

DRAFT ENVIRONMENTAL ASSESSMENT

Prepared and Submitted for Concurrent Processing in Accordance with Chapters 205A and 343, HRS

KAHUKU VILLAGE SUBDIVISION

Kahuku, Ko'olau Loa District, O'ahu, Hawaii

June 2008

APPLICANT



Continental Pacific, LLC
249 Mack Bayou Loop, Suite 301
Santa Rosa Beach, FL 32459

PREPARED BY



R. M. Towill Corporation
2024 North King Street, Suite 200
Honolulu, Hawaii 96819-3494
(RMTC Ref: 1-29011-00)

DRAFT ENVIRONMENTAL ASSESSMENT

Prepared and Submitted for Concurrent Processing in Accordance with Chapters 205A and 343, HRS

KAHUKU VILLAGE SUBDIVISION

KAHUKU, KO'OLAU LOA DISTRICT, O'AHU, HAWAII

JUNE 2008

APPLICANT:

Continental Pacific, LLC
249 Mack Bayou Loop, Suite 301
Santa Rosa Beach, FL 32459

PREPARED BY:

R. M. Towill Corporation
2024 North King Street, Suite 200
Honolulu, Hawaii 96819-3494

TABLE OF CONTENTS

	<u>Page</u>
PROJECT SUMMARY	v
SECTION 1 INTRODUCTION	
1.1 Project Location and Proposed Action	1-1
1.2 Project Background	1-5
1.3 Project Purpose and Need.....	1-6
1.4 Ownership.....	1-7
1.4 Basis for Environmental Assessment	1-7
SECTION 2 PROJECT DESCRIPTION AND ALTERNATIVES CONSIDERED	
2.1 Project Description	2-1
2.1.1 Lot Creation	2-1
2.1.2 Residential Structures.....	2-7
2.1.3 Amenities.....	2-8
2.1.4 Road Improvements	2-10
2.1.5 Water	2-11
2.1.6 Wastewater.....	2-13
2.1.7 Power and Communication	2-24
2.1.8 Drainage Improvements and Flood Mitigation.....	2-24
2.2 Summary of HRS 201(H) Exemptions from Subdivision and Zoning Code	2-30
2.2.1 Exemptions to ROH, Chapter 21 - Land Use Ordinance.....	2-30
2.2.2 Exemptions to ROH, Chapter 22 – Subdivision of Land	2-31
2.2.3 Exemptions to Subdivision Rules & Regulations	2-31
2.3 Affordable Housing Eligibility.....	2-32
2.4 Project Schedule and Cost	2-34
2.4.1 Project Schedule	2-34
2.4.2 Estimated Cost	2-35
2.5 Alternatives Considered	2-35
2.5.1 No Action	2-35

2.5.2 Maximum Density: Golf Course Development 2-35
2.5.3 Large Agricultural Lot Subdivision..... 2-36

SECTION 3 DESCRIPTION OF AFFECTED ENVIRONMENT

3.1 Natural Environment..... 3-1
3.1.1 Climate 3-1
3.1.2 Topography 3-1
3.1.3 Soils and Geology 3-2
3.1.4 Shoreline Conditions 3-4
3.1.5 Water 3-12
3.1.6 Air Quality 3-15
3.1.7 Noise 3-16
3.1.8 Natural Hazards 3-16
3.1.9 Flora and Fauna 3-22
3.2 Social and Economic Environment 3-29
3.2.1 Land Use..... 3-29
3.2.2 Historic and Archaeological Resources 3-30
3.2.3 Cultural Resources and Practices 3-36
3.2.4 Scenic and Visual Resources..... 3-37
3.2.5 Recreational Facilities 3-39
3.2.6 Fire, Police, and Medical Services 3-41
3.2.7 Schools 3-41
3.2.8 Demographics 3-41
3.2.9 Socio-Economic Conditions 3-47
3.3 Infrastructure and Utilities..... 3-54
3.3.1 Traffic and Transportation Systems 3-54
3.3.2 Potable Water System 3-59
3.3.3 Drainage System 3-60
3.3.4 Wastewater System..... 3-61
3.3.5 Electrical and Communications Systems 3-61
3.3.6 Solid Waste Disposal System..... 3-62

SECTION 4 RELATIONSHIP TO LAND USE PLANS AND POLICIES

4.1 The Hawaii State Plan..... 4-1
4.2 State Land Use Law 4-6

4.3	City and County General Plan	4-8
4.4	City and County Zoning and Land Use Ordinances	4-12
4.5	Ko’olau Loa Sustainable Communities Plan.....	4-14
4.6	Special Management Area (SMA) Rules and Regulations	4-21
4.6.1	Shoreline Management, Section 25, ROH.....	4-21
4.6.2	Coastal Zone Management, HRS 205(A)	4-28
4.6.3	Flood Hazard District Requirements, LUO Section 9.10	4-39
4.7	Certified Shoreline Survey	4-41
SECTION 5 NECESSARY PERMITS AND APPROVALS		
5.1	City and County of Honolulu.....	5-1
5.2	State of Hawaii	5-1
5.3	Federal Agencies	5-1
5.4	Utility Companies	5-2
SECTION 6 ORGANIZATIONS AND AGENCIES CONSULTED DURING THE PREPARATION OF THE DRAFT EA		
6.1	City and County of Honolulu.....	6-1
6.2	State of Hawaii	6-1
6.3	Government Officials	6-1
6.4	Private Organizations / Individuals	6-1
SECTION 7 ORGANIZATIONS AND AGENCIES CONSULTED DURING THE 30-DAY DEA REVIEW PERIOD		
7.1	City and County of Honolulu.....	7-1
7.2	State of Hawaii	7-1
7.3	Federal Agencies	7-1
SECTION 8	DETERMINATION.....	8-1
SECTION 9	REFERENCES	9-1

LIST OF FIGURES

Figure 1-1	Project Location and Site Map.....	1-2
Figure 1-2	Tax Map Key	1-3
Figure 2-1	Site Plan – Kahuku Village Master Plan.....	2-3
Figure 2-2	Aerial Plan – Kahuku Village Master Plan	2-5
Figure 2-3	Typical Road Sections.....	2-12
Figure 2-4	Existing Water System.....	2-14
Figure 2-5	Cesspool Locations	2-15
Figure 2-6	Well Locations in Project Area	2-17
Figure 2-7	IWS Profile and Septic Tank Schematic	2-20
Figure 2-8	Distribution Box & Absorption Bed Detail & Cross-Section.....	2-21
Figure 2-9	IWS Profile and Aerobic Tank Schematic	2-23
Figure 2-10	Conceptual Drainage Master Plan.....	2-25
Figure 2-11	Proposed Flood Reduction Measures.....	2-27
Figure 2-12	Flood Plain Map	2-29
Figure 3-1	Soils Map	3-3
Figure 3-2	Shoreline Setback Map	3-7
Figure 3-3	FEMA Flood Insurance Rate Map.....	3-17
Figure 3-4	Tsunami Evacuation Zone	3-19
Figure 3-5	Archaeological Sites Map.....	3-33
Figure 4-1	State Land Use Districts.....	4-7
Figure 4-2	City and County Zoning Districts.....	4-13
Figure 4-3	Ko’olau Loa Sustainable Communities Plan Land Use Designations	4-15
Figure 4-4	Special Management Area	4-22

APPENDICES

Appendix A	Public Meetings / Outreach Documentation
Appendix B	Agency Pre-Consultation Letters
Appendix C	Certified Shoreline Documents
Appendix D	Archaeological Inventory Survey
Appendix E	Cultural Impact Assessment
Appendix F	Terrestrial Flora and Fauna Inventory
Appendix G	Biological and Water Quality Survey of Surface and Marine Waters
Appendix H	Socio-Economic Study
Appendix I	Market Study
Appendix J	Dune Characterization Study
Appendix K	Coastal Change Study
Appendix L	Agricultural Feasibility Study
Appendix M	Traffic Study
Appendix N	Existing House Floor Plans and Elevations
Appendix O	List of Current Kahuku Village Leaseholder Residents
Appendix P	Resolution 06-032 Supporting Preservation of Plantation Communities

SECTION 1

Introduction

1.1 PROJECT LOCATION AND PROPOSED ACTION

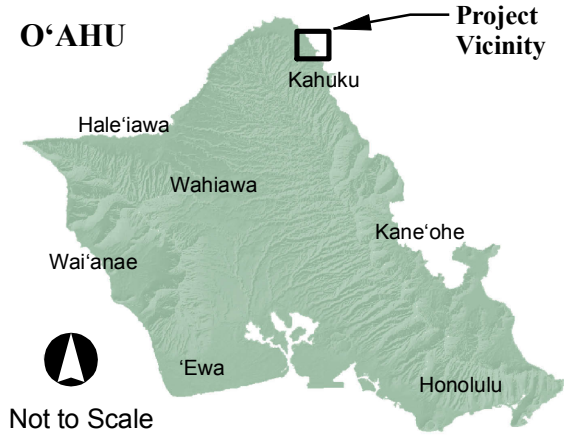
Continental Pacific, LLC (Continental), a family-owned land development company is the fee owner of 172.7 acres of land located in Kahuku, Ko'olau Loa District, on the north shore of the island of O'ahu. The site is located *makai* of Kamehameha Highway and includes Kahuku Village 5 ("New Camp") plantation residences, the Kahuku Golf Course, two cemeteries, a large open area known as "Adams Field" and vacant agricultural and shoreline lands immediately adjacent to the Kahuku golf course. The project area is identified by Tax Map Keys (TMK): (1) 5-6-002: 3, 10, 12, 16, & 27, 33, 35, and 37. A portion of the project is located within the Special Management Area (SMA) as defined in Chapter 205A, Hawai'i Revised Statutes (HRS) and Chapter 25 of the Revised Ordinances of Honolulu (ROH). **Figure 1-1: Project Location and Site, and Figure 1-2: Tax Map Key.**

Continental intends to develop the Kahuku properties with a top priority of long-term preservation of the plantation village by providing 72 existing, resident families an opportunity to own their homes in fee simple through an affordable home purchase program while developing the balance of the parcels in a manner that will ensure adequate funds to subsidize the plantation village preservation efforts and generate a reasonable return on investment while "Keeping Kahuku Country", i.e., by least impacting the area culturally, socially, environmentally and economically. To these ends, Continental has developed an integrated plan comprised of the following elements:

1. The property surrounding the 72 existing plantation residences, known as (a portion of) Kahuku Village 5, will be subdivided to create 10,000 square foot (sf) lots designed to accommodate the existing location of such residences (hereinafter the "Village Home Lots"). An additional 64 vacant lots are planned on remaining land throughout the village immediately adjacent to the Village Home Lots (hereinafter the "Village Vacant Lots").



James Campbell
National Wildlife Refuge



Pacific Ocean

Kamehameha Highway

Cemetery

Walkerville

Kahuku Golf Course

Kahuku Sugar Mill

Hale Hauoli

Kahuku Community Hospital

Kahuku District Park

LDS

Ocean View Cemetery

Kahuku High & Intermediate

Kahuku Elementary

New Camp

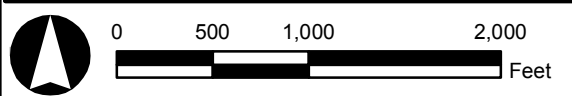
Makahoa Point

Malaekahana Stream

Malaekahana State Recreational Area



FIGURE 1-1
PROJECT LOCATION AND SITE MAP
Kahuku Village HRS 201(h) Subdivision
Kahuku, Oahu, Hawaii



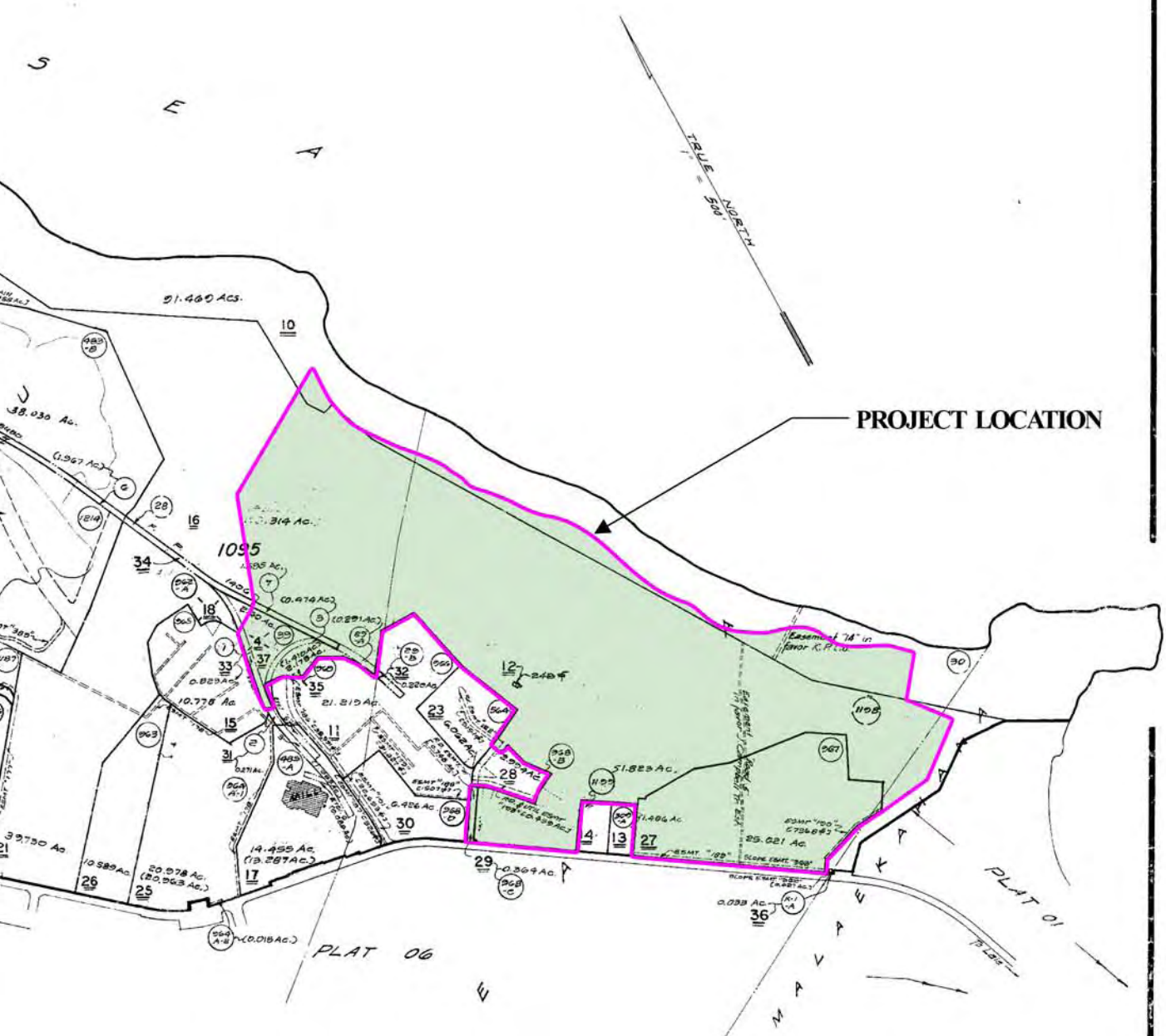



FIGURE 1-2
TAX MAP KEY
 Kahuku Village HRS 201(h) Subdivision
 Kahuku, Oahu, Hawaii

 **NOT TO SCALE**

R. M. Towill Corporation May 2008

Dropped Parcels: 4, 15, 18,

TAXATION MAPS BUREAU		
TERRITORY OF HAWAII		
TAX MAP		
FIRST DIVISION		
ZONE	SEC.	PLAT
5	6	02
CONTAINING PARCELS		
SCALE: 1 in = 500 FT		

2. Infrastructure and utility improvements, including existing and new roadway improvements, new water lines for fire protection, replacement of existing cesspools with septic treatment systems, storm run-off remediation and related drainage improvements and upgrades to power and communication lines will be made to improve health and safety conditions within the village for the Village Home Lots and the Village Vacant Lots.
3. Two beach parks, one at either end of the Kahuku Golf Course, will be donated to the community through the Kahuku Village Association or a proposed Kahuku Village Home Owners' Association or other entity or organization acceptable to Continental and will be open for public use with at least one of these new parks dedicated to providing the general public convenient legal access to the Kahuku beaches so surfers, sunbathers and beachcombers will not have to illegally traverse the golf course to access the beach.
4. The 9-hole Kahuku Golf Course will be maintained as a golf facility with some reconfiguration of tees and greens to accommodate the Golf Course Lots. It is the intention of Continental that the golf course will be conveyed by deed or lease to an entity selected by Continental to be managed as a public golf facility. Planned improvements include demolition and replacement of the existing clubhouse and storage facility which are both in poor structural condition. A new clubhouse and dwelling for the golf course manager are planned to be constructed on the golf course property.
5. The two cemeteries located in the area will be donated to an entity acceptable to Continental to be maintained as cemeteries in perpetuity.
6. Eighteen new residential lots will be created on the *makai* side of the Kahuku Golf Course. These will be large lots (minimum half-acre) developed in accordance with R-20 county zoning and will hereafter be known as the "Golf Course Lots". Purchasers of these Golf Course Lots will be restricted by legally-binding C,C & R's as to the location, size and construction methodology of their residence so as to protect the primary dune eco-system, minimize visual impacts to beach and ocean views from the golf course and minimize potential property damage from high winds and storms.
7. 12 new lots will developed at the north end of the Kahuku Golf Course in accordance with City & County of Honolulu "Country" zoning standards (minimum 1 acre in size) and will hereafter be known as the "Country Lots". The country lots will be sold for residential and/or continued agricultural use.

The Kahuku Village plan will be developed under the provisions of Hawaii Revised Statutes (HRS), Chapter 201(H) as an affordable housing subdivision. A detailed description of planned improvements and a list of proposed exemptions from City and County of Honolulu Land Use Ordinances are provided in **Section 2**.

1.2 PROJECT BACKGROUND

In 2006, Continental purchased the 172.7-acre Kahuku Village property from the Estate of James Campbell (now the James Campbell Company) prior to the Estate's dissolution. The property includes 72 occupied residences in the Ocean View and New Camp neighborhoods of Kahuku Village 5 (KV5), the Kahuku Golf Course, two cemeteries, undeveloped agricultural lands, and 4,600 linear feet of shoreline land. The existing residences are plantation era homes, some dating back 90 years or more and served by deteriorating roads, cesspools, and substandard utilities. Based on newspaper accounts from 2006, the Kahuku Village residents were seeking two assurances from then owner Campbell Estate: (1) that they would be given an opportunity to purchase their homes at affordable prices and, (2) that the village and surrounding land would not be urbanized in the process.

During this time period, the City Council for the City and County of Honolulu passed Resolution 06-032, CD1: "Supporting the Preservation of Residential Homes in Former Plantation Owned Housing Areas and Urging the Owners of Land on Which Present or Former Plantations are located to Subdivide the Land and Allow Current Tenants to Acquire Ownership of the Property". This resolution was initiated by the City Council due to concern about the precarious housing condition faced by former plantation workers in Kahuku Village and other villages on O'ahu.

As part of the negotiations to purchase the property, Continental met with the City Administration and the Kahuku community to discuss alternatives that would allow existing residents to purchase their homes at an affordable price, preserve the Kahuku Golf Course for public use, create two new public access beach parks, and upgrade existing infrastructure, in exchange for the development of 18 coastal lots to be sold at market rates to cover land and development costs and subsidize the affordable purchase price of the existing homes and new residential lots.

Following the purchase, Continental presented a 10-point development plan for the project reflecting the proposals that had been introduced during the purchase period. Though supported by a majority of the KV5 residents, the 10-point plan has met with some resistance by segments of the larger Kahuku and North Shore community, primarily due to controversy surrounding development of the planned 18 shoreline lots. Since its introduction, the development plan, as presented in this Environmental Assessment, has undergone several significant revisions and refinements in response to community and environmental concerns, notably:

- Lot sizes around the existing 72 residences for the Village Home Lots have been increased from a proposed 5,000 sf to 10,000 sf.
- A new water system for fire flow protection and potable water service to serve the Village Home Lots and Village Vacant Lots, when developed, has been added as part of the plan.
- The concept of beachfront homes built on the dunes fronting the Shoreline lots has been abandoned in favor of house siting outside the dune eco-system, mostly on current golf course fairway land that, through the use of restrictive covenants, will insure that if the plan is approved, no construction activities other than possible dune preservation or protection measures will ever take place within the environmentally sensitive Kahuku beach dune ecosystem or any other portion of the Kahuku Shoreline Area, thus preserving the Kahuku beach for posterity.

In addition, it is the owner's objective to achieve, as reasonably as possible the community's multiple objectives of preserving the Kahuku Golf Course as an affordable public-play facility, providing perpetual, legal public beach access, protecting Kahuku beaches from erosion and other damage for posterity, and maintaining Kahuku's rural character.

1.3 PROJECT PURPOSE AND NEED

The current residents of KV5 are living on borrowed time. The existing plantation-era homes are slowly deteriorating while land and housing costs on the north shore quickly rise. Within the context of current permitting and subdivision requirements, the KV5 settlement is an awkward and unwanted artifact. House structures do not meet current building codes. Roads and utilities are non-compliant with county design standards. The single-lot settlement is non-conforming with the county's land use ordinance. In essence, the village is not entitled to exist. In effect, when a house falls down, the resident cannot rebuild and will be forced to look for a new home in a market that offers few affordable options.

In answer to this need, the proposed development plan is guided by the following objectives:

- Secure ownership of the existing plantation village homes for the residents of KV5 by creating entitled, fee simple residential lots for sale at affordable rates;
- Preserve the character of the historic plantation community;
- Create additional affordable housing opportunities for other north shore families;
- Upgrade substandard infrastructure and utilities serving these village homes; and,
- Provide the developer with income to pay for the land and development costs and a reasonable return on investment for the financial risk incurred.

In addition, it is the owner's objective to achieve, as reasonably as possible the community's multiple objectives of preserving the Kahuku Golf Course as an affordable public-play facility, providing perpetual, legal public beach access, protecting Kahuku beaches from erosion and other damage for posterity, and maintaining Kahuku's rural character.

1.4 OWNERSHIP

With the exception of limited infrastructure improvements required for roadway connection to the Kamehameha Highway right-of-way, all project activities will occur on land owned by Continental Pacific, LLC. The project does not involve the use of State or County lands, nor will any government funding be used. The project site is comprised of TMK lots: (1) 5-6-02: 10, 12, 16, 27, 33, 34, 35, and 37.

1.5 BASIS FOR ENVIRONMENTAL ASSESSMENT

This Environmental Assessment (EA) is prepared for the Kahuku Village Subdivision. Because a portion of the project is located within the Special Management Area (SMA), the proposed activity is subject to the preparation of environmental documentation per requirements of Chapter 25, Revised Ordinances of Honolulu (ROH), and Chapter 205A Hawaii Revised Statutes (HRS). In addition, connection to Kamehameha Highway, a State highway facility, triggers an EA in accordance with Chapter 343, Hawaii Revised Statutes (HRS). This EA addresses the impacts anticipated from proposed improvements, and proposes mitigation measures to reduce or eliminate adverse effects to the natural, social, and built environments.

SECTION 2

Description of Project and Alternatives Considered

2.1 PROJECT DESCRIPTION

Proposed improvements are described in the following sections. See **Figure 2-1: Site Plan**, and **Figure 2-2: Site Plan Aerial Image**.

2.1.1 LOT CREATION

A total of one-hundred seventy-five (175) new lots, excluding road lots, are to be created. New lots are summarized in Table 2-1 and described below.

Table 2-1 Planned Lots	
Type	Quantity
<i>Residential Lots</i>	
Village Home Lots (existing residences)	72
Village Vacant Lots (in-fill lots)	64
Golf Course Lots	18
Country Lots	12
Golf Course Caretaker Lots	1
<i>Subtotal</i>	167
<i>Other</i>	
Golf Course	1
Golf Course Club House	1
Beach Parks	2
Cemeteries	2
Open Space (Adam's Field)	1
Methodist School Lot (existing facility)	1
Road Lots	--
<i>Subtotal</i>	8
Total	175

Existing Residential and New In-fill Lots

The project proposes to create one hundred thirty-six 136 residential lots developed in accordance with R-10 zoning standards (10,000 sf minimum lot size). Seventy-two (72) of these lots will be created around existing occupied residences. Lot boundaries were developed through field visits and collaboration with the current residents to ensure that existing living spaces and accustomed, peripheral uses are accommodated. In a few cases, the lot lines result in building encroachment into the zoning setback. An exemption will be sought in these cases, as described in Section 2.2 below.

In addition, sixty-four (64) vacant lots are currently planned in the remaining available area within the Village. These vacant in-fill lots will be sold to individuals for home construction or developed in collaboration with a self-help affordable housing organization such as Habitat for Humanity. Lots will be served by improved roadways, utility improvements, and new individual septic systems, as described in the following sections.

Golf Course Residential Lots

Eighteen (18) lots will be developed along the makai edge of the golf course according to R-20 zoning standards (20,000 sf minimum lot size). Typical lot sizes will range from 30,000 to 50,000 sf. Planned improvements include roadway access, potable water connection and underground power and communication lines, as described in the following sections. New lot owners will be responsible for installation of individual waste water systems. The lots will be sold at market rates to offset land and development costs for other project improvements and to subsidize the affordable housing component of the plan. The lots will be developed for residential use by individual owners.

Country Residential Lots

Twelve (12) lots will be created at the northern end of the Kahuku Golf Course according to country zoning standards (minimum ½-acre lot size). Lots will range in size from 1-6 acres. Planned improvements include roadway access, potable water connection and underground power and communication lines, as described in the following sections. New lot owners will be responsible for installation of individual waste water systems.

Golf Course Caretaker's Dwelling and Maintenance Warehouse Lot

A lot will be created adjacent to the Catholic Cemetery for the development of a dwelling and maintenance warehouse for use by a resident golf course caretaker.

PRELIMINARY
subject to change

Total Area	=	172.7 acres
AG-2	=	111.0 acres
B1	=	0.8 acres
R-5	=	48.0 acres
P-1	=	0.9 acres
P-2	=	12.0 acres

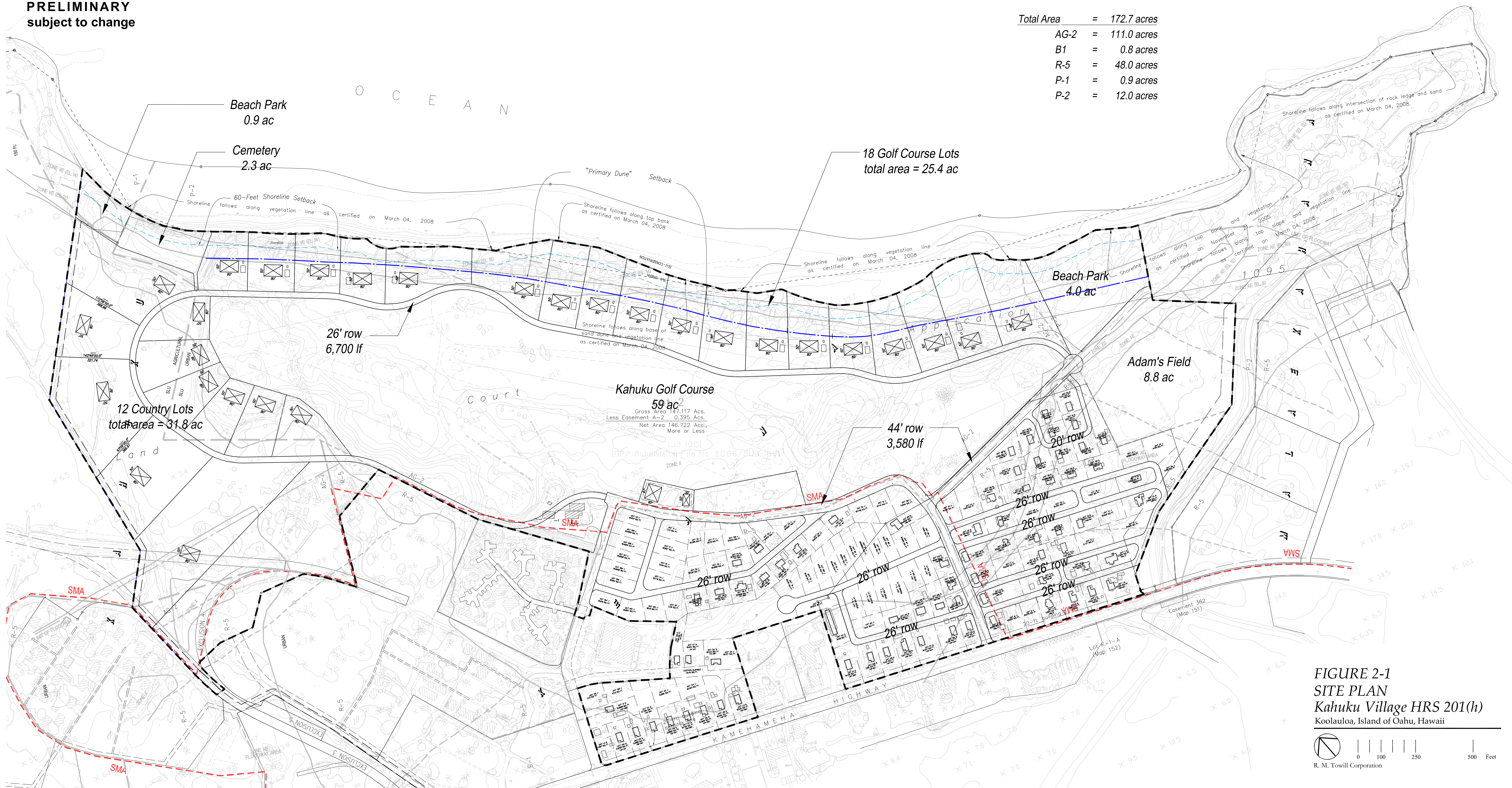
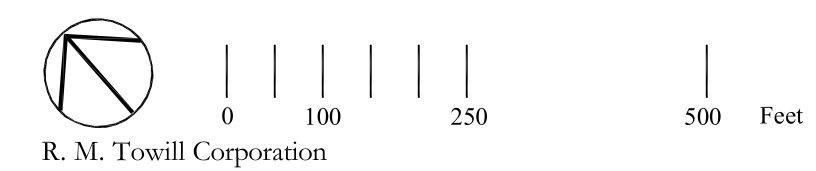


FIGURE 2-1
SITE PLAN
Kahuku Village HRS 201(h)
Koolauloa, Island of Oahu, Hawaii



PRELIMINARY
subject to change

Total Area	=	172.7 acres
AG-2	=	111.0 acres
B1	=	0.8 acres
R-5	=	48.0 acres
P-1	=	0.9 acres
P-2	=	12.0 acres

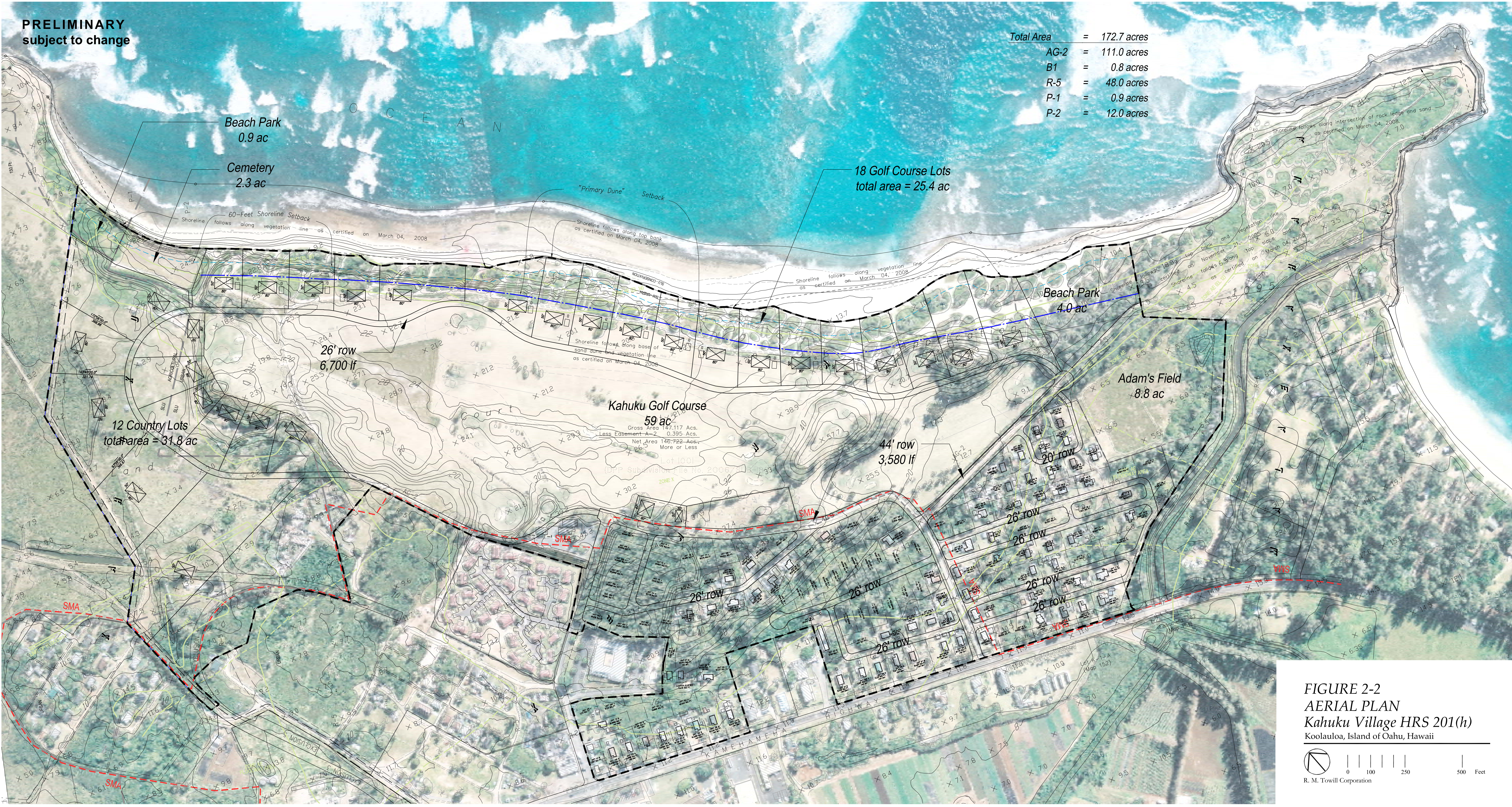
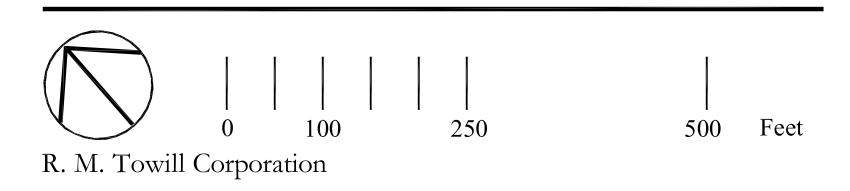


FIGURE 2-2
AERIAL PLAN
Kahuku Village HRS 201(h)
Koolauloa, Island of Oahu, Hawaii



Miscellaneous Lots

Additional lots to be created include:

- One (1) Kahuku Golf Course lot
- One (1) golf course club house lot
- Two (2) beach park lots
- Two (2) cemetery lots
- One (1) Adams Field Lot
- Road lots

Planned use of these lots is described in the following sub-sections.

