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STATE OF HAWAII  
DEPARTMENT OF HAWAIIAN HOME LANDS

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MAY 10, 1994

'94 MAY 11 P3:50

OFFICE OF  
QUALITY CONTROL

Bruce S. Anderson, PhD., Interim Director,  
Office of Environmental Quality Control  
220 South King Street, Suite 400  
Honolulu, Hawaii 96813

Dear Dr. Anderson:

SUBJECT: Negative Declaration for Princess Kahanu Estates  
TMK: 8-7-07: 04, 8-7-34: 14  
Lualualei, Waianae District, Oahu, Hawaii

The Department of Hawaiian Home Lands has reviewed the comments received during the 30-day public comment period which began on April 8, 1994. The agency has determined that this project will not have significant environmental effects and has issued a negative declaration. Please publish this notice in the May 23, 1994 OEQC Bulletin.

We have enclosed a completed OEQC Bulletin Publication Form and four copies of the Final Environmental Assessment.

Please contact Darrell Ing of our Land Development Division at 586-3816 if you have any questions.

Warmest aloha,

  
Hoaliku L. Drake, Chairman  
Hawaiian Homes Commission

HLD:di/5339B

ENCLOSURE

5b

1994-05-23-0A- FEA- Princess Kahanu  
Estates

MAY 23 1994

FINAL ENVIRONMENTAL ASSESSMENT

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**PRINCESS KAHANU ESTATES**

Lualualei, Waianae District, Oahu, Hawaii


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Prepared in Fulfillment of the Requirements  
of Chapter, 343, Hawaii Revised Statutes and  
Title 11, Chapter 200, Administrative Rules  
Department of Health, State of Hawaii

Prepared for

Department of Hawaiian Home Lands  
335 Merchant Street, Room 307  
Honolulu, Hawaii 96813

Responsible Official:

  
Hoaliku L. Drake, Chairman  
Hawaiian Homes Commission

Date:

5/10/94

Prepared By:

Calvin Kim & Associates, Inc.  
and  
Gerald Park Urban Planner

## SUMMARY

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PROPOSED ACTION: Princess Kahanu Estates  
Residential Subdivision

APPLICANT: Princess Kahanu Development Corporation

DETERMINING AGENCY: Department of Hawaiian Home Lands  
335 Merchant Street, Room 307  
Honolulu, Hawaii 96813

LOCATION: Lualualei, Waianae District  
City and County of Honolulu, Hawaii

TAX MAP KEY: 8-7-07: 4; 8-7-34: 14

LAND AREA: 52.369 acres

LANDOWNER: Department of Hawaiian Home Lands  
State of Hawaii

STATE LAND USE  
DESIGNATION: Urban

GENERAL PLAN: Rural

DEVELOPMENT PLAN AREA: Waianae  
LAND USE MAP: Residential  
PUBLIC FACILITIES MAP: Farrington Highway widening w/in 6 years

ZONING: PD-H

EXISTING USE: Vacant

CONTACT PERSON: Darrell Ing  
Land Agent  
Department of Hawaiian Home Lands  
Land Development Division  
335 Merchant Street, Room 345  
Honolulu, Hawaii 96813

Phone: 586-3816

Note: Revisions to the Draft Environmental Assessment are italicized and shown in bold type. Deleted text is enclosed by brackets [].

## TABLE OF CONTENTS

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	<u>Page</u>
<b>SUMMARY</b>	i
<b>SECTION 1 PROJECT DESCRIPTION</b>	1
A. Background	1
B. Purpose of the Project	1
C. Technical Characteristics	3
D. Economic Characteristics	3
E. Social Characteristics	3
<b>SECTION 2 DESCRIPTION OF THE AFFECTED ENVIRONMENT</b>	6
A. Existing Use	6
B. Climate	6
C. Topography	6
D. Soils	6
E. Groundwater	9
F. Surfacewater	9
G. Flood Hazard	9
H. Flora	9
I. Fauna	10
J. Archaeological Resources	10
K. Air and Acoustical Quality	10
L. Environmental Hazards	10
M. Land Use Controls	11
N. Socio-Economic Characteristics	11
O. Public Facilities and Services	12
1. Roads	12
2. Water	13
3. Wastewater	13
4. Drainage	13
5. Solid Waste	14
6. Power and Communication	14
7. Protective Services	14
7. Medical Facilities	14
8. Public Schools	14
9. Recreation	14

<b>SECTION 3</b>	<b>SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS AND MEASURES TO MITIGATE ADVERSE EFFECTS</b>	16
	A. Assessment Process	16
	B. Short-Term Impacts	16
	C. Long-Term Impacts	18
<b>SECTION 4</b>	<b>ALTERNATIVES TO THE PROPOSED ACTION</b>	24
<b>SECTION 5</b>	<b>AGENCIES AND ORGANIZATIONS TO BE CONSULTED</b>	25
<b>SECTION 6</b>	<b><i>DETERMINATION OF SIGNIFICANCE</i></b>	27
<b>REFERENCES</b>		30
<b>APPENDIX A</b>	<b>TRAFFIC ASSESSMENT REPORT</b>	
<b>APPENDIX B</b>	<b>COMMENT LETTERS AND RESPONSES</b>	

## LIST OF FIGURES

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<u>Figure</u>	<u>Title</u>	<u>Page</u>
1	Location Map	4
2	Preliminary Subdivision Plan	5
3	Traffic Assignment 1996 Peak Hour	20

## PHOTOGRAPHS

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<u>Photograph</u>	<u>Title</u>	<u>Page</u>
1	East View of Site from Waiolu Street	7
2	South View of Site from Hakimo Road	7
3	Improved Roadway Littered with Debris (Typical)	8
4	East View of U2 Drainage Channel from Pohai Street Bridge	8
5	Ulehawa Drainage Channel. U2 Drainage Channel Section on Right.	8

## SECTION 1 DESCRIPTION OF THE PROPOSED PROJECT

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Princess Kahanu Development Corporation, a registered Hawaii corporation, proposes to construct a residential subdivision on lands situated at Lualualei, Waianae District, City and County of Honolulu, Hawaii. The property is located mauka of Farrington Highway between Hakimo Road to the north and the Ulehawa Drainage Channel to the south. The subdivision site bears tax map key 8-7-07: 4 and 8-7-33: 14 and encompasses an area of 52.369 acres.

### A. Background

The site was first proposed for residential development in 1971 by Keystone Investments, Inc. in association with the Honolulu Redevelopment Agency and Model Cities. The Nanakuli Planned Development (referred to as the Keystone Project) was to provide moderate cost housing units in the Waianae area which in 1969 was estimated to have a 1,585 unit shortage of low-moderate income housing. The shortage was projected to increase at 245 units per year.

The Keystone development "[P]lans indicate that 502 residential units consisting of Patio Houses, Town Houses and Three Story Dual Town House Units are proposed for this project. A recreational building will be built near the center of the project. Utility lines will be placed underground. Approximately 450,000 square feet of land (approximately 10 acres) is devoted to recreation and open space for the project--Tot lots, Playgrounds, and a Junior Baseball Field account for approximately 175,000 square feet. The balance of the open space is for pedestrian parkway systems, buffer areas, etc. The parking spaces are provided at the ratio of 2 to 1 for each unit. In addition parallel guest parking will be allowed along interior streets."

The developer graded the property, installed water, sewer, drain lines, interior roads, and parking areas in anticipation of multi-family housing construction. Houses were never built and no further improvements were made.

In 1990, Gentry Homes, Ltd. in cooperation with the State Housing Finance and Development Corporation proposed to develop the property for residential use. In the intervening 15 years, housing styles and consumer preferences had changed and the Gentry plan proposed a residential subdivision of lesser density than that proposed by Keystone Investments. According to the Gentry proposal "the proposed project consists of the development of 395 dwelling units and 20 single-family residential lots . . . The subject development will include 263 single family detached houses similar to the Soda Creek subdivision developed by applicant in Ewa, Oahu. The remaining 132 units will be multi-family, townhouse units similar to those constructed by the applicant in the Haiku Point project in Kaneohe. Twenty (20) finished, ready-to-build single family residential lots will be provided to Housing, Finance and Development Corporation for self-help housing. A 4-acre recreation field will be a central feature of the proposed project. A 3-acre church and childcare site will also be included adjacent to the recreation field."

The Gentry project was never built.

## B. Purpose of the Project

Princess Kahanu Estates is one of 12 Department of Hawaiian Home Lands projects planned for the Nanakuli-Waianae area in various stages of development. The proposed action helps to implement the objectives of the Hawaiian Homes Commission Act of 1920 by providing residential lots and dwellings for native Hawaiians .

## C. Technical Characteristics

Applicant proposes to develop a single-family residential subdivision consisting of 272 residential lots each with a minimum lot size of 5,000 square feet. In addition, a 1.3 acre site has been set aside for a daycare center and one lot ( $\pm$  6,600 square feet) for a community association office. A site plan is shown in Figure 2. The table below summarizes the proposed unit mix, enclosed living area, and estimated selling prices (dwelling only) for the various units.

<u>Model</u>	<u>No. Units</u>	<u>Unit Type</u>	<u>Living Area</u>	<u>Estimated Selling Price</u>
A	41	2 Bedroom/1 Bath	853 square feet	\$ 78,000
B	81	3 Bedroom/2 Bath	1,126 square feet	\$ 102,000
C	94	3 Bedroom/2 Bath	1,118 square feet	\$ 125,000
D	28	3 Bedroom/2 Bath	1,446 square feet	\$ 136,000
E	28	4 Bedroom/2.5 Bath	1,524 square feet	\$ 145,000

All homes will be erected on a concrete slab foundation, wood framed (using pressure treated lumber) with exterior hardboard siding, and topped with an asphalt shingle roof. Each unit features a two-car carport, front veranda, and backyard lanai. Units are one story in height except for the larger 3 and 4 bedroom units which are two stories. All lots and dwelling units will conform to City and County of Honolulu zoning and building codes.

Access to the subdivision will be from Farrington Highway and Hakimo Road via Pohai and Waiolu Streets, respectively. Both streets were constructed in the early 1970s as part of the Keystone project. The road alignments into the subdivision will remain intact and both will be resurfaced. A right turn lane from Farrington Highway into Pohai Street is planned.

A new interior roadway system built to City standards and serving all lots in the subdivision will be constructed. Three existing cul-de-sacs off Waiolu Street within the property and existing paved driveways and parking areas which were constructed in anticipation of multi-family development will be removed. The land will then be graded to achieve design elevations for the houselots and roadways and for drainage purposes. A vehicle crossing will be constructed over the U2 drainage channel which separates the project site from Farrington Highway. The crossing will be built atop a 15' X 8' box culvert to be placed in the channel. The deck of an existing bridge adjacent to the proposed crossing will be demolished and the bridge footing and abutments left in place.

Existing sewer and drain lines will be cleared of debris and tested to determine if they are still intact or if sections need to be replaced. Water lines and valves also will be tested and missing, damaged, or broken sections repaired and replaced as required. New county standard water and sewer lines will be installed in the new roadways. Connections will be made to the existing utility systems and service provided to each residential lot. The existing "gang" configuration for multi-family development is not workable for a residential subdivision.



The project area between Farrington Highway and the U2 drainage channel will be improved for boat parking. The area will be paved and enclosed by a 6-foot high cement masonry wall. Boats over 15 feet in length (measured from bow to stern) will be required to be stored in this area and owners will be assessed a monthly storage fee.

Three 2,000 gallon LPG above ground gas tanks will be located adjacent to the boat storage area.

A lot off Hakimo Road is set aside for a day care facility. The developer will prep the site for construction and turn it over to the Department of Hawaiian Home Lands. In turn, the department will solicit proposals to construct a day care facility and also an operator for the facility.

#### **C. Economic Characteristics**

The cost of all improvements is estimated at \$50.6 million dollars and will be borne by applicant.

The property is owned by the Department of Hawaiian Home Lands. Title to the property was acquired in 1992 by deed transfer from the Housing Finance and Development Corporation, State of Hawaii.

Residential lots will be leased to homeowners for \$1.00/year for 99 years with provisions for renewal. Houses will be sold at the estimated prices previously disclosed.

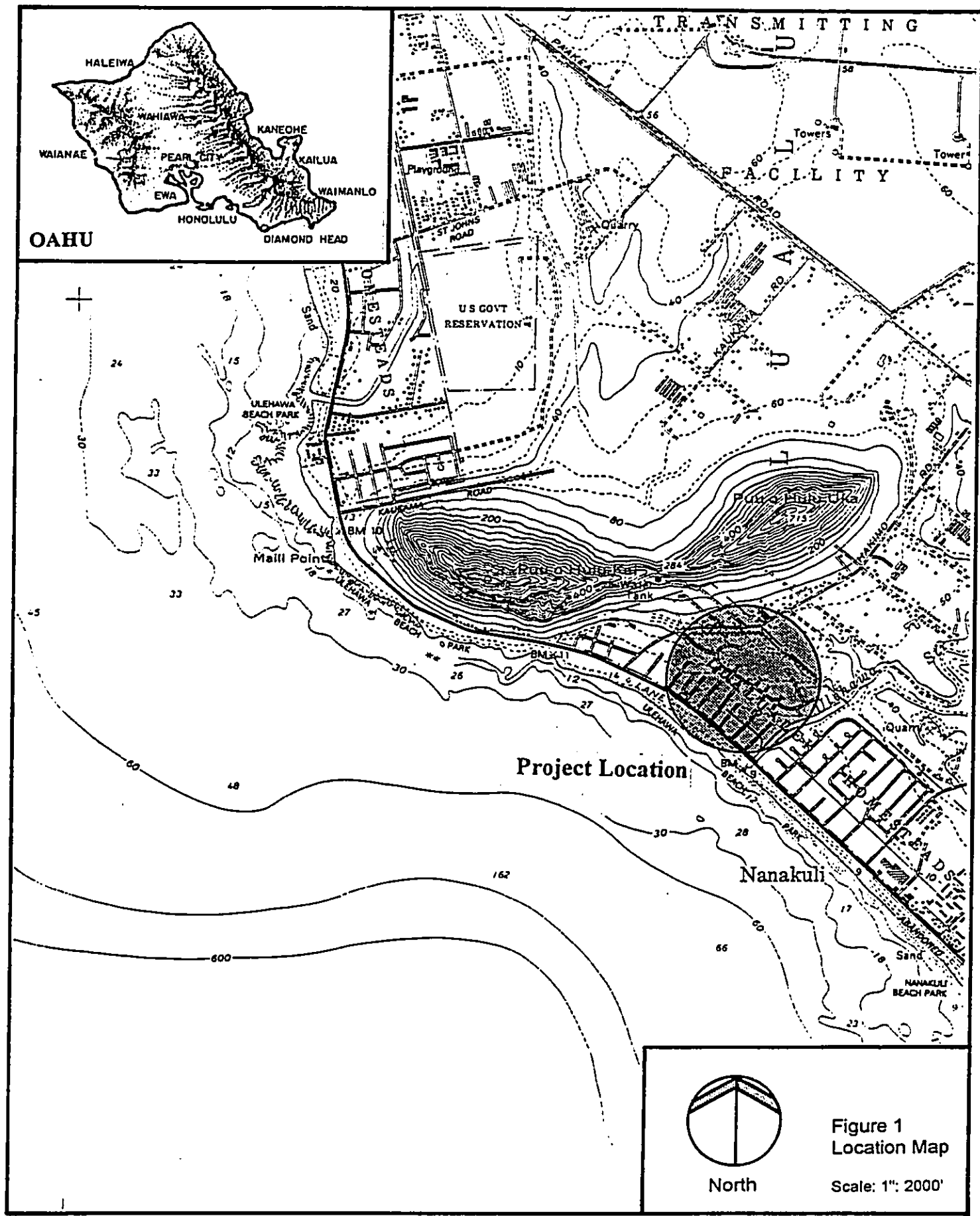
Construction will commence after all necessary approvals are received. The project will be developed in one phase separated into three construction increments. Tentatively, the developer proposes to commence infrastructure construction in July 1994 and house construction in January 1995. The first homes should be ready for occupancy in May 1995, and house construction should be completed in July 1996.

