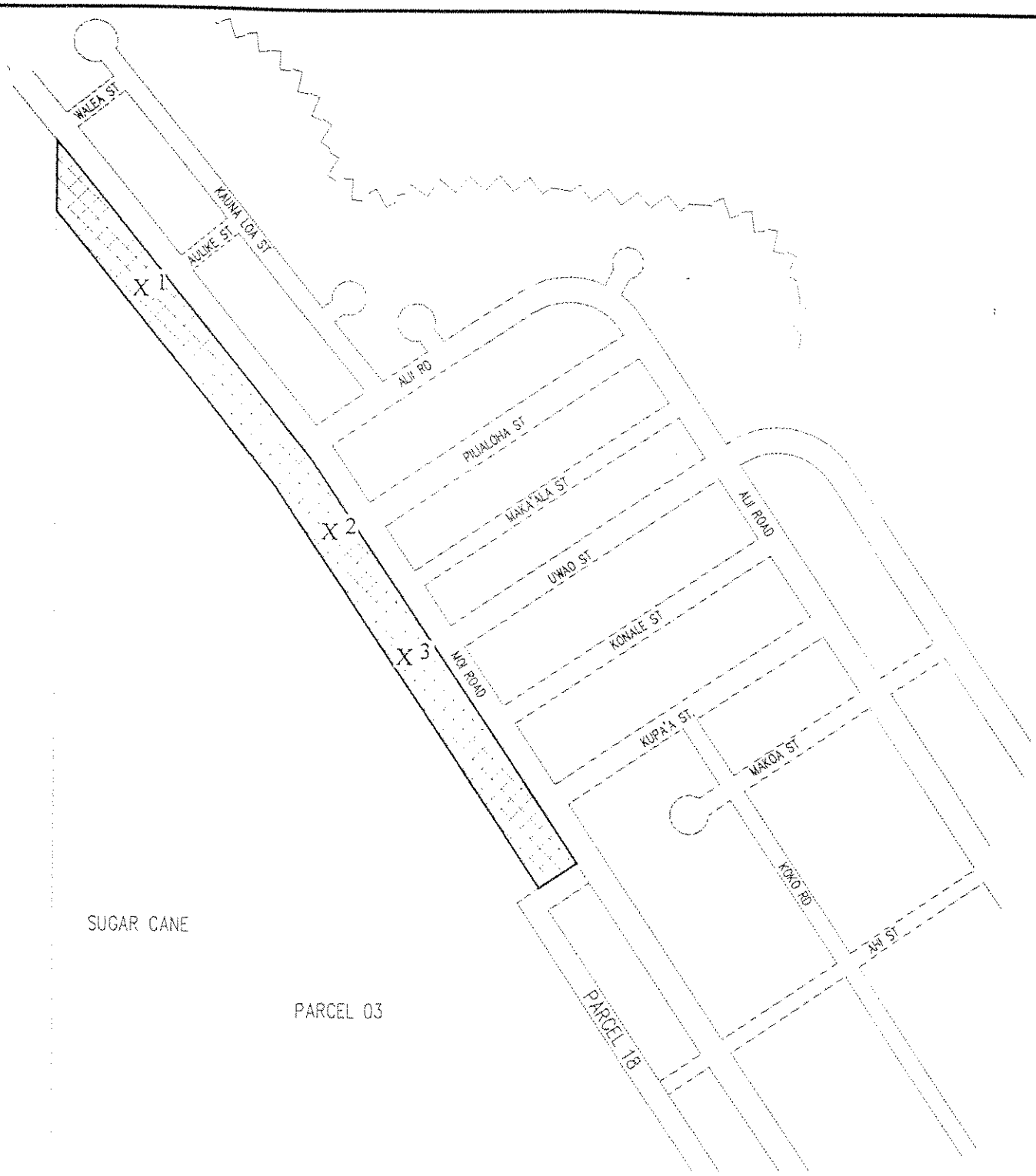
20204212 Aquifer Code

(11111) Status Code

Source: *Mink and Lau (1992)*

PROJECT 960753.1

MURANAKA ENVIRONMENTAL CONSULTANTS, INC.



SITE MAP
NOT TO SCALE

X sample location

MURANAKA
ENVIRONMENTAL CONSULTANTS, INC.

HANAPEPE HEIGHTS
PHASE II SITE ASSESSMENT SOIL SURVEY
HANAPEPE, KAUAI, HAWAII

SITE MAP

SURVEYED BY:	CHECKED BY:	DATE	JOB NO.
PHL	MTM	DEC 1996	960753.1
DRAWN BY: JTM	APPROVED BY: MTM	FIGURE A5	

APPENDIX B

PHOTOGRAPHS

MURANAKA ENVIRONMENTAL CONSULTANTS, INC.
801 Moowaa Street
Honolulu, Hawaii 96817

Photographs taken December 27, 1996.