2.1.2 RESIDENTIAL STRUCTURES

Existing Houses on Village Home Lots

There are seventy-two (72) existing, occupied plantation-era residential structures within KV5. The village is located in county R-5 zoning. These houses were constructed during Hawaii's territorial period well before current building codes and land use ordinances were in effect. As such, the current houses are not in compliance with building codes and non-conforming with respect to subdivision and zoning requirements. The houses are single-wall, post-and-beam construction typical of the plantation style. They are serviced with water and power. The houses are not sprinkled and the water system does not provide adequate flow for fire protection. Waste water disposal is by individual or gang cesspool. Floor plans and elevations for the 72 existing plantation homes within KV5 are included as **Appendix N**.

New Affordable Houses on Village Vacant Lots

New affordable houses will be constructed by individual owners on the Village Vacant Lots. Alternatively, new house construction might be undertaken as a self-help affordable housing project in partnership with a non-profit organization. In either case, houses will be constructed in conformance with current building codes and R-5 zoning requirements for density, setbacks, and height limitations.

Houses on Golf Course Lots

The golf course lots will be developed for residential use by individual owners. Development on the lots will conform to current building codes and R-20 zoning requirements for density, setbacks, and height limitations. In addition, development and use of the lots will be subject to codes, covenants and restrictions (CCRs) that will include the following:

1. No development, including grading or the erection of walls, fences or other vertical structures, will be permitted makai (shoreward) of the primary dune setback line.
2. Each lot will have a maximum, total building footprint of 4,000 sf.
3. Building heights will be limited to 25 feet in conformance with the R-20 zoning design standards.
4. Residential structures will be of post-and-beam construction to minimize ground disturbance.
5. Each lot is allowed one designated access path through the dunes to the shoreline.
6. Exterior building and roof colors will be limited to a palette (to be developed) that compliments and blends in with the natural landscape.
7. All exterior lighting will be shielded and angled downward (no uplighting) to minimize glare and prevent light pollution that could interfere with nocturnal bird navigation. No flood lights are permitted for landscape illumination.
8. Plant materials used in exterior landscaping will be selected from the following list of native species appropriate to the coastal dune environment:

naupaka (*Scaevola sericea*)
`aki`aki (*Sporobolus virginicus*) grass;
hala (*Pandanus tectorius*)
hinahina kahakai (*N. sandwicensis*)
hinahina (*Heliotropium anomalum* var. *argenteum*),
pauohiiaka (*Jacquemontia ovalifolia* ssp. *sandwicensis*),
`akoko (*Chamaesyce degeneri*),
nanea (*Vigna marina*),
alena (*Boerhavia repens*),
pohuehue (*Ipomoea pes-caprae*),
akulikuli (*Sesuvium portulacastrum*),
milo (*Thespesia populnea*).

2.1.3 AMENITIES

Kahuku Golf Course

The Kahuku Golf Course will be conveyed by deed or lease to an entity selected by Continental to be managed and maintained for public use. A golf course improvement “sinking fund” of \$450,000 will be set aside by the owner for the new managing entity to use to fund golf course improvements including, but not limited to:

- Reconfiguration of golf course tee-boxes, fairways, and greens.

- Re-development of the golf course clubhouse
- Development of a caretakers cottage and maintenance warehouse.

Improvements recommended for development by the future management entity are described in further detail below. The fund will revert to the owner after one year if it is not used or encumbered by the managing entity.

Golf Course Tee-boxes, Fairways, and Greens

It is anticipated that four of the nine holes will be reconfigured to accommodate the planned shoreline lots. Nine holes of play will be maintained. No other improvements to the golf course greens and fairways are planned at this time.

Future improvements to the golf course may include installation of an irrigation system utilizing recycled R-1 water from the Kahuku Waste Water Treatment Plant (WWTP). At present the Kahuku WWTP treats water to R-3 levels and disposes of the effluent by means of injection well. R-3 water is not suitable for irrigation purposes. The Ko'olau Loa Sustainable Communities Plan calls for upgrades to the Kahuku WWTP to facilitate effluent reuse for irrigation purposes. In addition to WWTP improvements, a non-potable water distribution system will be required to convey recycled effluent from the WWTP to the end use.

Golf Course Club House

The existing club house is to be replaced with improved facilities. A new club house building is proposed to house a small restaurant, seating area, management counter, and restrooms. A separate cottage will be constructed adjacent to the club house for a resident manager/caretaker. The facility will be serviced with water, power, and communication utility connections. Waste water will be disposed of by a septic leach field system.

Golf Course Caretakers Dwelling and Maintenance Warehouse

A lot will be created adjacent to the Catholic cemetery for a future resident caretaker cottage and maintenance warehouse. Water, power and communication utility connections will be stubbed out to service future development and use of the lot. The dwelling structure will be limited to a maximum footprint of 4,000 square feet. Waste water disposal will be by individual septic system. A building approximately 1,500 sf in size will be constructed to house equipment and supplies used for golf course maintenance. The lot will include an area graded and stabilized (grass or gravel) for material stockpiling and staging. Bathroom facilities are not included. Waste water from a warehouse wash basin will be filtered and disposed by means of percolation in a gravel bed.

Beach Parks

Association (HOA) or similar entity. Both parks are zoned P-2 (preservation) by the county. Both parks will be managed for public use shoreline access.

4.4-Acre Beach Park

The larger of the two beach parks will be created at the south end of the project site with access provided via South Golf Course Road. Improvements will consist of an unpaved parking lot, restroom facility that will be sited for joint-use by the golf course, and an emergency telephone. Water, power, and communication utility connections will be provided. Wastewater from the restroom will be disposed of by means of a septic leach field system.

0.9-Acre Beach Park

A 0.9-acre beach park will be created adjacent to the historic Japanese Cemetery at the north end of the project site. Access will be provided via an easement over the planned country lots on an existing unpaved road. In addition to the road, planned improvements include a gravel parking area. No other improvements are proposed.

The beach parks will provide public access to the shoreline during daylight hours subject to reasonable rules and regulations and will be closed at night. Access during night time hours for fishermen or cultural practitioners will be available by arrangement with the managing entity. Securing the parks during nighttime hours is necessary to prevent vandalism and other illicit activity at the park and on the shoreline.

2.1.4 ROAD IMPROVEMENTS

Existing Conditions

Two collector roads provide access into Kahuku Village 5 from Kamehameha Highway:

- Pu'uluana Place – provides access to the Kahuku Golf Course club house, Hale Hauoli Retirement Community, and the Church of Jesus Christ of Latter Day Saints (LDS) Kahuku 1st Ward. The road cross-section consists of a 20-foot wide pavement with one lane of traffic in each direction and grassed swales on each side. The road is located within a 44-foot wide private road lot owned by Continental (TMK: 5-6-2: 29) which connects to Kamehameha Highway and terminates at the LDS property (TMK 5-6-2: 28). It continues across the LDS property on a 44-foot wide access easement to provide access to the Hale Hauoli subdivision and the golf course.
- South Golf Course Road – provides access to the KV5 “New Camp” residences, Adams Field, the shoreline, the Catholic Cemetery, and a private residence at Makahoa Point. South

Golf Course Road connects with Pu‘uluana Place at the golf course club house. The road cross-section consists of a 20-foot wide pavement with one lane of traffic in each direction and grassed swales on each side. The road is located within an access easement across property owned by Continental.

Access roads within the KV5 residential areas consist of 10 to 12-foot wide oiled dirt roads with grassed swales.

Planned Improvements

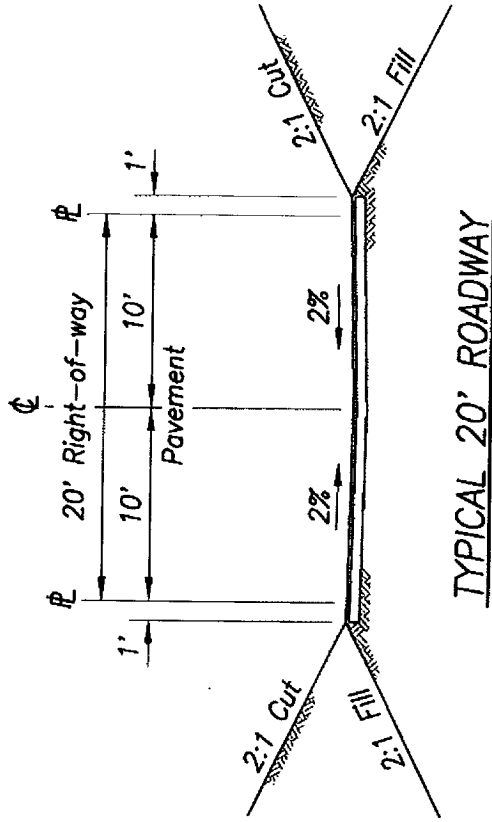
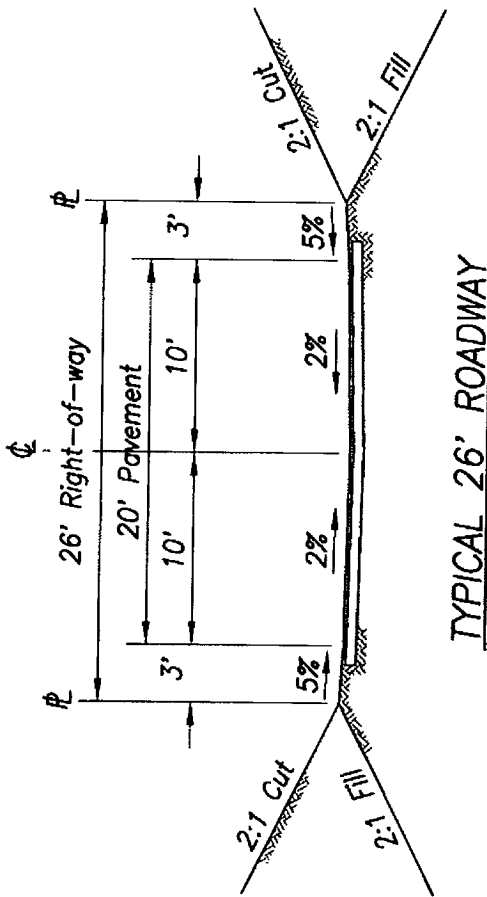
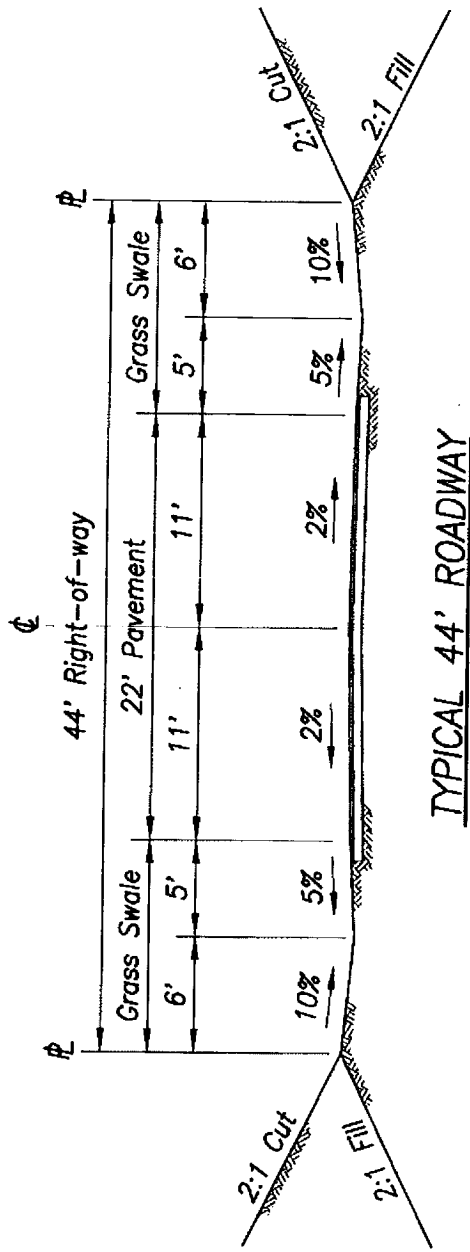
The development plan proposes to create new road lots and improve the existing roads in a manner that will preserve the rural character of Kahuku Village. The road system will consist of a looped collector road with two points of connection on Kamehameha Highway and a cul-de-sac dead-end access to Adam’s Field and one of the planned Beach Parks. Smaller “access” roads will intersect with the collector road and provide access to individual Village Residential lots. The access road layout provides looped and cross-connected two-way access through the village. Collector and access road cross-sections are proposed to be constructed with paved, inverted crown travelways and grassed swales. No curbs, gutters, or sidewalks will be constructed in order to preserve the existing rural character and minimize development costs. Planned right-of-way / pavement widths are shown in Table 2-2:

Table 2-2 Planned Road Sections		
Road Type	ROW/Pavement Width	Linear Feet
<i>R-5 Zone</i>		
Collector Road	44' / 22'	3,580 lf
Access Roads	26' / 20'	7,300 lf
	20' / 20'	600 lf
<i>AG-2 Zone</i>		
Collector Road	26' / 20'	6,700 lf

All roads within KV5 will remain private. The proposed road sections are illustrated in Figure 2-3.

2.1.5 WATER

All of the existing residences within KV5 and many of the land uses adjacent to the project are serviced by a private water system managed by the Kahuku Village Association (KVA). The system is connected to a single, 3-inch Board of Water Supply (BWS) master water meter



Planning - Engineering - Environmental Services - Photogrammetry - Surveying - Construction Management
R. M. TOWILL CORPORATION
 808 B-42 1133 420 Waiala Road Suite 411 Honolulu Hawaii 96817-4941

KAHUKU VILLAGE HRS 201(h) SUBDIVISION

TYPICAL ROAD SECTIONS

Figure 2-3

located on the makai side of Kamehameha Highway across from Kahuku High School. Each end user is connected through an individual sub-meter from which KVA monitors use rates for billing purposes. The water system was upgraded in 1997 to meet BWS standards for potable water service and to repair leaks that contributed to the loss of over 1.5 million gallons per month. The system is not sized to provide adequate pressure for fire protection. A schematic of the existing water system is shown in **Figure 2-4**.

Proposed improvements to the water system include:

- Installation of an 8-inch looped water line on Pu'uluana and South Golf Course Road.
- Installation of 8-inch looped water lines on access roads within the KV5 residential areas.
- Installation of individual service laterals and water meters to service each new lot.
- Installation of new fire hydrants spaced every 300 feet in compliance with the fire code.

2.1.6 WASTE WATER

For over 60 years, residents of the Kahuku Village have relied on old, and many deteriorating, cesspools for wastewater (sewage) disposal. The project area, consisting of approximately seventy-two (72) existing dwellings, sixty-four (64) new in-fill lots, twelve (12) country lots and eighteen (18) new lots (located on the makai side of the Kahuku Golf Course) is shown in **Figure 2-1**. Cesspool replacement will be undertaken in two phases (each phase will total less than 50 lots each).

The location of the existing cesspools serving the 72 dwellings is shown in **Figure 2-5**. There are a handful of cesspools that are considered "gang" cesspools where more than one dwelling is served by a single cesspool. These "gang" cesspools will be the first group to install individual wastewater systems since they have been banned by the U.S. Environmental Protection Agency. Installing individual wastewater systems (IWS) in place of all the cesspools will provide a significant improvement to the environment and will eliminate the need to pump out failing or overflowing cesspools.

New dwellings within the Kahuku Village, eighteen lots *makai* of Kahuku Golf Course, and twelve (12) agricultural lots (designed at a later time) will be serviced by new IWSs. The entire project area is located below the Board of Water Supply's "No Pass Line" and is located at least 1000 feet away from the nearest potable water source serving the public (see **Figure 2-6**). There are a number of water wells in the area but service is limited to irrigation and industrial

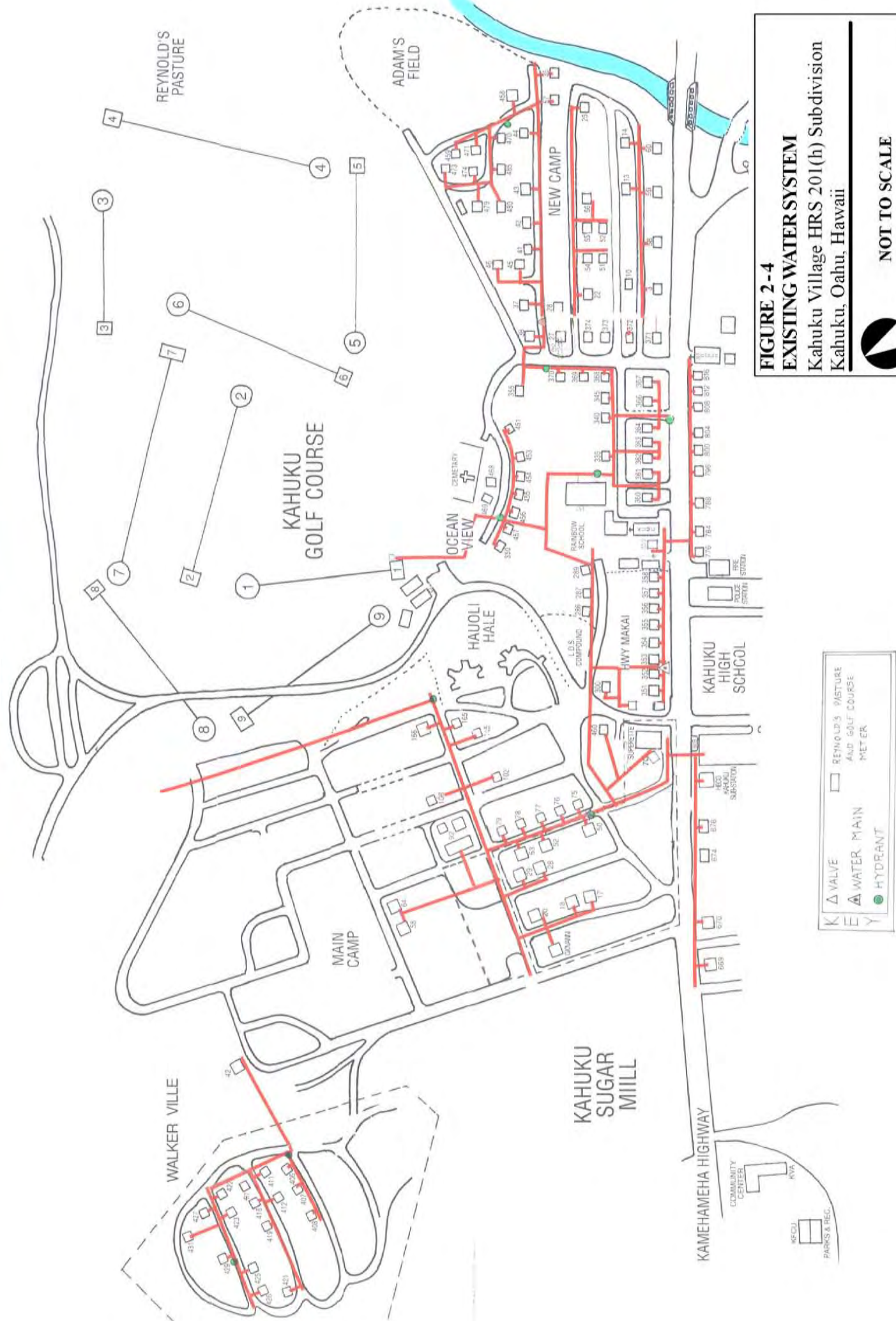
FIGURE 2-4
EXISTING WATER SYSTEM
 Kahuku Village HRS 201(h) Subdivision
 Kahuku, Oahu, Hawaii

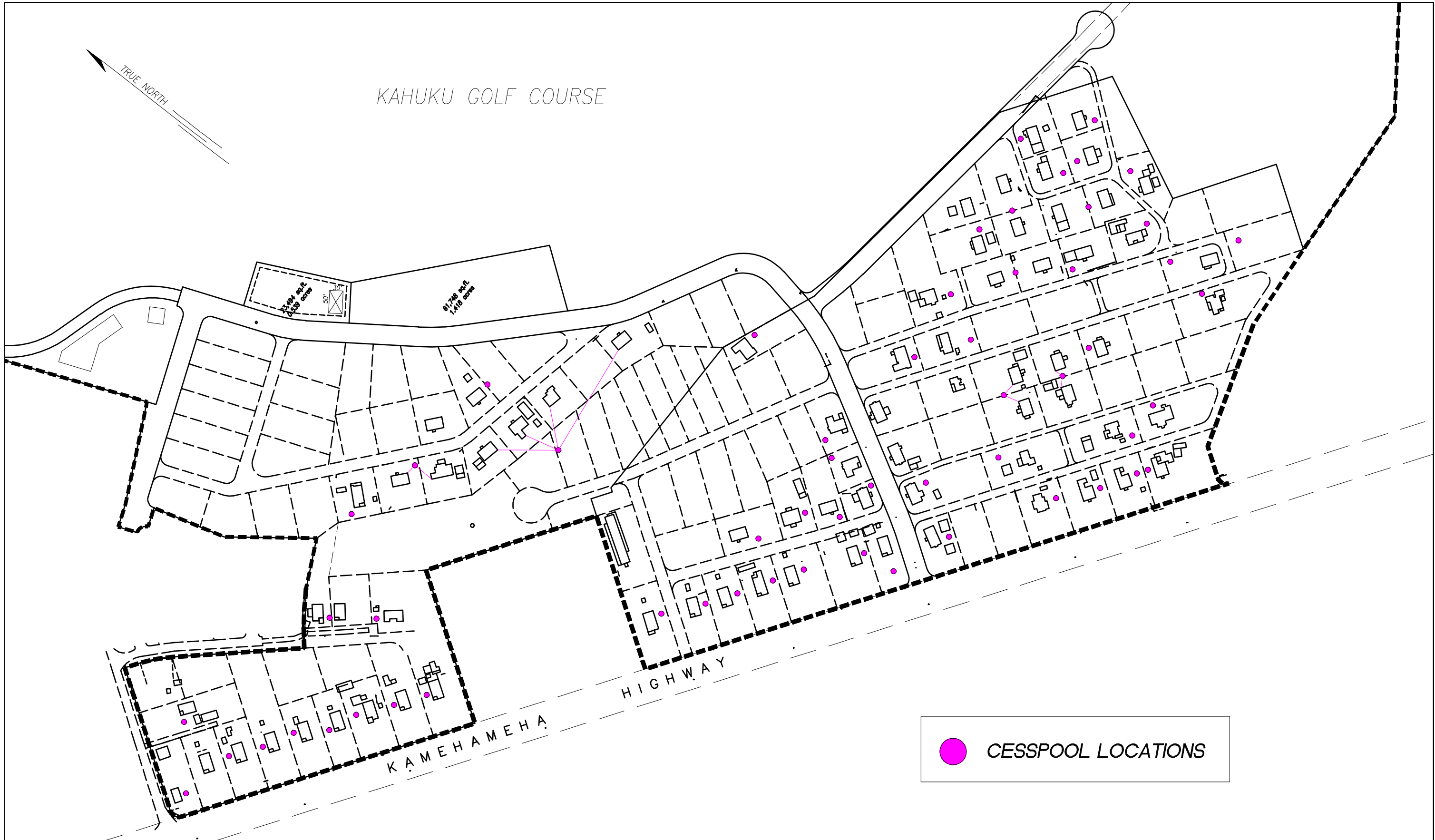


NOT TO SCALE

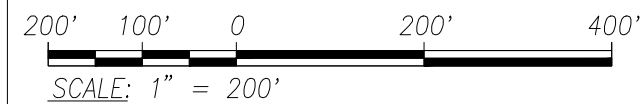
R.M. Towill Corporation

May 2008





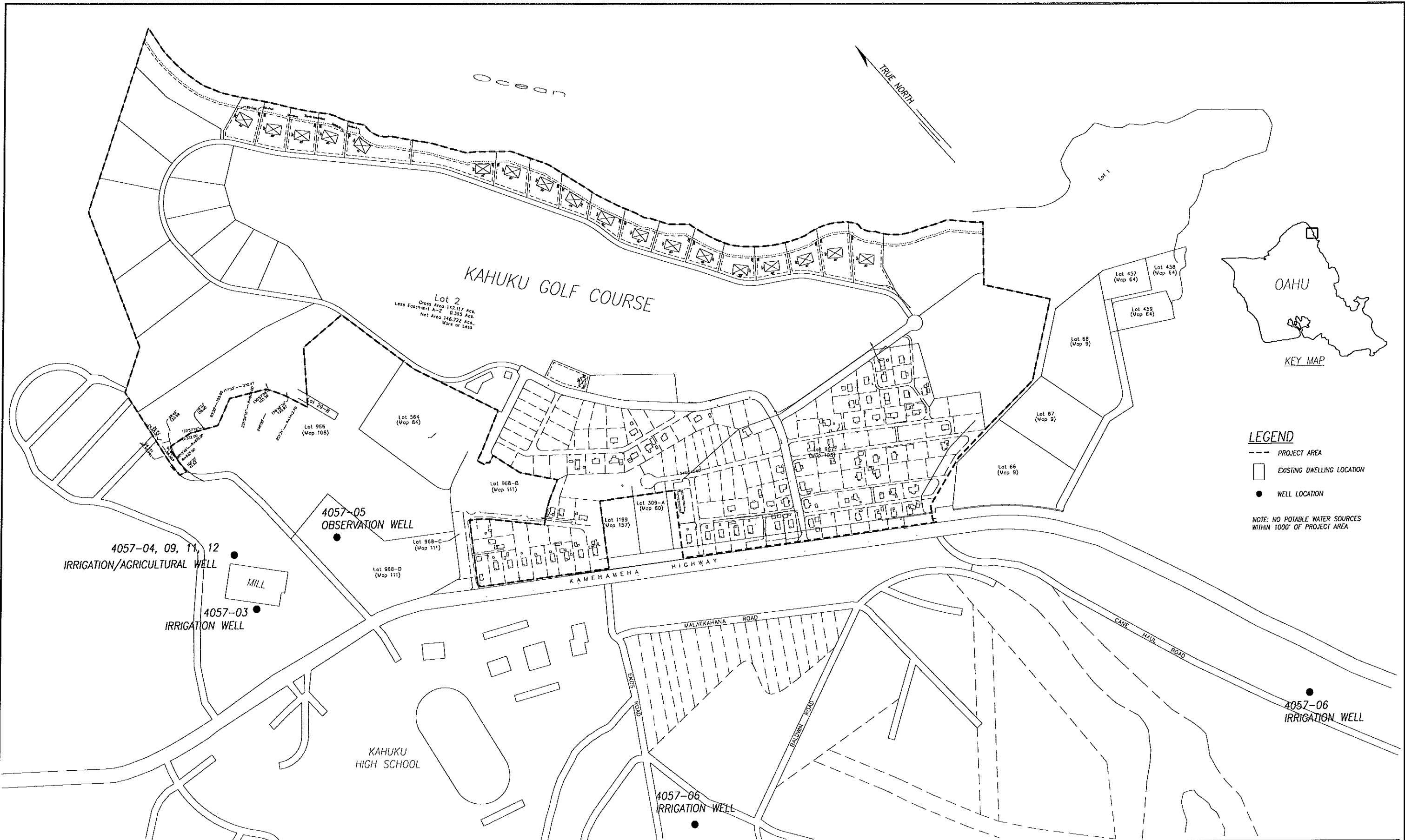
Planning - Engineering - Environmental Services - Photogrammetry - Surveying - Construction Management
R. M. TOWILL CORPORATION
 808 842 1133 420 Waiakamilo Road Suite 411 Honolulu Hawaii 96817-4941



Kahuku Village HRS 201 (h) Subdivision

CESSPOOL LOCATIONS
 Kahuku, Oahu, Hawaii

FIGURE
 2-5



purposes. A distance of at least fifty (50) feet will be required between the ocean vegetation line and the leach field for the new eighteen lots makai of the Kahuku Golf Course.

Technical Consideration

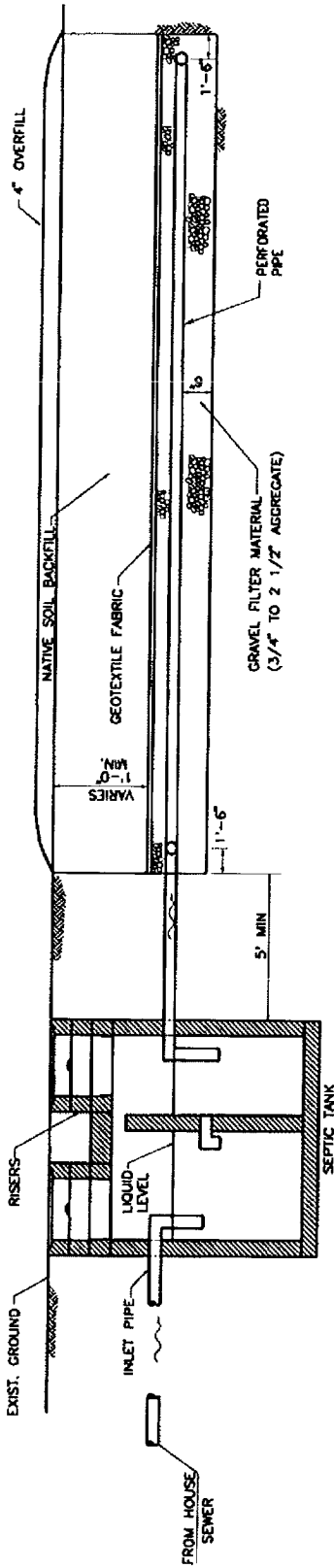
The individual wastewater system for each dwelling will consist of either a septic tank system or an aerobic unit system, both approved by the Hawaii State Department of Health. The dwellings vary in size anywhere from 2 bedroom houses (400 gallons per day, minimum 800 gallon IWS) to 5 bedroom houses (1000 gallons per day, 1000 gallon IWS). Percolation tests will be performed to size each of the leach fields. A brief description of each IWS is provided below.

The Septic Tank System

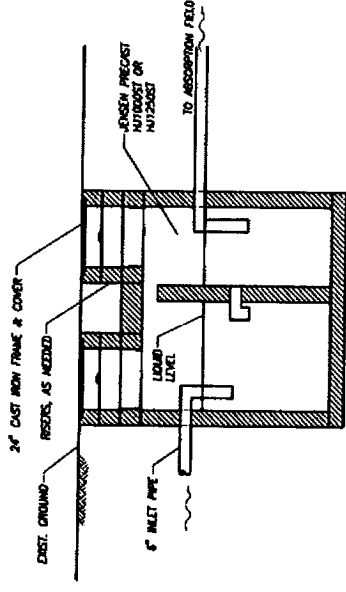
A septic tank system (similar to **Figures 2-7 and 2-8**) will be used to serve a majority of the dwellings (a maximum of five bedrooms per septic tank) in the project area. These IWS systems will be utilized for applications where there will be at least three feet of vertical separation between the high water level and the bottom of the leach field.

The septic tank system will consist of the following:

- A watertight septic tank constructed of fiberglass. These tanks will be underground around 10 to 15 feet from the foundation of the house and typically 18 to 24 inches below the surface.
- Two chambers within the septic tank created by an internal wall with an opening for flow from one chamber to the next. The first chamber, which is under continuous addition of new wastewater is around two-thirds the size of the tank, while the second chamber makes up the remaining one-third of the tank. The second chamber allows re-suspended particles to settle and digestion to occur.
- An inlet and outlet device at either end of the tank. The inlet tee forces incoming wastewater down into the tank to prevent flow of wastewater directly across the top of the wastewater to the outlet, which allows for settling. The outlet tee draws effluent from the settled wastewater between the sludge and scum layers.
- An optional effluent filter may be installed to prevent solids from leaving the tank and entering the leach field.
- Gastight, cast iron manhole frames and covers with concrete risers (as needed).
- A leach field (or drain field) where treated wastewater enters from the outlet of the septic tank for further treatment before being absorbed into the soil. Each leach field will consist of a gravel bed buried one to three feet below the ground to provide further



IWS PROFILE
NOT TO SCALE



SEPTIC TANK SCHEMATIC
NOT TO SCALE

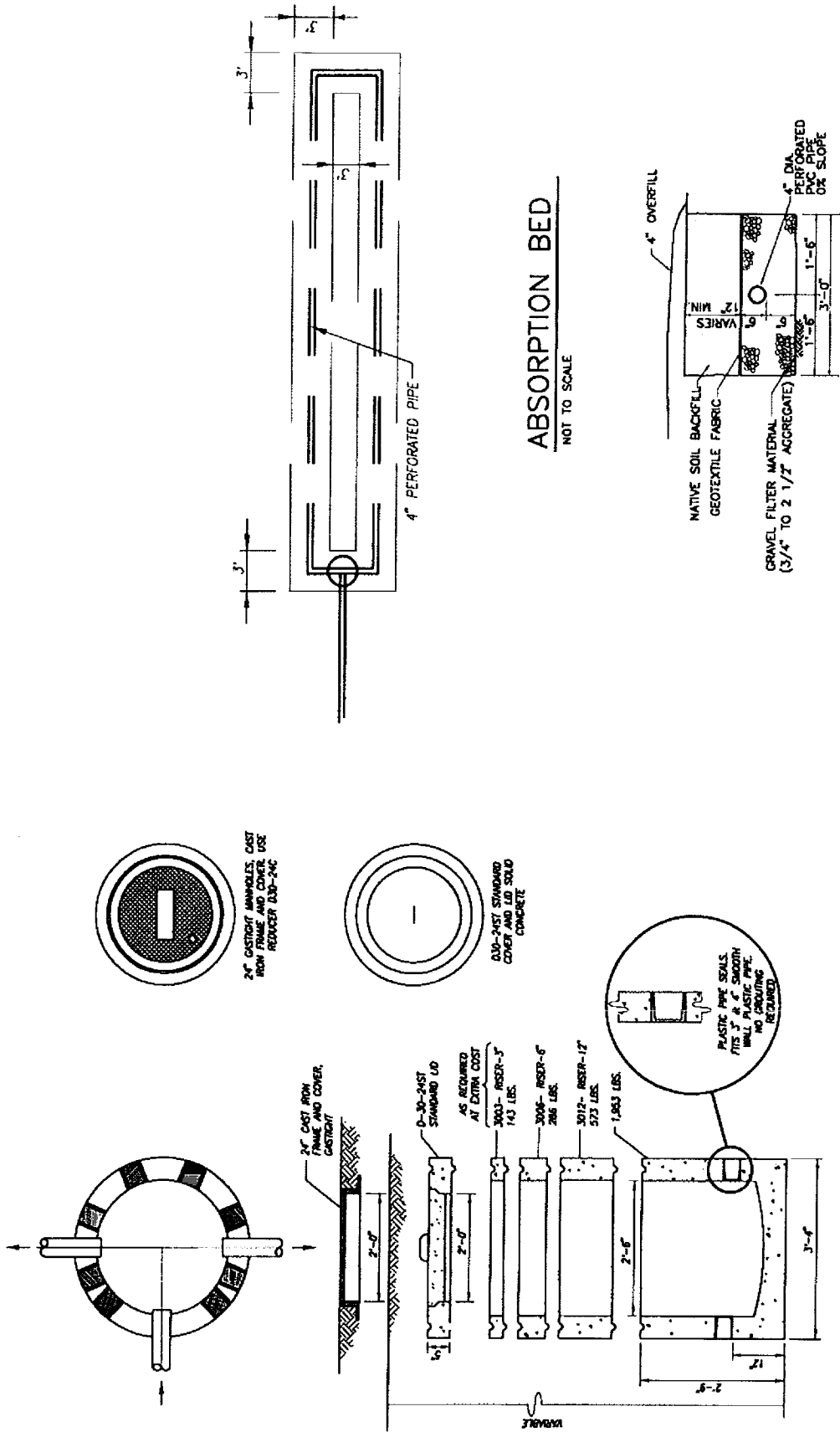


Planning - Engineering - Environmental Services - Photogrammetry - Surveying - Construction Management
R. M. TOWILL CORPORATION
 808 842 1133 2024 North King Street Suite 200 Honolulu Hawaii 96819-3470

KAHUKU VILLAGES EA

**IWS PROFILE AND
SEPTIC TANK SCHEMATIC**

**Figure
2-7**



ABSORPTION BED CROSS-SECTION
SCALE: 1" = 3'-0"

DISTRIBUTION BOX
NOT TO SCALE

KAHUKU VILLAGES EA
DISTRIBUTION BOX DETAIL AND ABSORPTION BED DETAIL AND CROSS-SECTION

Planning - Engineering - Environmental Services - Photogrammetry - Surveying - Construction Management
R. M. TOWILL CORPORATION
808 842 1133 2024 North King Street Suite 200 Honolulu Hawaii 96819-3470



filtration of treated wastewater and deliver effluent to the soil below it for absorption. PVC pipes are used to distribute the treated wastewater throughout the leach field.