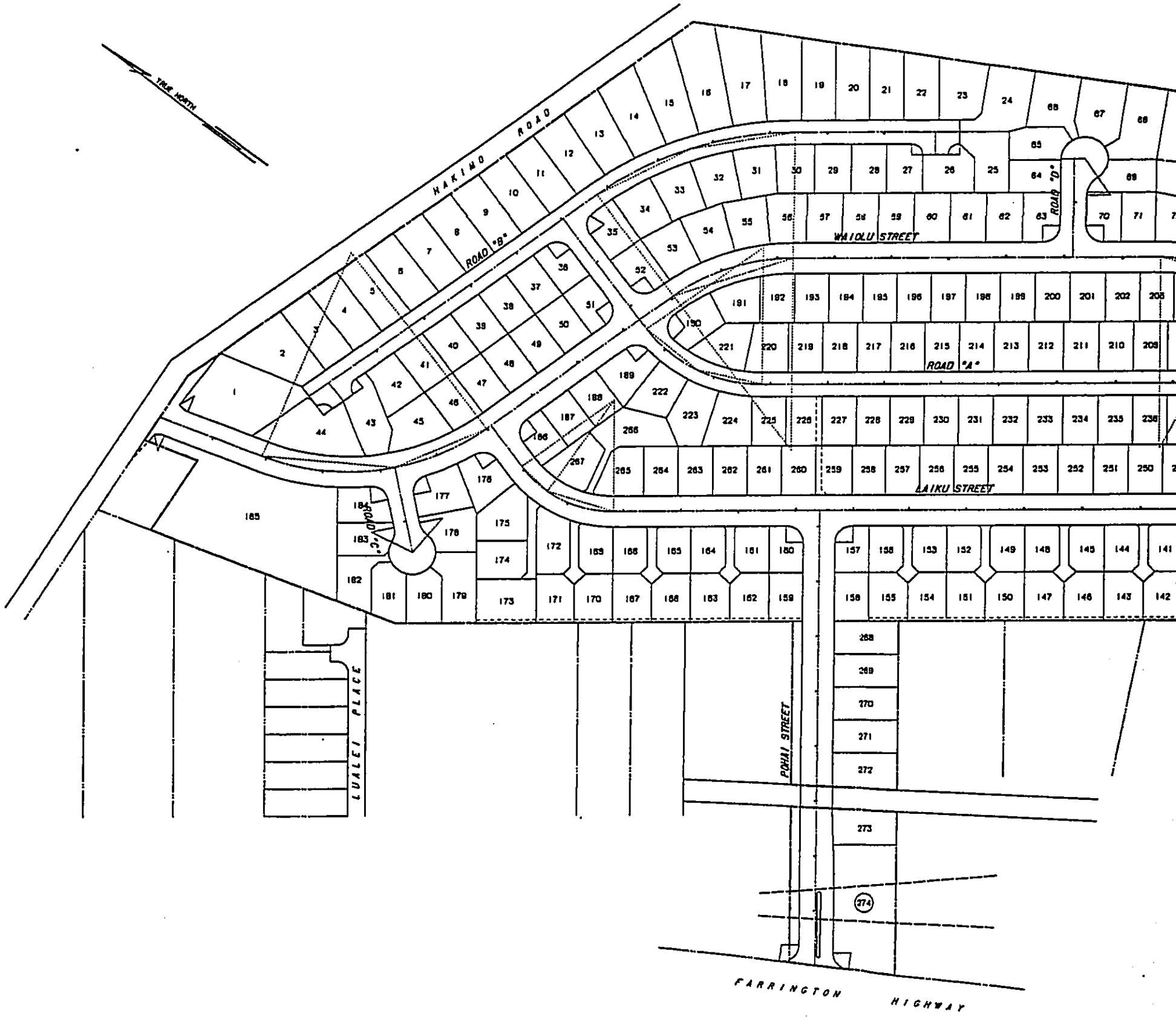
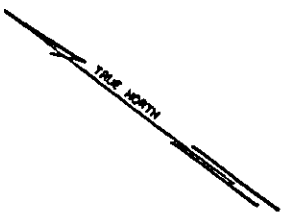
#### **D. Social Characteristics**

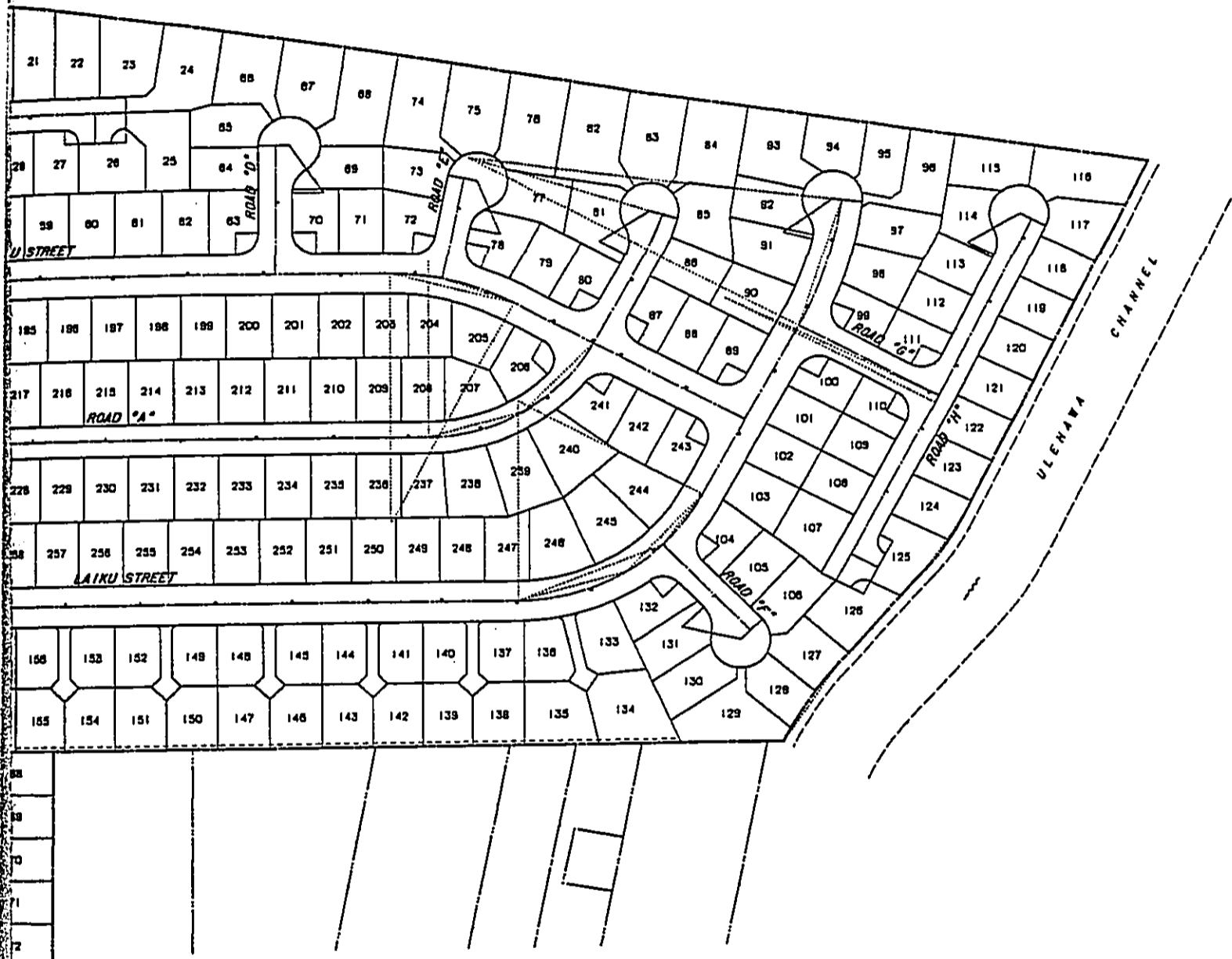
The Department of Hawaiian Home Lands has provided the developer with the names of prospective lessees. There are over 5,000 applicants on DHHL's Oahu waiting list. The names are compiled in rank order (date and time stamped) in which the department received completed applications for a Hawaiian Homes Lease. Princess Kahanu Development Corporation is required to follow the rank order in soliciting applications for a lot in the proposed development. Qualifying households will be able to select a lot and model house to be built on the lot.

Because the property is owned by the Department of Hawaiian Home Lands, land can be leased only to native Hawaiians (defined as one with 50% Hawaiian blood). For Hawaiian households, only one spouse needs to be native Hawaiian.

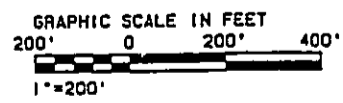
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**PRINCESS KAHANU ESTATES**



HIGHWAY

## SECTION 2 DESCRIPTION OF THE AFFECTED ENVIRONMENT

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### A. Existing Use

The site is vacant, overgrown with weeds, and used as an illegal dumpsite (See Photographs 1-3). Rubbish and debris are scattered throughout the premises. Rubbish piles were observed in the northern, eastern, and western borders of the property and along the the parking areas and roads on the site (Muranaka, 1993). A sampling of debris found on site include water heaters, washing machines, small appliances, abandoned automobiles, automobile tires, automobile batteries, empty 55-gallon drums, construction material and debris, abandoned refrigerators, and animal carcasses. Man-made debris is stuffed into and probably clogs many of the on-site sewer and drain manholes and lines. Rubbish is scattered on the bottom of and along the entire length of the Waianae Nui Watershed and Flood Prevention drainage channel located to the south of the property (the channel is a branch of the Ulehawa Drainage Channel a section of which borders the project site to the east). The western end of the channel ends in a residential area and here the channel is used as an open dump (See Photographs 4 and 5).

### B. Climate\*

Lualualei Valley is relatively arid. Mean annual rainfall is approximately 20 to 30 inches and varies from 3.5 inches in December and January to about 0.4 inches in June and July. Average temperatures within the area surrounding the project site varies from 70.3° F (January) to 76.7° F (October). Prevailing winds come from a northeast direction at an average 10 mph to 13.6 mph. Cloud cover varies from 51% in the summer to 63% in spring.

### C. Topography

The site was previously cleared, graded, and improved with roads, parking areas, and underground utility systems. Grading recontoured the land and a distinct north to south gradient is evidenced by roadway and parking area elevations. Finish elevation falls from 30 feet above sea level in the northernmost corner of the lot is about 11 feet in the southern corner adjoining the Ulehawa Drainage Channel. Cross slope is estimated at 2% which is relatively flat.

Although the site is relatively flat, its northern and northeastern boundaries are marked by a continuous limestone embankment. The embankment rises steeply between 30-40 feet above the flatland (1:1 slope) giving the appearance that the site is located in a bowl that is open on one side.

### D. Soils

Soil Conservation Survey (1972) maps identify a majority of the project site as a Quarry. Lands adjacent to the Ulehawa Drainage Channel and makai of the project site are identified as Mamala stony silty. This soil overlies coral limestone and consolidated calcareous sand at depths of 8 to 20 inches. The soil is moderately permeable and poses a slight erosion hazard.

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\* Hida, Okamoto & Associates, 1991. Final Environmental Impact Statement. Lualualei Golf Course.

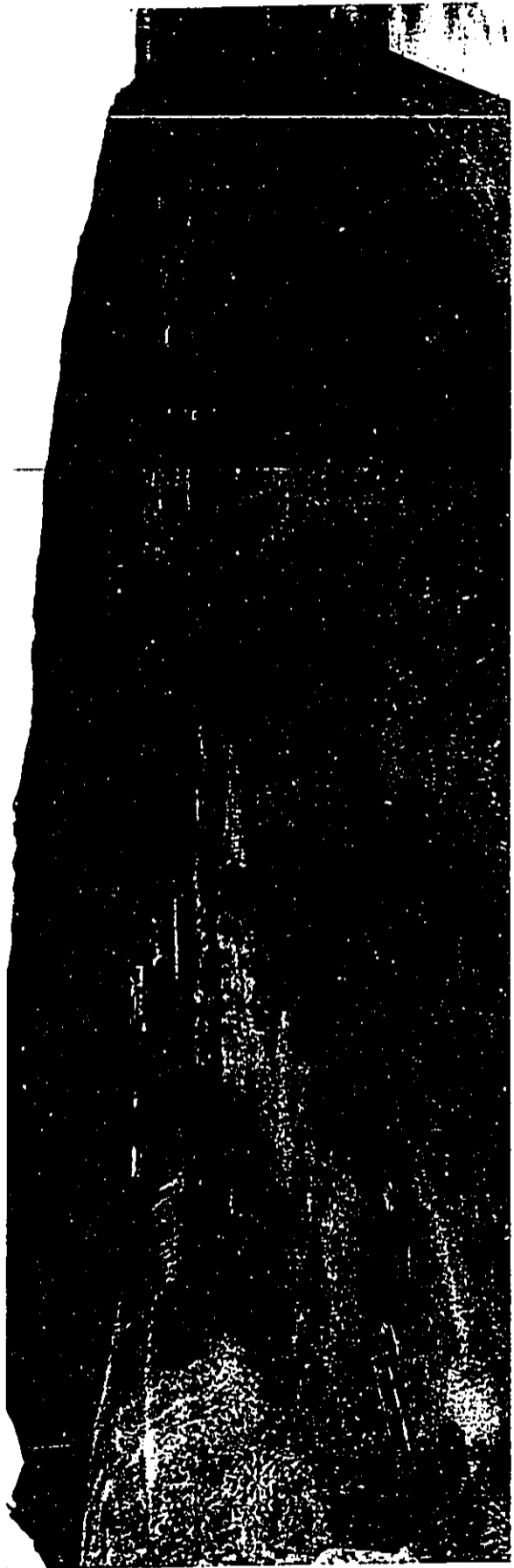


Figure 1. East View of Site from Waiolu Street.



Figure 2. South View of Site from Hakimo Road.

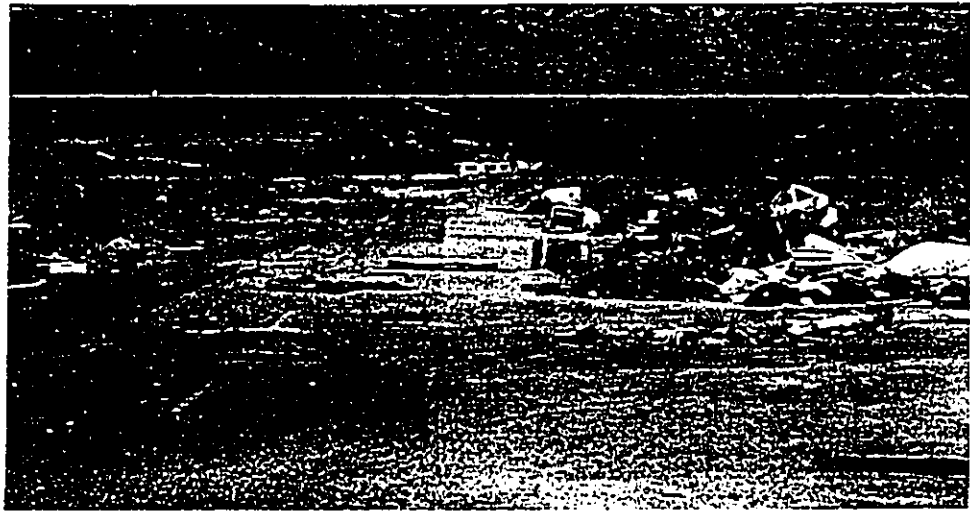


Figure 3. Improved Roadway Littered With Debris (Typical).

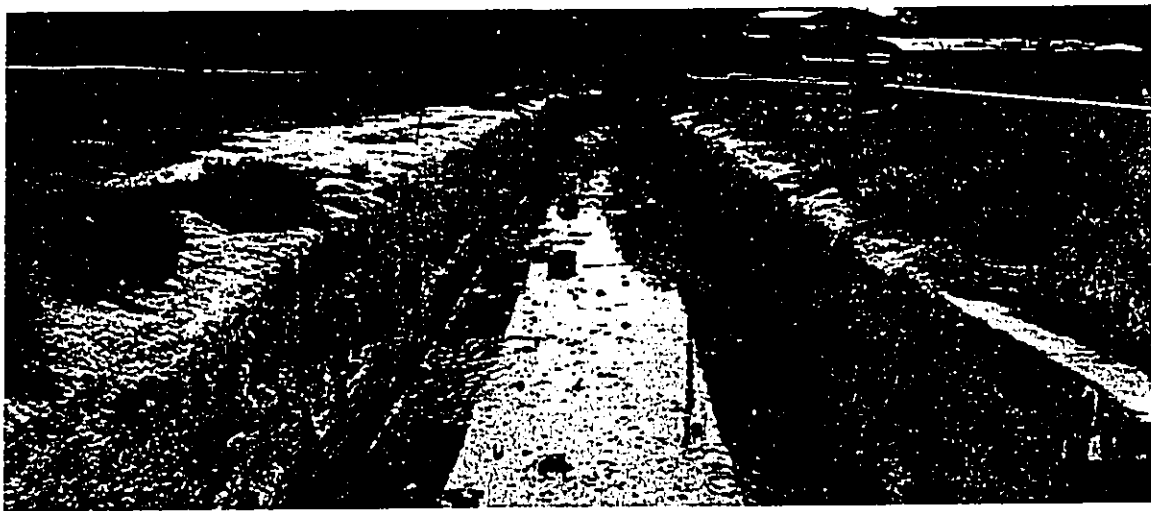


Figure 4. East View of U2 Drainage Channel from Pohai Street Bridge.



Figure 5. Ulehawa Drainage Channel. U2 Drainage Channel Section on Right.