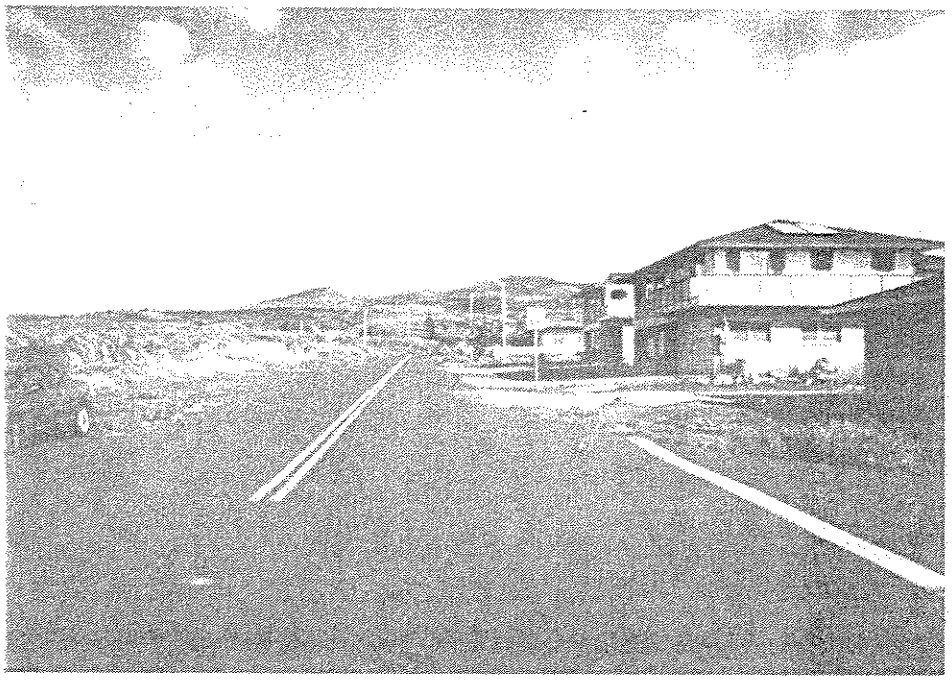


Figure B1 The soil samples were collected from parcels 03 and 18, which were under sugarcane cultivation.

Figure B2 Each composite soil sample was collected from a depth of one-foot below surface grade to the surface.

APPENDIX C

LABORATORY REPORT

MURANAKA ENVIRONMENTAL CONSULTANTS, INC.
801 Moowaa Street
Honolulu, Hawaii 96817

Weck Laboratories, Inc.

Analytical & Environmental Services

Client: Muranaka Environmental Consultants
801 Moowaa
Honolulu, HI 96817

Report Date: December 19, 1996

Received Date: December 03, 1996
Tuesday 10:12/TGN

Attn.: Shirley Jones (808) 848-8866 x FAX (808) 847-5267

Project Name: Hanapepe Heights, Kauai Phase II **Project #:** R01195-96
Purchase Order #: P96347 Normal Turnaround

Certificate of Analysis

Lab#: 9624464 **Sample ID:** 03-35330 **Matrix:** Soil
Sampled By: **Date:** 11/27/1996 **Time:**

Parameter	Result	Units	PQL	Method	Analyzed	Run #
Arsenic	18.6	mg/Kg	6.2	EPA 7061	12/18/1996	96145387
Ametryn	ND	mg/kg	0.03	EPA 619	12/09/1996	96145214
Atrazine	ND	mg/kg	0.03	EPA 619	12/09/1996	96145214
Diuron	ND	ug/Kg	25	EPA 632M	12/10/1996	96145114
4,4'-DDD	ND	ug/Kg	2.5	EPA 8080	12/04/1996	96144984
4,4'-DDE	ND	ug/Kg	2.5	EPA 8080	12/04/1996	96144984
4,4'-DDT	ND	ug/Kg	2.5	EPA 8080	12/04/1996	96144984
Aldrin	ND	ug/Kg	2.5	EPA 8080	12/04/1996	96144984
Alpha-BHC	ND	ug/Kg	2.5	EPA 8080	12/04/1996	96144984
Beta-BHC	ND	ug/Kg	2.5	EPA 8080	12/04/1996	96144984
Chlordane	ND	ug/Kg	13	EPA 8080	12/04/1996	96144984
Delta-BHC	ND	ug/Kg	2.5	EPA 8080	12/04/1996	96144984
Dieldrin	ND	ug/Kg	2.5	EPA 8080	12/04/1996	96144984
Endosulfan I	ND	ug/Kg	2.5	EPA 8080	12/04/1996	96144984
Endosulfan II	ND	ug/Kg	2.5	EPA 8080	12/04/1996	96144984
Endosulfan Sulfate	ND	ug/Kg	2.5	EPA 8080	12/04/1996	96144984
Endrin	ND	ug/Kg	2.5	EPA 8080	12/04/1996	96144984
Endrin Aldehyde	ND	ug/Kg	2.5	EPA 8080	12/04/1996	96144984
Gamma-BHC (Lindane)	ND	ug/Kg	2.5	EPA 8080	12/04/1996	96144984
Heptachlor	ND	ug/Kg	2.5	EPA 8080	12/04/1996	96144984
Heptachlor Epoxide	ND	ug/Kg	2.5	EPA 8080	12/04/1996	96144984
Methoxychlor	ND	ug/Kg	7.5	EPA 8080	12/04/1996	96144984
Toxaphene	ND	ug/Kg	38	EPA 8080	12/04/1996	96144984
Pentachlorophenol	ND	mg/Kg	1	EPA 8270	12/05/1996	96145022