The Aerobic Unit System

The IWS aerobic unit system (see **Figures 2-8 and 2-9**) will be used to serve a handful of dwellings that have less than three feet of vertical separation between the high water level and the bottom of the leach field.

The aerobic unit system will consist of the following:

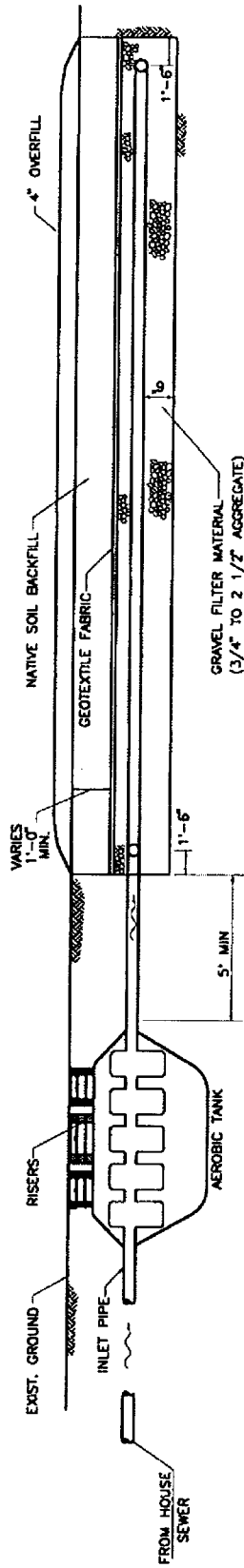
- A fiberglass multi-chamber tank with an approximate dimension of 8'x6'x8'.
- Five chambers within the tank for treatment of entering wastewater. The first two chambers are anaerobic filtration chambers which separate solids from influent wastewater. The third chamber, known as the aeration chamber allows aerobic microorganisms break down and eliminate organic substances in a process called oxidation. The fourth chamber is the settling chamber where remaining particles will settle and not be discharged out of the system. The last chamber is the disinfection chamber where chlorine is added to the effluent to minimize the amount of bacteria in the treated wastewater before entering the leach field.
- A blower will be used to get oxygen into the third chamber to feed the aerobic microorganisms.
- Gastight, cast iron manhole frames and covers with concrete risers (as needed).
- A leach field similar to that which was described above for the septic tank system.

Ownership And Maintenance

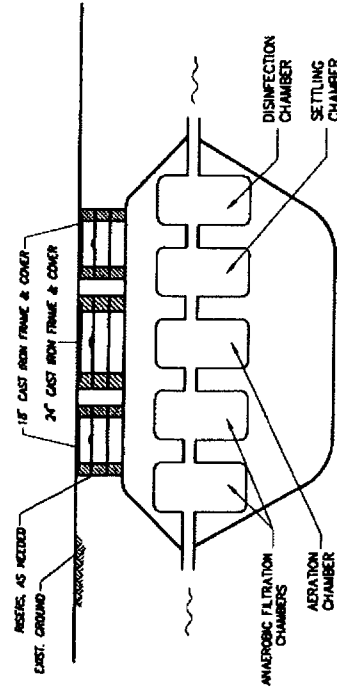
The homeowner will own and be responsible for maintaining each IWS. The homeowners will have to maintain their septic tanks, including inspections of the tank every 3 years and occasional pumping of solids every 3-5 years depending on the inspection reports. Maintenance of each septic system is vital to maintaining a healthy tank environment.

General maintenance for the septic tank system includes:


- Septic tanks shall be inspected on a semi-annual basis by opening the access cover and checking if either the sludge or scum is near the outlet pipe.
- The septic tank shall be cleaned out if either the bottom of the floating scum mat is within three inches of the bottom of the outlet pipe, or sludge comes within six inches of the bottom of the outlet pipe.



IWS PROFILE
NOT TO SCALE



AEROBIC TANK SCHEMATIC
NOT TO SCALE


R. M. TOWILL CORPORATION
 Planning - Engineering - Environmental Services - Photogrammetry - Surveying - Construction Management
 808 842 1133 2024 North King Street Suite 200 Honolulu Hawaii 96819-3470

KAHUKU VILLAGES EA

**IWS PROFILE AND
AEROBIC TANK SCHEMATIC**

**Figure
2-9**

- Cleaning the septic tank shall consist of pumping of the contents into a tank truck and hauling it to a State Department of Health approved point of disposal. The septic tank shall not be washed or disinfected after pumping. Three inches of residual sludge shall be left in the tank for seeding purposes.
- A septic tank shall not be entered by anyone unless proper safety procedures are followed. There is a potential hazard of explosion of gases and/or asphyxiation of personnel if precautions are not taken.
- Paper towels, newspaper, wrapping paper, rags and sticks should not be flushed into the septic tank. They may not decompose and could lead to clogging of the piping.
- Improper operation and maintenance of the septic tank will lead to early failure of the disposal system and/or irrigation system by clogging the piping. This will result in septic tank overflows.

Owners of the proposed household aerobic units shall have an active 2-5 year service contract (as required by the Hawaii State Department of Health) with the aerobic manufacturer for the proper maintenance of the aerobic unit.

Septic System Costs

Each septic tank system will cost approximately \$5,000-\$25,000 installed, depending on the site conditions (e.g. subsurface) and accessibility. Each aerobic system will cost approximately \$25,000-\$40,000 (an aerobic unit alone is \$12,000 - \$18,000 with a two-year maintenance contract) installed, also dependent on the site conditions and accessibility.

2.1.7 POWER AND COMMUNICATION

Existing electrical and communication service is provided by aerial utilities. The development plan proposes to maintain the existing aerial utilities within KV5 residential area. Utility poles will be relocated as necessary to accommodate road improvements. Power and communication service to the new shoreline and country lots will be provided by underground utility lines installed within the planned 26-foot loop road right-of-way.

2.1.8 DRAINAGE IMPROVEMENTS AND FLOOD MITIGATION

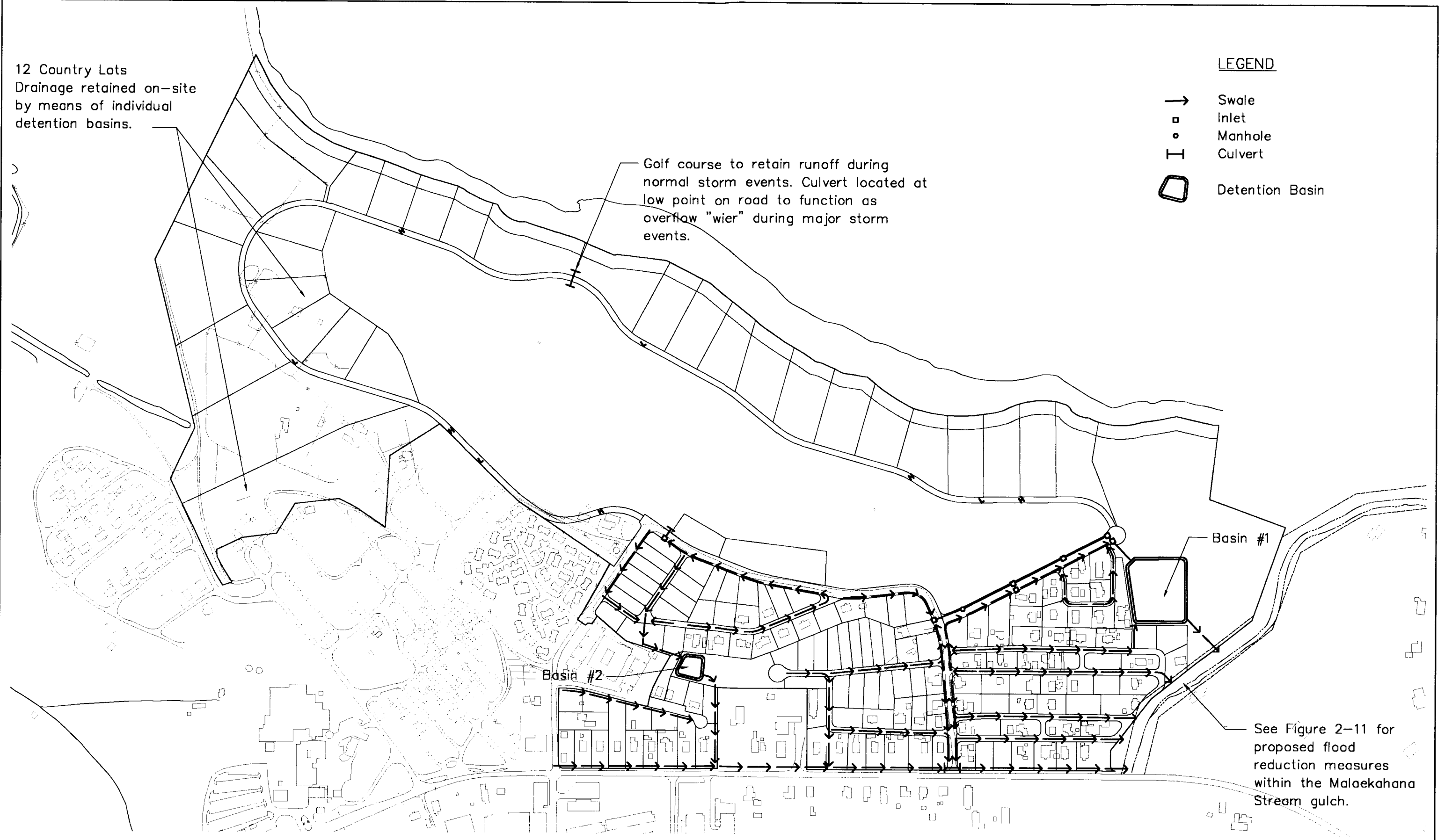
Drainage improvements are proposed throughout Kahuku Village in order to more efficiently convey storm water runoff away from residential properties and reduce the impacts from flooding (see **Figure 2-10**). Planned improvements consist of clearing the Mālaekahana Stream channel to eliminate obstructions and increase capacity for storm water flows (see **Figure 2-11**). The stream channel functions as the primary drainage way for the Kahuku community. In addition to stream channel clearing, a new drainage system will be constructed consisting of

12 Country Lots
 Drainage retained on-site
 by means of individual
 detention basins.

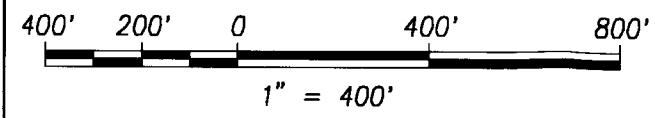
LEGEND

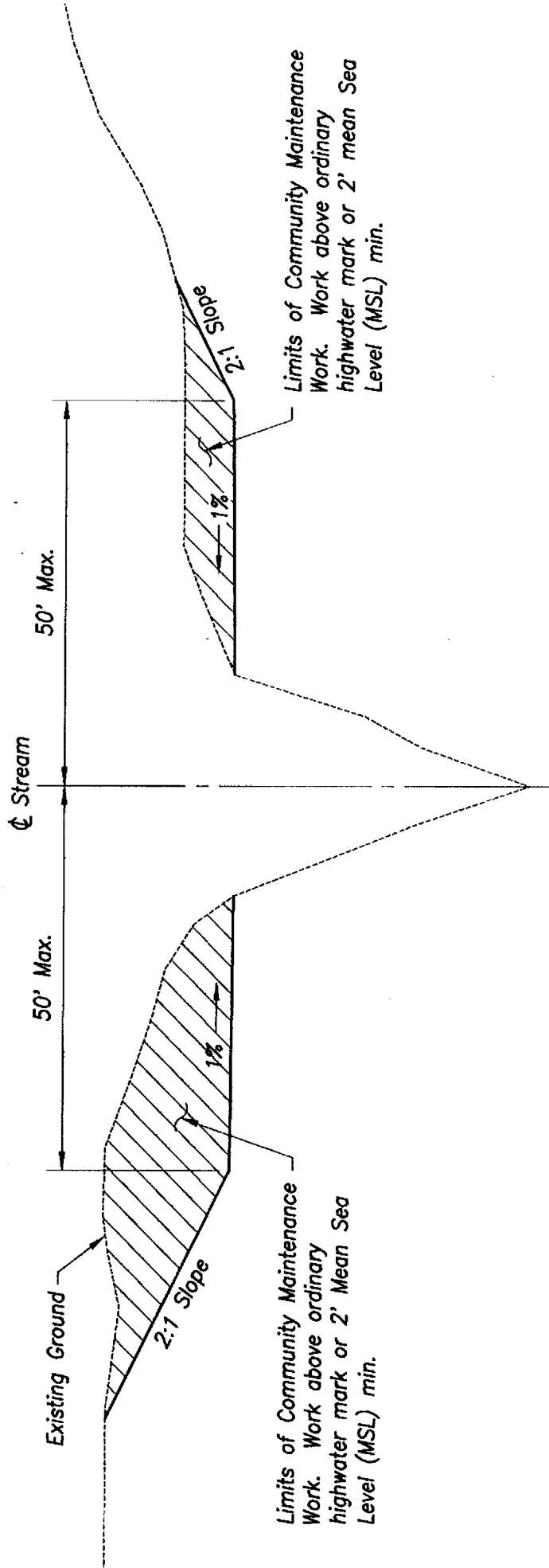
- Swale
- Inlet
- Manhole
- ⊥ Culvert
- ◻ Detention Basin

Golf course to retain runoff during
 normal storm events. Culvert located at
 low point on road to function as
 overflow "wier" during major storm
 events.



See Figure 2-11 for
 proposed flood
 reduction measures
 within the Malaekahana
 Stream gulch.





KAHUKU VILLAGE HRS 201(h) SUBDIVISION

**PROPOSED
FLOOD REDUCTION MEASURES
AT MALAEKAHANA STREAM**

Figure
2-11

Planning - Engineering - Environmental Services - Photogrammetry - Surveying - Construction Management
R. M. TOWILL CORPORATION
 808 842 1133 420 Waiakamilo Road Suite 411 Honolulu Hawaii 96817-4941



improved swales, pipes, culverts and drain inlets throughout Kahuku Village. The system will include the design of roads with inverted crowns to function as swales during storm events (see **Figure 2-3**).

The planned drainage system will provide a significant improvement over existing conditions and will eliminate the ponding and rutting currently experienced in the village after storm events. The improvements will not, however, result in a significant reduction of the flood plain boundary. Approximately two-thirds of the existing residences will remain within the 100-year flood plain boundaries following construction of the planned drainage improvements. The floorboards of the existing post and pier houses located within the flood plain will, in most cases, remain below the designated flood elevations. **Figure 2-12** shows the existing flood plain boundary and KV5 residences.

Table 2-3			
Residents/Lots Inside/Outside Flood Plain			
Location	Existing Residences	Vacant Lots	Total
In Flood Plain	47	14	61
Outside Flood Plain	25	50	75
Total	72	64	136

Note: The residential lot count does not include the existing commercial (B-1 zone) lot on the corner of Pu'uluana Place, or the residential lot currently occupied by the Methodist Church School.

Several methods of reducing the flood plain have been considered during project development and continue to be studied by Continental and by others. Continental Pacific supports ongoing efforts by the Army Corps of Engineers to mitigate flooding and reduce the flood plain boundary in Kahuku through regional-level efforts involving lands mauka of Kamehameha Highway. However, Continental is limited in its own flood mitigation efforts to the land it directly owns.

On behalf of Continental, R. M. Towill Corporation prepared engineering analysis to determine the reduction in the flood plain boundary that could be achieved through stream clearing and excavation of adjacent lands along the Mālaekahana Stream channel. The study modeled a “maximum effort” scenario that excavated open space lands adjacent to the stream channel down to an elevation of 2 feet above mean sea level, which represents the high water mark. The model resulted in only a moderate reduction in the flood plain boundary and a drop of 1 to 2 feet in the designated flood zone elevations, but required excavation of approximately 4 feet over a 10-acre area to achieve these results. The redrawn floodplain boundary in this model did not spare many of the village houses. The extensive cost of excavation weighed prohibitively against the limited flood mitigation benefit.

O C E A N

60-Feet Shoreline Setback

Shoreline follows along vegetation line as certified on March 04, 2008

Voluntary "Primary Dune" Setback

Shoreline follows along vegetation line as certified on March 04, 2008

Shoreline follows along vegetation line as certified on March 04, 2008

Shoreline follows along vegetation line as certified on March 04, 2008

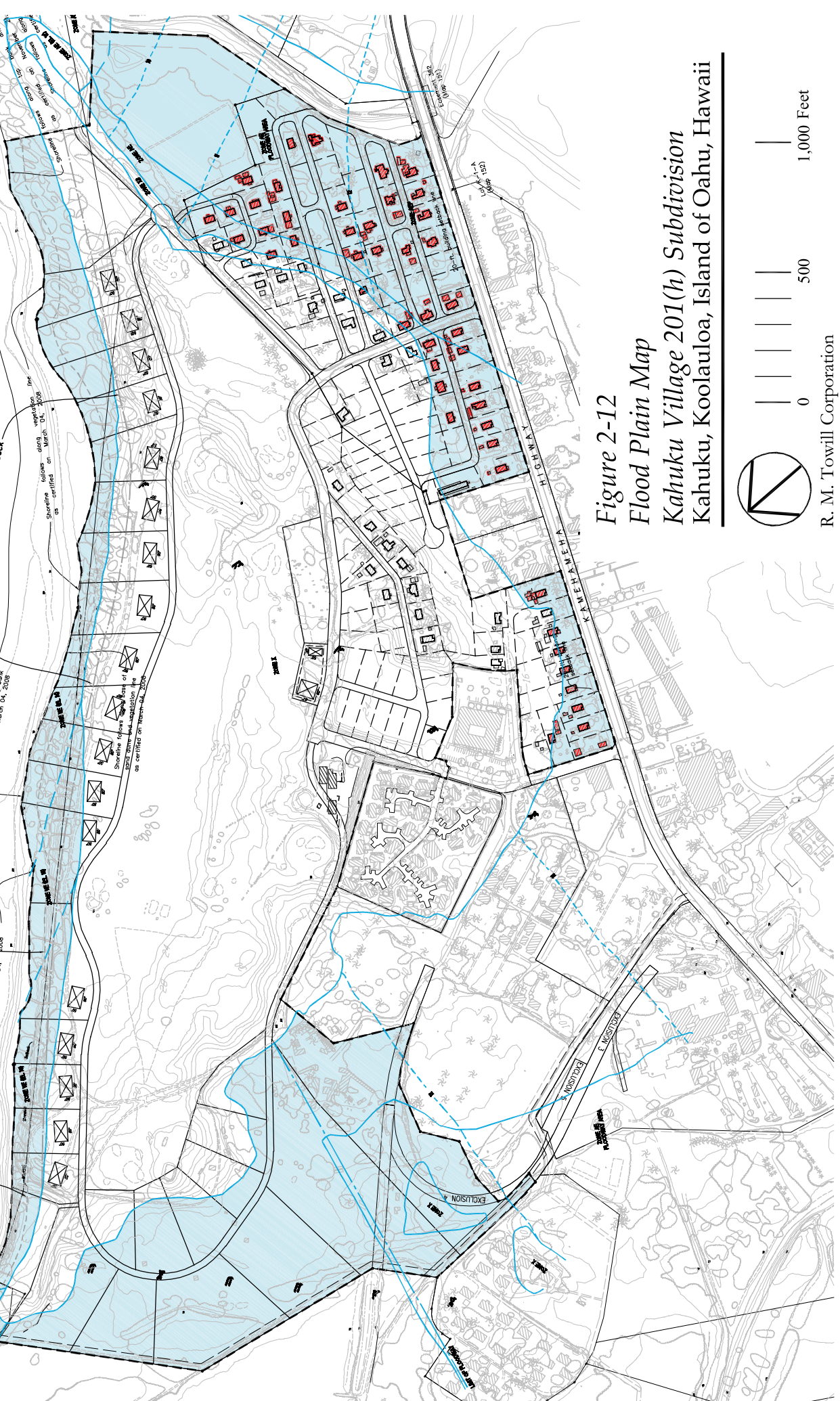
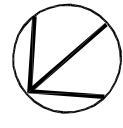


Figure 2-12
Flood Plain Map
Kahuku Village 201(h) Subdivision
Kahuku, Koolauloa, Island of Oahu, Hawaii



1,000 Feet

500

0

R. M. Towill Corporation

Based on this outcome, it is evident that a regional mitigation effort beyond the authority or financial means of the private owner is required to completely mitigate flooding in Kahuku Village. As an interim measure, Continental proposes the aforementioned improvements to Mālaekahana Stream and the KV5 drainage system. Given that the existing village residences were constructed long before the current flood elevations were established and that, based on oral testimony of long-time village residents, the homes have never experienced flooding to the floorboard level during even the most severe flood events in the community, it is recommended that the existing residences be allowed to remain in their current location. It is further proposed that the additional vacant lots planned within the flood plain be created under the current action, but prohibited from any further development until such time as regional flood mitigation measures are constructed that result in reduction of the flood plain and removal of those lots from flood hazard as designated. The planned development will not exacerbate existing flood hazards or contribute to conditions that could cause flooding.

2.2 SUMMARY OF HRS 201(H) EXEMPTIONS

The following exemptions to the Revised Ordinances of Honolulu will be sought under the provisions of HRS 201(h) *Hawaii Housing Finance And Development Corporation* to facilitate development of the project for affordable housing.

2.2.1 EXEMPTIONS TO ROH, CHAPTER 21 – LAND USE ORDINANCE

The following exemptions to the ROH Chapter 21 – Land Use Ordinance will be sought for development of the project in the Residential (R-5) zoning district:

Section 21-3.50-4 and Table 21-3.1 Agricultural uses and development standards

A portion of the project site is zoned AG-2 which permits a minimum lot size of 2 acres and a minimum lot width and depth of 150 feet. The project proposes to create the following lots within the AG-2 zone:

- Eighteen (18) lots along the makai side of the golf course developed according to R-20 zoning standards. The golf course lots range in size from approximately 30,000 square feet (sf) to 80,000 sf.
- Twelve (12) lots at the north end of the Kahuku Golf Course developed according to Country zoning standards. The 12 country lots range in size from approximately 1 acre to 6 acres.

Section 21-3.71 and Table 21-3.2 Residential uses and development standards

A portion of the project is zoned R-5 which, for detached homes, permits a minimum lot size of 5,000 square feet (sf) and a minimum lot width and depth of 50 feet. The project proposes to create the following lots with the R-5 zone:

- Seventy-two (72) 10,000 sf lots around existing occupied residences.
- Sixty-four (64) 10,000 sf vacant lots for additional affordable housing.

2.2.2 EXEMPTIONS TO ROH, CHAPTER 22 – SUBDIVISION OF LAND

The following exemptions to the ROH Chapter 22 – Subdivision of Land will be sought for the project:

Section 22-3.5 Regulations governing the subdivision or consolidation of land.

Exemptions to the City and County of Honolulu Subdivision Rules and Regulations are described in Section II below.

Section 22-4.1 Requirements for Sidewalks and Curbs

Road standards within the R5 zone require a minimum 56-foot right-of-way for collector roads with curb, gutters, sidewalks, street lighting, and street trees. The project seeks an exemption from the requirement for curbs, gutters and sidewalks on residential streets. Proposed road sections are described in **Section 2.1.4.**

2.2.3 EXEMPTIONS TO C&C HONOLULU SUBDIVISION RULES & REGULATIONS

The following exemptions to the City and County of Honolulu Subdivision Rules and Regulations are being sought for the project.

Section 4-410 – Lot Area, Width, and Depth

See the discussion above on ROH Chapter 21, Section 21-3.71 and Table 21-3.2 Residential uses and development standards.

Section 4-406 – Access

The project site has access off of Kamehameha Highway, a public right-of-way owned by the State of Hawaii. A private road system will be developed for interior access to village residences, the golf course, and beach parks.

The interior private road system consists of 44-foot and 26-foot wide right-of-way streets. Where the 26-foot right-of-way is proposed, the roads are proposed to function as two-way loop roads with connection to the main 44' collector road.

Access to six (6) of the proposed affordable residential lots is proposed via a permanent easement across LDS Church property, with connection to Pu'uluana Road.

Section 5-502 – Streets and Highways, and Section 5-503 – Private Streets

The project seeks and exemption from Subdivision Street Standards within the AG-2 and R-5 zones to allow for construction of the following right-of-way / pavement widths:

R-5 Zone

44' / 22'	=	3,580 lf
26' / 20'	=	7,300 lf
20' / 20'	=	600 lf

AG-2 Zone

26' / 20'	=	6,700 lf (3,700 along shoreline)
-----------	---	----------------------------------

Streets will be developed with grass swales. No curb, gutters, or sidewalks will be constructed in order to maintain the rural character of the village.

2.3 AFFORDABLE HOUSING ELIGIBILITY

One of the primary objectives of the project is to provide Kahuku Village residents with the opportunity to acquire fee ownership of their existing homes. To do so requires that enough of the existing households are eligible for affordable housing assistance to qualify this project for subdivision processing under HRS 201(h), and as importantly that the houses be affordable to the residents.

Table 2-4 Planned Residential Lots	
Type	Quantity
Village Home Lots (existing residences)	72
Village Vacant Lots	64
Golf Course Residential Lots	18
Country Lots	12
Golf Course Caretaker Lots	1
Total	167
Total Affordable (50%)	84

The project proposes to create 167 new residential lots. To qualify for 201(h) subdivision processing, fifty percent (50%) of the total residential houses/lots must be affordable. Thus, a minimum of 84 of the new lots must be sold at an affordable price to households with income levels that qualify for affordable housing in accordance with City and County of Honolulu criteria. The remaining residential lots can be sold at market rates.

Household Income Eligibility

Affordability is determined in relation to median household income, based on family size, as established by the City. Median income currently ranges from \$52,125 (1-member household) to \$98,313 (8-member household). A copy of the current income eligibility criteria (updated March 2007) is listed below in Table 2-5. The eligibility of existing KV5 households is being evaluated based on self-reported income. It is expected that the majority of the existing households will qualify under City & County of Honolulu criteria.

Income Group	% of Median	Household Size							
		1	2	3	4	5	6	7	8
Very Very Low	30%	\$15,650	\$17,900	\$20,100	\$22,350	\$24,150	\$25,950	\$27,700	\$29,500
Very Low	50%	\$26,100	\$29,800	\$33,550	\$37,250	\$40,250	\$43,200	\$46,200	\$49,150
Low	60%	\$31,275	\$35,775	\$40,225	\$44,700	\$48,250	\$51,850	\$55,425	\$58,975
Lower	80%	\$41,700	\$47,700	\$53,650	\$59,600	\$64,350	\$69,150	\$73,900	\$78,650
Median	100%	\$52,125	\$59,625	\$67,063	\$74,500	\$80,438	\$86,438	\$92,375	\$98,313
Gap	120%	\$62,550	\$71,550	\$80,475	\$89,400	\$96,525	\$103,725	\$110,850	\$117,975
Upper Gap	140%	\$72,975	\$83,475	\$93,875	\$104,300	\$112,600	\$121,000	\$129,325	\$137,625

The affordable units are required to be distributed across three income groups as shown in Table 2-6. Based on the breakdown above, at least 20 existing families need to qualify for one of the three affordable income groups. This assumes that all of the 64 vacant lots are created and sold as affordable houses based on the above percentages (64 vacant + 18 existing = 84 affordable houses/lots). If fewer vacant lots are created, more families have to qualify. Conversely, if more families qualify, more vacant lots can be sold at market rates.

Table 2-6 Affordable Eligibility Income Distribution	
Income Group	Lots Required Per Plan
• 10% lower income: families making 80% of the median income	17
• 20% moderate income: families making 81% to 120% of the median income.	34
• 20 % gap group: families earning 121% to 140% of the median income.	33
Total	84

House Price

The "affordable" housing sale price is also determined on a sliding scale tied to median income. Estimated starting price for an affordable house on O’ahu is in the mid-\$200,000 range. The average \$75,000 sale price offered by Continental for the existing 72 homes and 10,000 (minimum) square foot lot is well below affordable rates by any measure contemplated by the City or the U. S. Department of Housing and Urban Development (HUD).

Affordable Village Vacant Lots

At least thirteen (13) of the Village Vacant Lots must be sold for affordable housing rates to qualify the project for HRS 201(h) subdivision processing. Typically, affordable housing projects include the house building due to the difficulty faced by many low-income families in securing a loan for home construction. An effort will be made, in consultation with the City Department of Community Services, and HUD to derive a reasonable valuation of raw land that can be applied to the project to satisfy the affordable housing requirement. Alternatively, the vacant lots may be developed as affordable homes in partnership with a non-profit, self-help housing organization.

2.4 PROJECT SCHEDULE AND COSTS

2.4.1 PROJECT SCHEDULE

Completion of planning and entitlements	December 2008
Start of construction	June 2009
Completion of construction	June 2010

2.4.2 ESTIMATED COSTS

The planned infrastructure and utility improvements are estimated to cost \$11.1 million.

2.5 ALTERNATIVES CONSIDERED

2.5.1 NO ACTION

State legislation requires that a “no-action” alternative be considered to serve as a baseline against which potential actions can be measured. The no-action alternative would involve no effort to preserve the existing residences in Kahuku Village 5:

- The property would not be subdivided to create lots for purchase at affordable price.
- No new golf course lots or country lots would be created.
- No beach parks would be developed for public use
- No improvements to existing infrastructure and utilities would be undertaken other than basic, essential maintenance.
- No measures to mitigate drainage and flooding in KV5 would be undertaken
- The Kahuku Golf Course would continue to be operated under current license agreements with the City.

Under this option, environmental impacts resulting from development activities would be averted and project costs would be spared. However, the “no-action” alternative would fail to meet the owner’s and the KV5 community’s goal of preserving the existing residences through an affordable home ownership program. Existing residences would remain unentitled under current building, zoning, and subdivision code and would continue to be at risk of permanent loss from deterioration, fire, or other calamity. In such an event, residents would be unable to rebuild their homes and would be forced to move. In addition, the no action alternative would not allow the owner to make beneficial use of the land in order to realize a return on the investment cost of the land. For these reasons, this alternative was considered, but rejected.

2.5.2 MAXIMUM DENSITY: GOLF COURSE DEVELOPMENT

Of the 272.7 acres encompassed by the project boundary, the most desirable land for residential development is occupied by the Kahuku Golf Course. Site characteristics that attract development attention include the following:

- The golf course lands are relatively flat and capable of being developed without a great deal of excavation that can increase construction costs.
- The land offers beautiful, open-space views of the ocean and Koolau Mountains and is located along the coastline with direct shoreline access.

- The land is located completely outside of the flood plain and flood zone and thus requires no special engineering analysis and costly mitigation.

In addition, although the property is zoned for agriculture, the land is of marginal agricultural quality and historically has never been used for agricultural production. The agricultural feasibility study prepared for the project identified two potential agricultural uses: (1) pasturage based on irrigated bermuda grass cultivation; and, (2) tree nursery operations based on irrigated field stock. In any case, use of the land for residential development would not impact the State's inventory of prime or unique agricultural lands or lands of agricultural importance.

Numerous plans involving subdivision of the golf course property for residential development have been considered by different developers over the years. The approximately 59 acres occupied by the golf course could support development of more than 300 residential lots based on R-5 zoning (minimum 5,000 square foot lots) after deducting land for roadways. A plan based on half-acre "country" lots would yield more than 85 new residential properties in place of the golf course. While these densities represent increased land value to the owner, they would result in failure to meet the following project objectives:

- Preservation of Kahuku Golf Course for public use and open space.
- Preservation of the low-density rural character of Kahuku Village.

For these reasons, this alternative was rejected.

2.5.3 LARGE AGRICULTURAL LOT SUBDIVISION

A subdivision plan comprised of 7 large agricultural lots (greater than 20 acres, AG-2 zoning) and 2 large urban lots (R-5 zoning) was considered. Key concepts and components of this plan included:

- Seven (7) agricultural lots, each greater than 20 acres in size, were to be created over the vacant agricultural land, golf course, shoreline dune area, shoreline park area, and Adams Field. As applicable, the lots were to be subject to preservation easements to ensure the continued use of the Kahuku Golf Course and to ensure public access to the shoreline. The lots were to be sold for agricultural use subject to existing state land use law and county land use ordinances.
- Two (2) large urban lots containing the existing residential areas of KV5 were to be created for development as a condominium property regime (CPR) or sale to a third party for development as an affordable housing project to benefit the KV5 residents. Within the two large urban lots, the owner proposed to create minimum 10,000 square foot CPR parcels around the existing residences for fee simple, affordable sale to the KV5 residents.

Additional vacant CPR parcels were to be created for additional affordable home sale opportunities for other O'ahu families.

- Planned infrastructure and utility improvements included:
 - Roads: development of the existing collector roads through Kahuku Village (Pu'uluana Place and S. Golf Course Road) with two connections to Kamehameha Highway. The collector roads were to be improved to comply with county "agricultural road" standards consisting of 44-foot right-of-way with 24-foot pavement and grass swales.
 - Water: installation of a new water system to provide adequate fire flow protection and potable and irrigation water service to the new agricultural lots.
 - Sewer: replacement of all existing cesspools with individual septic leach field systems.
 - Power and Communication: installation of overhead utilities to service the agricultural lots. Maintenance of existing overhead utilities through the KV5 residential areas.