#### E. Groundwater

Mink (in Hida, Okamoto, 1991) cites the presence of two separate aquifers in Lualualei Valley. One of the aquifers, a limestone aquifer, "extends throughout Lualualei Valley below the approximately 100 feet elevation." Groundwater in the limestone aquifer occurs as a lens of brackish water floating on sea water. Nowhere is the water fresh enough to drink, and in most places it is unusable for irrigating all but salt-tolerant plants (Mink). The sustainable draft of the limestone aquifer between Puu Hulu, a basaltic ridge half a mile west of the property [the proposed Lualualei Golf Course], and Ulehawa is on the order of 300,000 gallons per day (Ibid).

Although the subject property may be atop a portion of a limestone aquifer and although there are many water wells further mauka in Lualualei Valley primarily serving agricultural activities, there are no water wells on the subject property (Department of Health UIC Map). The nearest drinking water source is approximately 1.25 miles northwest of the property on the Waianae side of Puu O Hulu Uka a basaltic ridge separating the Nanakuli and Maile communities.

#### F. Surface Water

Ulehawa Stream, an intermittent stream, drains approximately 3,178 acres of Lualualei Valley (Hida Okamoto, 1991). Originating at about the 1,650 foot elevation on the north slope of Puu Haleakala, the stream meanders west/southwest for about 5 miles and is fed by several tributaries before outletting into the ocean. For most of its length the stream flows within a natural streambed. About .25 mile from the ocean, the natural streambed has been replaced by a smooth 110-foot wide concrete trapezoidal channel. Existing peak discharge is estimated at 8,100 cfs (Hida, Okamoto, 1991). The channel is subject to tidal influences and oftentimes sandbars form in the channel mauka of Farrington Highway.

#### G. Flood Hazard

Flood Insurance Rate Maps (FIRM) place almost the entire property in Flood Zone D which is defined as "areas in which flood hazards are undetermined." (Federal Emergency Management Agency, 1987). A portion of the planned project entry road and lots adjacent to Farrington Highway lies in Flood Zone AE (shaded) which is defined as "special flood hazard area inundated by 100-year flood, base flood elevation determined" (Ibid, 1987). The base flood height is calculated at Elevation 10' and Elevation 12' with the higher elevation located closer to Farrington Highway.

The entry road and land immediately adjacent to Farrington Highway may be subject to coastal flooding with velocity hazard (wave action). The southern corner of the lot adjacent to Farrington Highway makai lies in FIRM Zone VE (EL 12). We estimate this area to be 100 sf or less.

#### H. Flora

Flora consists primarily of scrub vegetation. Kiawe (*Prosopis pallida*) and koa haole (*Leucaena leucocephala*) dot the landscape. Dry, scrubland vegetation such as Guinea grass (*Panicum maximum*), buffel grass (*Cenchrus ciliaris*), ilima (*Sida fallax*), 'uhaloa (*Waltheria americana*), and false mallow (*Malvastrum coromandelianum*) also are in abundance. Although several species are native to the Hawaiian Islands, they can be found throughout the state in areas with



similar environmental conditions. None of the observed species are considered rare, threatened, or endangered.

#### I. Fauna

No significant wildlife are known to frequent the property. Stray chickens and cats, barking dogs, and mongoose (*Herpestes auro-punctatus*) were observed or heard during our field survey. Spotted dove (*Streptopelia chinensis*), barred dove (*Geopelia striata*), ricebird (*Lonchuria punctulata*), and house sparrow (*Passer domesticus*) were the only birds seen. More than likely, the piles of debris and rubbish attract various species of rodents.

Juvenile and adult tilapia (*Sarotherodon cf. mossambica*) were the only fish observed in the murky waters of the U2 Channel.

#### J. Archaeological Resources

No archaeological features were observed on the premises and none are depicted on historic site maps and recorded in reference files at the Historic Preservation Division, Department of Land and Natural Resources. Having been used for quarrying activities and having been mass graded for residential development in the early 1970s, it is unlikely that there are any surface archaeological remains on the property.

#### K. Air and Acoustical Quality

The acoustical environment is relatively quiet and controlled by sounds of passing vehicles on Farrington Highway and Hakimo Road, rustling trees, singing birds, and barking dogs. Adjoining residential areas are the only noise sensitive uses located near the project area.

Air quality is generally considered good because of the low degree of development in the area and the absence of on-site air pollution sources. Ambient air quality is sometimes affected by cement dust generated by a cement plant (for which numerous citizen complaints have been filed in the past) about 1 mile east of the project area and exhaust emissions from highway traffic. Many agricultural animal industries are located in Lualualei Valley and on occasion foul odors from these activities can be detected downwind.

#### L. Environmental Hazards

Site conditions that may present an environmental hazard or liability were examined by Muranaka Environmental Consultants (MEC). Key findings of their Environmental Site Assessment are summarized below. The Environmental Site Assessment is attached as Appendix A.

- o No visible Underground Storage Tanks were observed on the site and none are listed in the State of Hawaii, DOH Underground Storage Tank Registration List.
- o MEC did not observe regulated hazardous waste that was generated or treated on the site. However, some of the materials dumped on the property are considered to be hazardous waste. Hazardous waste is strictly regulated by the U.S. Environmental Protection Agency under the Resource Conservation and Recovery Act, and firms that improperly manage hazardous wastes are subject to fines.

- o No suspect Polychlorinated Biphenyls (PCBs) containing items or electrical transformers were observed on the site.
- o MEC observed signs of surface contamination on the site. Several abandoned automobiles had stains underneath them which were approximately 3 feet in diameter. Petroleum, oil, and lubricants that are used in automobiles are considered hazardous and have the potential to cause surface and /or subsurface contamination. Further investigation is recommended to determine if there is subsurface contamination present.
- o No lead-based paint covered surfaces were observed on the site.
- o Asbestos mineral fibers were detected in samples of vinyl sheeting and gray cement corrugated roofing material discarded on the site.
- o Rubbish scattered throughout the lot and in the Waianae Nui Watershed and Flood Prevention Project drainage channel may present a potential health hazard.

**M. Land Use Controls**

State Land Use Classification: Urban  
 General Plan: Rural  
 Development Plan Area: Waianae  
 Land Use Map: Residential, Park  
 Public Facilities Map: Farrington Highway widening, w/in 6 years  
 Zoning: Residential (R-5) and Preservation (P-2)  
 overlaid by PD-H  
 Special Management Area: Only lands makai of the U2 channel are  
 located within the Special Management Area  
 Underground Injection Control: Located below UIC Line

**N. Socio-Economic Characteristics**

In 1990, the number of residents living in Waianae was 37,411 persons. This represented approximately 4.4 % of Oahu's population. The percentage of population falls within the range of 4.2-4.6 % established for Waianae by the Oahu General Plan.

The project site is situated within Census Tract 96.04 which extends from the coastline to the back of Lualualei Valley. Lualualei Valley is physically separated from the town of Nanakuli by Puu Haleakala, a steep ridge on the eastern side of the valley, and the town of Maili by Puu O Hulu, a double domed coastal landform.

In 1990, the census tract had a population of 4,696 persons distributed into 1,079 households. Hawaiians (1,638 persons), Filipinos (1,071 persons) and Caucasians (985 persons) were the predominant ethnic groups. Almost 9 out of every 10 persons claim to be native (Hawaii) born and about half the households (553) are newcomers to the area having moved there between 1985-1990.

There are 1,130 housing units in the tract and the majority (641) of them were built between 1960-1979. Of the occupied housing units, a majority are renter occupied (588) in comparison to owner occupied units (491).

## O. Public Facilities and Services

### 1. Roads

Farrington Highway is a rural arterial highway which connects the Waianae Coast communities of Makaha, Waianae, Maile, and Nanakuli. It is the only roadway for through traffic along the Waianae Coast and links with the H-1 Freeway at the Kaleloa Interchange near the second city of Kapolei. The H-1 Freeway carries vehicle traffic from the leeward communities to and from Ewa, Central Oahu, and the Primary Urban Center (Pearl City to downtown Honolulu).

In the vicinity of the project site, Farrington Highway is an undivided four-lane highway with a posted speed limit of 35 mph. The typical section of the highway includes four 12-foot lanes (two lanes serve traffic in each direction) and paved shoulders varying from 5 to 8 feet wide. An asphalt sidewalk is provided on the northeast (mauka) side only, and utility poles are located northeast of this sidewalk. A program to widen the road is proposed within six years.

Hakimo Road is a collector street approximately two miles long serving residential properties, pig farms, and other agricultural activities located along its length. It is a two-lane undivided roadway within a 40-foot right-of-way with unpaved shoulders on each side. The posted speed limit is 20 mph. The intersection of Farrington Highway and Hakimo Road is signalized and traffic movement controlled by a demand-actuated two-phase signal. In the vicinity of the the project site, 10-foot setbacks have been established on both sides of the road for future road widening.

Two subdivision roads were constructed as part of the Keystone Project. Waiolu Street at Hakimo Road is located about 1,100 feet mauka of Farrington Highway. The right-of-way measures 56 feet with 36-foot wide pavement and 10-foot shoulders on each side. The road is improved with curbs, gutters, and sidewalks. The street currently is blocked with concrete piles at Hakimo Road. A curve in Hakimo Road at the intersection with Waiolu Street and a grass covered mound on the mauka side of Waiolu Street will impede sight distance in the mauka direction for outbound traffic.

Pohai Street intersects Farrington Highway about 1,200 LF to the south of the Farrington Highway/Hakimo Road intersection and was planned as the major entryway into the Keystone Project. The road lies within a 56-foot right-of-way with a 36-foot pavement and 10-foot shoulders on both sides and is improved with curbs, gutters, and sidewalks. The 800 foot long road ends about 300 LF mauka of Farrington Highway at the U2 Drainage Channel. There is no vehicle crossing over the channel within the road right-of-way but a concrete bridge over the channel immediately abuts the right-of-way on its south side.

## 2. Water

Potable water requirements are estimated at 143,000 gallons per day. The existing water system which was constructed in the early 1970's was designed and sized to accommodate a larger development than that proposed. Preliminary engineering studies indicate that the existing water system can accommodate the Princess Kahanu development. The system will be reconfigured to provide service to each lot.

Other than water transmission lines, Board of Water Supply facilities in the immediate area include the Hakimo Road Booster Pumping Station located on a lot adjacent to the Hakimo Road/Waiolu Street intersection and the 1.5 million gallon Puu o Hulu water storage reservoir located on a landform to the southwest overlooking the project site.

## 3. Wastewater

As previously noted, sewer manholes and lines are stuffed with debris. These lines will be cleaned, tested, and repaired as required. The sewer system layout will be reconfigured to allow for sewer hook-ups to each residential lot. Engineering studies indicate that the existing system is adequate to accommodate the proposed development.

Wastewater flow is estimated at 90,000 thousand gallons per day. Wastewater will be collected within the subdivision and conveyed by an existing 12" line down Pohai Street to a manhole in Farrington Highway. From the manhole, wastewater will be pumped to the Waianae Wastewater Treatment Plant for treatment and ocean disposal. The plant has a design capacity of 5.2 mgd and existing flow averages 3.0 mgd (Townscape, Inc., 1993).

## 4. Drainage

The previous developer graded the site so that approximately 30+ acres in the north and northwest sections of the property drains to the U2 Channel and 23 acres in the south and southeast sections drain to Ulehawa Stream Channel.

Approximately 1,800 LF of the lower reach of Ulehawa Stream was channelized in 1963 by the City and County of Honolulu under Project 24-63 "Ulehawa Stream Channel Improvement" in cooperation with the Soil Conservation Service, U.S. Department of Agriculture. Mauka of Farrington Highway, the improved section is fed by two branch channels (U2 and U3) located on opposite sides of the main Ulehawa Drainage Channel. U2 drains lands to the northwest of the channel and U3 drains lands to the southeast. Both were constructed in about 1965 as part of the Waianae Nui Watershed Channel Project. U2 is approximately 1,400 LF in length and is located between Farrington Highway and the project site. The channel lies within a 40-foot wide drainage easement and is fenced on both sides. Excavated out of limestone, the rectangular channel is about 15 feet wide and 10 feet deep.

The debris laden U2 Channel is not fed by any freshwater streams. Ponding water in the channel results from stormwater discharge or backwater from the ocean.

Six bridge crossings between Pohai Street and the Ulehawa Drainage Channel provide access to and from Farrington Highway for residences located on both sides of the U2 Channel. The bridge crossings are supported on reinforced concrete rectangular sections.

#### **5. Solid Waste**

The property is vacant and not served by municipal refuse collection services.

#### **6. Power and Communication**

Overhead electrical power and telephone lines along Farrington Highway and Hakimo Road are available to service the development.

#### **7. Protective Services**

Police and fire protection services for the project area originate from the Waianae Police sub-station in Waianae about 4 miles away and the Nanakuli Fire Station in Nanakuli about 3.5 miles away.

#### **8. Medical Facilities**

The largest medical facility on the Waianae Coast is the Waianae Coast Comprehensive Health Center located on Farrington Highway about 3.5 miles northwest of the project site. A satellite clinic is located about 1.5 miles away in Nanakuli opposite Nanaikapono Elementary School. The nearest hospital is Saint Francis Hospital West which is located about 12 miles away (via the H-1 Freeway) on the western edge of Waipahu Town

#### **9. Public Schools**

Public schools in Nanakuli include Nanaikapono Elementary (K-6), Nanakuli Elementary (K-6), and Nanakuli Intermediate/High (7-12) Schools. [Both elementary schools are operating near capacity and will not be able to accommodate the anticipated enrollment increase in the service area with present facilities (DHM, Inc. 1994).] *Nanaikapono Elementary School is operating beyond capacity. Both Nanakuli Elementary School and Nanakuli High and Intermediate School are operating close to capacity and report a shortage of classrooms. A new Nanakuli III Elementary School is projected to be completed in 1998 to relieve the overcrowded conditions of the elementary schools in the area (Comment Letter, Department of Education, 1994).* [To relieve present overcrowding and accommodate projected growth in enrollment, the Departments of Education and Accounting and General Services are proposing to construct a new elementary school (Nanakuli III) somewhere in Lualualei Valley.]

#### **10. Recreation**

The ocean and the many beach parks along Farrington Highway are the primary recreational attractions on the Waianae Coast. Beach parks in the vicinity of the project area include Mailiili, Maili, Maipalaoa, Puuhulu, Ulehawa (opposite Pohai Street), and Kalaniana'ole.

State of Hawaii and municipal recreation facilities—boat harbors and boat launching ramps, ballfields, parks, outdoor courts—as well as private recreation facilities serve the Waianae area.

### SECTION 3 SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS AND MEASURES TO MITIGATE ADVERSE EFFECTS

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#### A. Assessment Process

The scope of the project was discussed with applicant and the consulting engineers and other members of the consultant team. State and County agencies were contacted for information relative to their jurisdiction, expertise, and areas of concern. Because the property was (and probably still is) used as an illegal dumpsite, an Environmental Site Assessment was conducted to identify site conditions that could pose environmental hazards. Time was spent on the property noting field conditions, conditions in the vicinity of the project site, and the drainage channel located to the south of the property. A literature search provided useful information about environmental conditions in 1973 and 1990 when previous residential developments were proposed. From the discussions and field investigations, existing conditions and features that could be affected by or affect the project were identified. These influencing conditions are:

- o The site has been significantly altered by its previous use both as a quarry and by the construction of roads, parking areas, and infrastructure for residential development planned in 1973;
- o Except for a small section off of Farrington Highway, the property is not located in an identified flood hazard area;
- o There are no rare, threatened, or endangered flora or fauna on the premises;
- o There are no archaeological features on the ground surface and none have been reported on the property;
- o Rubbish and debris found on the site may pose a health hazard;
- o Evidence of surface contamination by petroleum, oil, and lubricants were observed beneath abandoned automobiles; and
- o Traces of asbestos mineral fibers were detected in vinyl sheet siding and cement corrugated roofing materials discarded on the site.
- o The infrastructure needed to serve residential use—roads, water, drainage, and sewer systems—are substantially already in place.

#### A. Short-term Impacts

Prior to construction, both the site and section of the U2 Channel for the Pohai Street crossing will be cleared of rubbish and debris. Trash will be collected and hauled to an approved sanitary landfill for disposal. Most of the rubbish on-site and within the U2 channel are non-hazardous materials presenting only a potential health hazard

Asbestos containing materials will be removed by a licensed asbestos removal contractor. In addition, subsurface testing will be conducted in areas where surface contamination by lubricants

and petroleum products was observed. Should subsurface contamination be detected, applicant will notify the State Department of Health and initiate corrective actions. All short and long-term remediation measures will comply with Federal regulations and State guidelines (40 CFR 280 Subpart G, Closure and Department of Health Technical Guidance Manual, respectively), to remediate potential subsurface contamination.