ND = Not Detected
PQL = Practical Quantifiable Limit
e = Estimated (> MDL, but < PQL)

Authorized Signature

Any remaining sample(s) for testing will be disposed of three weeks from the final report date unless other arrangements are made in advance.

Weck Laboratories, Inc.

Analytical & Environmental Services

Client: Muranaka Environmental Consultants
801 Moowaa
Honolulu, HI 96817

Report Date: December 19, 1996

Received Date: December 03, 1996
Tuesday 10:12/TGN

Attn.: Shirley Jones (808) 848-8866 x FAX (808) 847-5267

Project Name: Hanapepe Heights, Kauai Phase II **Project #:** R01196-96
Purchase Order #: P96347 Normal Turnaround

Certificate of Analysis

Lab#: 9624463 **Sample ID:** 02-35329 **Matrix:** Soil
Sampled By: **Date:** 11/27/1996 **Time:**

Parameter	Result	Units	PQL	Method	Analyzed	Run #
Arsenic	18.8	mg/Kg	6.2	EPA 7061	12/18/1996	96145387
Ametryn	ND	mg/kg	0.03	EPA 619	12/09/1996	96145214
Atrazine	ND	mg/kg	0.03	EPA 619	12/09/1996	96145214
Diuron	ND	ug/Kg	25	EPA 632M	12/10/1996	96145114
4,4'-DDD	ND	ug/Kg	2.5	EPA 8080	12/04/1996	96144984
4,4'-DDE	ND	ug/Kg	2.5	EPA 8080	12/04/1996	96144984
4,4'-DDT	ND	ug/Kg	2.5	EPA 8080	12/04/1996	96144984
Aldrin	ND	ug/Kg	2.5	EPA 8080	12/04/1996	96144984
Alpha-BHC	ND	ug/Kg	2.5	EPA 8080	12/04/1996	96144984
Beta-BHC	ND	ug/Kg	2.5	EPA 8080	12/04/1996	96144984
Chlordane	ND	ug/Kg	13	EPA 8080	12/04/1996	96144984
Delta-BHC	ND	ug/Kg	2.5	EPA 8080	12/04/1996	96144984
Dieldrin	ND	ug/Kg	2.5	EPA 8080	12/04/1996	96144984
Endosulfan I	ND	ug/Kg	2.5	EPA 8080	12/04/1996	96144984
Endosulfan II	ND	ug/Kg	2.5	EPA 8080	12/04/1996	96144984
Endosulfan Sulfate	ND	ug/Kg	2.5	EPA 8080	12/04/1996	96144984
Endrin	ND	ug/Kg	2.5	EPA 8080	12/04/1996	96144984
Endrin Aldehyde	ND	ug/Kg	2.5	EPA 8080	12/04/1996	96144984
Gamma-BHC (Lindane)	ND	ug/Kg	2.5	EPA 8080	12/04/1996	96144984
Heptachlor	ND	ug/Kg	2.5	EPA 8080	12/04/1996	96144984
Heptachlor Epoxide	ND	ug/Kg	2.5	EPA 8080	12/04/1996	96144984
Methoxychlor	ND	ug/Kg	7.5	EPA 8080	12/04/1996	96144984
Toxaphene	ND	ug/Kg	38	EPA 8080	12/04/1996	96144984
Pentachlorophenol	ND	mg/Kg	1	EPA 8270	12/05/1996	96145022

ND = Not Detected
PQL = Practical Quantifiable Limit
e = Estimated (> MDL, but < PQL)

Authorized Signature

Any remaining sample(s) for testing will be disposed of three weeks from the final report date unless other arrangements are made in advance.