The large lot subdivision was submitted to the City for processing, at which time several issues emerged:

- As a standard subdivision, the proposed 44-foot wide agricultural road does not meet required county road design standards for the underlying R-5 zoning within the KV5 residential area. The required 56-foot wide right-of-way would result in the displacement and relocation of at least 5 existing homes and building setback encroachments by at least 2 remaining homes. Use of the 44-foot wide road standard in the R-5 zone would require approval of a zoning variance from the Department of Planning and Permitting.
- In order to create CPR residential parcels around the existing village homes, the current non-conforming residential structures require recognition by the City and County through an Existing Use Permit (EUP). As a first step in the EUP process, an evaluation of the existing structures by City and County inspectors was requested by the owner. The inspectors have completed the required field work. Their final evaluation and report is pending.
- As part of the subdivision and EUP process, an evaluation of the existing and proposed residential parcels suitability within the 100-year flood zone is required by the City and County.

In light of these issues, and in consultation with the City and County of Honolulu Department of Planning and Permitting, the owner decided to withdraw the large lot subdivision application and develop the project as an affordable housing subdivision under the provisions of Hawaii Revised Statutes (HRS) 201(h). The 201(h) process allows the owner to request exemptions from zoning and subdivision codes and design standards in order to accommodate site conditions and minimize development costs in the interest of creating opportunities for affordable home ownership. In effect, the process functions as a "master variance" through

which various development permissions and project entitlements can be consolidated and addressed under one action.

On this basis, this alternative was considered, but rejected in favor of the proposed alternative process. Although this alternative is no longer being considered, much of the planning and proposed improvements under this alternative serve as the basis for the preferred alternative.

SECTION 3

Description of Affected Environment

3.1 PHYSICAL ENVIRONMENT

3.1.1 CLIMATE

Kahuku Village is located on the windward coast on the northeastern shore of O'ahu. The north shore has a mild subtropical climate which is characterized by abundant sunshine, persistent northeast tradewinds, relatively constant temperatures and moderate humidity. The area has constant tradewind exposure with average wind velocity in the area varying from 10 to 15 mph.

Mean temperatures are typical of the island chain. Mean monthly temperatures range from high-80° Fahrenheit (F) in the summer months, to high-70° F during the winter. Mean minimum temperatures range from the low 60° F in the winter to the low 70° F in summer. The average annual rainfall for O'ahu is approximately 24 inches while the average annual rainfall for the Kahuku area is approximately 45 inches. The dryer months of May through September average 3-4 inches per month. The wetter months of October through April average 4-8 inches per month.

Impacts and Mitigation Measures

The proposed project will not have any effect on the existing climatic conditions.

3.1.2 TOPOGRAPHY

The project site is located in Kahuku, on the northeastern shore of O'ahu, makai (seaward) of Kamehameha Highway. The site is situated on a low coastal plane and is relatively flat with some topographical variation.

Along the shoreline, sand dunes form a protective barrier with typical heights ranging from 15 to 25 feet above msl. Behind the dunes the topography levels off somewhat through Kahuku Golf course before sloping down towards the U.S. Fish and Wildlife Sanctuary on the northwest, Kamehameha Highway on the southwest, and Mālaekahana Stream (also known as Kea'aulu Stream) on the southeast.

Typical elevations through the site range between sea level and 25 feet above mean sea level (msl). Several small rises throughout the property reach elevations of 40 to 58 feet. Kahuku Golf Course has average elevations between 20 and 30 feet above msl. The majority of the Village 5 "New Camp" residential area is between 5 and 12 feet above msl. The agricultural land at the north end of the site proposed for the country lots is averages 3 to 6 feet in elevation.

Impacts and Mitigation Measures

The proposed project will involve minor grading and cut and fill required for roadway improvements and modifications to the golf course. No earth moving activities will occur within the primary shoreline dunes. The project will not have any effect on the existing topographical conditions.

3.1.3 SOILS AND GEOLOGY

Soil Types existing in the project area are depicted in **Figure 3-1, Soils Map**, and described as follows . (USDA Soil Conservation Service, August 1972):

- BS Beaches - Beaches occur as sandy, gravelly, or cobbly areas. Beach sands are derived from corals and seashells.
- JaC Jaucas Sand, 0 to 15 percent slope - Jaucas sand consists of excessively drained, calcareous soils. In most places the slope does not exceed 7%. Permeability is rapid. Runoff is slow to very slow. The hazard of water erosion is slight, however wind erosion is a severe hazard where vegetation has been removed.
- KmbA Kea'au Clay, saline, 0 to 2 percent slopes. These soils typically occur in depressions adjacent to the ocean or in pickets within the limestone area where seepage water evaporates. Permeability is slow, runoff is slow, and the erosion hazard is no more than slight

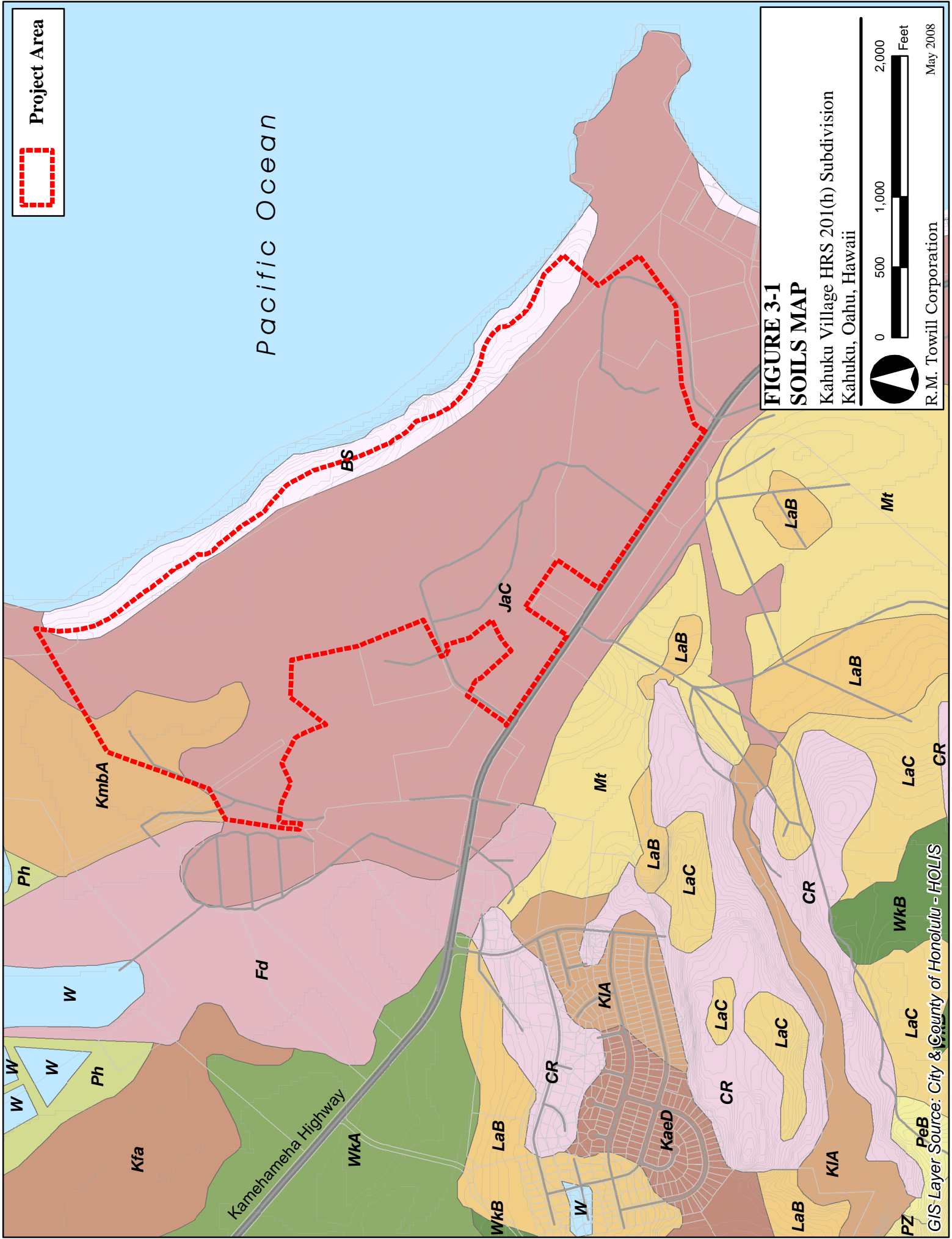
To complement the soil survey, the Hawaii State Department of Agriculture (DOAg) produced a classification system entitled *Agricultural Lands of Importance to the State of Hawaii* (ALISH). None of the proposed project area was included in the ALISH land classification.

The University of Hawaii Land Study Bureau prepared an inventory and evaluation of the State's land resources during the 1960's and early 1970's. A five-tier productivity rating using the letters "A" through "E" was established based on climate, topography, local history of crop production, and soil properties including texture, structure, depth, drainage, materials, and stoniness. "A" represents the highest productivity rating and E the lowest. The entire golf



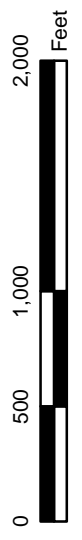
Project Area

Pacific Ocean



**FIGURE 3-1
SOILS MAP**

Kahuku Village HRS 201(h) Subdivision
Kahuku, Oahu, Hawaii



R.M. Towill Corporation
May 2008

GIS Layer Source: City & County of Honolulu - HOLLIS

course and Kahuku Village residential area were not rated under this system. The dune area and a portion of the agricultural lands at the northwest end of the project area were rated "E" corresponding to the lowest productivity rating.

Impacts and Mitigation Measures

Planned roadway improvements and installation of utilities and septic systems will involve ground disturbance. In order to reduce any erosion of the existing soils, proper best management practices plan (BMP's) will be in place and monitored at all times during construction activities. Excavation required during installation of utilities or septic systems will be backfilled to original grades with native material. Areas of ground disturbance will be immediately stabilized by seeding or hydro-mulching following completion of construction activities. Due to the susceptibility of jaucas sands to wind erosion, residents will be responsible for maintaining suitable landscaping to stabilize soils.

No disturbance to the soils and vegetation within the primary shoreline dune system will result from this project. Planned development activities will ensure that the coastal dunes continue to function as a protective natural barrier against wind and wave erosional forces. See further discussion in **Section 3.1.4 – Shoreline Conditions**.

No productive lands of agricultural importance will be lost by the planned development. No significant impacts to soils or geology will result from this project.

3.1.4 SHORELINE CONDITIONS

The Kahuku Village project area includes 4,600 linear feet of shoreline characterized by a strip of sandy beach located between gradually rising, vegetated coastal dunes and a tidally exposed limestone shelf at the water's edge. Isolated sand pockets and the Keone'ō'io Channel at the mid-point of the beach offer access into the water. The limestone shelf extends offshore in waters 2 to 10 feet in depth. The channel is frequented by fishermen for pole and spear fishing. Two named surf breaks, Seventh Hole and Club House Rights, are located approximately 800 feet offshore from the project site.

Historic and ongoing human activity on the shoreline at Kahuku has caused significant degradation of the beach and dune environment:

- Sand mining conducted between 1949 and 1967 contributed to the loss of an estimated 34 acres of sandy beach area and a shift in the shoreline position approximately 230 feet landward.
- Recreational four-wheel drive and All Terrain Vehicle (ATV) use along the shoreline and within the beach dunes has and continues to damage vegetation, destabilize sand and soils, accelerate erosion, and destroy coastal habitat for native plants and animals.
- Camping on the beach results in trash and residual ash pits from camp fires.

The following studies were undertaken to evaluate existing shoreline conditions and processes at the project site:

- *Dune Characterization and Coastal Hazard Analysis Memo Report*, prepared by Sea Engineering, April 2008.
- *Kahuku Beach Shoreline Change*, prepared by the University of Hawaii Coastal Geology Group, March 2008.

In addition, studies of terrestrial and marine flora and fauna were undertaken along the shoreline for this project. The findings of those reports are described in **Section 3.1.10 – Flora and Fauna**.

Dune Characterization

A site visit was made on April 9, 2008 by Sea Engineering, coastal engineers, to investigate the general condition and characteristics of the beach and shoreline in the vicinity of Kahuku Village, along the ocean side of the golf course.

Dunes are broadly defined as hills of sand largely built by *eolian* or wind-blown processes. In Hawaii, large waves also contribute to the development of dunes. Natural coastal dunes built by the prevailing wind and wave conditions, or established and/or nourished by deliberate human action, can contribute significantly to overall long term shoreline stability. High dunes prevent wave overtopping of the beach and backshore flooding. During storm events, when the beach may be undergoing increased erosion, the dune can release sand into the littoral system and help prevent landward recession of the beach. Dunes are therefore important ecosystems that are increasingly targeted for protection in most coastal counties.

Almost the entire shoreline area seaward of the golf course at Kahuku can be classified as a coastal dune environment. It consists of undulating hills, ridges and mounds of unconsolidated beach sand, partially vegetated by salt tolerant grasses and shrubs, and occasional trees. There

is ample evidence that dune formation is an active process in the area, including wind ripples in the sand, fields and patches of loose sand, and sand entrapment in the vegetation.

As a basis for evaluating the Kahuku dune area, determining the landward dune limit within the overall dune environment, and establishing a development setback, Sea Engineering applied standards for shoreline development established by Maui County. Maui has been the most progressive county in Hawaii in developing regulations to safe guard coastal resources. The Maui County grading ordinance, (Maui County Code Section 20.08.035) prohibits grading within coastal dune environments. The intent of this law is to prevent beach loss due to erosion by keeping dune sediment available for inclusion in local littoral processes.

The Maui County ordinance defines a coastal dune as “one of possibly several continuous or nearly continuous mounds or ridges of unconsolidated sand contiguous and parallel to the beach, situated so that it may be accessible to storm waves and seasonal high waves for release to the beach or offshore waters.” Thus, three main criteria are used to establish the presence or limits of a dune:

1. Morphology – a dune is a mound or ridge formation, that rises to a crest, and slopes downward on the back, or landward side. The backside “heel” of the dune can be located and surveyed to determine a backshore dune line.
2. Unconsolidated sandy soil - is the material comprising the dune. A dune is primarily beach quality sand. Small holes or trenches can be dug to determine the presence of sand or earthen material.
3. The possible reach of storm or seasonal high waves - is the dune sand accessible to storm waves, such that it is available and can be released into the littoral system during storm events.

On the basis of this definition, the Kahuku Village shoreline is determined to be representative of a well-established, functioning coastal dune ecosystem environment. It consists entirely of beach sand, is accessible to storm waves, and is well-vegetated to stabilize it against wind erosion. The backside, or “heel”, is not pronounced at all locations, which may partially be attributable to extensive human activity and alteration of the area. Accessibility to storm waves was judged based on distance from the water, ground elevation, and the extent nature of shoreline vegetation. The primary dune setback, as would be defined by the Maui County Code, is illustrated in **Figure 3-2**

O C E A N

60-Feet Shoreline Setback

Voluntary "Primary Dune" Setback

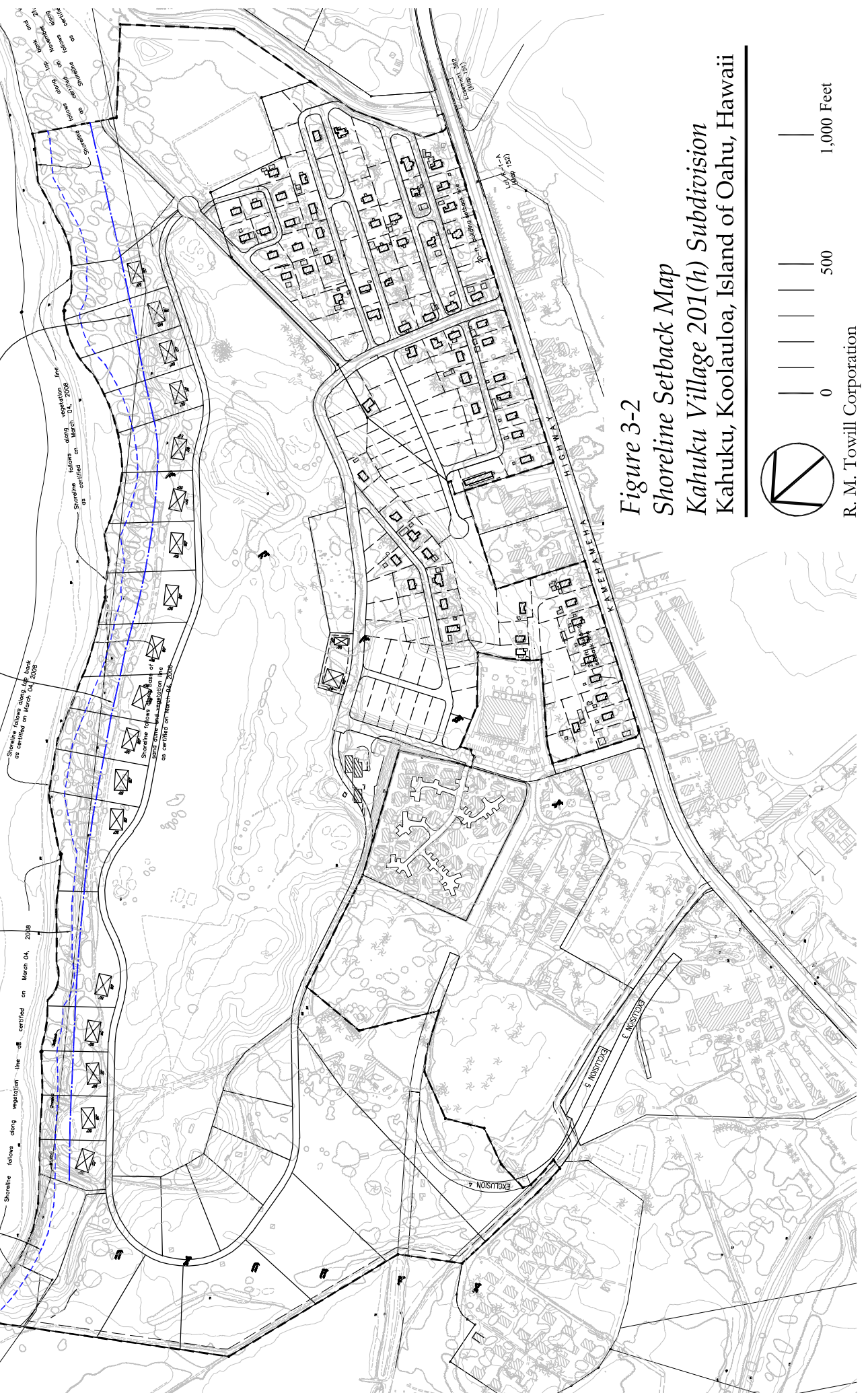
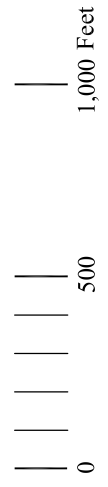
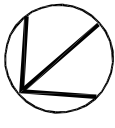


Figure 3-2

Shoreline Setback Map

Kahuku Village 201(h) Subdivision

Kahuku, Koolauloa, Island of Oahu, Hawaii



R. M. Towill Corporation

Kahuku Beach Shoreline Change Study

The University of Hawaii Department of Geology recently completed a shoreline historical position analysis. The study is attached to this document as **Appendix K – Coastal Change Study**. The study analyzed aerial photographs and maps from 1911 to 2006 to track the location of the shoreline over time.

Historical shorelines from 1911 to 2006 indicate three stages of shoreline change at Kahuku Beach. During the first stage, from 1911 to 1933, the shoreline was relatively stable (see 1911, 1928, and 1933 aerial photos in Appendix K). During the second stage, between 1933 and 1967, the entire shoreline retreated at a high annual rate. This was likely due to sand mining activity visible in the aerial photography from that period (see 1949 aerial photo in Appendix K). During this 34 year period the shoreline retreated up to 230 feet landward exposing beachrock. Based on the aerial photography (see 1967 photo in Appendix K), sand mining activity ceased sometime between 1949 and 1967. During the third stage, lasting 39 years from 1967 to 2006, the shoreline has remained relatively stable or accreted. (UH Coastal Geology Group, 2008).

Based on the total period of analysis, from 1911 to 2006, the calculated annual rate of shoreline change is -2.27 feet \pm 0.22 (erosion) per year (see last page of Appendix K, UH Coastal Geology Group, 2008). This rate factors in 34 years from 1933 to 1967 covering the period of sand mining activities when the shoreline retreated up to 230 feet (-6.76 feet per year).

A 1981 study (Hwang, 1981) which based its analysis on the location of the water line taken from aerial photos, found net landward movement of the waterline (erosion) between 1949 to 1975. However, both the 1981 study and a 1988 study (Sea Engineering, 1988) found net seaward movement of the vegetation line in most areas between 1949 and 1988. This conclusion reflects recovery of the coastal dune vegetation after sand mining ceased. (UH Coastal Geology Group, 2008). Since that time, the shoreline has been relatively stable along the north segment and accreted along the south segment near the mouth of Keone'ō'io Channel.

Based on this analysis, the site is not currently subject to a prevailing or chronic erosion and shoreline recession problem. Shoreline stability following the cessation of sand mining is likely due, in part, to the protection provided by the broad beach rock shelf at the beach toe. The extensive dune system also makes a significant contribution to the stability and replenishment of the beach, serving as a sand reservoir and permitting the beach to weather severe storms without receding inland. Preservation of the shoreline dune system will thus help protect the beach and existing and planned backshore development from potential future damage by storms or erosion. An additional consideration is the very real possibility of sea level rise over

the next century. There is increasing evidence that significant sea level rise may in fact be beginning. An intact and functioning dune system at Kahuku, and placing structures at elevations above estimated flood and wave inundation levels, would provide a valuable safety factor for near shore development.

Shoreline Setback

Pursuant to the provisions of Chapter 23, Revised Ordinances of Honolulu, the shoreline setback for new development is 60 feet from the certified shoreline. The shoreline was most recently certified on March 04, 2008. See **Section 4.7 – Certified Shoreline Survey** for additional information.

Impacts and Mitigation Measures

On the basis of the coastal studies undertaken for this project, the concerns expressed by coastal resource experts, government agencies, and community members, and its own understanding of the importance of preserving coastal resources, Continental Pacific, LLC, the owner, recognizes the following principles for the planned development:

- *The beach at Kahuku Village is, in accordance with established Hawaiian law, a public trust asset. Public access to the shoreline and ocean is a right preserved in the Hawaiian Constitution for the citizens of Hawaii.*
- *Any action that damages or threatens to damage the beach is of direct concern to the public trust.*
- *Beach loss and narrowing, and coastal dune grading that accompanies coastal development causes environmental and ecological damage to natural resources and habitats.” (DLNR, COEMAP, p.4)*
- *In the case of undeveloped shorelines, a level of avoidance of flooding and erosion hazards can be achieved with the use of an increased construction setback from the shoreline. (DLNR COEMAP, p.30)*

Planned mitigation measures include:

- All proposed improvements will be designed to conform to rules relating to shoreline setbacks (ROH Chapter 23). All grading and development activities will be constructed more than 60 feet mauka of the certified shoreline with the possible exception of limited improvements proposed for resource protection, including:
 - installation of mesh fencing around select Wedge-tailed Shearwater nesting areas to protect against predation by terrestrial mammals; and,

- installation of pier and beam boardwalks to restrict access through the dunes and mitigate damage to vegetation and sandy soils from foot traffic.
- A voluntary building setback line will be established behind the primary dune system based on the dune characterization study prepared by Sea Engineering. All grading activities and building construction will be undertaken mauka of the primary dune setback line, with the possible exception of resource protection measures noted above.
- Building sites will be located at a minimum elevation of 20 feet above msl where there is a reasonable degree of safety from storm wave runup and inundation, and will be setback behind the primary dune which will offer protection from ocean storm forces.
- Building methods and materials will be designed to minimize impacts on property and personal health and safety in the coastal environment. See Section 2.1.2 for details.
- Each shoreline lot will have one, designated path through the dunes to provide access to the shoreline. Use of protective pier and beam boardwalks may be considered through the dunes to mitigate damage to the dune eco-system from foot traffic.
- Prohibition of motor vehicle activity within the beach dunes will be enforced. The planned presence of residences along the mauka edge of the dunes will create an added level of vigilance to deter unauthorized vehicle use within the dune system.

The development of 18 new residential lots along the makai edge of the golf course will result in the following impacts:

Visual Impacts

Within the project site, the dunes and shoreline are visible from a limited number areas within the community including certain sections of the golf course, locations along the golf course access road adjacent to the catholic cemetery, from the cemetery itself, and from a few of the residences at the makai edge of KV5. The presence of houses along the makai side of the golf course will be apparent from these locations, however the houses will be subject to development restrictions that will mitigate visual impacts and preserve ocean views from vantage points that currently provide such a view. Development on the golf course lots will not be visible from Kamehameha Highway, the nearest public right-of-way.

From the shoreline, some of the houses may be partially visible looking mauka through breaks in the dunes. The voluntary “primary dune” setback will situate the houses a minimum of 100 feet to 250 feet mauka from the vegetated shoreline and behind the crest of the primary dune. As such, the houses will be hidden from view. In locations where homes are in view, only the upper portions of the structures will be visible.

Measures proposed to mitigate visual impacts include:

- Building footprints will be limited, lots sized and setbacks enforced to preserve visual space between the new residences and maintain uninterrupted view corridors to the ocean.
- New houses will be subject to height restrictions of 25 feet in accordance with zoning standards.
- Exterior building materials, colors, lighting and landscaping will be subject to design controls to ensure compatibility with the appearance of the surrounding natural landscape and minimize visual impacts. See additional discussion on mitigation of nighttime lighting in **Section 3.1.10 – Flora and Fauna**.

Based on the proposed mitigation measures, no significant adverse visual impacts to the shoreline are anticipated to result from the proposed action.

Beach Access

Currently, the project lands mauka from the certified shoreline, including the vegetated dune system, are privately owned and public access is legally prohibited. In practice, many people trespass across the golf course and dunes by foot and motorized vehicle to access the shoreline. Uncontrolled access within and through the dune system has contributed greatly to the degradation of the dune environment. Development of the Golf Course lots will prevent the majority of the dune system from being used as a public access way to the shoreline. Legal and convenient public beach access will be provided via two new beach parks that will be created for public use under this project.

Dune Preservation

The dunes have experienced significant abuse over the decades from illicit human activity such as ATV riding, camping, and commercial and personal resource extraction. The presence of new homes just mauka of the dunes will provide an additional level of vigilance and enforcement to prevent unwanted activities that could harm the dune system.

3.1.5 WATER

For a description of potable and irrigation water systems, see **Section 3.3.2**.

Ground Water

The project is located above the Ko'olau Aquifer within the 'Ō'io and Mālaekahana watersheds, 2 of the 16 watersheds that contribute to the aquifer's recharge. The Ko'olauloa Aquifer is comprised of two aquifer layers: a shallow "caprock" aquifer and a deeper basalt aquifer from which BWS pumps potable and irrigation water for the Kahuku region. Water quality in from this aquifer is very high. The estimated sustainable yield is 35 million gallons per day (mgd) and current allocation is 21 mgd

The caprock aquifer is composed of coral, sand, silt, lithified dunes, and clay. Sedimentary materials such as clay strata and limestone within the caprock retard the movement of groundwater. Groundwater within the cap rock moves toward the ocean, however, local variations may affect the flow direction. This caprock groundwater is not considered a drinking water source due to generally high saline content. Recharge of the cap rock aquifer is predominantly from infiltration of precipitation with smaller amounts contributed by irrigation and other surface water flows.

The deeper basalt aquifer underlies the cap rock aquifer and extends thousands of feet into the subsurface. The basalt aquifer consists of thin bedded lava flows of very high permeability. The upper portion of the basalt aquifer is comprised of weathered volcanics that normally have a lower permeability than the underlying unweathered basalts. The basalt aquifer, like the cap rock aquifer is also recharged predominantly by rainfall, primarily from the mountains mauka of Kahuku.

The caprock geologic boundary is used to define the Board of Water Supply "no-pass line", a regulatory designation to protect groundwater quality from contamination from waste water treatment facilities, landfills, and cesspools. Another regulatory boundary, the Underground Injection Control (UIC) line is delineated based on ground water chloride levels of less than 10,000 parts per million (ppm). Both of these lines are located mauka of the project site.

Surface Water

The surface water in the project vicinity is comprised of ocean water, wetlands, and one perennial stream.

The United States Fish and Wildlife Service (USFWS) has identified several natural wetlands in the vicinity surrounding project area. USFWS classifies wetland areas according to identifying features such as general appearance, dominant form of vegetation, composition of bottom, and permanency. Two classifications of wetlands have been identified along the stream bordering Mālaekahana (E1UBL and E2EM1N). These wetlands can generally be described as part of the tidal riverine system. The area along the coastline has been designated by USFWS as Estuarine and Marine Wetlands (M2USN, M2RSN, M2RSP, M1RF1L). These include the tidal areas along the shoreline as well as the reef lying off the coast.

Mālaekahana Stream (also known as Kea’aulu Stream) is approximately 19.6 miles long, a ½ mile makai segment of which passes along the south-east end of the project area and separates Kahuku Village from the lands of Mālaekahana before emptying into the ocean near Makahoa Point. The Environmental Protection Agency has classified several impairments in the stream which include pathogens, turbidity, sediment/siltation, and habitat alterations. Hydromodification may contribute to one or more of these impairments. Hydromodification activities include channelization and channel modification, dams, and stream bank and shoreline erosion. These activities change a water-bodies physical structure and natural function.

Mālaekahana Stream is designated as “Class 2” inland water. “Class 2” waters are to be protected for recreational use, propagation of aquatic life, and as a source of water for agricultural and industrial uses.

The ocean waters fronting the project area have been classified as Class A waters by the State of Hawai’i, Department of Health (DOH) Administrative Rules, Chapter 54, Water Quality Standards. Class A waters are protected for recreational purposes, aesthetic enjoyment, and protection and propagation of marine life. Discharges covered by a National Pollutant Discharge Elimination System general permit, approved by the U.S. Environmental Protection Agency and issued by the DOH are allowed in this class of waters.

Inland and marine water quality in the project area is generally good. However, storm runoff from urban, agricultural, and vacant natural areas periodically discharges into Mālaekahana stream and coastal waters during heavy rainfall events. Constituents in the runoff, including silt, organic material, debris, trash, terrigenous bacteria, and dissolved nutrients, degrade stream and ocean water quality.

Impacts and Mitigation Measures

No adverse impacts to water quality are anticipated from development of this project. Planned replacement of the existing cesspools with individual septic treatment systems will result in an improvement in water quality over existing conditions. See **Section 3.3.4 – Wastewater System** for additional discussion.

Project improvements will result in an increase in impervious surface area and corresponding increase in storm water runoff. The quality of runoff water will be improved, however, by proposed landscaping which will replace existing conditions of bare soil and patchy grass. New landscaping will serve to stabilize soils, filter water and trap sediment, reduce rainfall impacts, and slow runoff velocity to allow for more rapid percolation into the underlying soils. Proposed improvements will not result in significant changes in land use, thus ground water and ocean water conditions are expected to be generally equivalent following project completion.

National Pollutant Discharge Elimination System (NPDES) general permit coverage will be obtained, as necessary, for activities involving discharges of construction storm water, hydrotesting water, and construction dewatering effluent. Best management practices (BMPs) will be employed to prevent soil loss and sediment discharges from work sites. BMPs will include structural (e.g., silt fences, barriers), vegetative (e.g., grass, mulch, ground cover, soil stabilization), and management measures (e.g., project phasing), as appropriate. Project activities will comply with DOH regulations as set forth in Hawaii Administrative Rules, Title 11 Chapter 54 - Water Quality Standards, and Chapter 55 - Water Pollution Controls.

Best Management Practices (BMPs)

BMPs consisting of mitigation measures to prevent construction related runoff, discharge pollution, and other possible detrimental impacts to State waters will be employed during all periods of construction activity. Mitigation measures shall include, but not be limited to the following:

- Clearing and excavation shall be held to a minimum necessary to meet project design and construction plan requirements.
- Construction shall be phased to minimize the exposure time of cleared or excavated areas. Existing ground cover shall not be destroyed, removed or disturbed more than 20 calendar days prior to the start of construction.

- Storm water flowing toward active project areas shall be diverted as much as practicable using appropriate controls, such as berms and silt fences, as determined by the contractor according to site conditions.
- Areas that remain unfinished for more than 20 calendar days shall be hydro-mulched or seeded to provide temporary soil stabilization.
- The project contractor will select locations for stockpiling construction material. As appropriate to the site, a sediment retention berm or silt fence will be installed around the down-slope side of stockpile sites to retain sediment discharge during heavy rainfall.
- Fueling of construction equipment will be performed off-site or within an area designated by the contractor. Any site designated for refueling shall be located away from surface water and constructed to contain spills and seepage and prevent storm water runoff from carrying pollutants into state coastal waters.
- The contractor, based on professional experience and expertise, may modify the proposed BMP mitigation measures as necessary to account for unanticipated or changed site conditions.

3.1.6 AIR QUALITY

The present ambient air quality in the project area is considered good due to the prevailing northeasterly tradewinds and the absence of “heavy” industries. Air quality in the area can be affected by air pollutants from natural and/or human sources. Natural sources include ocean spray, wind-blown dust, wild fires, and occasional distant volcanic emissions from the Island of Hawaii. Human sources include vehicular emissions from motorists traveling on Kamehameha Highway and residential streets, refuse burning, BBQs, and other intermittent sources.

Impacts and Mitigation Measures

The proposed project is not expected to have a significant impact on air quality. Construction activities may result in short-term air quality impacts from fugitive dust and equipment emissions. Dust control measures will include, but not be limited to, watering of active work areas, using wind screens, keeping adjacent paved roads clean, and covering open-bodied trucks. Construction-related exhaust emissions will be mitigated by ensuring that project contractors properly maintain their internal combustion engines and comply with DOH Rules Title 11, Chapter 59 and 60, regarding Air Pollution Control. Construction related impacts to air quality will be temporary and will cease when construction is completed.

Long-term impacts from vehicular sources are not anticipated to increase significantly

over existing conditions as a result of this project. Traffic use levels are anticipated to remain the same, thus, no mitigation measures are required or recommended.

3.1.7 NOISE

Ambient noise conditions in the proposed project area are generally low due to the rural location. The dominant noise is from wind and from vehicular traffic along Kamehameha Highway and the local roadways. Local residences are generally exposed to sound levels ranging from 70 dB to 60 dB or lower (Day-Night average sound levels). Other normal daytime sources of noise include lawn mowers, barking dogs, power tools, and occasional aircraft over-flight. Other natural sources of sound include bird calls, such as nocturnal calls of the Wedge-tailed Shearwater, and ocean waves.

Impacts and Mitigation Measures

Short-term noise impacts are related primarily to construction activities. A majority of the noise will be generated during mobilization and operation of heavy construction equipment. Construction equipment noise is expected to be in the range of 55 to 90 dBA in close proximity to the site. To mitigate short-term construction related impacts, the contractor will ensure that project activities are in compliance with the provisions of HAR, Chapter 11-46, "Community Noise Control".