The site will be grubbed of vegetation, asphalt concrete parking areas demolished, and paving materials removed from roadways. Existing roads will be resurfaced and new roads built to service all lots in the subdivision. New water, sewer, and drainage systems will connect to existing systems and service provided to each lot. These activities will raise fugitive dust, increase erosion, create noise, and increase on and off-site traffic.

Fugitive dust can and will be controlled by sprinkling water over exposed areas or by the application of other dust suppression measures stipulated in Chapter 60 (Air Pollution Control) of Title 11, Administrative Rules of the the State Department of Health and conditions to grading plans approved by the Department of Public Works, City and County of Honolulu.

Construction noises will be audible during the one year construction period. Noise will be most pronounced during the early stages of development (grubbing and grading) to framing of the various dwelling units. Noise will diminish as interior work on the units commence as most noise should be confined to inside the building.

The allowable daytime noise level for residential zoning districts set by the State Department of Health is 55 dBA measured at the property line. Construction work will temporarily exceed this standard and the Contractor will obtain a noise permit prior to construction (Chapter 43, Community Noise Control, Administrative Rules, Department of Health. Construction will be limited to between the hours of 7:00 a.m. to 3:30 p.m., Mondays through Fridays.

Exposed areas can contribute sediment to the adjoining streams and drainage channels. Sediment basins and detention ponds will be constructed at perimeter locations to prevent sediment from discharging directly into nearby waterbodies during storm events. Exposed areas will be sprayed with mulch or planted with vegetation to minimize soil erosion. Site conditions and construction practices will determine the need for other erosion control measures. *A best managment practice plan to minimize storm runoff volume and runoff rates will be implemented during construction.*

Grubbing will remove all existing vegetation except some trees which may be retained for landscaping. These trees will be tagged and either left in place or temporarily relocated elsewhere until they are ready to be planted permanantly. None of the observed species are considered rare, threatened, or endangered and are commonly found on Oahu and the State of Hawaii.

The Historic Preservation Divison, Department of Land and Natural Resources, has indicated that the proposed "project will have no effect on historic sites" (Personal Communication, 1994). In the remote event that subsurface sites are unearthed, work in the immediate area will cease and historic authorities notified for proper disposition of the finds.

Drainage and sewer manholes and underground lines will be cleared of rubbish and debris and the lines tested. Broken or damaged lines will be repaired and missing parts replaced as required.



Excavation for new county standard water, sewer, and drainlines will be confined to the rights-of-way of the new interior road system. Electrical, gas, and CATV systems will also be installed underground.

Road work in the rights-of-way of Farrington Highway and Hakimo Road may require temporary lane closures. To minimize congestion and disruptions to traffic flow construction work will be restricted to non-peak hours and flagmen posted to marshal traffic around construction sites. Open trenches will be covered at the end of each working day and marked by warning lights during evening hours. Following construction, the work site will be restored to pre-construction condition.

### C. Long-Term Impacts

The Princess Kahanu Subdivision is one of the largest residential projects undertaken on homestead lands. One of the significant impacts of the project is that it offers Hawaiian households the opportunity to obtain a homestead lot and a new home. Native Hawaiian households are the ethnic group most affected by the project because they are the only group that can qualify for a residential homestead lot in the project. Improved houselots will be made available to 272 Hawaiian households regardless if they are homeowners desiring larger living quarters or renters wanting to purchase a home.

Princess Kahanu Estates is not an affordable housing project with imposed income limitations. It is a "market" subdivision with lots, houses, underground utilities, and roads built to applicable City codes and standards. Land costs are almost zero thus mortgage debt service is primarily for a dwelling. Eighty-five percent (85%) of the dwelling units are 3 and 4 bedroom homes and range in size from 1,126 to 1,524 sf. These larger homes are sized to accommodate the housing needs of the average homestead household (3.73 persons) which is larger than the average household on Oahu (2.97 persons).

Based on a weighted average of 3.73 persons per household (Mattson & Company, 1993) awarded a homestead lease (in comparison to 4.20 persons per household that apply for a homestead lease), development of 272 residential lots could add approximately 1,000 persons to the population of Nanakuli. The prospects of home ownership may attract Hawaiian households from other parts of Oahu (and the Neighbor Islands) to the Nanakuli area. It is anticipated, however, that many of the households that will move into the project already reside in the area or along the Leeward Coast. The net effect may be a redistribution of Hawaiian households in the Waianae area with an increase in the Hawaiian population of Nanakuli but no significant increase in the island-wide Hawaiian population.

The added population will place additional demands on the area's water, sewer, and traffic systems. With structural modifications, however, the in-place infrastructure has sufficient capacity to accommodate projected wastewater generation and storm runoff. The Department of Hawaiian Home Lands (DHHL) is negotiating with the Housing Finance and Development Corporation (HFDC), and the Division of Water and Land Development of the Department of Land and Natural Resources for a water use allocation for the Princess Kahanu development. In short, the DHHL would borrow part of a 2.0 mgd water allocation from the HFDC and at the same time assist the Board of Water Supply in new source development.

Utility companies have indicated that the respective power, gas, and communication systems can and will be provided to service the proposed development. Some of the existing facilities will need to be upgraded. Utility companies anticipate the need for system improvements in areas where development and population growth occur and system upgrades are just part of their planning and programming cycle to accommodate service demands.

The project will contribute school age children to public schools in the area *as shown in the table below*. This impact cannot be avoided and accommodation for increased enrollment needs to be made at the respective schools. *As indicated in a previous section, all public schools in the area are operating close to or beyond capacity*. A new elementary school planned for Nanakuli should help to alleviate over capacity conditions at other elementary schools.

<u>School</u>	<u>Grades</u>	<u>Projected Students</u>
Nanakuli Elementary	K-6	122
Nanakuli Intermediate	7-8	41
Nanakuli High	9-12	60

Source: Department of Education, 1994.

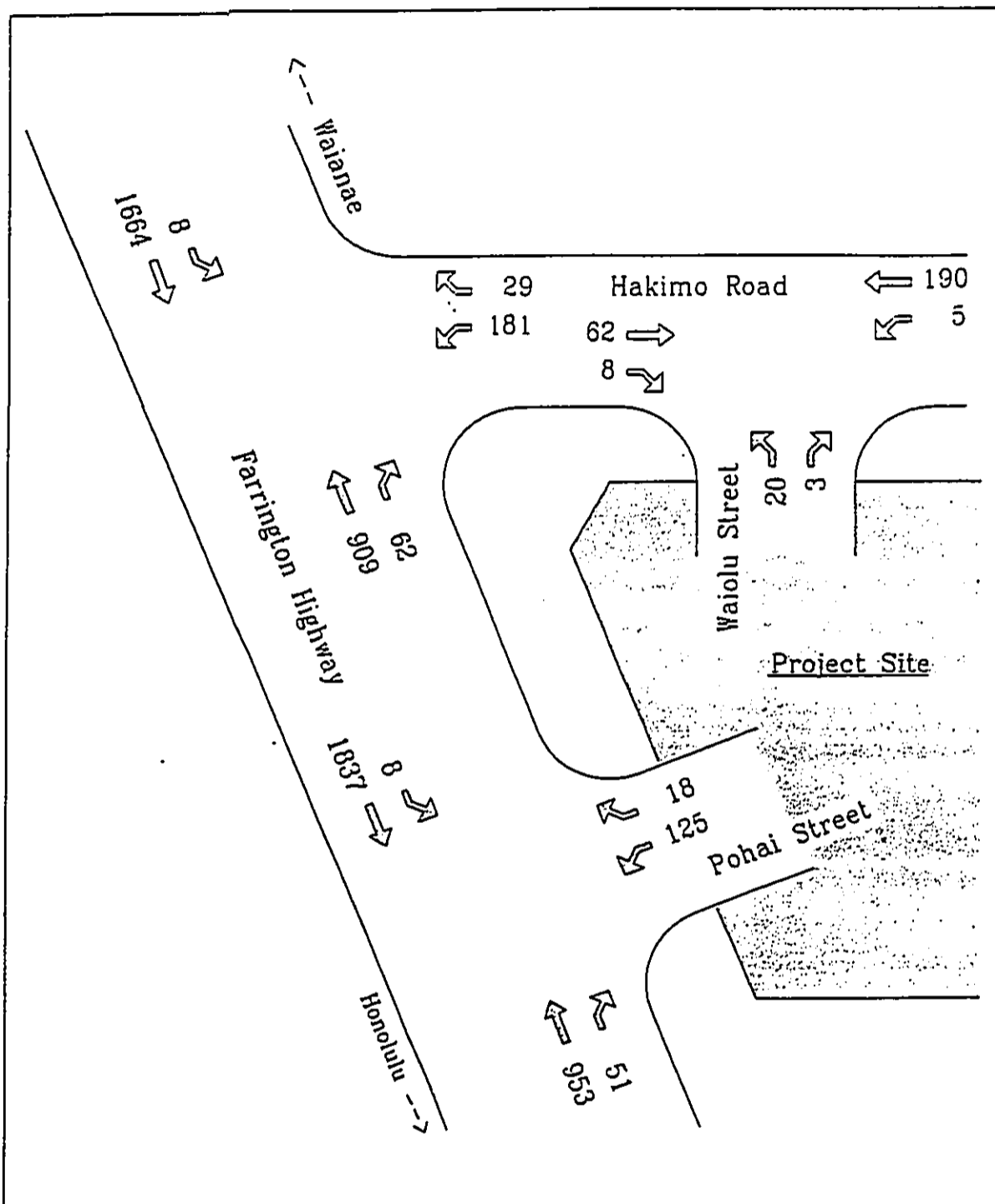
*The Police Department indicated that the project would have no effect on police services (Comment Letter, 1994). Similarly, the Fire Department commented that existing fire protection services provided from Nanakuli and Waianae engine companies with ladder service from Waianae are adequate (Comment Letter, 1994).*

*Medical services are provided on a need basis. Because medical facilities in the area are privately owned and operated, the facilities will be expanded (subject to needs assessment) when medical providers conclude that there is a sufficient population base to support their services.*

Increases in vehicle traffic are anticipated. The greatest traffic impact of the project would occur during the morning peak period, when traffic originating within the project enters Farrington Highway, with the major portion of this traffic expected to turn left onto the highway from either Pohai Street or Hakimo Road. Increased traffic will also occur at other times of the day, including an afternoon peak period when entering traffic is greatest; entering traffic, however, would be primarily right turns from the highway, which are typically not critical for intersection operations.

A traffic assessment report is found in Appendix B. Traffic impacts described in the report are paraphrased below.

During the morning peak hour (1996), the project would contribute approximately 166 vehicles in both directions to the adjoining roadway system (See Figure 3). Twenty three vehicles would be added to traffic on Hakimo Road (from Waiolu Street) and 143 vehicles to traffic on Farrington Highway (from Pohai Street). Pohai Street will serve as the primary ingress and egress to the subdivision and the majority of vehicle traffic at this intersection will be southbound.



Traffic Assessment Report  
 PRINCESS KAHANU ESTATES

Traffic Assignment  
 1996 AM Peak Hour

Figure  
 3

prepared for: Calvin Kim & Associates, Inc.  
 prepared by: Julian Ng, Inc.

January 1994

If Pohai Street is not signalized, there would be limited capacity for left turns onto southbound Farrington Highway. The high volume of southbound traffic and the need to cross northbound traffic lanes would limit opportunities to turn safely onto the southbound lanes. The left turn movement would be limited to phase changes at the upstream signal (at Hakimo Road). Traffic conditions are estimated at LOS E, based on a capacity for this movement of less than one vehicle per cycle, or about 45 vph. Outbound traffic will experience very long delays at this intersection.

The signalized intersection at Farrington Highway and Hakimo Road would continue to operate at "under" capacity conditions during the AM peak hour. Traffic impacts at this intersection are judged to be minimal.

Traffic signals at the Pohai Street/Farrington Highway intersection would mitigate long delays for outbound traffic. Based on traffic system warrants (Warrant 11, Peak Hour Volume described in the Manual of Uniform Traffic Control Devices for Streets and Highways, 1989), a signalized intersection is warranted for the projected AM peak hour traffic.

A sight distance problem exists at Waiolu Street and Hakimo Road. Sight distance from Waiolu Street looking mauka on Hakimo Road is limited by the vertical and horizontal alignment of Hakimo Road. Visibility of the intersection for drivers makai (west) bound on Hakimo Road also is very poor. A possible mitigation measure is the control of westbound traffic on Hakimo Road with the installation of a stop sign and appropriate advance warning signs. Sight distance can be improved by removing a grass covered mound along the makai side of Hakimo Road.

*A street widening program to increase the right-of-way of Hakimo Road from 40 to 60 feet has been proposed by the City and County of Honolulu. The Department of Hawaiian Home Lands intends to contribute their pro rata share for frontage improvements along Hakimo Road at such time that improvements are initiated by the City and County of Honolulu.*

Residential development is not a direct source of air pollution. However, the traffic that results from residential development can affect ambient air quality in the area where development occurs. Pohai Street at Farrington Highway will serve as the main ingress and egress from the subdivision and most traffic will pass through this intersection. Concomitantly this is where ambient air quality should most likely be impacted. Morrow (1991) performed air sampling and microscale analysis of air quality at Hakimo Road and Farrington Highway. His results indicate that "both state and federal 1-hour carbon monoxide standards would be met but exceedances were possible under worse case meteorological conditions." His study, prepared for the proposed Lualualei Golf Course, used traffic volume information developed for Hakimo Road during morning and afternoon peak hours both with and without the project. Morning peak hour traffic was projected at 178 vehicles (without the project) and 192 vehicles (with the project) by the year 1996. Based on microscale analysis, these traffic volumes with that projected for Farrington Highway did not result in significant air quality impacts.

Morning peak hour traffic at Pohai Street and Farrington Highway is projected at 143 vehicles which is less than that projected for Hakimo Road. If volume of traffic is the influencing factor in carbon monoxide generation, then the lesser number of vehicles, the lesser the quantities of carbon monoxide. Concomitantly, if the projected traffic volumes on Hakimo Road will not result in significant air quality impact, then too vehicle traffic on Pohai Street which is less than that on

Hakimo Road should not result in significant impacts on air quality. On occasion, carbon monoxide (CO) emissions may exceed both federal and state 1-hour standards but it is not likely for CO concentrations to persist for long periods of time. Prevailing winds should dilute and disperse pollutants in the direction of the ocean.

In the long-term, residential development should not adversely affect noise levels in the project area. Sounds of nature and the relative quiet of undeveloped land will be replaced by noises associated with residential land uses. Residential noise should not be significantly different in magnitude as existing noise levels in adjoining residential developments. Typically, exterior noise levels in suburban residential subdivisions average 55 dBA and can be significantly lower for subdivisions in rural areas. This average exterior noise level is consistent with State Department of Health daytime noise standards for residential areas.

Several physical features will also aid in attenuating noise. A steep limestone cliff separates the site from residences along the mauka side Hakimo Road and developed lands to the north. These residences overlook the project site situated on the flatlands below. In addition, the Ulehawa Stream Channel provides an ample buffer between the subdivision and residential developments on the Nanakuli side of the project.

Residential development is consistent with land use controls for the property. There are, however, two instances in which existing land use controls will have to be modified. A 1.3 acre site within the development is designated Preservation on the Waianae Development Plan Land Use Map and zoned P-2 General Preservation. Residential development is not permitted on lands zoned preservation and the site will need to be rezoned to be consistent with its use.

The entire property is zoned R-5 and P-2 but overlaid by a Planned Development-Housing (PD-H) designation. The PD-H, which was approved in 1973 for the Keystone Project, permits high density residential development and uses other than permitted by the underlying zoning district. Ordinance 41-21 which created the PD-H will have to be repealed.

The area between the U2 drainage channel and Farrington Highway is within the county delineated Special Management Area (SMA). Improvements proposed in this area may be subject to county special management area requirements. The area is also within a designated flood zone. No structures or dwellings will be constructed in the flood zone to negate the potential for flood damages. *Homeowners will have the option of purchasing flood insurance from the primary mortgage lender prior to closing escrow. Alternatively, hazard insurance can be purchased through the State of Hawaii.*

The Department of Hawaiian Home Lands will exempt the project from complying with the City and County of Honolulu Park Dedication Ordinance.

The project will complete urban use of the property initially proposed 20 years ago. The subject property is the largest vacant and undeveloped residential zoned property in Lualualei Valley. Development will complete the pattern of residential development established for the flat valley lands bordering and mauka of Farrington Highway. A steep limestone cliff borders the site to the north forming a natural boundary and in conjunction with zoning controls clearly separates residential zoned lands to the south from agricultural zoned lands to the north. Beyond Kaukai Road to the immediate north of the project site, valley lands are designated Agriculture on the Waianae Development Plan Land Use Map and zoned for agricultural uses.