Weck Laboratories, Inc.

Analytical & Environmental Services

Client: Muranaka Environmental Consultants
801 Moowaa
Honolulu, HI 96817

Report Date: December 19, 1996

Received Date: December 03, 1996
Tuesday 10:12/TGN

Attn.: Shirley Jones (808) 848-8866 x FAX (808) 847-5267

Project Name: Hanapepe Heights, Kauai Phase II **Project #:** R01195-96
Purchase Order #: P96347 Normal Turnaround

Certificate of Analysis

Lab#: 9624462 **Sample ID:** 01-35328 **Matrix:** Soil
Sampled By: **Data:** 11/27/1996 **Time:**

Parameter	Result	Units	PQL	Method	Analyzed	Run #
Arsenic	28.5	mg/Kg	6.2	EPA 7061	12/18/1996	96145387
Ametryn	ND	mg/kg	0.03	EPA 619	12/09/1996	96145214
Atrazine	ND	mg/kg	0.03	EPA 619	12/09/1996	96145214
Diuron	ND	ug/Kg	25	EPA 632M	12/10/1996	96145114
4,4'-DDD	ND	ug/Kg	2.5	EPA 8080	12/04/1996	96144984
4,4'-DDE	ND	ug/Kg	2.5	EPA 8080	12/04/1996	96144984
4,4'-DDT	ND	ug/Kg	2.5	EPA 8080	12/04/1996	96144984
Aldrin	ND	ug/Kg	2.5	EPA 8080	12/04/1996	96144984
Alpha-BHC	ND	ug/Kg	2.5	EPA 8080	12/04/1996	96144984
Beta-BHC	ND	ug/Kg	2.5	EPA 8080	12/04/1996	96144984
Chlordane	ND	ug/Kg	2.5	EPA 8080	12/04/1996	96144984
Delta-BHC	ND	ug/Kg	13	EPA 8080	12/04/1996	96144984
Dieldrin	ND	ug/Kg	2.5	EPA 8080	12/04/1996	96144984
Endosulfan I	ND	ug/Kg	2.5	EPA 8080	12/04/1996	96144984
Endosulfan II	ND	ug/Kg	2.5	EPA 8080	12/04/1996	96144984
Endosulfan Sulfate	ND	ug/Kg	2.5	EPA 8080	12/04/1996	96144984
Endrin	ND	ug/Kg	2.5	EPA 8080	12/04/1996	96144984
Endrin Aldehyde	ND	ug/Kg	2.5	EPA 8080	12/04/1996	96144984
Gamma-BHC (Lindane)	ND	ug/Kg	2.5	EPA 8080	12/04/1996	96144984
Heptachlor	ND	ug/Kg	2.5	EPA 8080	12/04/1996	96144984
Heptachlor Epoxide	ND	ug/Kg	2.5	EPA 8080	12/04/1996	96144984
Methoxychlor	ND	ug/Kg	7.5	EPA 8080	12/04/1996	96144984
Toxaphene	ND	ug/Kg	38	EPA 8080	12/04/1996	96144984
Pentachlorophenol	ND	mg/Kg	1	EPA 8270	12/05/1996	96145022

ND = Not Detected
PQL = Practical Quantifiable Limit
e = Estimated (> MDL, but < PQL)

Authorized Signature

Any remaining sample(s) for testing will be disposed of three weeks from the final report date unless other arrangements are made in advance.

APPENDIX D

CHAIN-OF-CUSTODY

MURANAKA ENVIRONMENTAL CONSULTANTS, INC.
801 Moowaa Street
Honolulu, Hawaii 96817

REPORT # _____ PROJECT # 960753 PAGE 1 OF 1

CLIENT INFORMATION

CLIENT NAME: HANAPEPE DEVELOPMENT, INC.
STREET (SUITE OR APARTMENT): C/O MARK DEVELOPMENT INC 3165 Waialae Ave. 200
CITY, STATE, AND ZIP CODE: Honolulu, HI 96816
TELEPHONE #: (808) 735-9099 FAX #: (808) 737-5633
CONTACT PERSON: Craig Nakase
PROJECT / SAMPLE LOCATION: Hanapepe Heights, Kauai Phase II ESA
SAMPLER: Patrick

TURN AROUND TIME REQUIRED
BASED ON WORKING DAYS

- *SAME DAY 100% SURCHARGE
- *1 DAY 75% SURCHARGE
- *2, 3 or 4 DAYS 50% SURCHARGE
- (5)10 DAYS LIST PRICE

REPORT WILL BE SENT TO CLIENT ADDRESS. PLEASE ☐ PHONE ☐ FAX PRELIMINARY RESULTS (✓)