No long-term noise impacts are expected to result from the proposed project. Vehicle traffic on Kamehameha Highway, the primary noise source in the area, will remain largely the same as current conditions.

3.1.8 NATURAL HAZARDS

Flood

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Map No. 15003C0030 F, dated September 30, 2004, shows that the project site is in the following flood zones. See **Figure 3-3: FEMA-FIRM Map**.

X – This designation indicates areas outside of the 500-year flood zone. The majority of the project site is located in this zone, including all of Kahuku Golf Course, approximately half of the Kahuku Village 5 residential area, the house sites for the golf course lots, and the two cemeteries.

FIRM
FLOOD INSURANCE RATE MAP
 CITY AND COUNTY
 OF HONOLULU,
 HAWAII

PANEL 45 OF 395

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:
 COMMUNITY NUMBER PANEL SUFFIX
 HONOLULU CITY AND COUNTY OF HAWAII



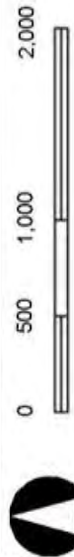
Project Area



MAP NUMBER
 15003C0045F
 MAP REVISED
 SEPTEMBER 30, 2004

FIGURE 3-3
FLOOD INSURANCE RATE MAP

Kahuku Village HRS 201(h) Subdivision
 Kahuku, Oahu, Hawaii



R.M. Towill Corporation

May 2008



City and County
 of Honolulu
 150001

VE – This designation indicates coastal flood areas subject to inundation during the 100-year flood with velocity hazard (wave action). Base flood elevations have been determined for zone VE lands. A portion of the dunes along the shoreline are located within the VE zone with base flood elevations ranging from 14 feet above msl along the southern half of the shoreline, to 16 feet above msl at the northern-most segment adjacent to the historic Japanese cemetery.

AE – This designation indicates special flood hazard areas subject to inundation during the 100-year flood. Base flood elevations have been determined for zone AE lands. Approximately half of Kahuku Village 5 “New Camp” is located within Zone AE, which generally expands out from the Mālaekahana Stream channel to define the flood plain. Base flood elevations in this zone range from 9 to 13 feet above msl. In addition, a portion of the proposed country lots at the north end of the project area are located within zone AE with base flood elevation ranging from 11 to 12 feet above msl.

Tsunami



Tsunamis pose a threat to coastal settlements throughout the Hawaiian island chain. The north shore of O’ahu has experienced several severe tsunami events in the past century, most notably the 1946 East Aleutian tsunami and the 1957 Central Aleutian tsunami, each of which had maximum wave run-up elevations in excess of 20 feet in Kahuku and caused loss of life and property. Though rare, it is reasonable to assume that future events will occur. As a result, the County has made an effort to locate permanent infrastructure (power facilities, waste water treatment) and vital services (fire, police) outside of tsunami inundation zones.

The project site, with the exception of the shoreline dunes and areas bordering Mālaekahana Stream channel, is located outside of the County’s tsunami evacuation zone. The height and depth of the dunes creates a buffer that slows wave velocity and offers some protection from the force of tsunami waves. See **Figure 3-4: Tsunami Evacuation Zone**.

Hurricane

The Hawaiian Islands are seasonally affected by Pacific hurricanes from the late summer to early winter months. The project area is infrequently subjected to severe storm events. It is difficult to predict these natural occurrences, but it is reasonable to assume that future events will occur. Severe wind speeds and rising tides associated with a hurricane pose a potential hazard to life and property at the site.

LEGEND

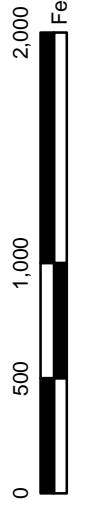
-  Project Area
-  Tsunami Evacuation Zone

Pacific Ocean

Kamehameha Highway

**FIGURE 3-4
TSUNAMI EVACUATION ZONE**

Kahuku Village HRS 201(h) Subdivision
Kahuku, Oahu, Hawaii



R.M. Towill Corporation

May 2008

GIS Layer Source: City & County of Honolulu - HOLIS &
Hawaii Statewide GIS Program

Seismic Hazard

The Uniform Building Code (UBC) provides minimum design criteria to address potential for structural damage due to seismic disturbances. The UBC scale is rated from Seismic Zone 0 through 4, with 0 being the lowest level of potential seismic induced ground movement. The island of O'ahu has been designated within Seismic Zone 2A (United States Geological Survey, 1997).

Impacts and Mitigation Measures

The coastal dune system will be preserved to serve as a protective buffer from tsunami waves and other ocean storm events. While preservation of the dunes does not eliminate the hazard posed by tsunami, it will function to absorb the initial force of tsunami waves and slow down wave run-up velocity.

The O'ahu Civil Defense Agency has designated Kahuku High and Intermediate School to serve as public emergency shelters in the event of a hurricane event. Kahuku Elementary School is also identified as a shelter in the event of a tsunami. Residents of low lying coastal areas will be advised by appropriate authorities when it is necessary to evacuate and when it is safe to return.

To mitigate the potential hazard from earthquakes, structural elements in this project will be built, at a minimum, in compliance with standards for UBC Seismic Zone 2A.

Drainage improvements are proposed throughout Kahuku Village in order to more efficiently convey storm water runoff away from residential properties and reduce the impacts from flooding. Planned improvements consist of clearing the Mālaekahana Stream channel to eliminate obstructions and increase capacity for storm water flows. The stream channel functions as the primary drainage way for the Kahuku community. In addition to stream channel clearing, a new drainage system will be constructed consisting of improved swales, pipes, culverts and drain inlets throughout Kahuku Village. The system will include the design of roads with inverted crowns to function as swales during storm events.

The planned drainage system will provide a significant improvement over existing conditions and will eliminate the ponding and rutting currently experienced in the village after storm events. The improvements will not, however, result in a significant reduction of the flood plain boundary. Approximately half of the existing residences will

remain within the 100-year flood zone boundaries following construction of the planned drainage improvements. The floorboards of the existing post and pier houses located within the flood plain will, in most cases, remain below the designated flood elevations.

Several methods of reducing the flood plain have been considered during project development and continue to be studied by Continental and by others. Continental Pacific supports ongoing efforts by the Army Corps of Engineers to mitigate flooding and reduce the flood plain boundary in Kahuku through regional-level efforts involving lands mauka of Kamehameha Highway. However, Continental is limited in its own flood mitigation efforts to the land it directly owns.

On behalf of Continental, R. M. Towill Corporation prepared engineering analysis to determine the reduction in the flood plain boundary that could be achieved through stream clearing and excavation of adjacent lands along the Mālaekahana Stream channel. The study modeled a “maximum effort” scenario that excavated open space lands adjacent to the stream channel down to an elevation of 2 feet above mean sea level, which represents the high water mark. The model resulted in only a moderate reduction in the flood plain boundary and a drop of 1 to 2 feet in the designated flood zone elevations, but required excavation of approximately 4 feet over a 10-acre area to achieve these results. The redrawn floodplain boundary in this model did not spare many of the village houses. The extensive cost of excavation weighed prohibitively against the limited flood mitigation benefit.

Based on this outcome, it is evident that a regional mitigation effort beyond the authority or financial means of the private owner is required to completely mitigate flooding in Kahuku Village. As an interim measure, Continental proposes the aforementioned improvements to Mālaekahana Stream and the KV5 drainage system. Given that the existing village residences were constructed long before the current flood elevations were established and that, based on oral testimony of long-time village residents, the homes have never experienced flooding to the floorboard level during even the most severe flood events in the community, it is recommended that the existing residences be allowed to remain in their current location. The planned development will not exacerbate existing flood hazards or contribute to conditions that could cause flooding.

3.1.9 FLORA AND FAUNA

Field inventory surveys of terrestrial and aquatic flora and fauna were conducted for the project. The terrestrial floral and fauna inventory is included as Appendix F at the end of this document. The aquatic biota inventory is included as Appendix G. A summary of the findings and recommended mitigation measures is included as follows:

Flora

Although, the majority of the plant species observed within the subject property are introduced (77%), the density of native vegetation near the coast is quite high. Several of the littoral plant species found during the survey are declining over their entire range in Hawaii due to habitat modification. The `akoko (*C. degeneri*) plants found on the property are in great abundance, especially within the northern cemetery plot. The hinahina kahakai (*N. sandwicensis*) found within the southern cemetery is listed as a 'Vulnerable' species. Keeping both cemeteries in their current condition should help to protect both of these native plant species from extinction on the property. The current plans for house site locations on the 18 Golf Course Lots and the proposed restrictions against construction activities on the dune system should ensure that the proposed development will have little or no impact on the native coastal vegetation found on the sand dunes

The naupaka and native `aki `aki grass are essential for the retention and protection of the large sand dunes found on the property's coastline. Off-road vehicle damage was observed throughout the dunes. Establishing designated walking paths over or through the dunes for beach access is recommended so that the remaining sand dunes and vegetation are left intact.

Two apparent intermittent wetland areas were noted within or adjacent to the project site. The first occurs at the southern most tip of the project in a sunken area adjacent to Mālaekahana Stream. The site supports a monotypic stand of hau trees (*Hibiscus tiliaceus*). It appears that when the stream is at a high mark, the hau grove is inundated with water. The second is a slight depression about 50 feet in diameter located between the northern road marking the property boundary and the horse stables. The topographical depression and presence of hydrophytic plant species is characteristic of a small intermittent wetland. The plant species observed growing in and on the edges of the area include, `ae`ae (*Bacopa monnieri*), umbrella sedge (*Cyperus involucratus*), `ahu `awa (*Cyperus javanicus*), `akulikuli, and saltmarsh sand spurry (*Spergularia marina*). None of the wetland species observed are protected species, however several of the species observed in the northern site are indigenous.

The following four species of endemic flora are located within the project area.

Table 3-1 Endemic Flora in the Project Area	
Scientific Name	Common Name
<i>Heliotropium anomalum</i>	Hinahina
<i>Jacquemontia ovalifolia</i> (Choisy) Hallier f. ssp. <i>sandwicensis</i> (A.Gray) K.R. Robertson	Pau o hiiaka
<i>Chamaesyce degeneri</i>	'akoko
<i>Nama sandwicensis</i> A. Gray	Hinahina kahakai

Fauna

A total of 24 bird species were observed during the site visit: one endemic, endangered species, six indigenous, protected species, and 17 alien species. In addition, one endangered reptile, a Pacific green sea turtle, was observed at the shore. The endemic and indigenous bird species are identified in the following table. Additional descriptions regarding the two endangered animal species is included below.

Hawaiian Common Moorhen or `Alae `Ula (*Gallinula chloropus sandwicensis*). The Common Moorhen is found over much of North America and is relatively common, but the Hawaiian subspecies is rare and listed as endangered under the U.S. Endangered species Act. It inhabits freshwater marshes, ditches, ponds, and other wetlands, usually favoring areas with dense vegetation along the water margin (U.S. Fish and Wildlife Service 2005). Two moorhens were observed during the site visit outside the project area in the water-filled ditch just west of the southwestern corner of the property. A third moorhen was heard during the site visit inside the project area in an area of dense brush between the horse paddock and chicken coops to the south. The area from which the bird called did not appear to have any standing water indicative of habitat, but moorhens are known to forage away from water. It is likely that this bird spends most of its time in the water-filled ditch, but visits the property occasionally to forage.

Pacific green sea turtle (*Chelonia mydas agassizi*). A single, large green sea turtle was observed on the beach below the cemetery at the northwestern corner of the property. This species is listed as threatened under the U.S. Endangered Species Act and under Hawaii Administrative Rules Title 13 Chapter 124. The beach in this area could provide suitable nesting habitat for sea turtles if off-road vehicles are prevented from driving over sand.

Table 3-2 Protected Fauna in the Project Area		
Scientific Name	Common Name	Status
Family Procellariidae – Shearwaters And Petrels		
<i>Puffinus pacificus</i>	Wedge-tailed Shearwater or `Ua`u Kani	I
Family Rallidae – Rails, Coots, Moorhens		
<i>Gallinula chloropus sandvicensis</i>	Hawaiian Common Moorhen or `Alae `Ula	E*
Family Charadriidae - Plovers		
<i>Pluvialis fulva</i>	Pacific Golden Plover or Kolea	I
Family Scolopacidae - Sandpipers		
<i>Numenius tahitiensis</i>	Bristle-thighed Curlew or Kioea	I
<i>Heteroscelus incanus</i>	Wandering Tattler or `Ulili	I
<i>Arenaria interpres</i>	Ruddy Turnstone or `Akekeke	I
<i>Calidris alba</i>	Sanderling or Hunakai	I

Notes:

I = Indigenous

E = Endemic

* listed under the U.S. Endangered Species Act

Stream Biota

An aquatic biota survey of Mālaekahana Stream was conducted on March 21, 2008. visibility in the stream was generally good throughout the survey area except in deeper segments where slightly turbid water would not allow visibility to the stream bottom. Hand nets were used to collect fish and invertebrates for identification. Photographs of some aquatic biota were taken to aid in identification. The aquatic biota survey area extended from the Kamehameha Highway bridge to the ocean. A list of all of the aquatic biota observed during the stream survey is included in **Appendix G**.

The survey revealed similar species throughout the survey area except within 50 meters of the ocean where additional marine species were present. From near the Kamehameha Highway bridge to 50 m (164 ft) upstream from the ocean blackchin tilapia (*Sarotherodon melanotheron*)

were found to be abundant throughout. 'Aholehole (*Kuhlia sandvicensis*, *Kuhlia xenura*) and mullet (*Mugil Continentalhalus*) were also abundant in schools. Two species of shrimp, 'opae'oeha'a (*Macrobrachium grandimanus*) and grass shrimp (*Palaemon debilis*) were common in shallow water and on vegetation along the stream banks. A grapsid crab (*Metapograpsus thuhukar*) was sighted retreating into sheltered holes in the stream bank. The Samoan crab (*Scylla serrata*) and barracuda (*Sphyraena barracuda*) were present but sighted rarely. One dead 'o'opu 'akupa (*Eleotris sandwicensis*) was observed as well.

The stream environment within 50 meters of the seashore was host to a more diverse array of aquatic biota. Small waves consistently surged into the stream mouth mimicking a more exposed ocean environment. The splash zone of the rocky stream mouth was commonly covered with periwinkles (*Littoraria pintado*) and rarely nerite snails (*Nerita picea*). Lower, near the high water mark brown algae (*Ralfsia expansa*) and black purse shells (*Isognomon californicum*) blanketed the stream bank in dense clusters. The stream bottom was host to several mollusks with zebra horns (*Cerithium zebrun*), granular drupes (*Morula granulata*), and cowries (*Cypraea* spp.) uncommon. *Manini* (*Acanthurus triostegus*) and other unidentified small surgeonfish (*Acanthurus* sp.) were grazing on algae solitarily and in small schools. Juvenile and adult 'aholehole (*Kuhlia* spp), and mullet (*Mugil cephalus*) were abundant in this area of the stream. The same two shrimp species (*Palaemon debilis*, *Macrobrachium grandimanus*) were abundant clinging to the prop roots of mangrove trees (*Rhizophora mangle*). Patches of the red algae, *Amansia glomerata* were conspicuously growing on the stream bottom. Cloudy gobies (*Hazeus nephodes*) were uncommon on the stream bottom. An unidentified ghost crab (*Ocypode* sp.) was likely responsible for numerous burrows in the sandy shore near the stream bank.

Marine Biota

A near-shore marine survey was conducted by snorkeling the waters fronting the proposed project site, visually surveying along the marine bench, and dip netting fish and invertebrates along the shoreline. The limestone shelf extending offshore has very little relief and is covered with sand patches and algae. Though not abundant at any one location, *Coelothrix irregularis* is the most abundant algae species forming irregular clumps or growing in thin layers across the substrate throughout the survey area. Both branching (*Hydrolithon gardineri*) and crustose (*Hydrolithon reinboldii*) forms from the genus *Hydrolithon* are colorfully represented. The upright chlorophyte *Halimeda* sp. is growing somewhat densely at several locations. In shallower water, phaeophytes *Padina* sp. and *Turbinaria ornata* are locally abundant, densely covering the substrate just below the waves. *Liagora* spp. are also common forming round bushy clumps on substrata offering topographical relief. Small holes in the substrate are

generally filled with rock boring urchins (*Echinmetra mathaei*), wana (*Echinthrix calamaris*), and cone snails (*Conus* spp.). Inspecting under loose cobbles reveal brittle stars (*Ophiocoma erinaceus*), drupes (*Morula granulata*), and zebra horns (*Cerithium zebrum*) to be uncommon. The Hawaiian mussel (*Branchidontes crebistriatis*) is common in dense patches close to shore. Few scleractinian corals are present. Lobe coral (*Porites lobata*) accounts for most of the small coral heads found in the survey area. Pocilloporid corals (*Pocillopora meandrina*, *Pocillopora damicornis*) are also present but sightings are rare.

Fish assemblages over the shallow bench near the shoreline include juvenile mullet (*Mugil cephalus*) and *aholehole* (*Kuhlia* spp.). A small goby (*Hazeus nephodes*) was netted while resting on the substrate. Further offshore *manini* (*Acanthurus triostegus*) are common grazing on algae. Other acanthurids and butterflyfish (*Chaetodon* spp.) are less common. A few wrasses (*Thalassoma* spp.) were sighted hastily swimming through the survey area. Bright eyed damselfish (*Plectoglyphidodon imparipennis*) were uncommon hiding behind boulders or beneath ledges. Reef triggerfish (*Rhinecanthus rectangulus*) and Indo-Pacific sergeants (*Abudefduf vaigiensis*) were sighted picking at the algae covered substrate. One large lizardfish (*Synodus ulae*) was sighted resting on the sandy bottom.

Six fish species and one crab species encountered during this survey are regulated by the State of Hawaii, Department of Land and Natural Resources. Hawaii Administrative Rule 13-95 regulates the taking of mullet (*Mugil cephalus*), *aholehole* (*Kuhlia xenura*, *K. sandvicensis*), *kala* (*Naso unicornis*), *manini* (*Acanthurus triostegus hawaiiensis*) and Samoan crab (*Scylla serrata*). HAR 13-100 and 188-43 regulate taking of 'o'opu akupa (*Eleotris sandwicensis*). Three scleractinian coral species (*P. lobata*, *P. damicornis*, *P. meandrina*) rarely present in the survey area are protected by HAR 13-95-70. The federally protected green sea turtle (*Chelonia mydas*) was observed foraging in near-shore waters fronting the property. No other federally endangered or threatened species (Federal Register, 2005; USFWS, 2005) were encountered during the survey, and none is anticipated to utilize the estuarine reach of Mālaekahana Stream.

Impacts and Mitigation Measures

Mitigation measures are proposed that could benefit birds, sea turtles, and other natural resources in the Kahuku Village area. Proposed mitigation measures include:

- A list of appropriate Flora will be established for landscaping. Native plant species recommended for landscaping include hala (*Pandanus tectorius*). There were only a few individuals observed growing at the coast and in a few residential lots. Kahuku was once famous for its hala groves (Sterling &

Summers, 1978), and reestablishment of this indigeneous tree would be appropriate. See Section 2.1.2 for other recommended plants.

- The small fence around the Wedge-tailed Shearwater nesting colony is in need of repair or replacement. It has become unattached from the supporting metal posts along much of its length and is broken in several spots. The fence will be repaired to discourage people from unintentionally walking over the area and crushing the nest burrows and to prevent predation by terrestrial animals. In addition, other seabird nesting areas within the shoreline dune area will be considered for protective fencing.
- Construction of pole houses may encourage Wedge-tailed Shearwaters to nest under the structures for shelter. Wedge-tailed Shearwaters are night callers and may disturb the residents with their loud calls. Houses will be set back away from the dune system and protected nesting sites. Ground space under houses may be screened to prevent access by Wedge-tailed Shearwaters and other terrestrial animals.
- Artificial nighttime lighting attracts and confuses seabirds, including Wedge-tailed Shearwaters. Seabirds are known to fly around light sources until they either collide with an object or fall the ground from exhaustion. Once grounded, they are vulnerable to predators and to being struck by vehicles. To minimize impacts from nighttime lighting, outdoor lighting will be limited and all lights will be shielded and directed downward. Night time construction activities that require outdoor lighting will be prohibited during seabird fledging season from October 1 through December 15.
- Fencing surrounding the North and south cemeteries will be maintained.
- Feral cats appear to be abundant in the area based on the number of tracks observed in the sand. Feral cats are serious predators on ground-nesting birds like Wedge-tailed Shearwaters (Smith et al. 2002). If active feeding of a feral cat colony exists at the site, the practice will be stopped and the feral cats will be removed to reduce predation on Wedge-tailed Shearwater nests. In addition, trash on the beaches, dunes, and future parks will be collected, contained and routinely disposed to avoid attracting feral cats and dogs to the area
- Dog owners in the area will be reminded to keep their dogs on leash or in fenced enclosures. Dogs will be prohibited from running off-leash in the shoreline area.
- Two derelict utility poles and a section of old utility lines are present in the northwestern corner of the property. This non-functional structure represents a collision hazard for nocturnal seabirds like Wedge-tailed Shearwaters and will be removed.

SECTION 3 - Description of Affected Environment

- Off-road vehicles have damaged the coastal dune ecosystem and the beach. Preventing vehicles from driving across the dunes and onto the beach will enhance the beauty of the area, prevent erosion and stabilize the dunes and associated vegetation which provide important protection from high waves and storm surge, and might encourage sea turtles to use the beach for nesting. Signs will be placed along the shoreline areas to restrict the use of off-road vehicles on the beach and dune system and restrict foot traffic across the dunes in any locations other than designated access ways. Fencing may also be used in some locations to reduce the off-road vehicles access to the area. In addition, local authorities will be notified about efforts to enforce restrictions of off-road vehicles on the dunes/beaches.
- Designated walking paths or environmentally sensitive pier and post dune walkways will be established through the dunes for beach access.
- Fireweed (*Senecio Madagascariensis*) discovered in the Christian cemetery will be eradicated. Personnel responsible for golf course and cemetery maintenance will be instructed to identify and eradicate this plant wherever found.

The proposed improvements will not involve the use or destruction of wetland habitat frequented by the endangered, endemic Hawaiian moorhen. Aside from the moorhen, birds known from the project area are common and found widely throughout the islands. Project activities may temporarily disrupt routine behavior patterns of common birds, but will not result in permanent impacts. When project activities are complete, bird activity is expected to return to current conditions. Activities required to construct the proposed project are not expected to have a significant effect on terrestrial and aquatic wildlife.

A Best Management Practices (BMP) plan will be designed and implemented to minimize environmental impacts to water quality in vicinity of the project site from construction activities. See **Section 2.1.5: Water**. State law prohibits the breaking or damaging, with any implement, any stony coral from the waters of Hawaii, including any reef or mushroom coral. HAR 13-95-70

Based on the proposed mitigation measures, no adverse impacts to threatened or endangered plant or animal species are expected to result from this project. Nor will project activities diminish the availability of any plant species as a resource. Recommended mitigation will result in improvements over existing conditions, particularly in the dune area where enhanced enforcement of the prohibition on motor vehicle use will help minimize damage to the dune environment and its constituent plant and animal species.

3.2 SOCIO-ECONOMIC ENVIRONMENT

3.2.1 LAND USE

Kahuku Village is situated in a traditionally rural area characterized by a “country” lifestyle. The existing community population resides within the historic plantation housing settlement of Kahuku Village 5, comprised of the “New Camp” and “Ocean View” residential areas. Nearby, but outside of the project area are “Main Camp” and Village 4 (Walker Ville) residential communities, also legacy settlements from the plantation days. The Kahuku Village community was historically centered around the sugar mill, located adjacent to the project site on the makai side of Kamehameha Highway. Though the mill is closed, the land use pattern remains with development concentrated along the highway near the mill site. Land uses in the Kahuku Village “core” are dominated by Kahuku High School and Elementary School, and by Kahuku Hospital. Fire and police stations are also located on the highway mauka from the project site. Numerous churches, including the Catholic Church, Methodist Church and School, and the LDS Ward are also present in the town.

Outside of the urban uses, the majority of the lands in the vicinity of the project site are agricultural. Historically, land mauka of the highway was cultivated in sugar cane and other mono-culture crops. Lands makai of the highway have always been marginal for agricultural use and were not cultivated by the plantations. Typically, makai lands have been used for pasturage and livestock or have been left vacant. Immediately north of the project site and makai of the highway, the land is maintained by the U.S. Fish and Wildlife Department as a wildlife sanctuary.

Project activities will take place within the State Land Use Urban District and Agricultural District. Within the Urban District, land is subject to County zoning regulations. The entire residential area is zoned Residential (R-5) by the City and County of Honolulu (CCH). The

remaining areas, including the golf course, agricultural lots, and shoreline are zoned Agricultural (Ag-2). The beach parks are zoned P-1 (0.9-acre park) and zone P-2 (4.4-acre park).

Impacts and Mitigation Measures

Construction activities will have short-term impacts on surrounding land uses. To mitigate short-term construction-related impacts, the Contractor will be required to follow applicable State and City erosion, air quality, and noise control regulations and implement appropriate BMPs.

The proposed infrastructure and utility improvements are expected to provide a long-term benefit to land uses in the area by:

- Improving traffic circulation and safety through creation of improved road surfaces
- Enhancing community identity by making the existing residents fee owners of their own property.
- Increasing public open space through development of the beach parks and preservation of the golf course.

The proposed shoreline lots introduce a new, residential land use along the makai edge of the golf course. The planned houses and lots will be larger in size than is typical in the KV5 community. Correspondingly, they will also be less dense than is typical, and much less dense than alternative development scenarios that have been considered for the land. The application of the voluntary primary dune setback will place the shoreline lot improvements within the existing developed land of the golf course, thus will not result in land use impacts to the natural dune environment.

In light of the anticipated land use benefits resulting from the proposed improvements, no additional mitigation measures are required or recommended.

3.2.2 HISTORIC AND ARCHAEOLOGICAL RESOURCES

The project site is located in the ahupua'a of Keana and Kahuku on the north shore of O'ahu. Early historic visitors to the northern O'ahu coast commented on the dense population and extensive agriculture of the area. Hawaiian traditions and place names indicate that fishing was an important part of Hawaiian life in Keana, as different sections of the coast were known as good spots to hook or net *āhole* (Hawaiian Flagtail; *Kuhlia sandvicensis*), *ō'io* (Bonefish; *Albula vulpes*), and *'anae-holo* (Mullet; *Mugil cephalus*). Population decreased rapidly in the post-

contact period and former agricultural fields were abandoned. By the time of the Māhele, only sweet potatoes were grown near a few houselots back from the coast and the lower forest zone was used to plant small patches of 'awa, wauke, and breadfruit. Over the next century and a half, the land was extensively modified for cattle ranching, for sugar cultivation in the lowlands, and for pineapple cultivation in the uplands. Previous archaeological surveys have found few surface traditional Hawaiian sites. The majority of features are overhang shelters along cliffs and some temporary habitation features on top of limestone knolls or along/on top of cliffs. These are the only areas where features have survived the destruction of post-contact agricultural practices.

Along the coast, the project area was modified as part of the sugar mill complex of the Kahuku Sugar Plantation. Portions of the project area were used as worker's camps, as recreation areas, and as burial grounds for the workers. In 1937, a portion of the project area became the Kahuku Golf Course and in World War II, an emergency air strip was constructed on the golf course. Except for the fishing shrine recorded by J. Gilbert McAllister of the Bernice P. Bishop Museum (1933) at Makahoa Point, no surface traditional Hawaiian sites have been recorded during previous archaeological projects along the coast, but subsurface remains, including cultural deposits and burials in the sand dunes have been noted. Post-contact burials are also present in two cemeteries: The Japanese Cemetery on the shoreline at the north end of the project site, and the Catholic cemetery located at the mauka edge of the golf course adjacent to Kahuku Village 5 Ocean View residences. Beach erosion and wind and wave action, especially the 1946 tsunami, have led to the exposure of both Hawaiian and plantation worker's burials in the sands of the golf course area and along the beach.

Little archaeological work has been conducted in Keana Ahupua'a or along the eastern shores of Kahuku. The only site located within the project area, Pōlou Pool, State Inventory of Historic Places Site (SIHP) 50-80-06-271, was recorded in the first systematic archaeological study of the Kahuku area, conducted by McAllister, in the 1930s. McAllister (1933) consulted with knowledgeable informants about both physical and legendary sites of each district during his island-wide survey of O'ahu in the 1930s. McAllister relates the legend associated with this pool (see Appendix D Section 2.1) and says that it was "formerly a pool of water, sea side of the Kahuku mill." This makes it evident that McAllister did not locate the pool during his survey, but was only told about it. For additional descriptions regarding archaeological work in the areas surrounding the project site, see **Appendix D** Table 2 and Figure 6.

As shown the **Figure 3-1, Soils Map**, the project site contains Jaucas sand deposits. This soil type is associated with traditional Hawaiian burial practices, and is commonly found to contain

subsurface cultural deposits. Inadvertent discoveries of human remains have occurred all along the Kahuku, Keana, and Mālaekahana coasts, and have been discussed in several recent archaeological reports. A total of 19 burials (24+ individuals) have been found at the Turtle Bay Resort from Kawela Bay to Kahuku Point (O'Hare and Hammatt 2007). A recent report on Marconi Point, east of the Kahuku Point, discusses coastal burials from Marconi Point to Kalaeuila Point (Tulchin et al. 2007). Numerous inadvertent burial finds have been documented along Mālaekahana Bay.

Three reports and one recorded site are known within the project area. See **Figure 3-5: Archaeology**.

- In 1994, it was reported to the SHPD that a human femur had been found on the beach near the Kahuku Golf Course (Jourdane 1994a). The SHPD staff was taken to the location, which was on a gravel road at the north end of the Golf Course. This location was only 50 yards (45 meters) south of the Japanese Cemetery, which appears on USGS maps as early as 1919. High waves have knocked down some of the stone markers and eroded this section of the beach, and the archaeologists concluded that the femur probably had eroded from the slope and been carried to the gravel road. This bone location was not given a SIHP designation.
- Another bone found near the Japanese cemetery was reported to the SHPD in May of 1996 (Hibbard 1997). The record of this burial find is in the Burial Files at the SHPD office in Kapolei, Hawai'i. This bone location was not given a SIHP designation.
- Human skeletal remains were found on the seaward side of the Kahuku Golf Course in September of 1999 (Collins 1999) near a utility road which incorporates a former WWII blacktop road section, probably associated with the "Kahuku Village Airfield." Some of the remains on the ground surface were collected by the SHPD, but the remaining portion of the burial was left in place. The burial location was designated SIHP #50-80-02-5773.

In preparation of an Archaeological Inventory Survey Plan (AIS), a pedestrian inspection of the sand dune area of the project site was conducted in March 2008. No remains were identified. However, the presence of previously identified burials indicates the possibility that others may be found during excavation in areas with similar soil conditions. See **Appendix D** for further description of historic background, archaeological work and mo'olelo.

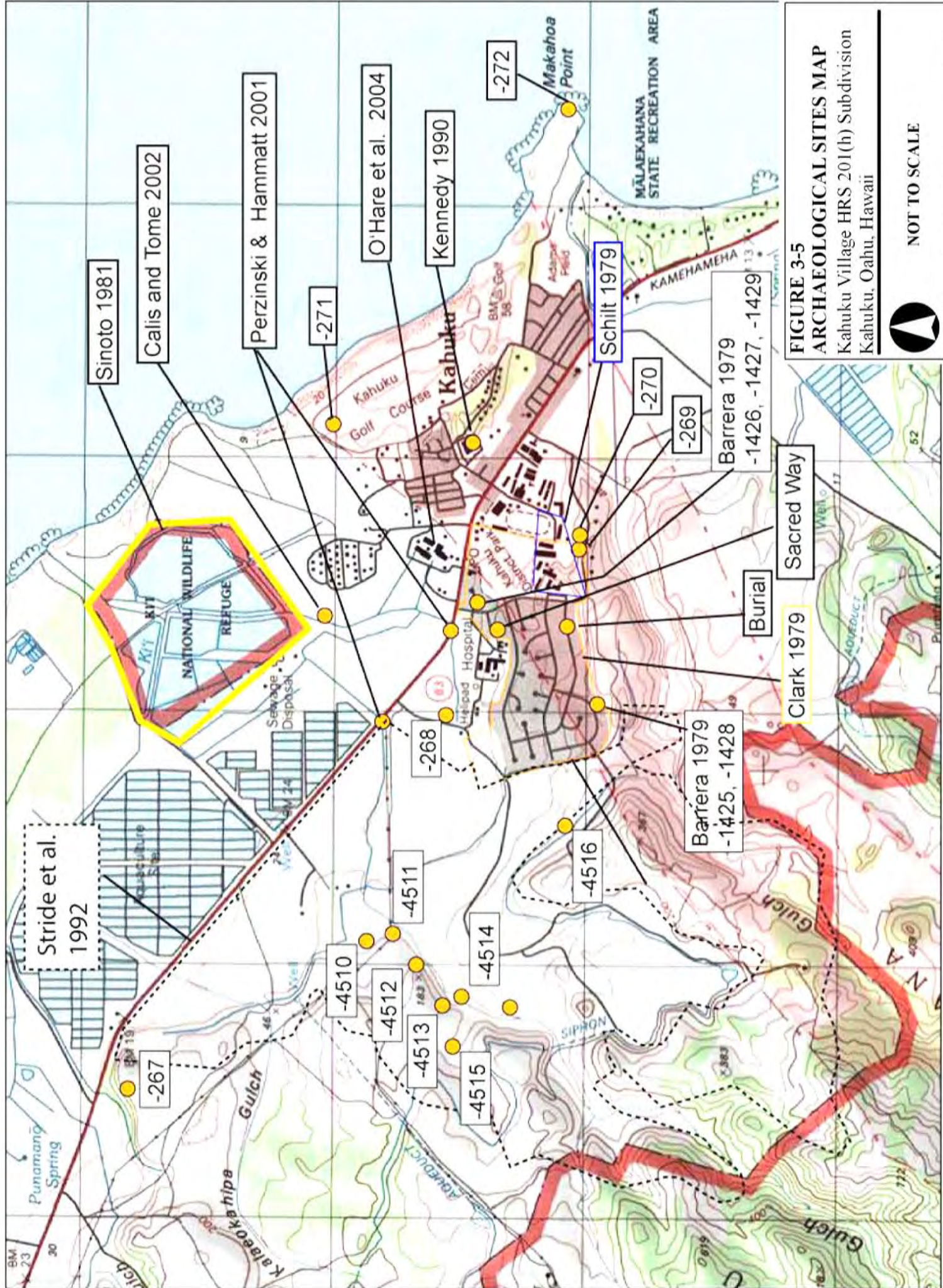


FIGURE 3-5

ARCHAEOLOGICAL SITES MAP

Kahuku Village HRS 201(h) Subdivision
Kahuku, Oahu, Hawaii



NOT TO SCALE

R. M. Towill Corporation

May 2008

Impacts and Mitigation Measures

To avert potential impacts to historic and archaeological resources, the applicant has developed and archaeological inventory survey (AIS) plan and mitigation measures in consultation with the SHPD. The AIS will consist of pedestrian inspection (which has been completed at the shoreline), and subsurface testing of the proposed shoreline lots, country lots, and wastewater improvements of Kahuku Village.