The number of dwelling units to be constructed (272 units) is about half the density as that proposed by Keystone Investments, Inc. (502 units) and two-thirds of that proposed by Gentry Homes, Ltd. (415 units). The lower density reinforces the existing low-rise, low-density residential character and urban form of the surrounding area.

Residential development will replace a vacant and partially improved, debris strewn lot that is a visual eyesore in the neighborhood. Development will not affect views of Puu O Hulu from Ulehawa Beach Park which is identified in the Development Plan Special Provisions for Waianae as an important public view to be protected (Section 24-9.2, Article 9. Waianae, Revised Ordinances of Honolulu). According to the City and County of Honolulu's Coastal View Study (1987), the property is located within the Nanakuli Viewshed. The significant view in the viewshed is identified as "this stretch of Farrington Highway provides significant mauka and makai views as well as lateral views si[g]ting down the highway and focusing on the land forms at either end of the viewshed [Kahe Point and Puu O Hulu]". Except for its entry at Pohai Street and the adjoining boat storage area, the development generally will not be visible from Farrington Highway and thus will not adversely affect significant coastal views.

#### SECTION 4 ALTERNATIVES TO THE PROPOSED ACTION

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A no action alternative maintains the status quo of the project site. Land that was improved for development 20+ years ago will remain unused and in all likelihood continue to be used as a dump site. A no action alternative precludes all short and long-term environmental impacts described in this Assessment. The Department of Hawaiian Home Lands will miss an opportunity in achieving its mission and the social and economic benefits of homeownership for 272 native Hawaiian households would be foregone.

The proposed residential subdivision is the most desirable development plan for the area. The project maintains the low-rise, low-density urban form of the surrounding neighborhood and community. *Developing the property for multi-family housing is inconsistent with the housing goals of the Department of Hawaiian Home Lands and the housing needs of the population it serves.*

## SECTION 5 AGENCIES AND ORGANIZATIONS TO BE CONSULTED

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Notice of availability of the Draft Environmental Assessment was published in the *OEQC Bulletin* by the Office of Environmental Quality Control on April 8, 1994. Agencies and organizations that were requested to review and comment on the Draft Environmental Assessment are listed below. In addition, copies of the Draft Environmental Assessment were mailed upon request to agencies and organizations. Those that responded in writing are identified with an asterik. Copies of their comments letters and responses are presented in Appendix B.

### Federal

U.S. Army Corps of Engineers  
Soil Conservation Service

### State of Hawaii

*Department of Agriculture*  
\*Department of Education  
*Department of Human Services*  
Department of Health  
Department of Land and Natural Resources  
Department of Transportation  
Office of State Planning  
Office of Environmental Quality Control  
\*Office of Hawaiian Affairs  
\*Housing Finance and Development Corporation  
\*Environmental Center, University of Hawaii

### City and County of Honolulu

Board of Water Supply  
Department of General Planning  
\*Department of Housing and Community Development  
Department of Land Utilization  
Department of Parks and Recreation  
\*Department of Public Works  
Department of Transportation Services  
Department of Wastewater Management  
\*Police Department  
\*Fire Department

### Others

Hawaiian Electric Company, Inc.  
GTE Hawaiian Telephone Company, Incorporated  
Waianae Neighborhood Board No. 24  
Nanakuli Hawaiian Homestead[ers]Association



*Maile Community Association [Non-existing]*  
*Nanakuli Hawaiian Homesteaders Community Association*  
*Paheehee Ridge Association*  
*Waianae Valley Homesteaders Community Association*  
*\*William W.L. Yuen*

## SECTION 6 DETERMINATION OF SIGNIFICANCE

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Chapter 200 (Environmental Impact Statement Rules) of Title 11, Administrative Rules of the State Department of Health, establishes criteria for determining whether an action may have significant effects on the environment ( §11-200-12). The relationship of the proposed project to these criteria is discussed below.

- 1) Involves an irrevocable commitment to loss or destruction of any natural or cultural resource;

There are no cultural resources on the premises. Natural resources in the form of native plants occur on the property and these will be lost with the advent of site work. None of the plants are rare, threatened, or endangered and all are commonly found throughout the Hawaiian Islands.

- 2) Curtails the range of beneficial uses of the environment;

The land is vacant, partially improved, and used as an illegal dump site. This is not an acceptable use of the environment. No other reasonable use has been proposed for the partially improved property. The current proposal will commit the property to a use which was planned and partially implemented 20 years ago. The subdivision will be developed at a density consistent with state and county land use plans and zoning for the area and complementing the environmental opportunities and restraints of the site.

- 3) Conflicts with the state's long-term environmental policies or 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 long-term environmental policies, goals, and guidelines of the State of Hawaii.

- 4) Substantially affects the economic or social welfare of the community or State;

The project will not substantially affect the economic welfare of the State. Monies spent on the project will purchase construction labor and materials. Revenue in the form of payroll and excise taxes will accrue to federal and state governments. No significant state or county expenditures are anticipated for infrastructure development such as roads, water, sewer because these would be paid by the developer.

The project makes available 272 homestead lots and dwelling units for native Hawaiians. Selected homesteaders would derive economic and social benefits associated with home ownership which would not be made available to them if there was no project.

5) Substantially affects public health;

Public health should benefit by the proposed project. It is anticipated that a general clean up will rid the site of rodents, trash, and hazardous materials dumped on the property. Development will eliminate unsightly and unsanitary conditions that have prevailed for the past 20 years.

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

Population increases, additional demands on schools, water systems, wastewater facilities, transportation systems, and other impacts on public facilities and services can be expected. These changes are unavoidable outcomes resulting from residential development. Although unavoidable, secondary impacts are not necessarily adverse in scale and magnitude. The proposed development will change the face of the landscape but this alteration (and others) is prescribed by land use plans and controls for the area. Concomitant with growth and development, various functional and general public facility plans prescribe the type of improvements needed to accommodate growth and development. In many instances, new development also improves the quality of existing public facilities through construction of new facilities or the upgrading of existing facilities.

7) Involves a substantial degradation of environmental quality;

The proposed project will improve the quality of the site and surrounding neighborhood. The project will improve the appearance of the site and eliminate potential hazards that threaten the health, safety, and well-being of surrounding residents.

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

The project is not the precursor for a larger action.

9) Substantially affects a rare, threatened or endangered species, or its habitat;

There are no rare, threatened or endangered flora or fauna on the premises.

10) Detrimentially affects air or water quality or ambient noise levels; or

Ambient air quality will be affected by fugitive dust and combustion emissions but can be controlled by measures stipulated in this Assessment. Construction noise will be pronounced during site preparation work but should diminish once homes are erected. All construction activities will comply with air quality and noise pollution regulations of the State Department of Health. Control measures to minimize storm runoff volume and runoff rates will be implemented during construction.

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

The project is not proposed in an environmentally sensitive area. A section of the property fronting Farrington Highway lies in a flood and coastal high hazard area. No habitable structures will be erected in this area to negate potential loss of life and destruction of property.

Based on the above criteria and comments received during the consultation period, the Princess Kahanu Estates Subdivision project will not result in significant adverse environmental impacts and an Environmental Impact Statement is not be required.

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**APPENDIX A**  
**TRAFFIC ASSESSMENT REPORT**

**TRAFFIC ASSESSMENT REPORT**

**PRINCESS KAHANU ESTATES**

**Nanakuli, Oahu, Hawaii**

Prepared for:

**Calvin Kim & Associates, Inc.**

Prepared by:

**Julian Ng, Inc.**

**January 1994**

## TABLE OF CONTENTS

	<u>Page</u>
Introduction.....	1
Existing Conditions.....	2
Future Conditions Without The Proposed Project .....	3
Proposed Project.....	4
Future Conditions With The Proposed Project .....	6
Conclusions and Recommendations .....	8
Figures 1 - 3	
Appendix A - Levels of Service	
Appendix B - Field Traffic Count Summary	

## LIST OF TABLES

<u>Table</u>		<u>Page</u>
1	Existing Traffic - AM Peak Hour.....	3
2	Trip Generation .....	4
3	Trip Distribution .....	5
4	Intersection Conditions - AM Peak Hour .....	7
5	Comparison of Project Traffic with Existing Traffic .....	8

## LIST OF FIGURES

<u>Figure</u>	
1	Location Map
2	AM Traffic Counts - December 16, 1993
3	Traffic Assignment - 1996 AM Peak Hour



**TRAFFIC ASSESSMENT REPORT**  
**Princess Kahanu Estates**  
**Nanakuli, Oahu, Hawaii**

The Department of Hawaiian Home Lands (DHHL) has proposed to develop 272 homes on a 54-acre site in Nanakuli, on the Waianae coast of Oahu (Figure 1). Access into the site will be from Pohai Street, which intersects Farrington Highway, and from Waiolu Street, which intersects Hakimo Road. This report summarizes a traffic assessment conducted to determine the appropriate improvements to provide adequate traffic capacity at these intersections and to identify the potential traffic impact at the Farrington Highway and Hakimo Road intersection.

The proposed project would construct 272 single-family homes on the site, which has roadways and other infrastructure constructed in the 1970s, but is otherwise presently vacant. The project will include a reconfiguration of the site, which may require reconstruction and additional infrastructure; however, changes to the access into the site are not expected. The start of infrastructure construction is scheduled for July 1994, with occupancy of the first homes in May 1995 and the completion of the project in July 1996. A day-care center and a community association office will also be part of the project.

The greatest traffic impact of the project would occur during the morning peak period, when traffic originating within the project enters Farrington Highway, with the major portion of this traffic expected to turn left onto the highway. Increased traffic will also occur at other times of the day, including an afternoon peak period when entering traffic is greatest; entering traffic, however, would be primarily right turns from the highway, which are typically not critical for intersection operations. This report, therefore, focuses on the morning peak hour, when the most significant impact is expected. Analyses were done using methods described in the *Highway Capacity Manual*<sup>1</sup> and the *Interim Materials on Unsignalized Intersection Capacity*<sup>2</sup> from the Transportation Research Board.

- 1 - Transportation Research Board Special Report 209, *Highway Capacity Manual*, 1985.
- 2 - Transportation Research Board, Transportation Research Circular 373, *Interim Materials on Unsignalized Intersection Capacity*, July 1991.

Conditions at signalized intersections were evaluated using the Planning Analysis and are described as "under" capacity, "near" capacity, or "over" capacity. At unsignalized intersections, a Level of Service (LOS) was identified for each controlled movement, by comparing the traffic demand with the capacity available for the movement. Levels of service are described in an attached appendix.

### **Existing Conditions**

The proposed project would have access from Farrington Highway, either directly at Pohai Street or indirectly via Hakimo Road. Farrington Highway is the only paved public highway connecting the Waianae coast of Oahu with the rest of the island. In the vicinity of the proposed project, Farrington Highway is an undivided four-lane highway with a posted speed limit of 35 miles per hour. The typical section of the highway includes four 12-foot lanes and paved shoulders varying from 5 to 8 feet wide. An asphalt sidewalk is provided on the northeast (mauka) side only, and utility poles are located northeast of this sidewalk.

At intersections and driveways, turns off of the highway are made from the northeast (mauka) through lane, except at the signalized Mohihi Street intersection, where a separate left turn lane has been provided. No other deceleration or separate turn lanes are provided along the highway within Nanakuli. A separate left turn lane for southbound traffic is provided at the Kaukama Road intersection in Maili, approximately 1.2 miles northwest of Pohai Street.

Hakimo Road is a collector street approximately two miles long and serves residential properties, pig farms, and other agricultural activities. It is a two-lane roadway with unpaved shoulders on each side and is intersected by other streets serving the Nanakuli-Maili area. The intersection of Farrington Highway and Hakimo Road is controlled by a demand-actuated two-phase signal. Left turns from southbound Farrington Highway are made from a lane shared with southbound through traffic, using gaps in the approaching northbound flow. Traffic turning from Hakimo Road onto Farrington Highway share a single, narrow lane.

A manual count of turning movements at the intersection of Farrington Highway and Hakimo Road was conducted during the morning peak period on

Thursday, December 16, 1993. The capacity analysis confirmed field observations that the intersection operated at "under" capacity conditions. A weekday count taken in April 1992 by the State Highways Division<sup>3</sup> shows a two-direction traffic volume of 39,000 vehicles in a 24-hour period on Farrington Highway south of Lualualei Naval Road, located approximately one mile southeast of Hakimo Road. The State Highways Division<sup>4</sup> has estimated that the Average Daily Traffic (ADT) on Farrington Highway in the vicinity of the project was 36,153 vehicles per day (vpd) in 1991. Table 1 compares the volume on Farrington Highway south of Hakimo Road, calculated from the 1991 ADT estimate with the 1993 manual count.

Table 1  
EXISTING TRAFFIC  
AM Peak Hour

Farrington Highway, South of Hakimo Road	<u>Southbound</u>	<u>Northbound</u>
December 16, 1993	1,462	760
South of Lualualei Naval Road (1.0 mile south of Hakimo Road) April 24, 1992 *	1,769	1,024
1.8 mile segment, Hakimo Road south to Nanakuli Avenue 1991, based on ADT estimate *	1,770	760

\* Source: State Highways Division

#### Future Conditions Without The Proposed Project

The State Highways Division recently installed traffic signals at the intersection of Farrington Highway and Mohihi Street, approximately 0.6 miles south of the Hakimo Road intersection. As part of the improvement, a separate left turn storage lane was provided for southbound traffic. The Highways Division<sup>5</sup> is considering a project to add a separate southbound left turn lane at the Hakimo Road intersection; if found to be feasible, construction could occur in 1995.

- 3 - State Highways Division, *Traffic Survey Data (Individual Stations) - Island Of Oahu, 1991*. Station 14.
- 4 - State Highways Division, *Traffic Summary - Island of Oahu 1991*.
- 5 - Telephone conversation with Mr. Paul Hamamoto, State Highways Division, Traffic Branch, December 22, 1993.

Traffic volumes on Farrington Highway are expected to increase. The Highways Division's estimates of ADT for the years 1987 through 1990 on Farrington Highway between Nanakuli Avenue and Hakimo Road reflects an average growth rate of 7.56% per year. This growth rate was applied to the traffic volumes counted at the Hakimo Road intersection to estimate traffic volumes on Farrington Highway in 1996, at the expected completion of the proposed project. The Hakimo Road intersection will continue to operate at "under" capacity conditions in the AM Peak Hour. At the Pohai Street intersection with Farrington Highway, where volumes on the north leg were assumed to equal those on the south leg of the Farrington Highway and Hakimo Road intersection, LOS E describes conditions for any left turns onto the highway from the stop-controlled Pohai Street.

#### Proposed Project

The proposed project consists of 272 single-family dwelling units, a day-care center, and a community association office. The traffic volumes generated by each use were estimated from rates and distribution percentages compiled by the Institute of Transportation Engineers<sup>6</sup> in *Trip Generation*. Half of the traffic volumes generated by the day-care center were assumed to be generated within the proposed project, and the net effect of the community association office to traffic was considered negligible. The trip generation estimates are shown in Table 2.

Table 2  
TRIP GENERATION

		Trip Rate	%In	Entering	Exiting
AM Peak Hour					
272	dwelling units	0.74	26%	52	149
7	KSF day care center	10.29	54%	39	33
	(less half of day care traffic)			(19)	(16)
	Total project trip generation			72	166
PM Peak Hour					
272	dwelling units	1.01	65%	179	96
7	KSF day care center	12.86	54%	41	49
	(less half of day care traffic)			(20)	(24)
	Total project trip generation			200	121

<sup>6</sup> - Institute of Transportation Engineers, *Trip Generation - An Informational Report*, 5th Edition, 1991.

The project traffic was distributed using the traffic volumes counted at the Farrington Highway and Hakimo Road intersection during a two-hour peak period (6:15 to 8:15 AM). Of the total traffic entering the intersection, 7% were on the Hakimo Road approach; a similar proportion of the traffic entering the project was estimated to be from existing areas served by Hakimo Road. Of the traffic turning onto Hakimo Road, 86% turned from the northbound lanes; the distribution used a similar proportion for traffic entering from the highway. Distribution of traffic exiting the project was done in the same manner. Trip distribution for the PM Peak Hour was assumed to be opposite that of the AM Peak Hour. Table 3 shows the trip distribution.

Table 3  
TRIP DISTRIBUTION

	<u>Hakimo Road</u>	<u>Farrington Highway</u>	
		<u>north</u>	<u>south</u>
AM Peak Period Count			
entering area	7%	13%	80%
exiting area	2%	12%	86%
Project Traffic - AM Peak Hour			
entering	5	9	58
exiting	3	20	143
Project Traffic - PM Peak Hour			
entering	4	24	172
exiting	8	16	97

As indicated in Table 3, the highest volume of the critical exiting movement to the south (left turn onto Farrington Highway) would occur in the AM Peak Hour.

The traffic due to the proposed project was assigned to the existing roadway system; based on the proposed layout of the project, seven-eighths of the project traffic to and from the highway was estimated to use the direct link provided by Pohai Street, with the remainder using Waiolu Street and Hakimo Road to access the highway. The estimate of future AM Peak Hour traffic volumes is shown in Figure 3.