CLIENT SAMPLE ID	MEC LAB ID	NUMBER OF CONTAINERS	DATE SAMPLED	TIME SAMPLED	SAMPLE MATRIX	AIR SAMPLE VOLUME IN LITERS	PLM (ASBESTOS ID)	PCM (FIBER COUNTING) NIOSH 7400	LEAD EPA 7420 (AA)	METALS (LIST EACH) ARSENIC EPA 7061	TCLP & 8 RCRA METALS	BTE EPA 8020	TPH GASOLINE EPA 8015M	TPH DIESEL EPA 8015M	HALOGENATED VOC EPA 8010	Herbicides by EPA 619 M (includes Ametryn and Atrazine)	Pesticides EPA 8.332 M (includes Dinoseb)	Organochlorine pesticides EPA 8080	Pentachlorophenol EPA 8270
960753-01		1	11-27-96	1010	soil					✓						✓	✓	✓	✓
960753-02		1	11-27-96	1110	soil					✓						✓	✓	✓	✓
960753-03		1	11-27-96	1145	soil					✓						✓	✓	✓	✓

CONDITION OF SAMPLE(S) UPON RECEIPT:

RELINQUISHER	DATE	RELINQUISHER	DATE
PRINT: PATRICK H LIVERMORE	TIME: 1648	PRINT	TIME
RECEIVER	DATE	RECEIVER	DATE
PRINT	TIME	PRINT	TIME

Muranaka Environmental Consultants, Inc.
P. O. Box 4341 Honolulu, HI 96812-4341
801 Moowaa Street, Honolulu, HI 96817
Ph.(808) 848-8866
Fax 808) 847-5267

Samples in Fridge
Send to Beck
Mon. Dec. 2, 96

*PRIOR NOTIFICATION NEEDED FOR EXPEDITED SERVICES
SAMPLES RECEIVED IN THE LABORATORY WILL BE DISCARDED AFTER 90 DAYS.

Muranaka Environmental Consultants, Inc.
801 Moowaa Street, Honolulu, Hawaii 96817

Responsibilities: Collection of soil samples; preparation and shipment of samples to laboratory; evaluation of laboratory results; preparation report.

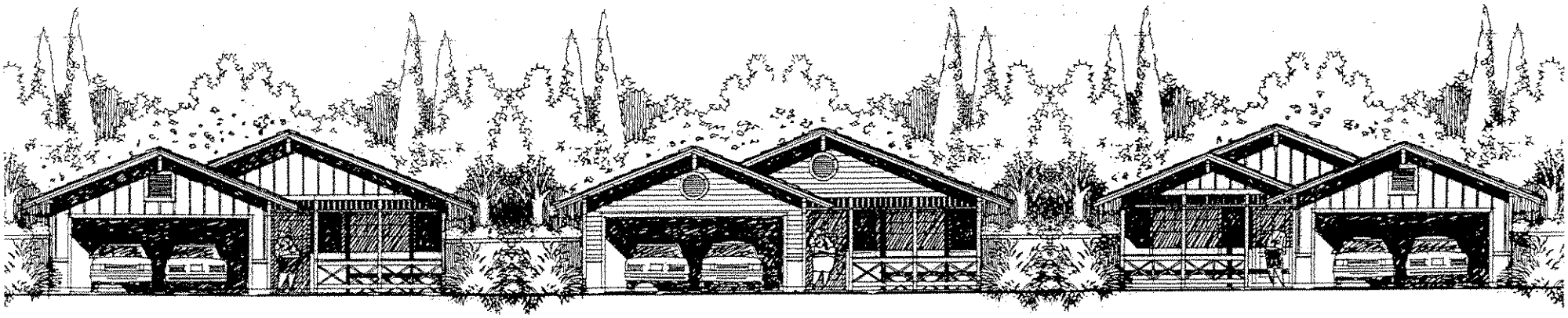
Project Coordinator: Mark T. Muranaka Phone: (808) 848-8866
Environmental Specialist: Patrick H. Lineberger

Weck Laboratories Inc.
14859 East Clark St., Industry, California 91745-1396

Responsibilities: Soil sample analysis.