A complete pedestrian ground survey of the 18 beach front lots, 12 agricultural lots, and 6 wastewater improvement sites will be undertaken for the purpose of identifying and documenting any historic property. The pedestrian inspection of the study area will be accomplished through systematic sweeps. The interval between the archaeologists will generally be 5-10 m. All historic properties will be documented by way of: a detailed written description, with evaluation of function, interrelationships, and significance; photographs; scale drawings, using standard tape-and-compass mapping procedures; location information will be acquired with Trimble ProXH GPS survey equipment (sub-foot accuracy). The beach front portion of the ground survey has been completed. No historic property was identified.

Following the ground survey, subsurface testing will be conducted to locate any buried cultural deposits. Field methods for the three areas of the project are summarized below. For further discussion see Appendix D.

Shoreline

Five trenches will be excavated for each of the proposed shoreline lots, two in the proposed building footprint, one in the proposed location of the septic tank, and two in the proposed location of the new leach field. The leach field will go between 50 and 60 feet back (*mauka*) of the certified shoreline. Trench placement will vary for each lot based on topographic features (i.e. large trees, sand dunes, bedrock exposures, etc.). The subsurface testing program is projected to consist of the excavation of a minimum of 90 test trenches, 20 feet (6 meters) long, for a total excavation of 432 m².

Agricultural Lots

Five trenches will be excavated for each agricultural lot, two in the proposed footprint of the new house, one in the proposed location of the septic tank, and two in the proposed location of the new leach field. Trench placement will vary for each lot based on topographic features (i.e. large trees, sand dunes, bedrock exposures, etc.). The

subsurface testing program for the country lots is projected to consist of the excavation of a minimum of 60 test trenches, 20 ft (feet), or 6 m (meters) long.

Kahuku Village Wastewater Improvements

There are a total of 60 cesspools serving 72 residences in Kahuku Village, ten of which are larger “gang cesspools” serving two or more households. Current EPA regulations require immediate replacement of gang cesspools with septic waste water treatment systems. The developer proposes to eventually replace all 60 cesspools with septic leachfield systems. Replacement will involve excavation to install a new septic tank, leach field, and piping. In consultation with SHPD it has been agreed that a 10% sample of the planned septic system sites, six locations in total, will subject to subsurface archaeological investigation under AIS protocols. The subsurface testing program for the waste water sites is projected to consist of the excavation of a minimum of 18 test trenches, 20 ft (feet), or 6 m (meters) long, two for each leach field, and one for each septic tank.

If any significant archaeological or historical finds are discovered, SHPD will be informed immediately. Any significant historic properties that are found will be treated in accordance with a program approved by the SHPD. If human remains are discovered, the SHPD archaeology branch will be notified immediately. In the event that human remains are encountered, they shall be treated as previously identified under Hawai'i Administrative Rule (HAR) 13-300-31(b). Relocation or preservation in place will be determined by the State Historic Preservation Division in consideration of the recommendations of the O'ahu Island Burial Council. If human remains are identified, no further work will take place, including no screening of back dirt, no cleaning and/or excavation of the burial area, and no exploratory work of any kind unless specifically requested by the SHPD.

Project activities in the vicinity of the discovery of human remains may resume if an accepted Burial Treatment Plan has been approved or in the event that SHPD has agreed to permit the undertaking to proceed with culturally appropriate interim protective measures for human remains which may include preservation in place or recordation.

In accordance with Chapter 6E, HRS, construction activities will not commence until the SHPD has provided written concurrence that “no effect” to historic sites will result from proposed project activities.

3.2.3 CULTURAL RESOURCES AND PRACTICES

A Cultural Impact Assessment (CIA) was prepared for the project in accordance with the State Office of Environmental Quality Control's Guidelines for Assessing Cultural Impacts. The CIA used literature research and consultation with individuals in the community knowledgeable about traditional cultural practices in and around the project area. The CIA is included as Appendix E of this document.

Three community agencies/organizations and three individuals participated in the assessment. Findings include the following cultural practices and resources:

- The project area and vicinity is likely to have surface and subsurface cultural and historic properties, including human burials.
- The project area and vicinity, particularly the shoreline, has a long history of cultural use by Kānaka Maoli (native born), as well as other kama'āina groups, mainly former plantation workers and their descendants and more recent immigrant groups (Japanese, Filipinos, Portuguese, Koreans, Chinese, Laotians) for a variety of cultural activities including fishing, salt and limu collection, and plant-gathering.

Impacts and Mitigation Measures

The following concerns were expressed through the cultural consultation:

- There is concern that surface and subsurface cultural and historic properties, including human burials will be disturbed by project activities.
- There is concern that beach access will be restricted as a result of the proposed development and that access to cultural resources will be disrupted.

The following mitigation measures are proposed to address these concerns:

- An archaeological inventory survey (AIS) is being undertaken for the project and will include subsurface investigation of areas specifically planned for development activities. All historic or cultural properties that may be discovered during the AIS, including burials, will be handled in accordance with state law.
- On-site and on-call cultural and archaeological monitoring will be conducted during project activities, as required based on consultation with SHPD.
- Personnel involved in development activities in the project area will be informed of

the possibility of inadvertent cultural finds, including human remains. Should cultural or burial sites be identified during ground disturbance, all work in the area of discovery will immediately cease and appropriate agencies will be notified pursuant to applicable law.

- In the event of burial finds, the owner will work closely with cultural and lineal descendants of Kahuku to honor their wishes concerning proper cultural protocol, re-internment and protection of iwi kupuna.
- Two beach parks will be created at either end of the project site to provide public access to the shoreline. Currently, no legal public access to the shoreline exists through the project site without permission of the owner. The parks will be accessible by private roadways maintained by the existing Kahuku Village Association (KVA), by a Kahuku Village Homeowners' Association (KVHOA) to be created, or by another entity selected by the owner based on ability to properly manage and maintain the parks. The beach parks will be open during daylight hours and closed at night. Nighttime access for fishing will be possible by arrangement the managing entity of the park. In accordance with State Law, access along the shoreline will remain unimpeded at all times.
- Development activities are planned within areas that have already experienced extensive ground disturbance. Planned improvements and uses in the project area will not diminish the availability of any rare or protected plant type for use in cultural practices. See also **Section 3.1.9 – Flora and Fauna**.

With the recommended mitigation measures, no impacts to cultural resources or practices are anticipated to result from the project.

3.2.4 SCENIC AND VISUAL RESOURCES

Kahuku Village is located within a narrow coastal plain backs up against the eastern side of the Ko'olau Mountain Range creating beautiful views of the mountains and sea throughout the region. Within the highway corridor fronting the project site, views of the ocean are blocked by topography, vegetation, and built structures. The rural character of the village is evident in the visual setting of agricultural fields, low-density plantation buildings, and minimal road improvements (no curb and gutter). This character is reinforced by the green slopes of the Ko'olau Mountains which serve as background. The State and County have not identified any view plains or scenic vistas in the project vicinity.

The visual quality of the Kahuku area is based primarily on the visual intactness of the agricultural land and open spaces along the Kamehameha Highway corridor. Open space is an important aspect of the view shed in this area as identified in the 1987 Coastal View Study. The study notes the importance of the vegetation and agricultural usage in maintaining the rural character of the Mālaekahana and Kahuku area.

Though not visible from the roadway, views of the ocean and intervening dune system are apparent from certain areas within the project site, including certain sections of the golf course, locations along the golf course access road adjacent to the catholic cemetery, from the cemetery itself, and from a few of the residences at the makai edge of KV5. Coastal views are available primarily because of the open space of the Kahuku Golf Course and most ocean vantage points are from locations on or at the immediate periphery of the course. Within the village itself, most of the existing homes do not have ocean views.

Impacts and Mitigation Measures

The presence of the shoreline houses will be apparent from the golf course and limited locations at the makai edge of KV5 residential areas, however the shoreline houses will be subject to development restrictions that will mitigate visual impacts and preserve ocean views.

From the shoreline, some of the houses may be partially visible looking mauka through breaks in the dunes. For the most part, the voluntary “primary dune” setback will situate the houses a minimum of 100 feet, and in most cases more than 150 feet mauka from the vegetated shoreline and behind the crest of the primary dune. As such, the houses will be largely hidden from view. In locations where homes are in view, only the upper portions of the structures will be visible.

Measures proposed to mitigate visual impacts include:

- Building footprints will be limited, lots sized and setbacks enforced to preserve visual space between the new residences with uninterrupted views to the ocean from the golf course and peripheral areas.
- New houses will be subject to height restrictions of 25 feet in accordance with zoning standards.
- Exterior building materials, colors, lighting and landscaping will be subject to design controls to ensure compatibility with the appearance of the surrounding natural landscape.

In addition to these mitigation measures, the two planned beach parks will provide the public with direct access and views to the ocean.

The planned roadway and utility improvements are not expected to create additional significant visual impacts. Planned road sections consisting of paved travelways and grassed swales are in character with the area's country identity. Use of standard urban roads with curb, gutter, and sidewalk would result in a significant visual change to existing conditions, thus were not included.

The potential for unwanted light spillage and glare from proposed street lighting and residential lighting at the shoreline lots will be mitigated by shielding all light fixtures and aiming them downward. Lighting in the remaining areas of KV5 will not significantly change from existing conditions.

The construction effort will cause temporary visual impacts in the immediate area of work activities. Heavy equipment operations, stockpiles, disturbed ground, dust screens, signage, and construction worker activity will all be apparent from adjacent areas. However, these impacts will be short-term and will cease when the project is complete. To minimize visual impacts, construction staging and work activities will be undertaken only to the extent required for each project phase. Ground disturbance will be limited to the minimum area required for project activities. Disturbed areas will be stabilized and landscaped as soon as practicable before new areas are opened up to construction.

Based on the proposed mitigation measures, no significant adverse visual impacts to the shoreline are anticipated to result from the proposed action.

3.2.5 RECREATIONAL FACILITIES

City parks in the project vicinity include:

- Kawela Bay Beach Park is located 4.5 miles north-west of the project site. There are no amenities at this park.
- Lā'ie Beach Park, known locally as Pounders, is located 3.5 miles south of the project site. There are no amenities at this park.
- Kokololio Beach Park is located 4 miles south of the project site adjacent to Lā'ie Beach

Park. Amenities include restroom and shower facilities and 5 sites for camping by permit

State parks in the project vicinity include:

- Mālaekahana State Recreation Area is a 37-acre wooded beach-front park with picknicking and camping facilities located 1 mile south of the project site. Amenities include 37 tent campsites, 7 rental cabins, thatched picknick pavilion, bathrooms, showers, fire pits, barbecue grills, 24 hour on-site security.

Private recreational facilities in the project vicinity include:

- Kahuku Golf Course is a 9-hole facility that is located within the project boundaries and operated as a public course by the City's Department of Enterprise Services under a license with the owner. The planned subdivision will continue operation of the golf course for public use under license with the City or other management entity.
- Turtle Bay Resort has two championship 18-hole golf courses that are featured in the PGA and LPGA tournament circuit. The golf courses are privately operated and open to the public.

Impacts and Mitigation Measures

The project will enhance public recreational opportunities in the Kahuku region by creating two new passive beach parks for public use:

- A 4.4-acre park will be created at the south end of the project site with access via South Golf Course Road. Improvements will consist of an unpaved parking lot, restroom facility, and emergency telephone.
- A 0.9-acre beach park will be created adjacent to the historic Japanese Cemetery at the north end of the project site with access provided via an easement over an unpaved road. Planned improvements include a gravel access road and an unpaved parking area.

In light of these improvements, the project is anticipated to have a positive impact on public recreational resources. Proposed project activities will not block access to any of the State or County beach parks or other recreational facilities in the project area. No adverse impacts to public recreational resources are expected and no mitigation measures are recommended.

3.2.6 FIRE, POLICE AND MEDICAL SERVICES

Fire protection service is provided through the Honolulu Fire Department's Kahuku and Sunset Beach Fire Stations. Each fire station has one fire truck and is able to provide engine and medical services. Police protection services are provided by the Honolulu Police Department's Kahuku Substation. The Kahuku Hospital is located less than five minutes from the project site and provides health care services.

Impacts and Mitigation Measures

The proposed project is not expected to have an adverse impact on fire, police and medical services. Planned improvements will result in a small increase in population, but the addition of 60 to 80 new residences will not significantly increase demands for service. Fire apparatus access will be maintained throughout the construction site for the duration of the project. The project will improve fire response by providing adequate water pressure and fire hydrants for fire control purposes, and ensuring adequate travelway clearance for emergency vehicle access. No other mitigation measures are required or recommended.

3.2.7 SCHOOLS

Public schools in Kahuku include Kahuku Intermediate and High School and Kahuku Elementary School. The school facilities are located on the mauka side of Kamehameha Highway across from the project site.

Kahuku Intermediate and High school offers grades 7-12, and currently has approximately 1850 students in attendance with a 16 to 1 student to teacher ratio. The school is known as the "Pride of the North Shore" and is well known for its several alumni currently playing in the NFL in addition to celebrity alumni musician Jack Johnson and chef Sam Choy. Nearby Kahuku Elementary offers grades PK-6. The school has approximately 578 students currently enrolled with an 18:1 student teacher ratio.

Impacts and Mitigation Measures

The proposed project is not expected to have an adverse impact the school facilities. The increase in residences from the project is not expected to result in a significant increase in school age children attending Kahuku's public schools.

3.2.8 DEMOGRAPHICS

Demographically, The Kahuku Village community is distinct from the larger North Shore population and from the nearby community at La'ie in terms of ethnicity, income, and

occupation. A comparison of population characteristics within 1 mile radius and 15 mile radius is presented in the following tables.

Past, current and forecast population for Kahuku Village are shown in Table 3-3.

	2000	2008	2000-2008	2013	2008-2013
Population	2,137	1,698	-21%	1,720	1%
Households	521	416	-20%	427	3%
Families	410	329	-20%	337	2%
HousingUnits	539	431	-20%	443	3%

* Income projects prepared by Claritas based on census data.

The data shows that the immediate community shrank significantly over the last 8 years, coinciding with the peak of the recent real estate cycle. While a correlation is not apparent from this data, it is the case that strong real estate markets have the affect of displacing renters and pricing lower income home buyers out of the market. Under such conditions, the need for affordable housing projects increases.

Ethnicity

The Kahuku Village population is much more Hawaiian (16% difference) and much more mixed (10% difference) than the broader community. Fewer caucasians and blacks live in the community. This distribution is largely due to the economic history of the local areas. Kahuku Village close ties to it's plantation past are evident in the ethnic mix, while the larger North Shore community reflects the relatively recent influx of mainland Caucasians drawn to the surf and tourist economy. Of note is the preponderance of Filipinos and Japanese constituencies in the community. Additionally, the presence of Laotians in the community is a recent feature, due to the availability of farmland for diversified truck crop horticulture

Ethnicity	1 Mile	%	15 miles	%
Two or More Races	578	34%	18,926	24%
Native Hawaiian and Other Pacific Islander Alone	434	26%	7,775	10%
Asian Alone	403	24%	23,452	29%
White Alone	260	15%	22,726	28%
Some Other Race Alone	13	1%	2,091	3%
Black or African American Alone	7	0%	4,457	6%

SECTION 3 - Description of Affected Environment

Ethnicity	1 Mile	%	15 miles	%
Filipino	211	52%	10,368	44%
Japanese	86	21%	8,661	37%
Two or more Asian categories	36	9%	1,936	8%
Laotian	31	8%	177	1%
Chinese, except Taiwanese	28	7%	1,193	5%
Total	392		22,335	

Employment & Labor

Services are the number one employer in the immediate Kahuku Village area, followed by sales and office jobs. This differs from the broader area which has a larger share of professional jobs.

Job Category	1 Mile	%	15 Miles	%
Service	205	32%	6,045	19%
Sales and Office	147	23%	7,380	24%
Professional and Related Occupations	96	15%	6,974	22%
Construction, Extraction and Maintenance	74	12%	3,133	10%
Management, Business, and Financial Operations	58	9%	3,811	12%
Production, Transportation and Material Moving	48	7%	3,132	10%
Farming, Fishing, and Forestry	15	2%	632	2%
		100%		100%

The Kahuku community also has a smaller number of for-profit workers, and a larger share of non-profit (church) and government workers. The government work force is larger than the outside community. This is due in part to efforts by the state and city to hire displaced plantation workers following cessation of agricultural activities.

Employment Category	1 Mile	%	15 Miles	%
For-Profit Private Workers	360	56%	18,734	60%
Non-Profit Private Workers	100	16%	2,833	9%
State Government Workers	78	12%	3,366	11%
Self-Employed Workers	40	6%	1,779	6%
Local Government Workers	32	5%	1,240	4%
Federal Government Workers	32	5%	3,097	10%
Unpaid Family Workers	1	0%	58	0%
		100%		100%

Table 3-8 shows that there is a larger proportional share of farmers in the immediate area compared to the larger region, and that there are more blue collar than white collar workers.

Employment Category	1 Mile	%	15 Miles	%
Blue Collar	121	19%	6,265	20%
White Collar	296	46%	17,863	57%
Service and Farm	226	35%	6,980	22%

Employment trends in Ko’olau Loa District were forecast by the City and County of Honolulu to the year 2030. See Table 3-9. The forecast anticipates very little job growth over this period. This is partially reflective of the fact that two obvious employment generators, farming and resort development are of limited viability. Farming will continue to provide some niche opportunities, but not on the scale of the former plantation economy. Resort growth faces strong public opposition on the North Shore. Of the 131,078 jobs forecast to be created on O’ahu by 2030, Ko’olau Loa District’s share is 1.1%. The vast majority of new jobs are expected to be created in the Primary Urban Center (68.2%), Ewa (10.9%), and Central O’ahu (10.9%). The small measure of employment growth in the project region is expected to be generated by the public sector, some non-profit work, plus various forms of self-employment (distance workers, craftsmen, etc.).

Category	2000	2030	Change 30 yr	Change %
Military	33	33	0	0
Government	134	147	13	0
Industrial	103	103	0	0
Service	3,777	4,472	695	23
Retail	1,005	1,147	142	5
Other	748	853	105	4
Ko'olauLoa Total	5,800	6,755	955	32

Wages and Income

In general, the data reveals that Kahuku area incomes are lower than those in the wider community.

Employment Category	1 Mile	%	15 Miles	%
Income Less than \$15,000	66	15.9%	2,035	8.5%
Income \$15,000 - \$24,999	49	11.8%	1,882	7.8%
Income \$25,000 - \$34,999	31	7.5%	2,329	9.7%
Income \$35,000 - \$49,999	57	13.7%	3,243	13.5%
Income \$50,000 - \$74,999	95	22.8%	4,758	19.8%
Income \$75,000 - \$99,999	60	14.4%	3,351	13.9%
Income \$100,000 - \$149,999	39	9.4%	4,026	16.8%
Income \$150,000 - \$249,999	15	3.6%	2,049	8.5%
Income \$250,000 - \$499,999	4	1.0%	322	1.3%
Income \$500,000 and more	0	0.0%	40	0.2%

Description	1 Mile	15 Miles	O'ahu
2008 Est. Average Household Income	\$60,209	\$77,818	--
2008 Est. Median Household Income	\$51,432	\$63,285	\$63,372
2008 Est. Per Capita Income	\$15,488	\$24,404	\$27,478

Table 3-12 shows average incomes projected over the next five years. The projection shows a slowdown in the median income over the next five years (relative to the last 8 years) but an increase in the average income. This indicates that greater affluence is in store for a few people and/or more affluent people will be moving into the area.

Description	2000	2008	2013	2000-2008 % change	2008-2013 % change
Average Household Income	\$48,541	\$60,209	\$71,572	3.0%	3.8%
Median Household Income	\$40,921	\$51,432	\$58,816	3.2%	2.9%
Per Capita Income	\$12,470	\$15,488	\$18,558	3.0%	4.0%

* Income projects prepared by Claritas based on census data.

Housing

Kahuku has more owner-occupants and longer residency on average (13 years vs. 8 years) compared to the larger region. This suggests that Kahuku Village is a one of the more stable residential communities on the North Shore. The stability might be due to the fact that some residents, the current KV5 residents in particular, do not relocate easily.

	1 mile	%	15 miles	%
Owner Occupied	232	56%	12,729	53%
Renter Occupied	184	44%	11,304	47%
Average Length of Residence	13		8	

The median sale price for single family residences within 1 mile of the project site is \$445,283, which is approximately 10% lower than the median price of homes within a 15 mile radius (\$495,851), and 30% lower than the median sale price for the island as a whole (\$620,000 during first quarter of 2008). The lower value is attributable in part to the more remote location from town and from the main economic centers on the North Shore (Haleiwa, La'ie) and also due to the age of construction. The majority of the housing stock within 1 mile of the project site was constructed between 1980 and 1989 (221 units, or 51% of the total). Forty-two percent of the housing stock is nearly 40 years old and twenty percent of the homes within one mile of the project (87 units) were constructed prior to 1949.

Impacts and Mitigation

The proposed project will result in new residents moving to the Kahuku Village community, with a corresponding increase in population and changes to the demographics of the area. With full build-out, the proposed new residential lots, including the Village Vacant lots, golf course lots, and country lots, would more than double the number of households in the community from 72 to 170. Though it is not possible to predict the specific characteristics of the newcomers, it is reasonable to assume that they would include a range of ethnicities and incomes. The additional affordable housing opportunities created by the Village Vacant lots would attract low-income households from the entire island of O'ahu, particularly from La'ie and other North Shore communities. The market value of the planned golf course lots would limit sales to a high-income demographic. It is also likely that the golf course lots would be sold as second homes to individuals from outside of the islands. The influx of newcomers to the community would certainly change the ethnic mix, as well as change the economic composition in terms of median household income and housing stock. The

impact of these changes to the community are discussed in further detail at the end of Section 3.2.8.

3.2.9 SOCIO-ECONOMIC CONDITIONS

A socio-economic study and market analysis report were prepared for the project and are included at the end of the document as Appendix H and I respectively. The following are highlights from those reports.

Overview of Socio-Economic History and Settlement Pattern

The project area was not heavily populated by indigenous Hawaiians, relative to the bays and valleys to the south. Despite a good source of freshwater from Mālaekahana stream, the relatively dry, windy climate and sandy soils made cultivation difficult and other areas, such as Kahana Bay and Waimea Bay, more attractive for settlement. In the post contact period, Kahuku remained remote from the center of social and economic activity on O'ahu (Honolulu Harbor), and not particularly important as a center of native population or agricultural or commercial activity. In the late 1800s, the success of dry land water source development and distribution (drilling wells and irrigation networks) resulted in the success of agribusiness, specifically large scale plantation production of sugar and pineapple. The instigator of this water development was James Campbell, and the success he enjoyed led him to search out areas that were suitable for crop cultivation, particularly, flat land on the dry side of the island, i.e., Kaanapali, Ewa, Kahuku. In the project vicinity, he bought all of the land from Kawela Bay to Cooke's Point (border with Lā'ie).

Having determined that there was adequate sun and water for plantation agriculture, Campbell enlisted plantation operator Alexander and Baldwin, (A&B) to undertake cultivation of sugar cane in the area in 1890. A&B upgraded the transportation linkages with the rest of the island, began cultivation and ultimately constructed a processor plant (the sugar mill). While the cost of production remained below the national (and world) wholesale price of sugar, this business model was very successful.

While the plantation model at the beginning succeeded thanks to abundant inputs of water, sun, land and capital, the major chokepoint was applying sufficient labor to the process – there were only so many able bodied men on the island. Thus, the plantations actively imported field labor from Asia and elsewhere and then housing them onsite. As the cultivation spread to the outlying areas (Lā'ie, Hauula, Punaluu) and inland, more labor was needed, which resulted in successive waves of immigrants – Chinese, Japanese, Puerto Rican, Portuguese, Korean and Filipinos - moving into Kahuku. The town of Kahuku was thus populated and organized

around the plantation, with the sugar mill sitting symbolically and geographically at the center of economic and social activity.

The plantation created its own social pyramid or, within each particular culture, a “silo” with the field personnel at the broad base and their elders as village leaders, atop them. These social units functioned as discrete cultural “silos”, with little interaction between the various cultural and ethnic groups. On top of them, and across the silos, were the field bosses (generally Portuguese). Above them were the middle management (trade or skill based) and then finally the white collar top management, lead by the plantation manager.

At the height of plantation profitability, this enterprise supported 800 jobs directly, with a number of businesses – small at first, but growing overtime – in and around the area. This secondary business activity both directly serviced the plantation model, and supported the livelihood of the plantation families. Kahuku plantation itself had a store, a golf course and a hospital, but there was also a gas station, local farmer outlets, theatre, eateries, and other business owned and managed by first and second generation immigrant families. Places of worship were established as well – the occidental churches, and the oriental temples. For much of this period, the plantation was the only economic success in the area. The only other significant economic model in the region was the educational institution of the Mormon Church, which came into maturity after WWII.

The plantation model was quite successful up to WWII, at which time it came under pressure from foreign competition – mainly from Cuba and Philippines. Since those competitors had an advantage due to a lower wage structure – cheap labor, the Hawaiian plantations generally tried to nullify that by mechanizing: replacing mules and hand labor with trucks, tractors and cranes. This encouraged the Kahuku plantation workers to develop skills and trades, thus diversifying the socio-economic make-up of the community and narrowing the base of the social pyramid while expanding the middle.

There were several significant social and economic events (sand mining, tidal wave, economic boom) right after the end of the war that changed Kahuku’s society and economic base, the most important of which was the labor strike in 1947. The plantation worker’s decision to stop work and the ensuing hardship encouraged cross-cultural communications and interrelations. It also furthered the sense of independence that already characterized this rural, isolated community and began the process of social leveling, whereby the status of the workers and their families elevated, while that of the plantation management, descended, moving towards the current state of relative equality.

The viability of the plantation model continued to erode as foreign produced sugar increasingly challenged the profitability of Kahuku sugar produced for the tariff-protected markets in the U.S. mainland. Mechanization no longer offered a solution, and labor increased its share of the benefits to a point where the plantation was no longer economically viable and was closed down.

This outcome was well-forecast, and phased in over several years so the effects of the erosion of jobs and the reductions of income was somewhat mitigated by job transfers to other plantations, retirements, relocations and some public agency absorption. In particular, there were new hires at the state division of transportation, department of education, plus the creation of the regional fire and police stations. However, none of this created jobs in the community on the scale that had existed during the plantation heydays.

There was some hope for a one-for-one job replacement in the form of resort development in the area, specifically the zoning of a resort at the old manager's beach houses at Kawela Bay by Campbell Estate. The plantation found a buyer in Del Webb, a successful mainland developer, who entered this market with some expectation that gambling would be legalized in Hawaii. However, the legalization effort failed in the legislature and the hotel operation had to proceed as a mid-range hotel operation. Ultimately, the resort model did not flourish, partly because it was so far from the center of visitor activity, Waikiki, and partly because no other hotel was developed on the resort property, thereby severely limiting the potential growth of the resort. Indeed, the resort did not provide many jobs for Kahuku residents or for the surrounding areas of Lā'ie or the North Shore. There were field jobs, and infrastructure construction and maintenance jobs, but the total manpower needed to run the resort was a fraction of the plantation: 350 jobs vs. 700-800 jobs.

While the plantation ceased operation, the landowner, various efforts were made by the Campbell Estate, the city and state government, and the community to diversify the economic base and bring new businesses into the region. The impact to the community from the plantation closure was also buffered by the Campbell Estate allowing the residents to stay in their housing (substandard as it was) for close to zero rent through the formation of a for-profit management group, the Kahuku Housing Corporation.

The rise of the city's affordable housing program, fed by high real estate values and tax revenues during the 1988-1991 Japanese Bubble, coincided with renewed vigor in the Kahuku community's push towards home ownership. Community leaders worked with public officials

and the landowner to overcome the infrastructure deficiencies in the area (flooding, water, sewage) as well as the other impediments to affordable housing (land cost, infrastructure cost, construction and take out financing, mortgage qualification of low-income households). Ultimately, the Kahuku Housing Corporation formed a non-profit entity, the Kahuku Village Association (KVA) that built four phases of affordable housing for the Kahuku Village residents, known as Kahuku Village 1 through 4. Kahuku Village Phase 5, which corresponds to the current project site, was not completed at that time due to a number of issues, including dissension in the community (which lead to a change in the leadership of KVA), a drying up of financing, a flood and a change in market and economic conditions.

Impacts and Mitigation Measures

Development of the project as planned will result in significant changes to the Kahuku Village community. The key concerns voiced by residents who were interviewed for the project generally focuses on challenges to continuity of the community and the preservation of Kahuku's character and country lifestyle. The tangible manifestations of these interests are identified as follows:

Home Ownership

Entitled homeownership is fundamental to community stability. The primary social benefit of the project is to vest the current KV5 residents and others in the community with home ownership that is affordable. Under current conditions, the KV5 residents face great uncertainty about long-term tenure in their homes. Without vested rights of ownership, there always exists the possibility of permanent loss of the homes to natural disaster (due to lack of building permits, land use entitlements, and insurance to rebuild), or to the land owner's prerogative to change the land use.

As an affordable housing project, the planned development proposes to subsidize more than 100 affordable homes and lots through the sale of 30 prime market rate lots. The ratio of affordable units relative to the market units (>3 affordable to 1 market) is the inverse of typical affordable housing developments (normally 1 affordable to >3 market), and is overwhelmingly in favor of the community.

Improvements to infrastructure and utilities

Deteriorating infrastructure and utilities also contributes to pessimism about long-term community continuity. Underlying this pessimism is concern about the costs of improvements and who will bear them. The development plan proposes to relieve the residents of the cost of infrastructure and utility upgrades by subsidizing the costs

through the sale of prime market price lots.

Shoreline Preservation

The open shoreline is regarded as a community resource and symbol of the Kahuku lifestyle. It is used by the residents for a variety of social, cultural, and subsistence practices including fishing, camping, collecting, and recreation. Development along the shoreline would result in a perceived loss of the natural state of the beach. In addition, the presence of homes would create a sense of loss of access to the beach and its resources. The project makes two key concessions to these concerns: (1) in response to community comments the planned residential development has been moved away from the shoreline and outside of the beach dunes to the developed edge of the golf course; and (2) two beach parks will be created to provide permanent public shoreline access and recreational space. These two actions will preserve both the intactness of the shoreline environment and access to enjoy the resources there.

Preservation of Kahuku Golf Course

The golf course is valued by the community both for recreational use and as open space. Activities that change this use and the “openness” of the landscape are perceived as a threat to the Kahuku Village character and lifestyle. The current plan proposes to preserve the golf course for public use by taking two actions: (1) conveying the golf course facilities to a management entity with the provision that it remain open for public use; and (2) designating the golf course land as general preservation land (county P-2 zoning) through the HRS 201(h) subdivision process. The latter action precludes the use of the golf course land for residential development as has been proposed by other developers over the years.

Additional Concerns

In addition to these issues is concern about the introduction of outsiders, primarily affluent newcomers buying into the planned golf course and country lots, but also the addition of 60 or more low-income households. The chief issues related to this concern include:

- concern that socio-economic disparity will manifest in social segregation at the cost of community harmony;
- concern that affluent newcomers will exert political, cultural, economic and legal influence to change community norms; and,
- concern that the prime market price homes will drive up property taxes in the village.

If the project proceeds as planned, it is difficult to predict exactly how the existing residents and newcomers will interact and what the new social landscape will look like. Change on this scale will certainly bring with it frictions and a period of adjustment as new social and economic relationships are formed and neighborhood norms are reestablished. On the assumption that people generally don't aspire to be bad neighbors, the change will bring opportunities for strengthening the community as well.

Concerns about socio-economic harmony will exist so long as the plan involves development of residential lots priced at a higher market value than the existing residences. Given that the existing and proposed Village Lots are to be sold at affordable rates, any new market rate development would engender the same concerns whether it targets the luxury or median home market. The trade-off is in development density. The proposed plan concentrates the land value necessary to support the development costs and affordable home subsidy in a relatively limited number of luxury lots in order to keep the development density at a minimum. This in turn preserves open space and minimizes other impacts associated with higher-density development (demands on infrastructure, water, sewer, power, traffic, and public services). In comparison, the property would also support a development plan of 200 to 300 new residential lots at the cost of the golf course, increased infrastructure impacts, and similar concerns about social change.

The overall effect of the planned development would be to stabilize the area, inasmuch as it would stop the deterioration of the neighborhood and foster home ownership for the existing residents. The plan would also result in community growth by bringing new families into the area. The development plan addresses the economic and physical problems of the KV5 (leasehold status, deteriorating infrastructure) forthrightly, and attempts to remedy this by selling a limited number of home sites on the golf course and vacant, marginal agricultural land. Given the substantial magnitude of the land and development costs, both upfront and continuing, the plan is based on accessing a source of money – the latent land value – that is substantial, available and immediate. Moreover, the planned funding source is internally generated, as opposed to originating from external lenders, which are expensive, or from government sources, which are scarce. Under current circumstances, the sale of prime market price house lots best fits this criteria.

The benefits of the project, the strongest of which being providing the residents the opportunity for homeownership and the community with the chance to be revitalized,

represent a trade-off with the perceived adverse impacts to the shoreline and to social harmony from the creation of the market-priced golf course lots. Sale of the market lots is viable and offers a simple and direct path towards generating the sizeable surplus necessary for the affordable housing development and infrastructure improvements. In the event the development plan is rejected or is retracted, then the plantation village residents will return to uncertainty over their long-term housing prospects in that neighborhood. Undoubtedly, the property will go back on the market, with the hope that the next owner will have deeper pockets or a better plan.

Concerns about the affect on existing property taxes from the proximity of the prime market luxury lots have been addressed in consultation with the City and County of Honolulu Department of Budget and Fiscal Services (DBFS). The DBFS Real Property Assessment Division has clarified in written correspondence and in meetings with the Kahuku community that the value of the planned golf course and country lots will not affect the assessed value of the KV5 housing and lot development. The Tax Office will assess property value based on the value of the physical improvements on the subject property and in comparison with property with comparable characteristics and market position, in accordance with Chapter 8 of the Revised Ordinances of Honolulu. The KV5 lots will not be assessed in comparison to or based on the value of the luxury lots. (See **Appendix B – Agency Pre-Consultation Letters**.)

DBFS has also identified tax exemptions for which the existing and future residents might qualify, including exemptions for affordable housing, for elderly residents, and for disabled persons.

In addition, the Kahuku Village Association is working with members of the City Council on an ordinance that would mitigate the effect of escalating real property valuation for owners of affordable housing in Kahuku. The proposed ordinance would cap annual increases in real property assessed value at the rate of increase of the Consumer Price Index from the previous year. This would effectively dampen dramatic fluctuations in the market.

The proposed project is not expected to have adverse economic impacts. Economic benefits from the proposed project will result from construction jobs, services, and procurements in the form of construction supplies and equipment. These benefits will be temporary however, and will cease when the project is complete. Long-term economic benefits will result from the increased demand for goods and services by the increased number of families moving into the community.