### Future Conditions With The Proposed Project

The *Highway Capacity Manual* procedure for unsignalized intersections, which is not designed to be used for main street volumes exceeding 1,700 vehicles per hour (vph), would not provide any meaningful findings for an unsignalized intersection of Farrington Highway and Pohai Street. With an unsignalized intersection, Pohai Street would have limited capacity for left turns to southbound Farrington Highway. Due to the high volume of southbound traffic, opportunities to turn onto the southbound lanes would be limited to phase changes at the upstream signal (at Hakimo Road); because northbound traffic would also have to be crossed, conditions are estimated to be LOS E, based on a capacity for this movement of less than one vehicle per cycle, or about 45 vph.

Traffic signals at this intersection would be warranted for the projected AM Peak Hour traffic. With an existing major street (Farrington Highway) volume of 2,200 vph, the 125 vph wishing to turn left from a single lane on Pohai Street would exceed the 100 vph lower threshold volume (for major street volumes exceeding 1,800 vph) described in the *Manual on Uniform Traffic Control Devices for Streets and Highways*<sup>7</sup> as Warrant 11, Peak Hour Volume. As a signalized intersection, conditions during the AM Peak Hour would be "under" capacity.

The signalized intersection of Farrington Highway and Hakimo Road would continue to operate at "under" capacity conditions with the projected traffic in the AM Peak Hour. If Pohai Street were not available and all of the project traffic were to use Waiolu Street and Hakimo Road to access Farrington Highway, conditions at the existing signalized intersection would be "near" capacity.

With Waiolu Street traffic controlled by a stop sign at Hakimo Road, the left turn into Waiolu Street and the side street approach would each operate at LOS A for the volumes shown in the Figure 3. If Pohai Street were not available and all of the project traffic were to use Waiolu Street, the left turn from Hakimo Road would be at LOS A and the Waiolu Street approach would operate at LOS C.

<sup>7</sup> U.S. Department of Transportation, Federal Highway Administration, *Manual on Uniform Traffic Control Devices for Streets and Highways*, 1989, as amended.

However, the available sight distance to the right (east) from Waiolu Street is limited by the vertical and horizontal alignment of Hakimo Road. Visibility of the intersection for drivers on westbound Hakimo Road is also very poor. A possible mitigation measure is the control of westbound traffic on Hakimo Road with the installation of a stop sign and appropriate advance warning ("Stop Ahead") signs. While control of eastbound traffic on Hakimo Road may not be necessary, analysis of this intersection as an all-way stop intersection shows adequate capacity even if all of the project traffic were to use Waiolu Street, with overall LOS B conditions. Removal of the Waiolu Street connection to Hakimo Road would force all of the project traffic to use Pohai Street, including those originating in or destined to areas served by Hakimo Road. In this case, both the Hakimo Road and the Pohai Street intersections with Farrington Highway would operate at "under" capacity. Table 4 summarizes the findings of the capacity analyses. Desirable conditions occur in all instances except at the Farrington Highway intersection with Hakimo Road if Pohai Street were not available.

Table 4  
INTERSECTION CONDITIONS  
AM Peak Hour

Intersection:	<u>Farrington Highway</u>		<u>Hakimo Road</u>
	<u>Hakimo Road</u>	<u>Pohai Street</u>	<u>Waiolu Street</u>
Existing (1993)			
hour ending 7:15 AM	under (841)	E	A
hour ending 7:45 AM	under (802)	E	A
Future (1996)			
without project	under (1,048)	E	A
with project (Figure 3)	under (1,076)	under (1,077)	A
if no Waiolu Street:	under (1,053)	under (1,089)	-
if no Pohai Street:			
existing laneage	near (1,252)	-	C
added SB left turn lane	near (1,212)	-	C

Note: LOS shown for worst controlled approach at each unsignalized intersection; for a signalized intersection, overall condition (reserve capacity in vph) shown.

Table 5 compares the traffic generated by the proposed project with existing AM Peak Hour volumes counted at the Farrington Highway and Hakimo Road intersection. The project traffic would be added over a period of about fifteen months, and would be cause an increase consistent with the expected growth of traffic on Farrington Highway. Further, as indicated in the earlier analyses of the intersections in the immediate area, adequate capacity should be available.

Table 5  
COMPARISON OF PROJECT TRAFFIC WITH EXISTING TRAFFIC

	Existing <u>Volume</u>	Project <u>Traffic</u>	<u>Increase</u>
Farrington Highway north of Hakimo Road			
southbound	1,337	9	0.7%
northbound	738	20	2.7%
Farrington Highway south of Pohai Street			
southbound	1,462	143	9.8%
northbound	760	58	7.6%
Hakimo Road east of site			
westbound	115 *	5	4.3%
eastbound	38 *	3	7.9%

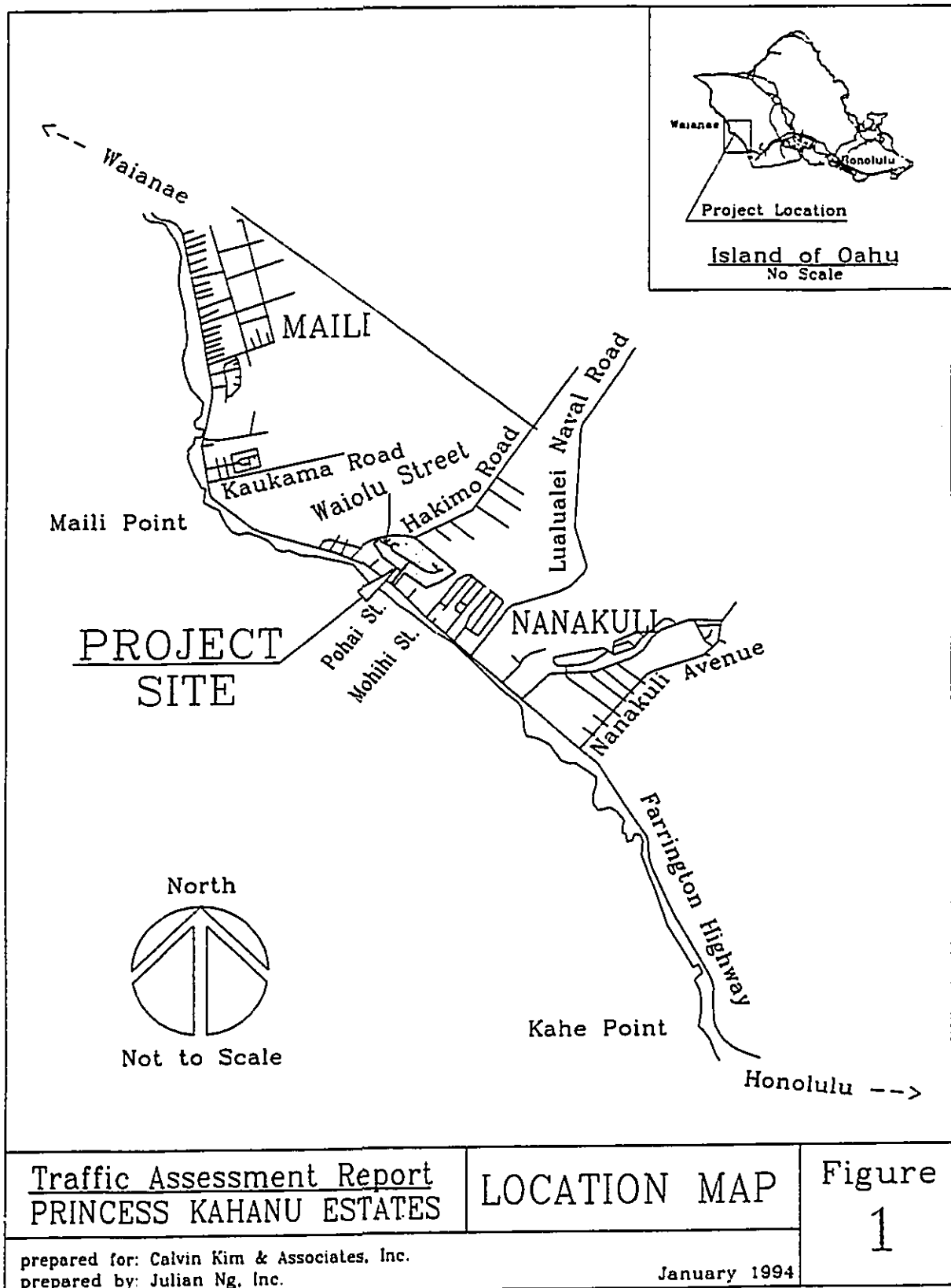
\* estimated to be 75% of volume at Farrington Highway

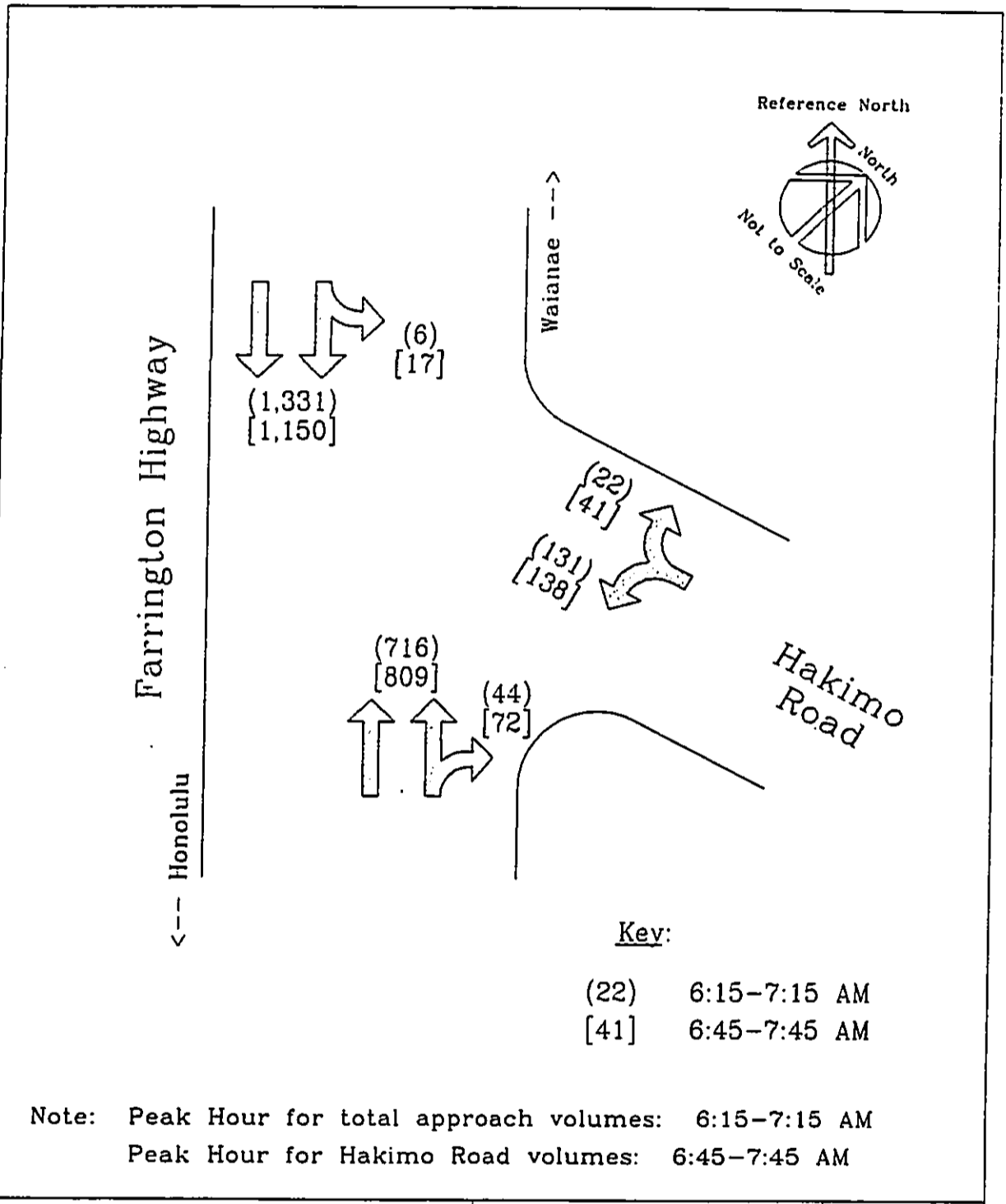
### Conclusions and Recommendations

The proposed project would contribute to the increasing traffic on Farrington Highway; however, the increase would be consistent with the long-term increases on this segment of highway. With Pohai Street serving the bulk of the project traffic, impacts at the existing signalized intersection of Farrington Highway and Hakimo Road would be minimal, with conditions remaining "under" capacity.

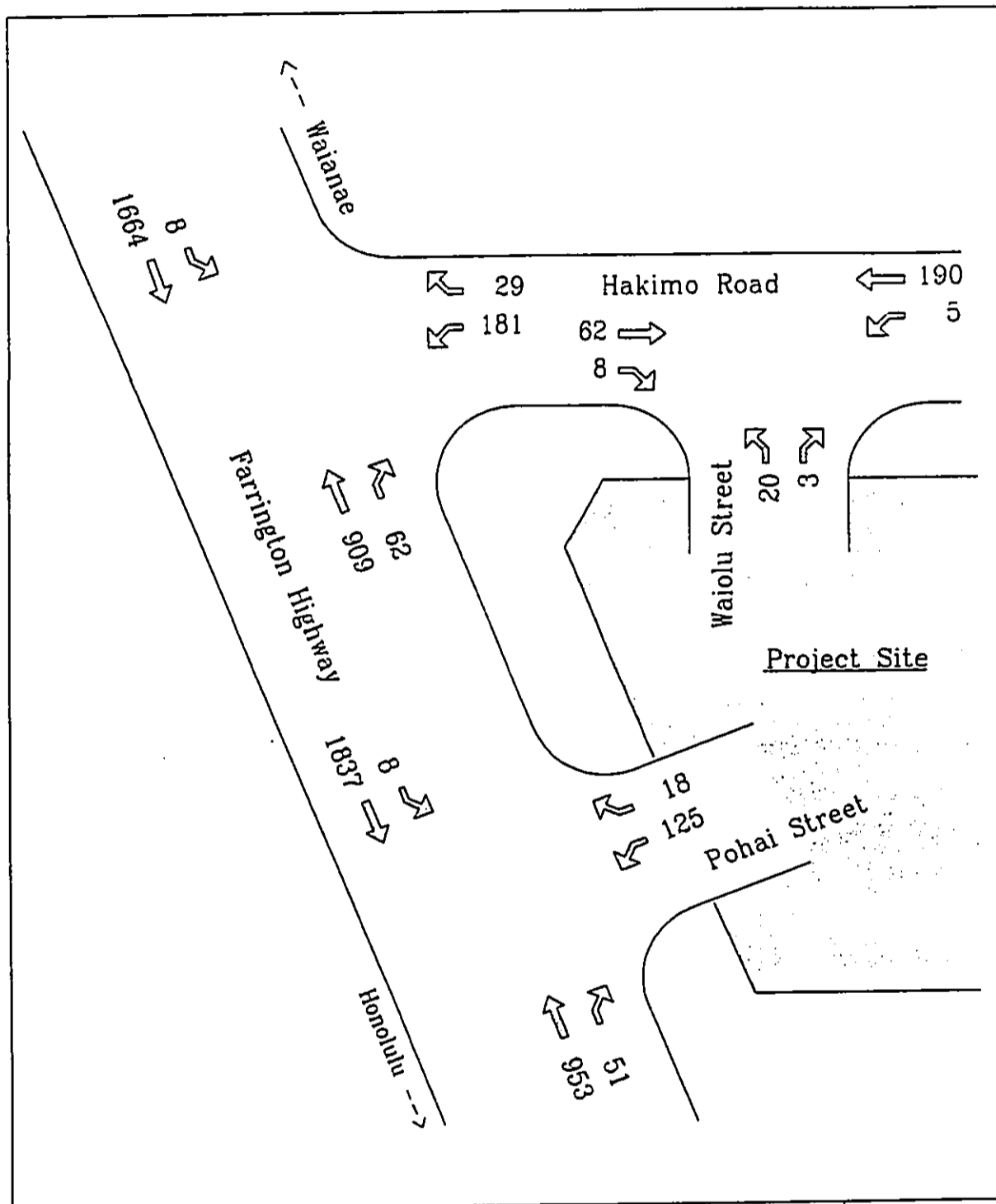
Signalization of the Farrington Highway and Pohai Street intersection was shown to be warranted by the projected traffic volumes. With signals, this intersection would operate at "under" capacity conditions. Any new signal on Farrington Highway should be interconnected with nearby existing signals. Adequate capacity would be available at the intersection of Waiolu Street with Hakimo Road; however, due to limited sight distances, a new stop control for westbound traffic on Hakimo Road is recommended.