Contact: Jayna Kostra Phone: (818) 336-2139

Brochures



MODEL 930
2BR/1-1/2 Bath

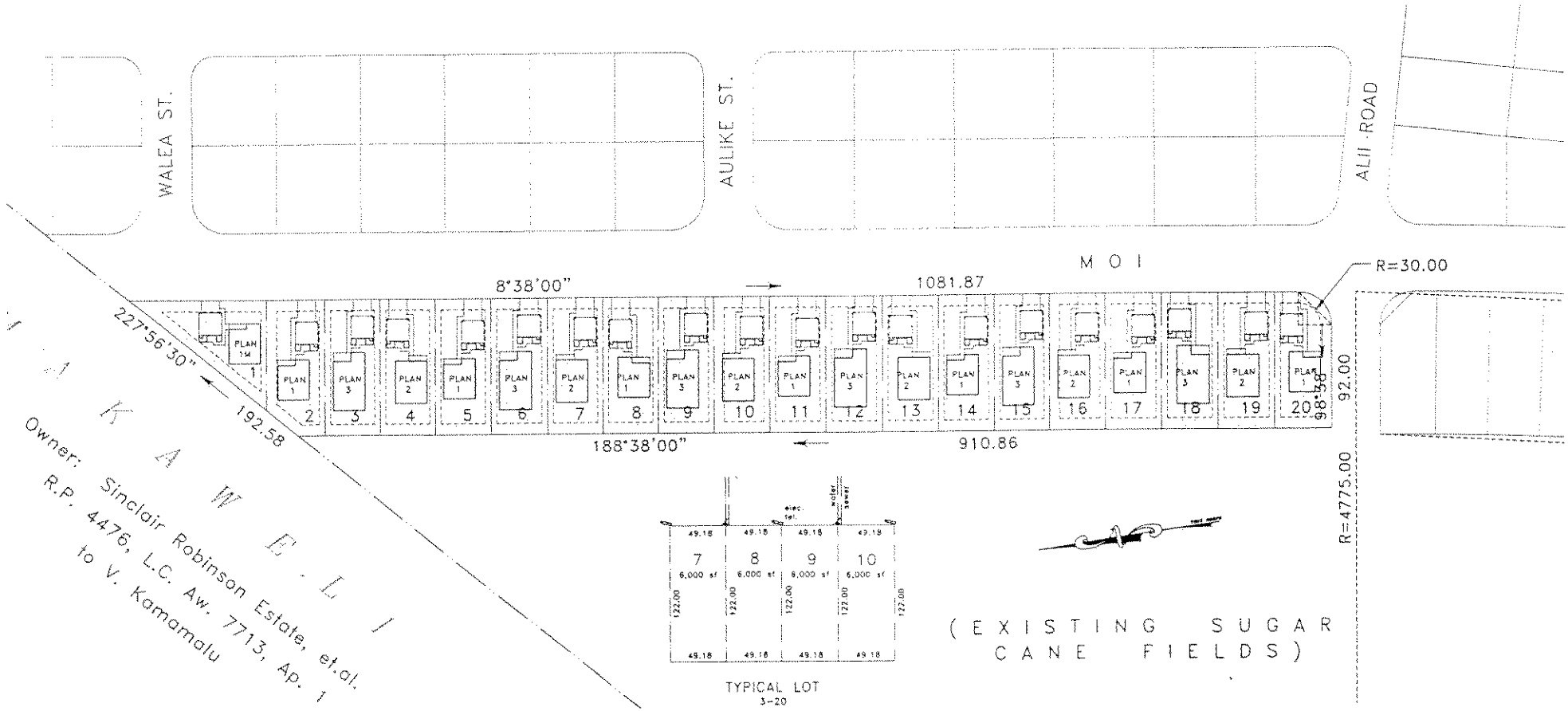
MODEL 1330
4BR/2-1/2 Bath

MODEL 1064
3BR/1-1/2 Bath

Kauai Habitat for Humanity

HANAPEPE RESIDENTIAL HOUSING PROJECT, UNIT 1
HANAPEPE · KAUAI · HAWAII

Design Partners Incorporated
Architects



SITE PLAN

Kauai Habitat for Humanity

HANAPEPE RESIDENTIAL HOUSING PROJECT, UNIT 1

HANAPEPE • KAUAI • HAWAII

T.M.K.: 1-8-07: PORTION

GRAPHIC SCALE

(IN FEET)
1 inch = 80 ft

HATCH AREA INDICATES HABITAT FOR HUMANITY LOTS

MAP SHOWING
50 LOT SUBDIVISION
BEING PORTION OF GOVERNMENT (CROWN)
LANDS OF HANAPEPE
HANAPEPE, WAIMEA, KAUAI, HAWAII
Tax Map Key: (4)
Date: February 8, 1996