3.3 INFRASTRUCTURE AND UTILITIES

3.3.1 TRAFFIC AND TRANSPORTATION SYSTEMS

Existing Traffic Conditions

The proposed project will be served by local streets that connect to Kamehameha Highway via Pu‘uluana Place and South Golf Course Road. Kamehameha Highway is a two-lane highway under the jurisdiction of the State of Hawaii Department of Transportation. In the vicinity of the intersections with Pu‘uluana Place and with South Golf Course Road, the posted speed limit on the highway is 35 miles per hour.

Table 3-14 shows the historical traffic volumes on the highway between Pu‘uluana Place and Lā‘ie. Average day volumes and typical peak hour volumes in 1995, 1996, and 1997 are based on the Average Daily Traffic (ADT) estimates and factors for peak hour traffic published by the State Highways Division. The most recent published traffic counts of highway traffic at the nearby Mālaekahana Stream Bridge are also shown.

	Average weekday Two-way total	AM Peak Hour		PM Peak Hour	
		SB	NB	SB	NB
1 = southbound, 2 =northbound					
1995 average day*	10,328	395	483	511	418
1996 average day*	10,523	355	434	492	402
1997 average day*	9,656	369	451	451	369
March 2005 counts (average of 2 days)	12,112	378	467	578	492
June 2006 counts (average of 2 days)	10,867	322	332	459	475

Source: State of Hawaii, Department of Transportation, Highway Planning Branch

As indicated by the highway volumes shown in Table 3.3-1, the AM Peak Hour volumes at the intersection have not changed significantly. The PM Peak Hour volumes and the daily totals increased by approximately 20% between 1996 and 2005 (the lower volumes counted in 2006 may be due to school schedules or seasonal variation). The increase from 1996 to 2005 reflects an average annual increase of 2 percent per year.

Pu‘uluana Place intersects the highway at a cross-intersection where vehicular and pedestrian movements are controlled by a traffic signal. The intersection consists of the highway

approaches, Pu‘uluana Place, and a driveway to Kahuku High and Intermediate School that is located directly across the highway from Pu‘uluana Place. Each approach consists of a single lane shared by all movements. The north (makai) leg of Pu‘uluana Place serves about half of the existing uses on the project site and other neighboring uses, including a 64-unit elderly housing site and a church. Manual traffic counts taken at the intersection showed a peak volume of approximately 1,300 vehicles per hour during the peak hours using the intersection. Table 3-15 shows peak hourly volumes recorded for Pu‘uluana Place traffic from the recent count.

Table 3-15				
Traffic Volumes on Pu‘uluana Place North of Kamehameha Highway				
	AM Peak Hour		PM Peak Hour	
	approach	departure	approach	departure
February, 2008 counts	61	71	65	62
Source: The Traffic Management Consultant (unpublished counts)				

The estimated capacity of a signalized intersection is 1,200 vehicles per hour if none of the vehicular movements can be made concurrently. At the Kamehameha Highway and Pu‘uluana Place intersection, many movements can be made concurrently (e.g., opposing through movements on the highway), and the intersection operates under capacity, even during peak hours.

South Golf Course Road intersects Kamehameha Highway as the stem of a “T”-intersection. South Golf Course Road serves the remainder of the existing uses on the project site. Traffic on South Golf Course Road entering the intersection is controlled by a stop sign and vehicles wishing to turn onto the highway must wait for an adequate gap in the highway traffic streams to proceed. Existing traffic volumes on South Golf Course Road, based on a recent count (Table 3-16), are well under the capacity (about 200 vehicles per hour) of a minor street approach controlled by a stop sign at a highway with a volume of 1,200 vehicles per hour (Exhibit 17-6 of the *Highway Capacity Manual*).

Table 3-16				
Traffic Volumes on South Golf Course Road North of Kamehameha Highway				
	AM Peak Hour		PM Peak Hour	
	approach	departure	approach	departure
February, 2008 counts	18	9	19	27
Source: The Traffic Management Consultant (unpublished counts)				

Impacts and Mitigation Measures

The proposed project will increase traffic volumes in the area. The existing uses are not expected to change, so existing traffic generated by these uses will continue with no change in magnitude or pattern of travel. Therefore, the traffic generated by the existing uses, including 72 occupied residences, 2 beach parks, 2 cemeteries, the golf course, and the open space already exists. The project traffic impact would be due to the increases caused by the addition of dwelling units on the vacant residential lots for affordable housing, the shoreline lots, and the country lots. Each of the lots will be limited by zoning or covenants to a single dwelling unit, and further subdivision of large lots will not be permitted.

The project will add 64 affordable residential lots and 30 other lots. Most, but not all of the lots are expected to be used for residential purposes (some of the lots may remain as open space). The traffic impacts of the additional lots have been estimated using trip rates from the *Trip Generation*, a widely-used reference manual published by the Institute of Transportation Engineers. Examples of rates for various types of dwellings are shown in **Table 3-17**.

Table 3-17						
Trip Generation Rates, per Dwelling Unit						
	Average weekday		AM Peak Hour		PM Peak Hour	
Dwelling type	Rate	entering	rate	entering	rate	entering
Detached single family	9.57	50%	0.75	25%	1.01	63%
Apartment	6.72	50%	0.51	20%	0.62	65%
Recreational home	3.16	50%	0.16	67%	0.26	41%
Senior adult (detached)	3.71	50%	0.20	38%	0.26	61%

Source: Institute of Transportation Engineers, *Trip Generation*, 7th Edition

A high-range estimate of the project impact to traffic is computed by applying the highest rates on the total number of lots, which assumes that each lot will have a new dwelling used by typical suburban commuters in a detached single family dwelling. **Table 3-18** shows the traffic impacts.

		Average weekday		AM Peak Hour		PM Peak Hour	
Component		entering	exiting	entering	exiting	entering	exiting
67	Residential lots	321	321	13	38	43	25
18	Shoreline lots	86	86	3	10	11	7
12	Country lots	57	57	2	7	8	4
Total Project Impact		464	464	18	55	62	36

The additional traffic would be distributed onto two roadways that connect to Kamehameha Highway: Pu'uluana Place and South Golf Course Road. The traffic volumes generated by each type of dwelling units were distributed to these two streets based on the site layout and the road network. The additional traffic is expected to turn onto Kamehameha Highway in either the northwest (Waimea) direction or the Lā'ie (southeast) direction in a manner similar to existing traffic. Peak hour traffic counts taken at Pu'uluana Place in 1996 as part of the traffic study for the installation of the traffic signals at the intersection with the highway were used to distribute the project traffic. The project traffic distribution is shown in Table 3-19.

The project impact, therefore, will be less than 100 vehicles per hour in one direction on any roadway segment during either peak hour and smaller impacts would be expected during other hours. The project impact is less than the threshold of significant traffic impact, as suggested by the Institute of Transportation Engineers "that a traffic access/impact study be conducted whenever a proposed development will generate 100 or more added (new) peak direction trips to or from the site during the adjacent roadways' peak hours or the development's peak hour" (*Traffic Access and Impact Studies for Site Development*, Washington, D.C., 1991).

		Average weekday		AM Peak Hour		PM Peak Hour	
		entering	exiting	entering	exiting	entering	exiting
Total Project Impact		464	464	18	55	62	36
Street used for access							
Pu'uluana Place		228	228	9	27	31	18
S. Golf Course Road		236	236	9	28	31	18
Direction on Kamehameha Highway *							
From/to Lā'ie				10	20	37	17
From/to Waimea				8	35	22	18
* based on unpublished counts from The Traffic Management Consultant							

Table 3-20 shows the project impact on highway traffic volumes, assuming the project traffic is added to existing volumes. These increases compare to the 2% average annual increase in traffic between 1996 and 2005. If the dwellings on the vacant lots provided by the project are used by existing residents in the area who currently are living in multiple-household dwellings, the impact to highway traffic would be less than those shown in Table 3.3-7.

Table 3-20			
Project Traffic Impact on Highway Traffic			
	Average weekday	AM Peak Hour	PM Peak Hour
Total Project Impact	464	73	98
Existing highway traffic*	12,112	845	1070
Lā'ie direction	280**	30	54
Potential increase	2.3%	3.6%	5.0%
Waimea direction	185**	43	40
Potential increase	1.5%	5.1%	3.7%
* based on March 2005 traffic counts			
** assuming 60% to /from Lā'ie			

Based on the above analysis, no significant long-term impacts to existing traffic levels are expected to result from planned development.

Proposed project activities will require staging and construction activities on the roadway corridors within Kahuku Village 5. Work activities will also take place immediately adjacent to Kamehameha Highway. Construction will not involve work within lanes of travel on Kamehameha Highway.

Construction of the proposed project is not expected to significantly impact the flow of traffic on Kamehameha Highway. Occasional increases in construction traffic may result from the periodic movement of construction materials and when vehicles leave the site to remove debris. Construction activities may result in motor vehicle, bicycle, and pedestrian traffic slow downs from temporary detours on Pualuana Place, South Golf Course Road, and within the residential areas. Occasional, short-term re-routing of traffic will be required.

Access will be maintained within the existing vehicle corridors throughout the work period. As required, construction personnel will use flags or other appropriate signaling devices along Kamehameha Highway to maintain safety when construction vehicles

enter and leave the project site. A traffic control plan will be prepared for this project and submitted to the County with the construction drawings during plan review. Traffic control barricades, cones, signage, and lighting will be used as necessary to alert drivers and delineate construction boundaries. Approach signs and a flag person will be positioned to direct traffic through temporary traffic controls as necessary.

Based on these measures, no significant adverse impacts are expected to result from this project.

3.3.2 POTABLE WATER SYSTEM

The Kahuku Village community's drinking water supply is provided through a 3-inch master water meter connected to the County Board of Water Supply (BWS) water main located within the Kamehameha Highway public right-of-way. Downstream from the master meter, a private water distribution system conveys potable water to the individual residences and other commercial and community uses. Each end user draws water through a sub-meter which provides readings for individual billing purposes. The entire private water distribution system and billing is managed by the Kahuku Village Association.

The existing system was renovated in 1997 to correct substandard conditions and repair leaks that contributed to the loss of over 1.5 million gallons per month. The system is not sized to provide adequate pressure for fire protection. A schematic of the existing water system is shown in **Figure 2-4**. A description of proposed improvements is included in **Section 2.1.5**.

Based on consultation with BWS, the existing water system is adequate to accommodate 147 units within Kahuku Village 5 plus an additional 18 units for the shoreline lots for a total allocation of 165 units. The owner currently has 92 water allocation units for which water system facilities charges are paid. The remaining 73 units will be required to pay the BWS water systems facility charge for resource development, transmission, and storage. See letter from BWS dated February 25, 2008 in **Appendix B**.

Impacts and Mitigation Measures

Planned improvements include installation of new main lines and service laterals sized to provide adequate water pressure for fire protection. The new main line will consist of a looped system following the planned collector and access street improvements. Laterals for potable water service will be provided to each new lot. Fire hydrants will be installed every 300 feet in compliance with the fire code.

The BWS water service allocation is adequate for the existing 72 residences, plus an additional 93 new lots. The plan calls for the development of 97 residential lots in addition to the existing homes (64 in-fill lots, 18 shoreline lots, and 12 country lots), plus the new golf course maintenance warehouse lot. The golf course club house is serviced by its own meter and water allocation, thus is not included in the count. Based on these counts, additional water allocation of 5 units will be required for the project to achieve full development as planned.

3.3.3 DRAINAGE SYSTEM

Drainage in the Kahuku area has been a significant concern due to the low elevations, high groundwater table, and off-site run-on flows that follow the Mālaekahana Stream channel and Kahuku Hospital ditch during storm events.

Roadways within the project area are not serviced by a drainage system. Runoff from the KV5 roads sheet-flows into grass swales and grade depressions along the road corridors and is absorbed through ground percolation and evaporation or conveyed off-site in surface flows. Prevailing drainage patterns within the project site vary based on localized topography. In general, grades within KV5 flow towards Kamehameha Highway and towards Mālaekahana Stream channel. A topographical rise towards the golf course forms a crest that splits flows and directs the majority of the golf course runoff in the direction of the shoreline where it flows through a low point in the dunes and is absorbed in the sand soils.

Impacts and Mitigation Measures

During construction, Best Management Practices will be employed to ensure that polluted storm water runoff does not discharge from the project site into State waters. All construction activities will be undertaken in compliance with HAR Chapter 11-54, Water Quality Standards, and Chapter 11-55, Water Pollution Control.

The planned drainage system improvements consist primarily of swales, including the use of roadway pavements designed with inverted crowns to function as part of the swale system. In some areas of the village, subsurface drain pipes will be used as necessary to convey water to the existing swale system and to bypass surface obstructions. New drain inlets and culvert crossings will be installed as necessary. Storm water runoff from the KV5 residential area will be directed to Mālaekahana Stream or to the existing swale on Kamehameha Highway which likewise directs flows to the Mālaekahana Stream channel. Improvements are described in further detail in **Section 2.1.8**.

Drainage system improvements will result in more efficient and rapid conveyance of storm water flows away from the existing and planned residential properties and will mitigate current conditions of ponding and rutting experienced in the village following storm events. For additional discussion, see also **Section 3.1.8**.

3.3.4 WASTEWATER SYSTEM

The existing residences rely on individual and gang cesspools for waste water disposal. See **Section 2.1.6** for a detailed description of the existing condition and proposed improvements.

The Kahuku Wastewater Treatment Plant (WWTP) is located to the north of Kahuku town near the Ki'i Pond Wildlife Refuge. It is the only municipal wastewater treatment facility in Ko'olau Loa. It has a design capacity of 0.4 mgd average flow and is operating at approximately one-third capacity.

Impacts and Mitigation Measures

The proposed action will greatly benefit the community by removing the existing cesspools and replacing them with septic systems. The project will not connect to the Kahuku WWTP, thus will not create demands on treatment capacity. In the future, when the plant is upgraded to treat waste water effluent to R1 levels, the Kahuku Golf Course may use the recycled water for irrigation, thereby eliminating the need for disposal by means of injection wells as is currently practiced.

Construction activities will result in a temporary increase in wastewater generation. Port-a-johns will be used during construction and will be discharged off-site in compliance with State and County regulations. No additional mitigation measures are required or recommended.

3.3.5 ELECTRICAL AND COMMUNICATIONS SYSTEMS

The electrical power and communications utilities which serve Kahuku are privately owned by Hawaiian Electric Company (HECO), Verizon Hawaii, Pacific Light Net, Inc., and Oceanic Cablevision. Existing overhead HECO transmission lines on the makai side of Kamehameha Highway deliver 46 kV power to the Hauula and Kahuku substations, which then steps power down to 11.5 kV for overhead distribution in Kahuku. Overhead utility poles on Kamehameha Highway are shared by HECO Verizon Hawaii and Oceanic Cable. On Pu'uluana Place, two sets of overhead utility poles, convey power, phone, and cable lines. Overhead utility lines are then distributed through the KV5 residential area on poles that follow the South Golf Course

Road alignment and extend into the adjacent access roads.

The existing utility poles and service lines will remain in place and unchanged as much as possible. Some poles may require relocation to accommodate planned street improvements within the KV5 residential area. Power and communication utility lines to service the new shoreline lots and country lots will be installed in underground conduits within the planned 26-foot loop road corridor.

Impacts and Mitigation Measures

The HECO system has adequate service capacity to meet the projected power requirements of the proposed new residential development. Proposed improvements will not adversely effect the provision of electrical power in the community.

Proposed undergrounding of utility lines will have no long-term effect on service, although there will be temporary interruptions when services are transferred to the installed underground lines. Community members will be notified of scheduled interruptions in service. Conduits, pull-boxes, and manholes will be designed in accordance with applicable engineering standards. No adverse impacts to utility services are expected to result from this project, and no additional mitigation measures are recommended.

3.3.6 SOLID WASTE DISPOSAL SYSTEM

Solid waste collection, transport and disposal operations on O'ahu are the responsibility of the City Department of Environmental Services, Refuse Division and private haulers. Individuals can also take their own trash to the "convenience center" in Lā'ie where they can dispose of household rubbish, green waste and large items.

Presently the solid waste generated by Kahuku residents is collected by both private vendors and by the City and County of Honolulu and disposed of at the Waimanalo Gulch landfill near Ewa or the H-Power facility in Campbell Industrial Park. The City also operates a "convenience center" out of its Corporation Yard near La'ie, approximately 3 miles from the project site. Depending on the type, waste from the convenience center is recycled, combusted, or disposed of in a landfill.

Impacts and Mitigation Measures

The proposed project is not expected to result in significant increases in solid waste, and will not have an adverse impact on the solid waste disposal system. All solid waste

SECTION 3 - Description of Affected Environment

generated by construction activities will be disposed of off-site by the project contractor in compliance with City and County of Honolulu regulations. Construction waste will not be disposed of at the City-operated “convenience center”.

SECTION 4

Relationship to State & County

Land Use Plans and Policies

4.1 THE HAWAII STATE PLAN

The Hawaii State Plan, Chapter 226, Hawaii Revised Statutes, serves as a written guide for the future long range development of the State. The Plan identifies statewide goals, objectives, policies, and priorities. The proposed project would be in conformance with the following sections of the State Plan:

Section 226-11 Objectives and policies for the physical environment--land-based, shoreline, and marine resources.

(a) Planning for the State's physical environment with regard to land-based, shoreline, and marine resources shall be directed towards achievement of the following objectives:

(1) Prudent use of Hawaii's land-based, shoreline, and marine resources.

(2) Effective protection of Hawaii's unique and fragile environmental resources.

(b) To achieve the land-based, shoreline, and marine resources objectives, it shall be the policy of this State to:

(3) Take into account the physical attributes of areas when planning and designing activities and facilities.

(4) Manage natural resources and environs to encourage their beneficial and multiple use without generating costly or irreparable environmental damage.

(6) Encourage the protection of rare or endangered plant and animal species and habitats native to Hawaii.

(7) Provide public incentives that encourage private actions to protect significant natural resources from degradation or unnecessary depletion.

(8) Pursue compatible relationships among activities, facilities, and natural resources.

(9) Promote increased accessibility and prudent use of inland and shoreline areas for public recreational, educational, and scientific purposes.

Discussion:

The development plan has been created based on careful study and evaluation of the existing shoreline environment and its constituent plant and animal species. All development activity has been voluntarily setback behind the shoreline dune ecosystem in order to preserve the dune function as a sand reservoir for beach replenishment, buffer against coastal erosion, storm surge and tsunami, and as habitat for native plants and animals. Two public beach parks will be created to ensure public access to the shoreline for recreational and cultural activities.

Section 226-12 Objective and policies for the physical environment--scenic, natural beauty, and historic resources:

(a) Planning for the State's physical environment shall be directed towards achievement of the objective of enhancement of Hawaii's scenic assets, natural beauty, and multi-cultural/historical resources.

(b) To achieve the scenic, natural beauty, and historic resources objective, it shall be the policy of this State to:

- (1) Promote the preservation and restoration of significant natural and historic resources.*
- (2) Provide incentives to maintain and enhance historic, cultural, and scenic amenities.*
- (3) Promote the preservation of views and vistas to enhance the visual and aesthetic enjoyment of mountains, ocean, scenic landscapes, and other natural features.*
- (4) Protect those special areas, structures, and elements that are an integral and functional part of Hawaii's ethnic and cultural heritage.*

Discussion:

The development plan is designed to preserve the existing, historic plantation village homes, both in the interest of securing homeownership for the existing residences, and in order to keep the country "country". Proposed improvements will preserve the rural character of Kahuku Village by maintaining low density land uses, "country standard" roadways, and existing open spaces. In addition, the shoreline dunes will be preserved by means of a voluntary development setback that will restrict development activities shoreward of the primary dune line.

Views toward the coast from Kamehameha Highway will remain largely as is. Planned residential development along the makai edge of the golf course will be apparent from some areas at the edge of the existing KV5 residential neighborhoods and from locations on the golf

course. Codes, covenants, and restrictions on building height, footprint, and site layout will ensure open space views are preserved. Landscape and building materials will be selected for compatibility with the surrounding setting, including the use of plants native to the ecosystem. Proposed undergrounding of utilities servicing the planned golf course lots will minimize visual impacts to mauka-makai views from the golf course. In addition, public beach access will be provided through development of two new beach parks at the north and south ends of the project site.

Section 226-13 Objectives and policies for the physical environment—land, air, and water quality.

(a) Planning for the State's physical environment with regard to land, air, and water quality shall be directed towards achievement of the following objectives:

(1) Maintenance and pursuit of improved quality in Hawaii's land, air, and water resources.

(2) Greater public awareness and appreciation of Hawaii's environmental resources.

(b) To achieve the land, air, and water quality objectives, it shall be the policy of this State to:

(5) Reduce the threat to life and property from erosion, flooding, tsunamis, hurricanes, earthquakes, volcanic eruptions, and other natural or man-induced hazards and disasters.

(6) Encourage design and construction practices that enhance the physical qualities of Hawaii's communities.

Discussion:

The project includes measures to improve drainage and mitigate flooding within Kahuku Village. Planned clearing of the Mālaekahana Stream Channel will eliminate obstructions and expand channel capacity to facilitate more efficient conveyance of flood waters during storm events. As a major land owner in Kahuku, Continental Pacific is committed to being a cooperative partner with state and federal agencies as they undertake study and design of regional flood mitigation projects.

Based on coastal hazard studies commissioned by the land owner, and in consultation with faculty at the University of Hawaii Coastal Geology Group, the landowner is voluntarily establishing a primary dune setback line and preserving the beach dune system to function as a natural, protective buffer against storm surge and tsunamis.

§226-15 Objectives and policies for facility systems--solid and liquid wastes.

- (a) Planning for the State's facility systems with regard to solid and liquid wastes shall be directed towards the achievement of the following objectives:*
 - (1) Maintenance of basic public health and sanitation standards relating to treatment and disposal of solid and liquid wastes.*
 - (2) Provision of adequate sewerage facilities for physical and economic activities that alleviate problems in housing, employment, mobility, and other areas.*
- (b) To achieve solid and liquid waste objectives, it shall be the policy of this State to:*
 - (1) Encourage the adequate development of sewerage facilities that complement planned growth.*
 - (2) Promote re-use and recycling to reduce solid and liquid wastes and employ a conservation ethic.*

Discussion:

The development plan calls for the replacement of existing individual and gang cesspools with new septic leach field or aerobic systems. At present, there is no county sewer service to the KV 5 residential areas. In consultation with the Department of Health, a plan is being developed to replace the 60 cesspools that serve the existing 72 residences in KV5 with new septic systems. See Section 2.1.6 for detailed discussion of the proposed improvements.

In addition, future improvements to the golf course may include installation of an irrigation system utilizing recycled R-1 water from the Kahuku Waste Water Treatment Plant (WWTP). At present the Kahuku WWTP treats water to R-3 levels and disposes of the effluent by means of injection well. R-3 water is not suitable for irrigation purposes. The Ko'olau Loa Sustainable Communities Plan calls for upgrades to the Kahuku WWTP to facilitate effluent reuse for irrigation purposes. In addition to WWTP improvements, a non-potable water distribution system will be required to convey recycled effluent from the WWTP to the end use.

Section 226-19 Objectives and policies for socio-cultural advancement--housing.

- (a) Planning for the State's socio-cultural advancement with regard to housing shall be directed toward the achievement of the following objectives:*
 - (1) Greater opportunities for Hawaii's people to secure reasonably priced, safe, sanitary, and livable homes, located in suitable environments that satisfactorily accommodate the needs and desires of families and individuals, through collaboration and cooperation between government and nonprofit and for-profit developers to ensure that more affordable housing is made available to very low-, low- and moderate-income segments of Hawaii's population.*

- (2) The orderly development of residential areas sensitive to community needs and other land uses.*
- (b) To achieve the housing objectives, it shall be the policy of this State to:*
 - (1) Effectively accommodate the housing needs of Hawaii's people.*
 - (2) Stimulate and promote feasible approaches that increase housing choices for low-income, moderate-income, and gap-group households.*
 - (3) Increase homeownership and rental opportunities and choices in terms of quality, location, cost, densities, style, and size of housing.*
 - (4) Promote appropriate improvement, rehabilitation, and maintenance of existing housing units and residential areas.*
 - (5) Promote design and location of housing developments taking into account the physical setting, accessibility to public facilities and services, and other concerns of existing communities and surrounding areas.*
 - (6) Facilitate the use of available vacant, developable, and underutilized urban lands for housing.*
 - (7) Foster a variety of lifestyles traditional to Hawaii through the design and maintenance of neighborhoods that reflect the culture and values of the community.*

Discussion:

One of the primary objectives of the proposed development plan is to secure affordable home ownership for the existing residents of the Kahuku Village 5 plantation community. See **Section 1.3** and **Section 2.1** for a full discussion.

226-23 Objective and policies for socio-cultural advancement--leisure:

- (a) Planning for the State's socio- cultural advancement with regard to leisure shall be directed towards the achievement of the objective of the adequate provision of resources to accommodate diverse cultural, artistic, and recreational needs for present and future generations.*
- (b) To achieve the leisure objective, it shall be the policy of this State to:*
 - (3) Enhance the enjoyment of recreational experiences through safety and security measures, educational opportunities, and improved facility design and maintenance.*
 - (5) Ensure opportunities for everyone to use and enjoy Hawaii's recreational resources.*

Discussion:

The project will have a positive impact on public recreational resources through development of the two new beach parks and preservation of the existing Kahuku Golf Course for public use.

No other recreational resources will be affected by the proposed project and no adverse impacts to recreational resources will result from the planned development.

§226-25 Objective and policies for socio-cultural advancement—culture.

(a) Planning for the State's socio-cultural advancement with regard to culture shall be directed toward the achievement of the objective of enhancement of cultural identities, traditions, values, customs, and arts of Hawaii's people.

(b) To achieve the culture objective, it shall be the policy of this State to:

(1) Foster increased knowledge and understanding of Hawaii's ethnic and cultural heritages and the history of Hawaii.

(2) Support activities and conditions that promote cultural values, customs, and arts that enrich the lifestyles of Hawaii's people and which are sensitive and responsive to family and community needs.

(3) Encourage increased awareness of the effects of proposed public and private actions on the integrity and quality of cultural and community lifestyles in Hawaii.

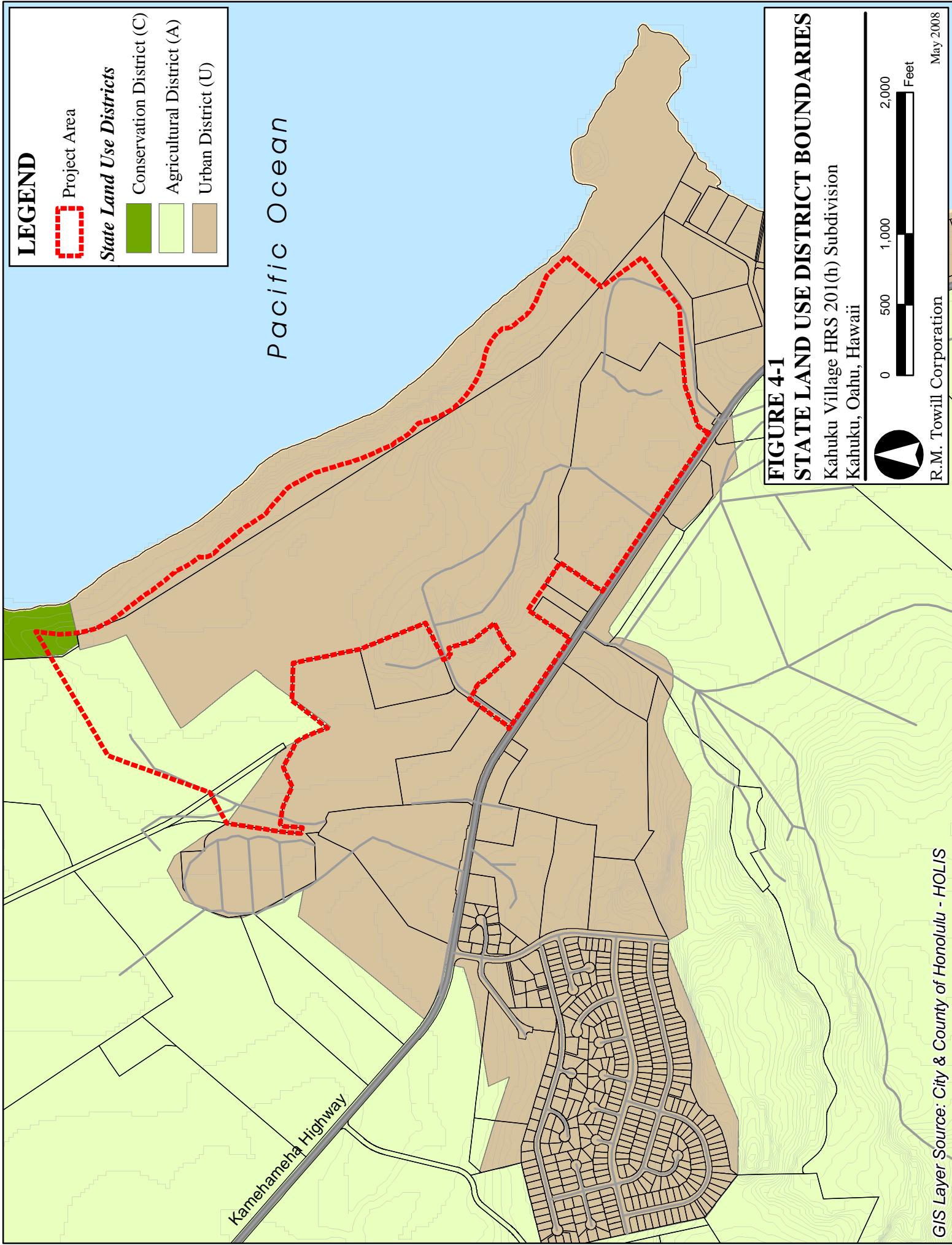
(4) Encourage the essence of the aloha spirit in people's daily activities to promote harmonious relationships among Hawaii's people and visitors.

Discussion:

The project is being undertaken in the spirit of keeping the country country. The development plan is explicit in its purpose of securing the existing plantation village homes for continued use by the existing residents through an affordable home purchase program. In response to community desires, the development plan includes preservation of Kahuku Golf Course, caretaking of the existing, historic cemeteries, and creation of two new beach parks to ensure continued public access to the shoreline. The plan has been carefully developed to preserve the characteristics and land uses within the village that the residents hold dear, and to preserve the open space character of the area.

4.2 STATE LAND USE LAW

The project site and the surrounding area are within the State Agriculture, Urban, and Conservation Land Use Districts (see **Figure 4-1**). The majority of the project area, including the Kahuku Village 5 residential areas, Golf Course, shoreline dunes, Adams Field, and the 4.4-acre beach park, is located within the State Urban District. Project activities in the State Urban District are subject to zoning regulations under the City and County of Honolulu Land Use Ordinances (see **Section 4.4** below.)



LEGEND

Project Area



State Land Use Districts

Conservation District (C)

Agricultural District (A)

Urban District (U)

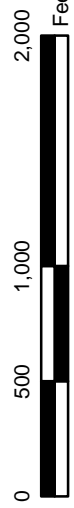
Pacific Ocean

Kamehameha Highway

FIGURE 4-1

STATE LAND USE DISTRICT BOUNDARIES

Kahuku Village HRS 201(h) Subdivision
Kahuku, Oahu, Hawaii



The proposed country lots are located within the State Agriculture and Urban Land Use Districts. The agricultural lands are considered marginal and are not within the land study bureau's land classification productivity rating class A or B. A state land use district boundary change is not expected to be required to accommodate the proposed creation of the country lots on these lands. The proposed country lots will be developed in accordance with Hawaii Revised Statutes Chapter 205 Section 4.5 and in accordance with rules and regulations established by the State Land Use Commission.

The proposed 0.9-acre beach park is the only portion of the project site located within the State Conservation District (County zoning P-1). The proposed use of the land for a passive beach park is a permitted use within the Conservation District. Planned improvements include gravelling the existing dirt access road. No other improvements to the park are proposed.

4.3 CITY AND COUNTY GENERAL PLAN

The City and County of Honolulu General Plan serves as a written guide for the future long-range development and welfare of O'ahu. The Plan identifies island-wide goals, objectives, policies, and priorities for achieving the aspirations of O'ahu's residents. The proposed project is in accordance with the following objectives of the City and County General Plan:

Section III. Natural Environment:

Objective A - To protect and preserve the natural environment.

- *Policy 1 - Protect O'ahu's natural environment, especially the shoreline, valleys, and ridges, from incompatible development.*
- *Policy 2 - Seek the restoration of environmentally damaged areas and natural resources.*
- *Policy 4 - Require development projects to give due consideration to natural features such as slope, flood and erosion hazards, water - recharge areas, distinctive land forms, and existing vegetation.*
- *Policy 5 - Require sufficient setbacks of improvements in unstable shoreline areas to avoid the future need for protective structures.*
- *Policy 7 - Protect the natural environment from damaging levels of air, water, and noise pollution.*
- *Policy 8 - Protect plants, birds, and other animals that are unique to the State of Hawaii and the Island of O'ahu.*

Objective B - To preserve and enhance the natural monuments and scenic views of O'ahu for the benefit of both residents and visitors.

- *Policy 2 - Protect O'ahu's scenic views, especially those seen from highly developed and heavily traveled areas.*
- *Policy 3 - Locate roads, highways, and other public facilities and utilities in areas where they will least obstruct important views of the mountains and the sea.*
- *Policy 4 - Provide opportunities for recreational and educational use and physical contact with O'ahu's natural environment.*

Discussion:

This EA document provides an assessment of potential impacts to the environment resulting from proposed project activities. Planned development will not significantly alter existing conditions with respect to natural features. Mitigation measures proposed in Section 3 of this document will protect the environment from damaging levels of air, water, and noise pollution. The development will be subject to a voluntary shoreline setback in excess of the City and County's 60-foot setback. The proposed setback is based on an analysis of the primary beach dune system and is established to ensure that continued preservation and function of the dune system as a natural protective barrier from coastal forces and as a habitat for native plants and animals.

The proposed golf course lots will alter existing views of the shoreline from certain locations on the golf course and periphery, but will not block sight to or from the coast. Gaps between the houses will ensure continuous line of sight between the golf course and the ocean. Additionally, public beach access will be maintained through the planned beach parks at each end of the shoreline to provide unobstructed recreational access and a direct line of sight to the ocean. Undergrounding of aerial utility lines to service the shoreline lots is proposed to eliminate the visual intrusion of power poles.

Section IV. Housing

Objective A - To provide decent housing for all the people of O'ahu at prices they can afford.

- *Policy 1 - Develop programs and controls which will provide decent homes at the least possible cost.*
- *Policy 2 - Streamline approval and permit procedures for housing and other development projects.*

- *Policy 3 - Encourage innovative residential development which will result in lower costs, added convenience and privacy, and the more efficient use of streets and utilities.*
- *Policy 4 - Establish public, and encourage private, programs to maintain and improve the condition of existing housing.*
- *Policy 7 - Provide financial and other incentives to encourage the private sector to build homes for low and moderate-income residents.*
- *Policy 8 - Encourage and participate in joint public- private development of low- and moderate- income housing.*
- *Policy 9 - Encourage the preservation of existing housing which is affordable to low- and moderate-income persons.*

Discussion

The primary objective of the proposed development plan is to secure affordable home ownership for the existing residents of the Kahuku Village 5 plantation community. See **Section 1.3** and **Section 2.1** for a full discussion.