Traffic Assessment Report PRINCESS KAHANU ESTATES	AM Traffic Counts December 16, 1993	Figure 2
prepared for: Calvin Kim & Associates, Inc. prepared by: Julian Ng, Inc.		January 1994



Traffic Assessment Report  
 PRINCESS KAHANU ESTATES

Traffic Assignment  
 1996 AM Peak Hour

Figure  
 3

prepared for: Calvin Kim & Associates, Inc.  
 prepared by: Julian Ng, Inc.

January 1994

## APPENDIX A - LEVELS OF SERVICE

A qualitative measure used by traffic engineers to describe traffic operational conditions is the level of service (LOS). Six levels have been defined, from LOS A (best operating condition) to LOS F (worst). The *Highway Capacity Manual* describes analysis procedures for different types of facilities.

Levels of service are identified for the controlled movements at unsignalized intersections. The analysis procedure determines the reserve capacity (total capacity less volume) of a controlled movement such as a left turn against oncoming traffic, or traffic entering a roadway from a side street controlled by a stop sign:

<u>Reserve Capacity</u>	<u>Level of Service</u>	<u>Expected Delay to Controlled Movement</u>
≥400	A	Little or no delay
300 - 399	B	Short traffic delays
200 - 299	C	Average traffic delays
100 - 199	D	Long traffic delays
0 - 99	E	Very long traffic delays

At all-way stop controlled intersections, the analysis estimates average vehicle delays on each approach based on the volumes on the other approaches. An overall average delay for the intersection can also be calculated. The criteria for levels of service are:

<u>Level of Service</u>	<u>Average Stopped Delay seconds/vehicle</u>
A	< 5
B	5 - 10
C	10 - 20
D	20 - 30
E	30 - 45
F	> 45

References: Transportation Research Board, National Research Council, *Highway Capacity Manual*, Special Report 209, Washington, D.C., 1985

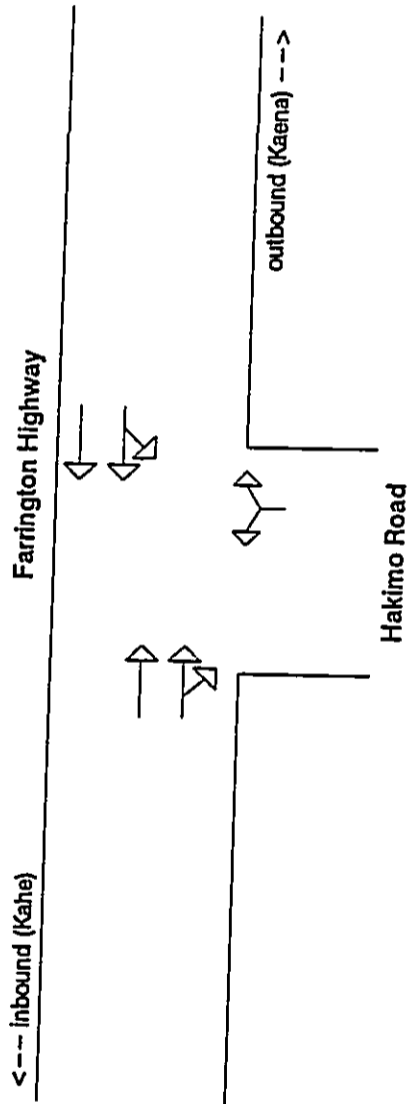
Transportation Research Board, Transportation Research Circular 373, *Interim Materials on Unsignalized Intersection Capacity*, July 1991.

APPENDIX B  
FIELD TRAFFIC COUNT SUMMARY

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# Field Counts -- AM Peak Period -- Farrington Highway & Hakimo Street

Thursday 16--Dec--93



Time	Outbound-->	<---Inbound	OB RT --v	v--IB LT	<+ side LT	side RT +>	Total
06:00 AM * 06:15 AM	87	414	6	0	45	2	554
06:15 AM -- 06:30 AM	132	365	9	3	39	3	551
06:30 AM -- 06:45 AM	159	337	7	0	30	1	534
06:45 AM -- 07:00 AM	206	286	16	2	32	9	551
07:00 AM -- 07:15 AM	219	343	12	1	30	9	614
07:15 AM -- 07:30 AM	182	271	24	8	48	14	547
07:30 AM -- 07:45 AM	202	250	20	6	28	9	515
07:45 AM -- 08:00 AM	206	192	22	2	18	6	446
08:00 AM -- 08:15 AM	127	208	22	6	19	5	387
08:15 AM + 08:30 AM	150	174	15	9	36	3	387
2-hour total (6:15--8:15)	1,433	2,252	132	28	244	56	4,145

\* 10-minute count factored to 15-minute period  
 + 5-minute count factored to 15-minute period

peak side street approach = 179 vph in the hour ending 07:45 AM  
 peak side street volume = 268 vph in the hour ending 07:45 AM  
 peak hourly volume = 2,250 vph in the hour ending 07:15 AM

**APPENDIX B**  
**COMMENT LETTERS AND RESPONSES**

RECEIVED  
4/13/94



STATE OF HAWAII  
OFFICE OF HAWAIIAN AFFAIRS  
711 KUPULUANE BOULEVARD, SUITE 500  
HONOLULU, HAWAII 96813 3218  
PHONE (808) 594-1688  
FAX (808) 594-1845

April 04, 1993

Mr. Gerald Park  
Urban Planner  
1245 Young Street, Suite 201  
Honolulu, HI 96809

Dear Mr. Park:

Thank you for the opportunity to review the Draft Environmental Assessment (DEA) concerning the development of the Princess Kahanu Estates on Lualualei, Waiānae District, Island of Oahu. If developed, the Princess Kahanu project will provide native Hawaiians the opportunity to obtain a homestead lot and a new home.

We find the DEA sufficient and have no objections to the applicant's proposal to construct a residential subdivision in that part of the island. Please contact me or Linda Delaney, Land and Natural Resource Officer, at 594-1938, should you have any questions on this matter.

Sincerely yours,

Dante K. Carpenter  
Administrator

LM:im

DEPARTMENT OF PUBLIC WORKS  
CITY AND COUNTY OF HONOLULU

430 SOUTH KING STREET  
HONOLULU, HAWAII 96813



FRANK ZARA  
MAILER

April 13, 1994

Mr. Gerald Park  
Gerald Park Urban Planner  
1245 Young Street, Suite 201  
Honolulu, Hawaii 96814

Dear Mr. Park:

Subject: Draft Environmental Assessment (DEA)  
Princess Kahanu Estates  
THK: 8-7-07: 04 and 8-7-14: 14

We have reviewed the subject DEA and have the following comments:

1. A drainage report should be submitted to Drainage Section, Division of Engineering, for review and comment.
2. Control measures (BMPs) to minimize storm water volume and runoff rates increase over the predevelopment phase should be implemented.
3. Existing roadways that serve as ingress and egress to the proposed project site may require upgrading to accommodate the demands of the project.
4. Access improvements should be provided in accordance with the Americans with Disability Act Accessibility Guidelines.
5. Frontage improvements along Hakimo Road fronting the project site will be required.
6. Roadway widening in compliance with the Development Plan (DP) street setback requirements may be necessary.
7. Future roadways intended to dedicate to the City should be constructed in accordance with the City's standards.

RECEIVED  
4/14/94

KENNETH SPRADUE  
MAILER


ENV 94-109



Mr. Gerald Park  
April 13, 1994  
Page 2

Should you have any questions, please contact Mr. Alex Ho,  
Environmental Engineer, at 523-4150.

Very truly yours,

  
KENNETH E. SPRAGUE  
Director and Chief Engineer

May 11, 1994

Kenneth E. Sprague  
Director and Chief Engineer  
Department of Public Works  
City and County of Honolulu  
650 South King Street  
Honolulu, Hawaii 96813

Dear Mr. Sprague:

Subject: Princess Kahana Estates Subdivision  
Luahale, Waianae District, Honolulu, Hawaii

Thank you for reviewing the Draft Environmental Assessment prepared for the  
subject project. We offer the following responses to your comments.

A drainage report is being prepared and will be submitted to the Drainage Section,  
Division of Engineering, for review and comment. Control measures to minimize  
storm water volume and runoff rates are being prepared and will be implemented  
during construction.

All interior roadways will be improved to City and County standards. Applicant  
is aware of the future widening of and street setback requirement along Hakimo  
Road. The Department of Hawaiian Home Lands intends to enter into an  
agreement to pay their pro rata share for frontage improvements along Hakimo  
Road at such time that improvements for adjacent segment(s) are initiated by the  
City and County of Honolulu.

Should you or your staff have any questions, please call me at 333-0018.

Sincerely,

GERALD PARK URBAN PLANNER



Gerald Park

cc: D. Ing. DHHL  
C. Wallace, PKDC

GERALD PARK URBAN PLANNER

123  
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FIRE DEPARTMENT  
CITY AND COUNTY OF HONOLULU  
3313 KAPPA STREET SUITE 201  
HONOLULU HAWAII 96819 1993

RECEIVED  
4/25/94



RICHARD R. SETO MOOK  
Acting Fire Chief

April 21, 1994

Mr. Gerald Park  
Gerald Park Urban Planner  
1245 Young Street, Suite 201  
Honolulu, Hawaii 96814

Dear Mr. Park:

SUBJECT: Princess Kahanu Estates  
Lualualei, Waianae District, Honolulu, Hawaii

We have reviewed the application for the above subject. Fire protection services provided from Manakuli and Waianae engine companies with ladder service from Waianae are adequate. We have no objections to the proposed project.

Access for fire apparatus, water supply and building construction shall be in conformance to existing codes and standards.

Thank you for the opportunity to comment on the project.

Should you have any questions, please call Assistant Chief Attilio Leonardi of our Administrative Services Bureau at 831-7775.

Sincerely,

*Richard R. Seto Mook*  
RICHARD R. SETO-MOOK  
Acting Fire Chief

AKL:ny

RECEIVED  
4/22/94



JOSEPH S. COVATTA  
EXECUTIVE DIRECTOR

STATE OF HAWAII  
DEPARTMENT OF BUDGET AND FINANCE  
HOUSING FINANCE AND DEVELOPMENT CORPORATION  
817 OWEN STREET, SUITE 200  
HONOLULU, HAWAII 96813  
FAX (808) 547-0400

FRANK'S FAX  
SECTION

WE WANT YOUR ID:  
94:PRE/2599

April 19, 1994

Mr. Gerald Park  
Urban Planner  
1245 Young Street, Suite 201  
Honolulu, Hawaii 96814

Dear Mr. Park:

Re: Princess Kahanu Estates, Lualualei, Waianae, Hawaii

Thank you for the opportunity to review the draft Environmental Assessment for the subject project.

We are supportive of the project as it would make a significant contribution to meeting the housing needs of native Hawaiian families. The development of housing at the site represents a logical extension of the neighboring residential community.

Sincerely,

*Joseph S. Covatta*  
JOSEPH S. COVATTA  
Executive Director



POLICE DEPARTMENT  
CITY AND COUNTY OF HONOLULU  
844 SOUTH BERTANHA STREET  
HONOLULU, HAWAII 96813 - AREA CODE (808) 531-3111

FRANK P. FASI  
Mayor



RECEIVED  
4/25/94

MICHAEL S. NAKAMURA  
Chief  
HAROLD M. KAWASAKI  
Deputy Chief

COMMANDEER  
Governor



STATE OF HAWAII  
DEPARTMENT OF EDUCATION  
P. O. BOX 2199  
HONOLULU, HAWAII 96814

KENNAH M. ALZADA  
Acting Superintendent

RECEIVED  
4/21/94

April 25, 1994

OUR REFERENCE BS-WK

April 20, 1994

OFFICE OF THE SUPERINTENDENT

Mr. Gerald Park  
Urban Planner  
1245 Young Street, Suite 201  
Honolulu, Hawaii 96814

Mr. Gerald Park, Urban Planner  
1245 Young Street, Suite 201  
Honolulu, Hawaii 96814

Dear Mr. Park:

SUBJECT: Princess Kahanu Estates  
Maunaloa, Maunaloa District, Honolulu, Hawaii

This is in response to your request for comments on a draft environmental assessment for Princess Kahau Estates.

We have reviewed the subject environmental assessment and have determined that the proposed development of 272 residential lots will have the following significant enrollment impact on the schools in the area:

We note that steps will be taken to mitigate noise, dust, and traffic problems during construction. This project is expected to have no significant impact on police services. We have no additional comments to make at this time.

SCHOOL	GRADE	Projected Students
Manakuli Elementary	K-6	122
Manakuli Intermediate	7-8	41
Manakuli High	9-12	60

Thank you for the opportunity to review this document.

Sincerely,

MICHAEL S. NAKAMURA  
Chief of Police

By Eugene Uemura  
EUGENE UEMURA  
Assistant Chief of Police  
Administrative Bureau

Maunaloa Elementary is operating beyond capacity and will not be able to accommodate the students from this development. Both Manakuli Elementary School and Manakuli High and Intermediate School are operating close to capacity and report a shortage of classrooms. A new Manakuli III Elementary School is projected to be completed in 1998 to relieve the overcrowded conditions of the elementary schools in the area. Until the new school is completed, the elementary students projected from this development will be assigned to Manakuli Elementary School. The Leeward District Office will review and revise the school service boundary areas when Manakuli III Elementary School is completed.

The Department of Education (DOE) cannot guarantee the availability of classrooms to accommodate the students from this development. The DOE will request that the developer make a fair share contribution for the construction of needed school facilities in the area.

AN AFFIRMATIVE ACTION AND EQUAL OPPORTUNITY EMPLOYER

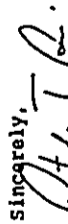
Hr. Gerald Park

-2-

April 20, 1994

Should there be any questions, please call the Facilities Branch at 737-4743.

Sincerely,



Herman A. Aizawa, Ph.D.  
Acting Superintendent

HHA:hy

cc: A. Suga  
L. Viduya

May 11, 1994

Herman M. Aizawa, Ph.D.  
Superintendent  
Department of Education  
State of Hawaii  
P.O. Box 2360  
Honolulu, Hawaii 96804

Dear Dr. Aizawa:

Subject: Princess Kahana Estates Subdivision  
Lualualei, Waianae District, Honolulu, Hawaii

Thank you for reviewing the Draft Environmental Assessment prepared for the subject project. The information the Department of Education provided on enrollment impacts on schools in the area will be included in the Final Environmental Assessment.

A significant number of families who have applied for homes in this project already live in the Nanakuli-Waianae area, thus the number of new students may not be as large as projected.

We will be contacting your staff to discuss your request for developer contributions for needed school facilities in the area.

We appreciate your participation in the environmental review process.

Sincerely,

GERALD PARK URBAN PLANNER



Gerald Park

cc: D. Ing, DHHL  
C. Watase, PKDC



GERALD PARK urban planning

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DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT  
CITY AND COUNTY OF HONOLULU

430 SOUTH KING STREET, 8TH FLOOR  
HONOLULU, HAWAII 96813  
PHONE: (808) 521-2211 FAX: (808) 521-2485



CHAIKIN ZATTO  
Acting Director  
RONALD S. LIM  
Acting Deputy Director

May 5, 1994



Mr. Gerald Park  
Gerald Park Urban Planner  
1245 Young Street, Suite 201  
Honolulu, Hawaii 96814

Dear Mr. Park:

Subject: Draft Environmental Assessment (DEA)  
Princess Kahanu Estates  
Lualualei, Waianae District, Honolulu, Hawaii

We have no comments to offer on the Draft Environmental Assessment (DEA) for the Princess Kahanu Estates.

Should you have any questions, please contact Jason Ching of our Planning and Analysis Division at 523-4368.

Thank you for the opportunity to comment.

Sincerely,

RONALD S. LIM  
Acting Director

CHING, YUEN & MORIKAWA  
A Law Partnership Including Law Corporations

Pacific Tower, Suite 2770  
1001 Bishop Street  
Honolulu, Hawaii 96813

Telephone: (808) 574-8820  
Teletype: (808) 574-7664

May 9, 1994

Via Facsimile No. 586-3835  
And Regular Mail

Department of Hawaiian Home Lands  
State of Hawaii  
335 Merchant Street, Room 307  
Honolulu, Hawaii 96813

Attention: Mr. Darryl Ing

Re: Princess Kahanu Estates Draft Environmental Assessment

Dear Mr. Ing:

I write on behalf of PVT Land Company, Ltd. ("PVT") the owner of Oahu Tax Map Key Number 8-7-09:3 (the "PVT Property"), which lies immediately adjacent to a portion of the mauka boundary of the Princess Kahanu Estates Subdivision (the "Subdivision"). PVT owns and operates the Nanakuli Landfill on the Nanakuli side of Ulehawa Stream.