Design Partners Incorporated

KAUAI HABITAT FOR HUMANITY

HANAPEPE RESIDENTIAL HOUSING PROJECTS, UNIT 1

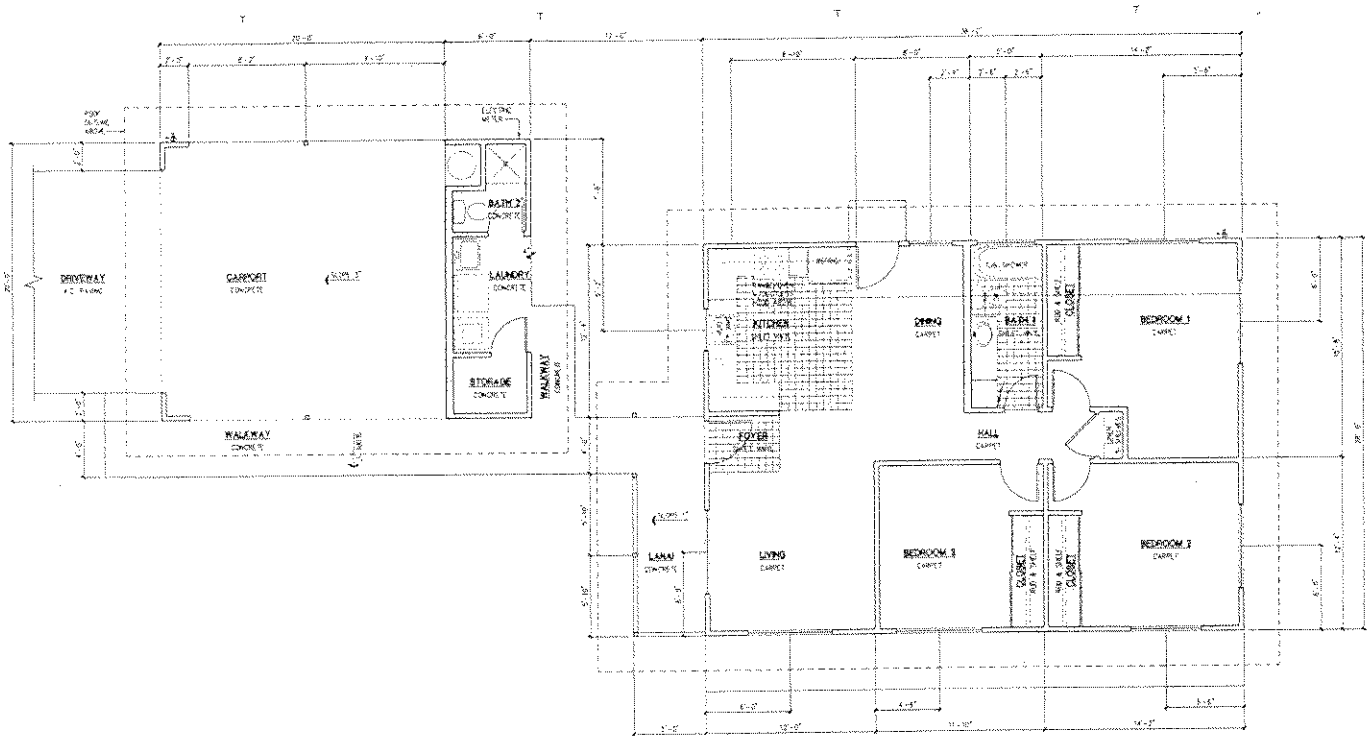
HANAPEPE • KAUAI • HAWAII

A-1

PLAN 1

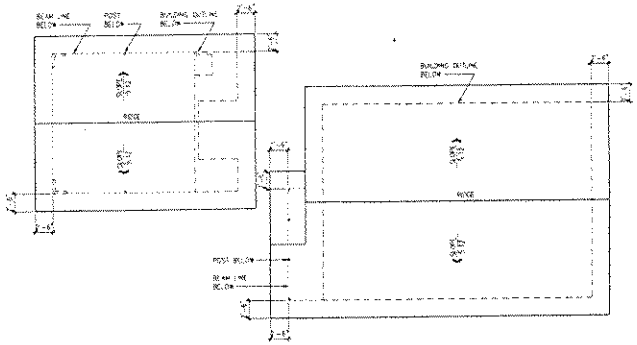
MODEL 930 - 2 BEDROOM / 1 1/2 BATH
FLOOR PLAN
1
A-1

MODEL 930 - 2 BEDROOM / 1 1/2 BATH
ROOF PLAN
2
A-1



PLAN 2

1 / A-2 MODEL 1064 - 3 BEDROOM / 1 1/2 BATH
FLOOR PLAN
SCALE: 1/4"=1'-0"