As described on pages 14 and 18 of the Draft Environmental Assessment prepared for the Subdivision, the Board of Education is currently conducting a site selection process for the development and construction of a new Manakuli III Elementary School. The site selection process has identified as Site 2 a twelve acre parcel comprised of a portion of the PVT Property located immediately adjacent to the Subdivision and an adjoining lot identified as Oahu Tax Map Key Number 8-7-22:1.

PVT has indicated to the school site selection consultants its willingness to cooperate in designation of Site 2 as the location of the proposed Manakuli III School.

The Manakuli III School will be designed to accommodate a proposed enrollment of 750 students. We believe that locating this school adjacent to the Subdivision will be a convenience for the proposed residents of Subdivision.

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Department of Hawaiian Home Lands  
May 9, 1994  
Page 8

The selection of Site 2 as the location of the Nanakuli III School immediately mauka of the Subdivision would be convenient for residents of the proposed Subdivision, as children may be able to walk to and from school. We suggest that the Environmental Assessment address how direct access to and from the proposed school Site 2 could be obtained to the Subdivision and implemented, as the boundary between the PVT Property and the subdivision are marked by a limestone embankment.

Please feel free to contact me if you have questions.

Yours truly,

CHING, YUEN & MORIKAWA



WILLIAM W. L. YUEN, Attorney at  
Law, A Law Corporation

WLY:jel

cc: Gerald Park Urban Planner  
PVT Land Company, Ltd.

May 11, 1994

William W.L. Yuen  
Ching, Yuen & Morikawa  
Pacific Tower, Suite 2770  
1001 Bishop Street  
Honolulu, Hawaii 96813

Dear Mr. Yuen:

Subject: Princess Kahanu Estates Subdivision

Thank you for reviewing the Draft Environmental Assessment prepared for the subject project. In response to your comment, we offer the following:

We agree that locating the proposed Nanakuli III Elementary School at Site 2 as described in your letter would be convenient for school age children living at Princess Kahanu Estates who may be able to walk to and from school.

We did not address the question of direct access in the Environmental Assessment because a school site has not been selected. Providing safe access to and from school is of paramount importance in any community. If Site 2 is chosen as the location of the Nanakuli III Elementary School, we will discuss the question of providing direct access between the subdivision and the school with Department of Education officials, the Community Association, and representatives of PVT Land Company. However, if negotiating the limestone embankment poses a potentially hazardous condition, then no attempt will be made to obtain direct access between the subdivision and the school.

We appreciate your participation in the environmental review process.

Sincerely,

GERALD PARK URBAN PLANNER



Gerald Park

cc: D. Ing. DHHL  
C. Wallace, PKDC

GERALD PARK Urban Planner

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University of Hawai'i at Mānoa

Environmental Center
A Unit of Water Resources Research Center
2550 Campus Road - Honolulu, Hawaii 96822

LAND REVENUE DEPARTMENT
MAY 10 2 46 PM '94

May 6, 1994
EA:00038

Mr. Darryl Ing
Department of Hawaiian Home Lands
335 Merchant Street, Room 307
Honolulu, Hawaii 96813

Post-it brand fax transmittal memo 7871
To: GERALD PAUL
From: D. Ing
Cc: DHHL
Phone: 586-3915
Fax: 586-3835

Dear Mr. Ing:

Draft Environmental Assessment
Princess Kahanu Estates
Luualaei, Oahu

This document addresses the proposal to construct a residential subdivision, consisting of 272 lots, on lands situated at Luualaei.

The Environmental Center has reviewed the Draft Environmental Assessment (EA) with the assistance of Jon Matsuoka, Social Work; and Chris Welch, Environmental Center.

The draft EA for Princess Kahanu Estates adequately addresses most of the impacts for the proposed subdivision. However, certain areas of the document need clarification.

Although the Native Hawaiian community is the principle beneficiary of the proposed project, social impacts of the project on the Native Hawaiian community are not adequately documented. Various types of information needed for evaluation of social impacts are lacking including projected growth of the Native Hawaiian Community with and without the project; services which will be available to address the special needs of this community; and what help will be available for families that need assistance in financing a first home.

Section 1
B. Purpose of the Project

Although the proposed project is cited on page 2 as only 1 of 12 projects planned for the Nanakuli-Waianai area, nowhere else in the document are the other 11 projects mentioned. Department of Health Administrative Rules Sections 11-200-12a,b specify

Mr. Darryl Ing
May 9, 1994
Page 2

consideration of cumulative impacts as a criterion for evaluating a project's significance. Completion of 12 comparably sized projects would provide housing for many families that have long been waiting for a home and significantly reduce the number of Department of Hawaiian Home Lands (DHHL) applicants. However, this could significantly affect the spatial distribution of the Native Hawaiian community throughout the Hawaiian Islands, thus creating disruptions in settled communities. Such a cumulative impact needs to be addressed in the EA so that the potential significance of the project can be adequately evaluated.

Section 2
G. Flood Hazard

The EA states that most of the Land for the project is in Flood Zone D according to the Flood Insurance Rate Maps. Since flood hazards are undetermined for Zone D, what effect will this have on insurance for those persons moving into the subdivision? Recent trends in homeowners insurance make this a concern. Will insurance policies be provided with the home buyers agreement? If not, will help be provided in gaining access to adequate home owners insurance?

O. Public Facilities and Services
2. Water

Generally, water supplies for the Waianae coast are considered fully developed, and availability is a critical issue. The document states that the long-term project need will be 143,000 gallons per day. The evaluation states that the DHHL is negotiating to borrow 2.0 mgd water allocation from the Housing Finance and Development Corporation. In return, the DHHL would assist the Board of Water Supply in developing new water resources. According to Section 1E of the document, no potable groundwater resources exist in the local aquifers. Where will these new water resources be developed, and what will be the secondary impacts of their development island-wide? Water availability is a prime consideration for development, and the resources must be secured before a development proceeds. This issue needs further consideration in order to adequately assess the significance of the proposed development.

4. Drainage

The picture and description of the U2 Channel indicate that contents of this storm drain are stagnant. This standing water and associated debris are a potential health hazard and an eye sore that could significantly affect the new community. Are there plans to address this problem (i.e. provide for better tidal flushing)?

# CORRECTION

THE PRECEDING DOCUMENT(S) HAS  
BEEN REPHOTOGRAPHED TO ASSURE  
LEGIBILITY  
SEE FRAME(S)  
IMMEDIATELY FOLLOWING





University of Hawaii at Manoa

Environmental Center
A Unit of Water Resources Research Center
2550 University Road • Honolulu, Hawaii 96822
Telephone: (808) 956-2311 • Facsimile: (808) 956-2340

May 6, 1994
EA:00058

Mr. Daryl Ing
Department of Hawaiian Home Lands
335 Merchant Street, Room 307
Honolulu, Hawaii 96813

Post-it brand fax transmittal memo 7871
To: GERALD PATEL
From: D. Ing
Cc: DHHL
Phone: 582-3815
Fax: 576-3835

Dear Mr. Ing:

Draft Environmental Assessment
Princess Kahanu Estates
Lualaie, Oahu

This document addresses the proposal to construct a residential subdivision, consisting of 272 lots, on lands situated at Lualaie.

The Environmental Center has reviewed the Draft Environmental Assessment (EA) with the assistance of Jon Matsuoka, Social Work; and Chris Welch, Environmental Center.

The draft EA for Princess Kahanu Estates adequately addresses most of the impacts for the proposed subdivision. However, certain areas of the document need clarification.

Although the Native Hawaiian community is the principle beneficiary of the proposed project, social impacts of the project on the Native Hawaiian community are not adequately documented. Various types of information needed for evaluation of social impacts are lacking including projected growth of the Native Hawaiian Community with and without the project; services which will be available to address the special needs of this community; and what help will be available for families that need assistance in financing a first home.

Section 1
B. Purpose of the Project

Although the proposed project is cited on page 2 as only 1 of 12 projects planned for the Nanakuli-Waianai area, nowhere else in the document are the other 11 projects mentioned. Department of Health Administrative Rules Sections 11-200-12a,b specify

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Mr. Daryl Ing
May 9, 1994
Page 2

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The EA states that most of the Land for the project is in Flood Zone D according to the Flood Insurance Rate Maps. Since flood hazards are undetermined for Zone D, what effect will this have on insurance for those persons moving into the subdivision? Recent trends in homeowners insurance make this a concern. Will insurance policies be provided with the home buyers agreement? If not, will help be provided in gaining access to adequate home owners insurance?

O. Public Facilities and Services
2. Water

Generally, water supplies for the Waianae coast are considered fully developed, and availability is a critical issue. The document states that the long-term project need will be 143,000 gallons per day. The evaluation states that the DHHL is negotiating to borrow 2.0 mgd water allocation from the Housing Finance and Development Corporation. In return, the DHHL would assist the Board of Water Supply in developing new water resources. According to Section 1E of the document, no potable groundwater resources exist in the local aquifers. Where will these new water resources be developed, and what will be the secondary impacts of their development island-wide? Water availability is a prime consideration for development, and the resources must be secured before a development proceeds. This issue needs further consideration in order to adequately assess the significance of the proposed development.

4. Drainage

The picture and description of the U2 Channel indicate that contents of this storm drain are stagnant. This standing water and associated debris are a potential health hazard and an eye sore that could significantly affect the new community. Are there plans to address this problem (i.e. provide for better tidal flushing)?

Mr. Darryl Ing  
May 9, 1994  
Page 3

7. Protective Services  
8. Medical Facilities

Both of these sections address the fact that facilities exist for protective and medical services. However, no assessment of whether these services can accommodate the new population is given. Additionally, no analysis is done on the impact that the development will have on these crucial services. These areas need to be addressed especially in light of the cumulative impacts discussed above.

9. Public Schools

The EA discusses the concerns of school crowding, especially at the elementary school level. The document notes that the Departments of Education and Accounting and General Services are proposing to construct a new elementary school in Luahalei Valley. However, no time frame is given for the school with respect to the housing subdivision. Will the two projects be completed in a complementary time frame, thus not overburdening a system already at capacity? If not, what intermediate steps will be taken to alleviate the problem?


An additional concern is that the increasing elementary school population will be reflected shortly in concomitant increases in the intermediate and high school populations. Do these educational facilities possess the capacity to incorporate the incoming students? If not, what are the future plans for additional educational facilities at the intermediate and high school levels?

To reiterate the point of cumulative impacts: the additional school population of all grades must be seen in the context of all students that will potentially enter into the system. In order to address the problem, figures for the other developments need to be incorporated into this document.

Conclusion

The intent of this project seems to be in keeping with the mission of the DHHL. However, in order that this and future projects fulfill their purposes in addressing the needs of Native Hawaiians, the documents should contain adequate information to adequately assess potential problems and impacts. High on the list of potential problems with this project is the subject of cumulative impacts. How the socio-economic landscape will change cannot be judged from the information contained within the EA, nor can the availability of water be assumed for this or future developments from the supposition made about future water development. In short, these topics need to be clarified in order to satisfy the requirements of the assessment process.

Thank you for the opportunity to comment on this EA.

Sincerely,  
  
John T. Harrison  
Environmental Coordinator

cc: OHEAC  
Roger Pujaka  
Jon Matusoka  
Chris Welch

May 11, 1994

John T. Harrison  
Environmental Coordinator  
Environmental Center  
University of Hawaii at Manoa  
Crawford 317,  
2550 Campus Road  
Honolulu, Hawaii 96822

Dear Mr. Harrison:

Subject: Princess Kahanu Estates Subdivision

Thank you for reviewing the Draft Environmental Assessment prepared for the subject project. We offer the following responses to your comments.

The Environmental Assessment evaluates short and long-term impacts of constructing a residential subdivision. The questions you raise about social impacts on the Native Hawaiian community are too general in scope. Because you do not identify what the special needs of the community are we are unable to identify programs that address these needs. With respect to financial programs to aid "families in financing a first home" applicants will be paying only for a dwelling in the Princess Kahanu project. The land cost is \$ 1/year and infrastructure improvements will be subsidized by the Department of Hawaiian Home Lands. In addition, the Federal Home Administration (FHA) will insure all mortgages.

#### Section 1 B. Purpose of the Project

The Princess Kahanu Estates Subdivision is one of 12 Department of Hawaiian Home Lands projects planned for the Waianae-Nakakuli area. At this time, the Princess Kahanu subdivision is the only large size (if 272 units can be considered large) project about to commence construction. The twelve projects are not comparable in size as you state but you are correct that these projects would provide housing for many families that have been waiting for a residential homestead. Several of the projects will make available agricultural lots for native Hawaiians who prefer an agrarian rather than urban setting.

Your comment concerning the spatial distribution of native Hawaiians was addressed in the Environmental Assessment as it pertains to the subject project. It is not likely that the addition of 272 native Hawaiian households to a predominantly Hawaiian community will have a disruptive effect on the community.

#### Section 2G. Flood Hazard

Households will have the option to purchase flood insurance from the principal mortgage lender prior to closing escrow. Because the project does not lie in a flood

John T. Harrison  
May 11, 1994  
Page 2

hazard area, actuarial flood insurance premium rates (if any) will be established by individual insurance companies. Alternatively, hazard insurance can be purchased through the State of Hawaii.

#### Section 2O. Public Facilities and Services. 2. Water

The Board of Water Supply and Department of Land and Natural Resources are conducting exploratory drilling programs in the Makaha, Waianae, Ewa, and Waipahu communities. Both agencies are aware of the developments projected for Leeward Oahu and the need to provide adequate water source and storage facilities. Projects without a water commitment will be placed on hold until such time that water is available to accommodate the specific project.

#### 4. Drainage

The U2 Channel is owned by the City and County of Honolulu and maintenance of the channel is their responsibility. There are no plans to clean the channel of debris as part of this project. A frequent program of dredging accumulated sand from the mouth of Ulehawa Stream Channel could improve tidal flushing.

#### 7. Protective Services

#### 8. Medical Facilities

The Police and Fire Departments report that their respective services will not be adversely affected by the proposed project (Comment Letters, 1994).

Medical services are provided on a need basis. Because medical facilities in the area are privately owned and operated, the facilities will be expanded (subject to needs assessment) when medical providers conclude that there is a sufficient population base to support their services.

#### 9. Public Schools

The Department of Education reported that Nanaikapono Elementary is operating beyond capacity. Both Nanauli Elementary School and Nanauli High and Intermediate School are operating close to capacity and report a shortage of classrooms. A new Nanauli Elementary School is projected to be completed in 1998 to relieve the overcrowded conditions of the elementary schools in the area.

It is anticipated that overcrowded conditions at some schools will continue until new, permanent facilities are constructed. Overcrowded classroom conditions can be alleviated by constructing portable classrooms and hiring additional staff. The Department of Education is aware of the overcrowding problem and the cumulative effects on school facilities generated by this and other residential projects in the area. Although the Department can justify the need for additional

John T. Harrison  
May 11, 1994  
Page 3

facilities, the State Legislature is responsible for allocating funds for facilities construction.

We hope that our responses address your concerns. Thank you for participating in the environmental review process.

Sincerely,

GERALD PARK URBAN PLANNER



Gerald Park

cc: D. Ing. DIIIHL  
C. Wallace, PKDC



## University of Hawai'i at Mānoa

Environmental Center  
A Unit of Water Resources Research Center  
Crawford 317 • 2550 Campus Road • Honolulu, Hawai'i 96822  
Telephone: (808) 956-7361 • Facsimile: (808) 956-3980

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May 6, 1994  
EA:00058

Mr. Daryl Ing  
Department of Hawaiian Home Lands  
335 Merchant Street, Room 307  
Honolulu, Hawaii 96813

Dear Mr. Ing:

Draft Environmental Assessment  
Princess Kahanu Estates  
Lualualei, Oahu

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Mr. Darryl Ing  
May 9, 1994  
Page 2

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Mr. Darryl Ing  
May 9, 1994  
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An additional concern is that the increasing elementary school population will be reflected shortly in concomitant increases in the intermediate and high school populations. Do these educational facilities possess the capacity to incorporate the incoming students? If not, what are the future plans for additional educational facilities at the intermediate and high school levels?

To reiterate the point of cumulative impacts: the additional school population of all grades must be seen in the context of all students that will potentially enter into the system. In order to address the problem, figures for the other developments need to be incorporated into this document.

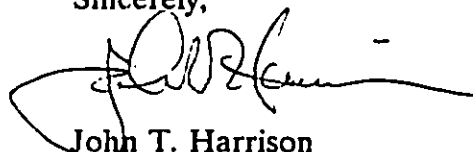
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Mr. Darryl Ing  
May 9, 1994  
Page 4

Thank you for the opportunity to comment on this EA.

Sincerely,

A handwritten signature in black ink, appearing to read "John T. Harrison", with a long horizontal flourish extending to the right.

John T. Harrison  
Environmental Coordinator

cc: OEQC ✓  
Roger Fujioka  
Jon Matsuoka  
Chris Welch