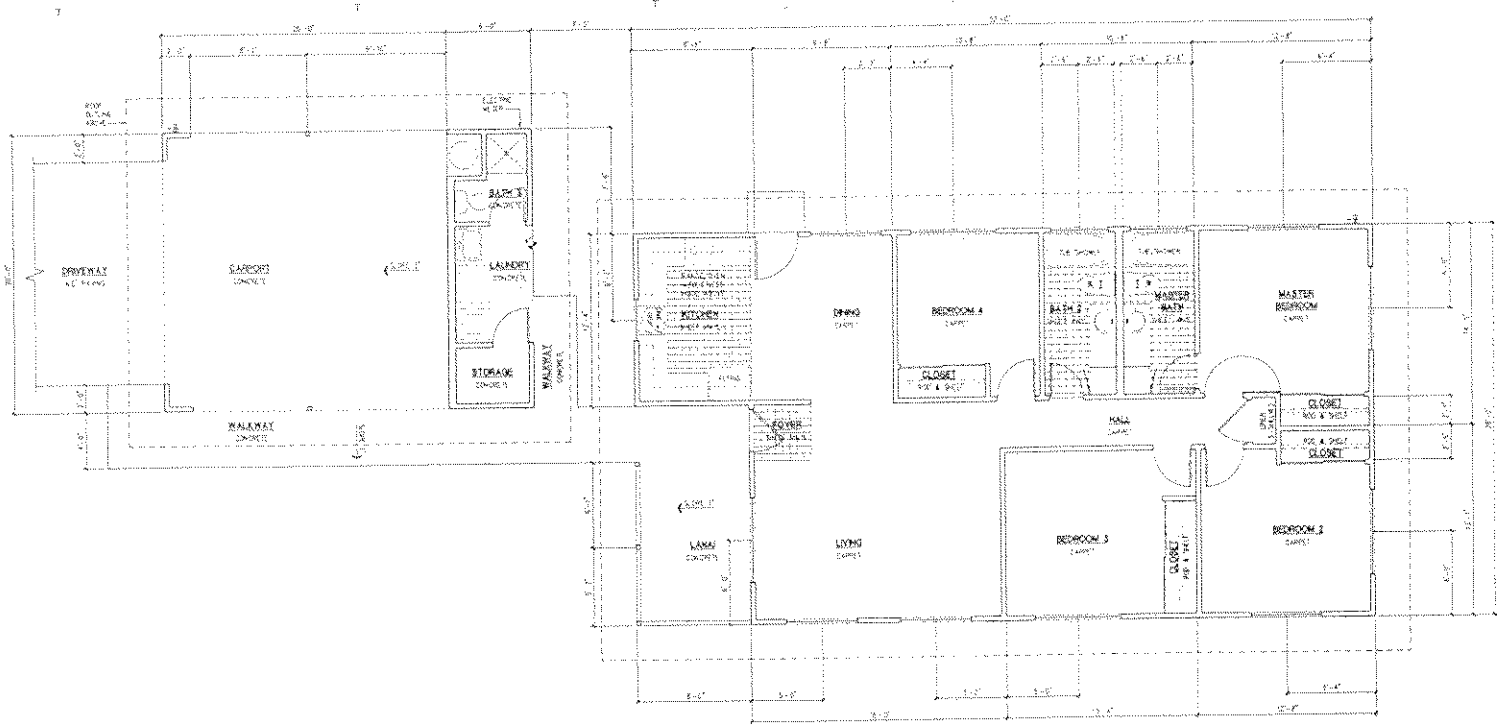


2 / A-2 MODEL 1064 - 3 BEDROOM / 1 1/2 BATH
ROOF PLAN
SCALE: 1/8"=1'-0"

Design Partners Incorporated
Architects
Urban Designers

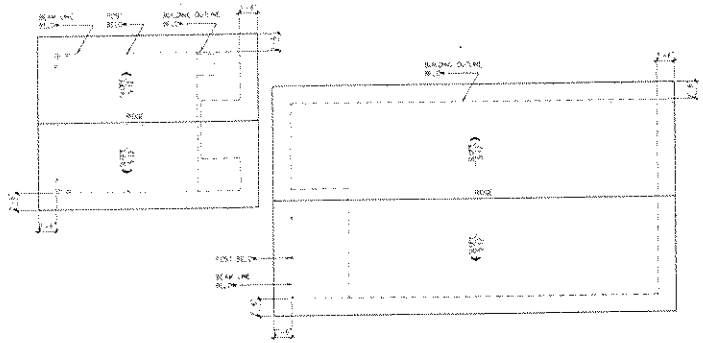
KAUAI HABITAT FOR HUMANITY
HANAPEPE RESIDENTIAL HOUSING PROJECTS, UNIT 1
HANAPEPE • KAUAI • HAWAII

A-2



PLAN 3

1 / A-3 MODEL 1330 - 4 BEDROOM / 2 1/2 BATH FLOOR PLAN



2 / A-1 MODEL 1330 - 4 BEDROOM / 2 1/2 BATH ROOF PLAN

Design Partners Incorporated

KAUAI HABITAT FOR HUMANITY

HANAPEPE RESIDENTIAL HOUSING PROJECTS, UNIT I

HANAPEPE • KAUAI • HAWAII

A-3