Section VII. Physical Development and Urban Design

Objective D - To maintain those development characteristics in the urban-fringe and rural areas which make them desirable places to live.

- *Policy 4 - Maintain rural areas as areas which are intended to provide environments supportive of lifestyle choices which are dependent on the availability of land suitable for small to moderate size agricultural pursuits, a relatively open and scenic setting, and/or a small town, country atmosphere consisting of communities which are small in size, very low density and low rise in character, and may contain a mixture of uses.*

Objective E - To create and maintain attractive, meaningful, and stimulating environments throughout O'ahu.

- *Policy 3 - Encourage distinctive community identities for both new and existing districts and neighborhoods.*
- *Policy 5 - Require new developments in stable, established communities and rural areas to be compatible with the existing communities and areas.*
- *Policy 8 - Preserve and maintain beneficial open space in urbanized areas.*

Objective F - To promote and enhance the social and physical character of O'ahu's older towns and neighborhoods.

- *Policy 1 - Encourage new construction to complement the ethnic qualities of the older communities of O'ahu.*
- *Policy 2 - Encourage, wherever desirable, the rehabilitation of existing substandard structures.*

- *Policy 3 - Provide and maintain roads, public facilities, and utilities without damaging the character of older communities.*

Discussion

The proposed project is planned to provide existing residents of the historic Kahuku Village 5 plantation community with an opportunity to purchase their existing homes through the HRS 201(h) affordable housing subdivision process. The development plan is guided by the principle of preserving the existing rural character of the community by maintaining low-density residential development, preserving open space areas (Kahuku Golf Course, beach dune system, and two beach parks), and promoting rural development standards for roadway improvements (swales in lieu of curb and gutter, no sidewalks).

Section X. Culture and Recreation

Objective B - To protect O'ahu's cultural, historic, architectural, and archaeological resources.

- *Policy 1 - Encourage the restoration and preservation of early Hawaiian structures, artifacts, and landmarks.*

Objective D - To provide a wide range of recreational facilities and services that are readily available to all residents of O'ahu.

- *Policy 1 - Develop and maintain community-based parks to meet the needs of the different communities on O'ahu.*
- *Policy 6 - Provide convenient access to all beaches and inland recreation areas.*
- *Policy 9 - Require all new developments to provide their residents with adequate recreation space.*
- *Policy 10 - Encourage the private provision of recreation and leisure-time facilities and services.*
- *Policy 12 - Provide for safe and secure use of public parks, beaches, and recreation facilities.*

Discussion

An archaeological inventory survey and cultural impact assessment is being prepared for the project. In the event that archaeological resources or pre-contact burials are discovered, a preservation and/or burial treatment plan will be prepared in accordance with State law to ensure proper handling of the resources or remains.

The project includes development of two beach parks to be managed by a private entity for public use and beach access. Access to the parks will remain open during daylight hours. At

night, access for fishing and other activities will be available by arrangement with the managing entity to ensure safety and security. In addition, the existing Kahuku Golf Course will be preserved and managed for continued public use.

4.4 CITY AND COUNTY LAND USE ORDINANCES (LUO)

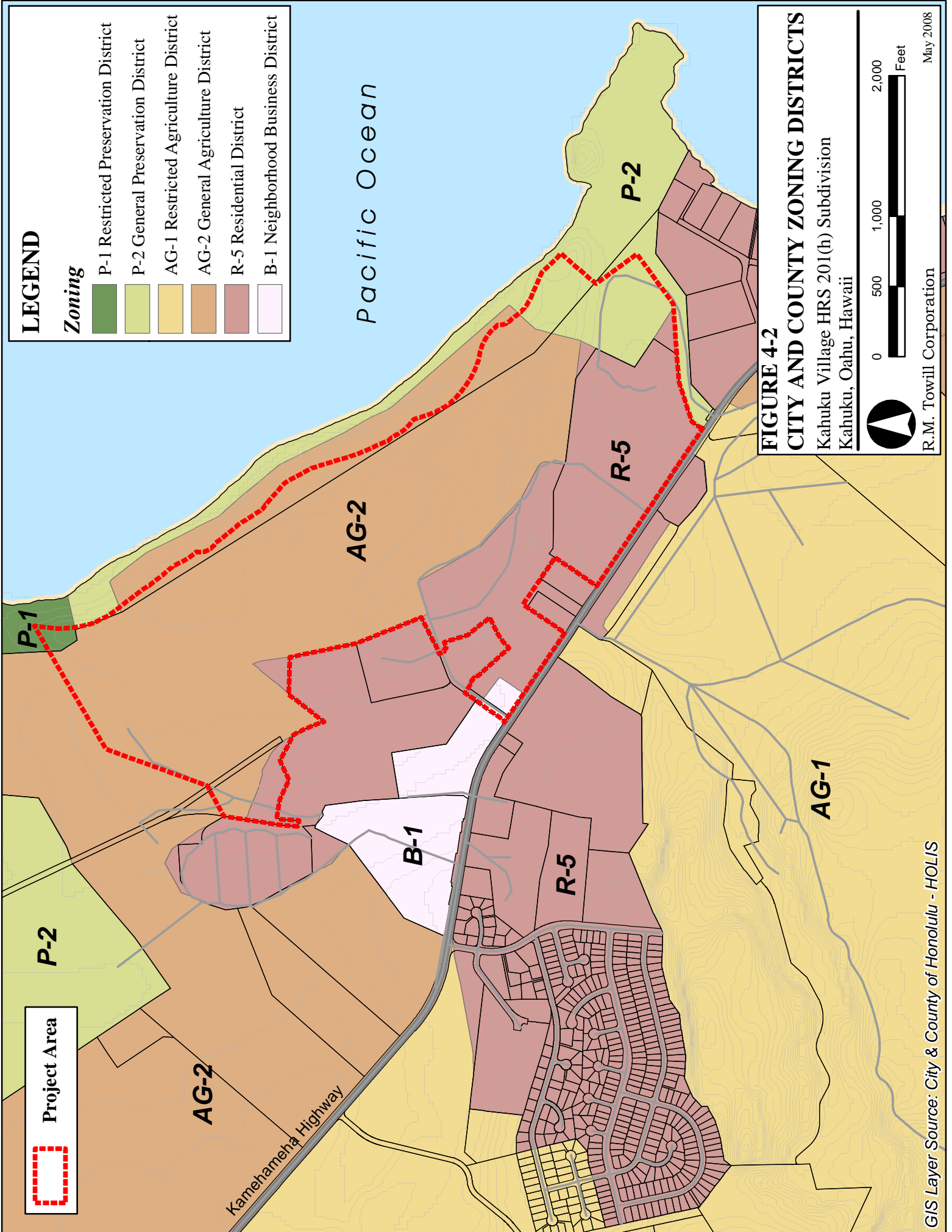
The project site contains the following county zoning districts, as illustrated on **Figure 4-2**

Residential (R-5): This designation applies to lands that are to be managed for urban residential development with a minimum lot size of 5,000 square feet. The development plan proposes continued residential use in the R-5 zoning district with planned lot sizes a minimum of 10,000 square feet in order to qualify for use of individual waste water systems. Planned uses and design standards conforms with City and County Land Use Ordinances (LUO).

General Agriculture (Ag-2): This designation applies to lands that are to be managed for agricultural use with a minimum lot size of 2 acres. Within the Ag-2 zone, the development plan proposes to continue use of the Kahuku Golf Course. In addition, under the provisions of HRS Chapter 201(h) an exemption will be sought from the City and County LUO to allow the development of 18 golf course lots along the makai edge of the golf course and 12 “country” lots on vacant agricultural land on the north end of the golf course. Each of these thirty lots will be a minimum of 1-acre in size.

Neighborhood Business (B-1): This designation applies to lands that are to be managed for commercial use with a minimum lot size of 5,000 square feet. This lot is to be used for a small business and possible owner’s accessory dwelling.

Preservation Districts, Restricted (P-1) and General (P-2): The purpose of the preservation districts is to preserve and manage major open space and recreation lands and lands of scenic and other natural resource value. It is intended that all lands within a state-designated conservation district be zoned P-1 restricted preservation district. Within the P-1 district, all uses, structures and development standards are to be governed by the State Department of Land and Natural Resources. The preservation districts within the project site are to be used for public beach parks and open space.



4.5 KO'OLAU LOA SUSTAINABLE COMMUNITIES PLAN (KSCP)

The Ko'olau Loa Sustainable Communities Plan (City and County of Honolulu Ordinance 99-72) provides policies, guidelines, and conceptual schemes to serve as a guide for more detailed zoning maps and regulations and for public and private sector investment decisions. The current KSCP was finalized in 1999. A review and update of the KSCP is currently underway by the City and County of Honolulu Department of Planning and Permitting.

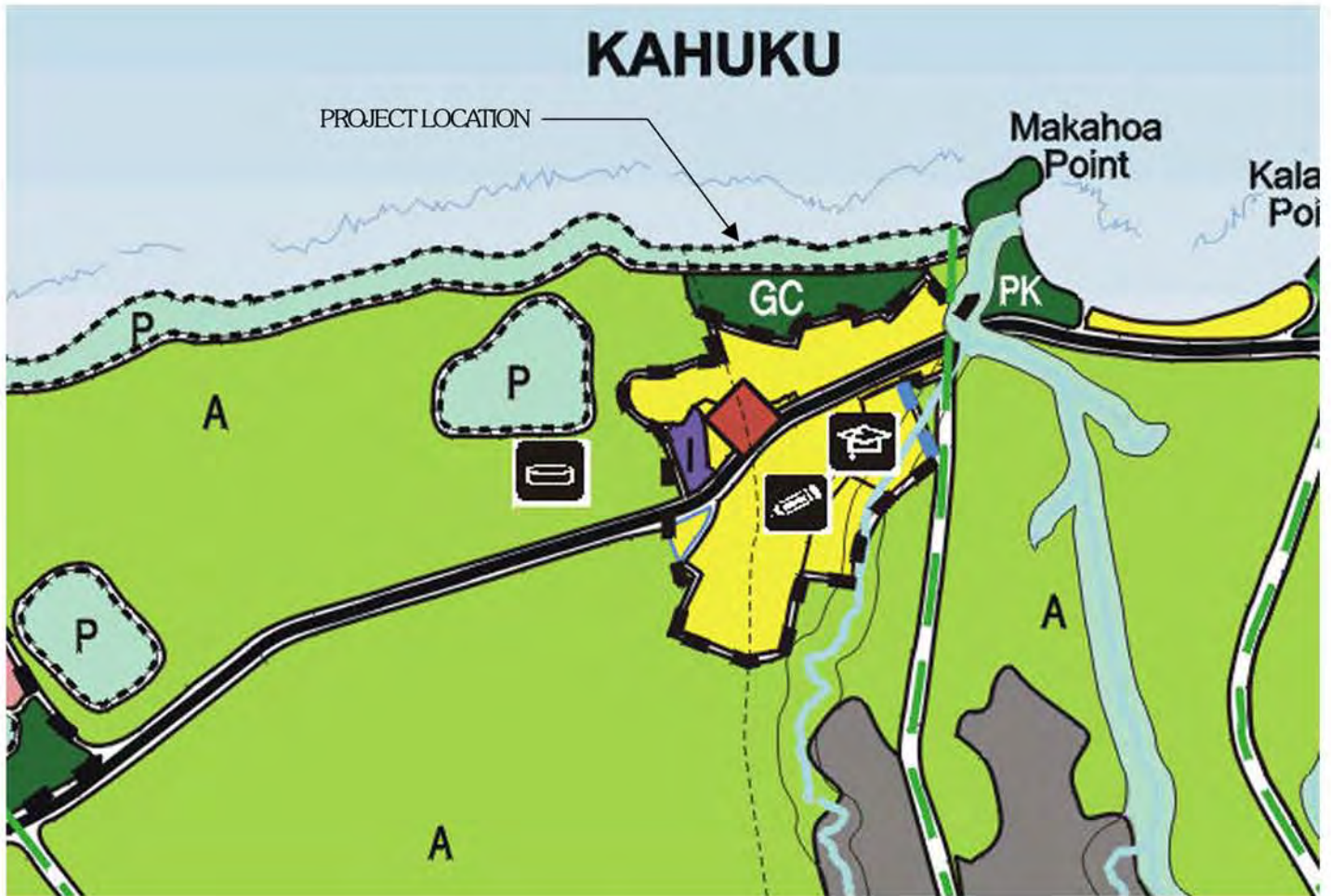
In the current KSCP, the project site is designated for rural residential, golf course and park space, preservation, and agricultural uses. KSCP land use designations are depicted in **Figure 4-3**. The proposed 18 golf course lots deviate from the Ko'olau Loa Land Use Map by introducing a strip of residential use between the golf course and preservation use designation. The 12 country lots are located partly within the rural residential designation and partly within the agricultural designation. Although the proposed development deviates from the KSCP land use map designations, the planned improvements should be assessed in light of their support for KSCP policies, principles, and guidelines, as well as the benefits they will provide to the Kahuku Village residents and larger community. These benefits include:











- Opportunity for existing village residents to obtain homeownership through an affordable housing program and creation of additional affordable housing.
- Preservation of open space and recreation areas, including the golf course, two beach parks, Adams Field, and the coastal dune system.
- Dedicated public beach access.
- New and upgraded infrastructure and utilities, including roads, drainage system, water system, and replacement of existing cesspools with septic systems.
- Preservation of Kahuku's rural character through a low-density development plan, proposed rural development standards for roadway improvements (requesting exemption from urban standards) and preservation of open space areas.

The project will be developed in accordance with the following KSCP land use policies, principles and guidelines (shown in italics):

Open Space Preservation

- *Maintain the region's rural character, protect scenic views and provide recreational resources.*
- *Define clear boundaries and separations between existing communities.*



- | | |
|--|---|
|  Country Town |  Wastewater Treatment Plant |
|  Rural Residential |  Elementary School(State) |
|  Industrial |  Intermediate/High School(State) |
|  Agricultural |  Ahupua'a Boundary |
|  Preservation |  Rural Community Boundary |
|  Major Parks and Golf Courses |  Preservation Boundary |
| |  Highway |

SOURCE:
KO'OLAULOA SUSTAINABLE COMMUNITIES PLAN
 Land Use Map



Department of Planning and Permitting
 City & County of Honolulu
 October 1999

FIGURE 4-3
KOOLAULOA SUSTAINABLE COMMUNITIES PLAN
LAND USE DESIGNATIONS
 Kahuku Village HRS 201(h) Subdivision
 Kahuku, Oahu, Hawaii



NOT TO SCALE

R. M. Towill Corporation

May 2008

Discussion

The project proposes a low-density development program in order to preserve the open space areas that contribute to Kahuku's rural character. The project plan includes a preservation setback of 100 to 250 feet from the shoreline based on an analysis of the "primary dune" system (see **Section 3.1.4 – Shoreline Conditions**). Areas makai of the setback, including the coastal dune system, will be preserved in their natural condition as open space. No development will be allowed within this area with the possible exception of measures required for resource protection, such as protective mesh fencing around seabird nesting sites and installation of boardwalks to limit access.

The project also proposes to preserve the Kahuku Golf Course by designating it as P-2 (general preservation) zone through the HRS 201(h) process. This will ensure that it remains undeveloped open space in perpetuity. The golf course is also proposed to function as a passive drainage detention area as part of the project drainage master plan. See **Section 2.1.8 – Drainage Improvements and Flood Mitigation** for additional discussion. Additional open space will be preserved through the creation of two passive recreation public beach parks. The beach parks will ensure that the public has dedicated access to the shoreline. Currently, there is no legal public access to the shoreline through the project site without the owner's permission. See **Section 3.1.4 – Shoreline Conditions** and **3.2.5 – Recreational Facilities**. No views of the ocean are visible from the coastal highway along the project property corridor. Views from public roadways will not be adversely impacted by the planned development.

There will be no impact to wildlife sanctuaries and no reduction in preservation zoning in the vicinity regional wildlife refuges. The shoreline dune system and its constituent flora and fauna will be preserved through the establishment of the "primary dune" setback line. Additional resource protection measures, including protective fencing around Wedge-tailed Shearwater nesting sites and landscaping with appropriate native coastal plant species will also be undertaken. See **Section 3.1.9 – Flora and Fauna** for additional discussion.

Agricultural Areas

- *Preserve the availability and crop production potential of agricultural lands.*
- *Protect agricultural lands from conversion to uses that are primarily residential, industrial or commercial.*
- *Encourage diversification of agriculture-related enterprises.*

- *Allow residential use in agricultural areas only as secondary to agricultural activity.*
- *Allow facilities necessary to support intensive cultivation to be located in agricultural areas.*
- *Allow for appropriate non-agricultural uses that are of a compatible open space and resource character, such as outdoor recreation, on agricultural lands not currently suitable for intensive cultivation.*
- *Recognize the function of agricultural areas as an important part of the region's natural drainage system.*

Discussion

The majority of the project area, including the golf course, shoreline dune area, and a portion of the lands underlying the proposed Country Lots is zoned AG-2 (general agriculture) (see **Figure 4-2**). Based on the University of Hawaii Land Study Bureau (LSB) land productivity classification, and the USDA Soil Conservation Service *Agricultural Lands of Importance to the State of Hawaii* (ALISH) classification, the majority of the land is either unrated or of limited agricultural productivity. The entire project area is not rated by the ALISH study, due to the sandy soil conditions and pre-existing golf course and residential uses. Two areas are rated by the LSB classification: (1) a portion of the area proposed for the 12 Country Lots is rated 'B', and (2) the coastal dunes are rated 'E'. Historically, the property has never been used for agricultural production aside from limited pasture use. The agricultural feasibility study prepared for the project identified two potential agricultural uses: (1) pasturage based on irrigated bermuda grass cultivation; and, (2) tree nursery operations based on irrigated field stock (See **Appendix L – Agricultural Feasibility Study**). The 12 Country Lots are proposed to allow for agricultural use on the 'B' rated agricultural lands under "country" zoning conditions. Use of the remaining unrated lands (golf course and village) and 'E' rated lands (the coastal dune area) for open space or residential development would not impact the State's inventory of prime or unique agricultural lands or lands of agricultural importance and are considered reasonable in light of the resulting benefits to the community (See **Section 1.3 – Project Purpose and Need** and **Section 3.2.9 – Socio-Economic Conditions**.)

Parks And Recreation Areas

- *Maintain and enhance existing parks by utilizing under-developed park land area and improving the condition of existing facilities.*
- *Employ appropriate siting and screening for park facilities.*

- *Ensure environmental compatibility in the design and construction of park facilities.*
- *Integrate recreational opportunities with the characteristics of the surrounding community.*
- *Integrate new community-based parks within the neighborhoods and communities they serve. Integrate the provision of new parks with development of larger new residential development.*

Discussion

The project proposes to preserve the existing Kahuku Golf Course for public use and create two new passive public beach parks to ensure continued, dedicated public shoreline access. See **Section 2.1.3 – Amenities**, and **Section 3.2.5 – Recreational Facilities**. Park facilities will be conveyed by lease or deed to a managing entity that will be responsible for development of park facilities. Park improvements will be subject to Special Management Area Permit requirements, including design treatments and mitigation of visual impacts. The proposed recreational open-space uses will preserve cherished open-space that contributes to the rural character of the Kahuku area.

Historic And Cultural Resources

- *Emphasize physical references to Ko'olau Loa's history and cultural roots.*
- *Protect existing visual landmarks and support the creation of new, culturally appropriate landmarks at ahupua'a boundaries.*
- *Preserve and restore historic and cultural resources associated with native Hawaiian and pre-contact periods.*
- *Preserve significant historic features from earlier periods such as the plantation era.*
- *Retain, wherever possible, significant vistas associated with archaeological features.*

Discussion

One of the objectives of the plan is to preserve the historic Kahuku Village 5 plantation village by providing the existing residents with the opportunity for home ownership through an affordable housing purchase program. Success of the plan as proposed in this document would result in preservation of Kahuku Village as a legacy settlement from the plantation era. It would allow for the existing residents, most of whose family histories are entwined with the plantation days, to pass their property down to their children and grandchildren and thus preserve an important part of their identity.

An archaeological inventory survey and cultural impact assessment are being conducted as part of the planning process in order to ensure that potential impacts to cultural

resources are known and mitigation measures are in place to protect them from harm. See Section 3.2.2 – Historic and Archaeological Resources, and Section 3.2.3 – Cultural Resources and Practices for additional discussion.

Residential Uses

- *Respect and help to preserve the natural setting of the Ko'olau Loa region by requiring development in residential areas to be sensitive to physical constraints and have minimal impact on the area's rural character.*
- *Provide a sufficient capacity within the Rural Community Boundary to accommodate existing and future housing needs.*
- *Maintain the existing residential capacities for the communities of Ka'a'awa, Hau'ula and Punalu'u. Future residential needs in these communities will be met through infill residential development.*
- *Adopt zoning, subdivision and related project design regulations which foster a rural character in new residential developments and improvements to existing residential areas.*
- *Encourage and support the development of affordable housing in the region in order to meet the needs of a variety of market sectors, existing pent-up demand for housing, and overcrowded housing conditions.*

Discussion

One of the primary purposes of the project is to vest the current KV5 residents and others in the community with home ownership that is affordable. Under current conditions, the KV5 residents face great uncertainty about long-term tenure in their homes. Without vested rights of ownership, there always exists the possibility of permanent loss of the homes to natural disaster (due to lack of building permits, land use entitlements, and insurance to rebuild), or to the land owner's prerogative to change the land use.

As an affordable housing project, the planned development proposes to subsidize approximately 136 affordable homes and lots through the sale of 30 prime market rate lots. The ratio of affordable units relative to the market units (>3 affordable to 1 market) is the inverse of typical affordable housing developments (normally 1 affordable to >3 market), and is overwhelmingly in favor of the community.

The proposed 136 affordable lots are to be located within the Kahuku Village 5 (New Camp and Ocean View sections), created around 72 existing, occupied homes, with the addition of 64 vacant lots to be developed for affordable housing. Some of the land sited

for the vacant lots once contained plantation houses that have long since been demolished due to fire or neglect. Creation of the new in-fill lots, each with a minimum size of 10,000 square feet, will fit within the grid layout of the existing homes and streets and be compatible with the villages' rural density and character. Exemptions from urban design standards contained in the City and County of Honolulu Land Use Ordinances are being requested under provisions of HRS 201(h) in order to eliminate hardscape street improvements (curb, gutter, sidewalk, lighting) that would alter the village's the rural character. See **Section 2.1 – Project Description**, and **Section 2.2 – Summary of HRS 201(H) Exemptions**.

Creation of the proposed 18 Golf Course Lots and 12 Country Lots will introduce development where none currently exists. In response to site constraints and environmental conditions, the planned lots have been setback landward from the shoreline dune system, limited in number and density, and subject to covenants and restrictions that will limit house footprint, height, materials, and colors, and restrict development to one house per lot. These restrictions will help preserve the open space and low-density development that contributes to Kahuku's rural character. See **Section 2.1.2 – Residential Structures** for additional discussion.

Commercial Areas

- *Support the maintenance, redevelopment, or expansion of various types of commercial establishments in the region in keeping with their type and purpose, and appropriateness to the character and needs of the communities they serve.*
- *Maintain and enhance the rural character of the recognized commercial areas including: Kahuku Country Town, Lā'ie Rural Regional Commercial Center, Hau'ula Rural Community Commercial Center, and various country store sites within the region.*

Discussion

The plan preserves the existing commercial space (B-1 zoning) at the corner of Kamehameha Highway and Pu'uluana Place for use by a small business tenant. In addition, the golf course club house will continue to be operated and/or redeveloped for commercial use through a lease or deed by a managing entity selected by the owner. See **Section 2.1.3 – Amenities**.

4.6 SPECIAL MANAGEMENT AREA (SMA) RULES AND REGULATIONS

The City and County of Honolulu has designated the shoreline and certain inland areas of O'ahu as being within the Special Management Area (SMA). SMA areas are designated sensitive environments that should be protected in accordance with the State's Coastal Zone Management policies, as set forth in Revised Ordinances of Honolulu (ROH), Chapter 25, Shoreline Management, and Hawaii Revised Statutes (HRS), Section 205A, Coastal Zone Management.

As depicted in Figure 4-4, the majority of the project site lies within the SMA area.

4.6.1 SHORELINE MANAGEMENT, SECTION 25, ROH

The potential effects of the proposed project are evaluated based on the review guidelines in Section 25 of the Revised Ordinance of Honolulu (ROH). The following is a discussion of the applicability of the guidelines to the proposed improvements at Kahuku Village.



- (a) **All development in the Special Management Area shall be subject to reasonable terms and conditions set by the Council to ensure that:**
 - (a.1) **Adequate access, by dedication or other means, to publicly owned or used beaches, recreation areas and natural reserves is provided to the extent consistent with sound conservation principles;**

Two beach parks, one at each end of the project property, will be created and conveyed by deed or lease to a private entity to be managed for public use and shoreline access. Currently, no public beach access exists in Kahuku Village, although shoreline access by means of trespassing across the golf course is common.

- (a.2) **Adequate and properly located public recreation areas and wildlife preserves are reserved;**

The two planned beach parks will be managed for public use. Provision of the parks will ensure public access to the shoreline in perpetuity. No wildlife preserves will be created by this project. However the James Campbell Wildlife Refuge is located adjacent to the project site on the north side and provides sanctuary to protected water fowl. The refuge will not be impacted by project activities.

LEGEND

-  Project Area
-  SMA Boundary

Pacific Ocean

Kamehameha Highway

FIGURE 4-4

SPECIAL MANAGEMENT AREA

Kahuku Village HRS 201(h) Subdivision
Kahuku, Oahu, Hawaii



R.M. Towill Corporation

May 2008

- (a.3) Provisions are made for solid and liquid waste treatment disposition and management which will minimize adverse effects upon Special Management Area resources;

Presently solid waste generated by Kahuku residents is collected by the City and County of Honolulu and disposed of at the Waimanalo Gulch landfill near Ewa or the H-Power facility in Campbell Industrial Park. At the northern end of La'ie adjacent to the City and County's Corporation Yard there is a City-operated "convenience center" where residents can drop off their waste. Depending on the type, collected waste is recycled, combusted, or disposed of in a landfill.

The proposed project will result in a doubling of residences in the Kahuku Village with a corresponding increase in solid waste generation from residential uses. The increase in not anticipated to be significant is expected to be handled by the existing solid waste service. Of greater concern is maintenance of the roadways facilitate trash truck access. In the past, dust and mud have hampered trash collection and forced residents to hand carry their trash to dumpsters located adjacent to Kamehameha Highway.

The property owner and the Kahuku Village Association will also consider the reuse of green waste generated by landscape maintenance. Green waste will be chipped and/or composted for reuse as mulch, as practicable. All solid waste generated by construction activities will be disposed of off-site by the project contractor in compliance with City and County of Honolulu regulations. Construction waste will not be disposed of at the City-operated "convenience center".

There are currently no municipal wastewater lines servicing the area. Existing residents rely on individual and gang cesspools for wastewater disposal. Under the current plan, all cesspools will be replaced by new septic leachfield or aerobic units, as described in Section 2.1.6.

Construction activities will result in a temporary increase in wastewater generation. Port-a-Johns will be used during construction and will be discharged off-site in compliance with State and County regulations.

- (a.4) Alterations to existing land forms and vegetation; except crops, and construction of structures shall cause minimum adverse effect to water resources and scenic and recreational amenities and minimum danger of floods, landslides, erosion, siltation or failure in the event of an earthquake.

Minor modifications to existing land forms that will result from this project will not create conditions that would adversely affect water resources, scenic resources, or recreational amenities. A grading permit and required approvals will be obtained prior to the construction and development of planned infrastructure improvements.

Preservation of the beach dune through voluntary designation of a “primary dune” setback will ensure that the beach dune remains intact to function as a natural protective barrier against storm surge and tsunamis, and will ensure that it is preserved as a natural open space resource.

No adverse impacts to water resources are anticipated from construction of this project. In the short-term, runoff from construction areas will be regulated under NPDES permit conditions. Best management practices (BMPs) will be employed to prevent soil loss and sediment discharges from work sites. Project activities will comply with DOH regulations as set forth in Hawaii Administrative Rules, Title 11 Chapter 54 - Water Quality Standards, and Chapter 55 - Water Pollution Controls.

Following construction, runoff from Kahuku Village will be conveyed by swales and subsurface drain pipes to discharge into Mālaekahana Stream channel, or directed to existing swales along Kamehameha Highway which, in turn, discharge into Mālaekahana Stream. Planting will be used to stabilize exposed soils against erosion and prevent sediment discharge in storm water runoff.

The Uniform Building Code (UBC) provides minimum design criteria to address potential for damages due to seismic disturbances. The UBC scale is rated from Seismic Zone 0 through 4, with 0 being the lowest level for potential seismic induced ground movement. The island of O’ahu has been designated within Seismic Zone 2A. To mitigate the potential hazard from earthquakes, structural elements in this project will be built, at a minimum, in compliance with standards for UBC Seismic Zone 2A.

- (b) No development shall be approved unless the Council has first found that:
- (b.1) The development will not have any substantial, adverse environmental or ecological effect except as such adverse effect is minimized to the extent practicable and clearly outweighed by public health and safety, or compelling public interest. Such adverse effect shall include, but not be limited to, the potential cumulative impact of individual developments, each one of which taken in itself might not have a substantial adverse effect and the elimination of planning options;

The proposed project is not anticipated to involve a substantial degradation of environmental quality. The area has long been developed for residential, golf course, sand mining, and other uses. The proposed project will improve the existing conditions of the community by creating opportunity for ownership of the existing plantation residences through an affordable housing program, and by upgrading the deteriorating infrastructure and utilities that serve the residences. The creation of new residential lots along the makai edge of the golf course will introduce a land use change to the area, and create a visual presence along the coastline that currently does not exist. Planning and design for the project includes mitigation measures to prevent or minimize potential adverse environmental impacts, including visual impacts and impacts to the beach dune environment. The project will not result in cumulative impacts, will not involve a commitment to larger actions, and will not result in the elimination of planning options.

Potential environmental impacts should be considered in light of the project's public benefit of providing affordable housing opportunities to the existing 72 Kahuku Village residents and an additional 60+ low-income families.

- (b.2) **The development is consistent with the objectives and policies set forth in Section 25-3.1 and guidelines contained in HRS Section 205A-26;**

The project is in compliance with the objectives and policies set forth in Hawaii Revised Statutes (HRS) 205A-2, and Special Management Area guidelines contained in HRS Section 205A-26. This document is prepared to summarize the proposed Kahuku Village Subdivision Project impacts in relation to the Special Management Area guidelines in HRS Section 205A-26 and ROH Section 25.

All planned development will be constructed more than 60 feet mauka of the certified shoreline (Shoreline Certification File Number OA-1171, Certification date March 08,

2008). All proposed improvements will be developed in compliance with shoreline setback requirements, as established in Chapter 23, Revised Ordinances of Hawaii.

Please refer to **Section 4.6.2**, Coastal Zone Management, HRS 205(A), for the project's compliance with the State's objectives and policies for the Coastal Zone.

(b.3) The development is consistent with the County General Plan, Development Plans and Zoning.

The proposed project is in conformance with the General Plan's objectives and policies for *Natural Environment, Transportation and Utilities, and Physical Development and Urban Design*, as described in **Section 4.3**.

The County zoning designation for the project site includes Residential (R-5), Agricultural (Ag-2), Neighborhood Business (B-2), and Preservation Restricted (P-1) and General (P-2). Proposed improvements are in general compliance with LUO requirements for the R-5, B-2, P-1 and P-2 zoning districts, as described in **Section 4.4**. An exemption from the LUO for proposed land use within the Ag-2 district will be requested under the provisions of Hawaii Revised Statutes (HRS) Section 201(h).

The project site is located on lands designated in the *Ko'olauloa Sustainable Communities Plan* (KSCP) for rural residential (RR), parks and golf courses (PK/GC), preservation (P), and agricultural (A) use. The proposed development is in compliance with the KSCP land use policies and guidelines, as described in **Section 4.5**.

- (c) **The Council shall seek to minimize where reasonable:**
- (c.1) **Dredging, filling or otherwise altering any bay, estuary, salt marsh, river mouth, slough or lagoon;**

The project will not involve dredging, filling or alteration of the shoreline configuration. No bay, estuary, salt marsh, river mouth, slough or lagoon is located near the project site and none will be affected by project activities.

- (c.2) Any development which would reduce the size of any beach or other area usable for public recreation;

No beaches along the coastal shoreline will be reduced in size or obstructed from use by the proposed project. Planned improvements will take place entirely within privately-owned property and mauka of the 60-foot shoreline setback. Improvements will not encroach on the sandy beach makai of the project site. Two planned parks will be developed and managed for public use and shoreline access.

- (c.3) Any development which would reduce or impose restrictions upon public access to tidal and submerged lands, beaches, portions of rivers and streams within the Special Management Area and the mean high tide line where there is no beach;

The project will not reduce or impose restrictions upon public access to tidal and submerged lands, beaches, portions of rivers and streams within the Special Management Area. Proposed improvements are well-above the mean high tide line, do not involve submerged lands, and will not block access along the shoreline. The property owner will establish two public beach parks to be managed for public use and shoreline access.

- (c.4) Any development which would substantially interfere with or detract from the line of sight toward the sea from the state highway nearest the coast;

Views from Kamehameha Highway to the coast are blocked by intervening vegetation, topography, and residential development. The planned improvements will not interfere with or detract from any coastal views from the state highway.

- (c.5) Any development which would adversely affect water quality, existing areas of open water free of visible structures, existing and potential fisheries and fishing grounds, wildlife habitats, or potential or existing agricultural uses of land.

The project site does not function as a wildlife habitat, and is not used for agricultural purposes. No adverse affects to water quality are expected to result from construction activities, or use of the improvements following project completion.

4.6.2 COASTAL ZONE MANAGEMENT, HRS 205(A)

The State of Hawaii designates the Coastal Zone Management Program (CZMP) to manage the intent, purpose and provisions of Chapter 205(A)-2 of the Hawaii Revised Statutes (HRS), as amended, and federal regulations for the areas from the shoreline to the seaward limit of the State's jurisdiction, and any other area which a lead agency may designate for the purpose of administering the Coastal Zone Management program.

The following is an assessment of the project with respect to the CZMP objectives and policies set forth in Section 205(A)-2.

1. Recreational resources

Objective: *Provide coastal recreational opportunities accessible to the public.*

Policies:

A) Improve coordination and funding of coastal recreational planning and management; and

B) Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by:

(i) Protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas;

(ii) Requiring replacement of coastal resources having significant recreational value including, but not limited to, surfing sites, fishponds, and sand beaches, when such resources will be unavoidably damaged by development; or requiring reasonable monetary compensation to the State for recreation when replacement is not feasible or desirable;

(iii) Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value;

(iv) Providing an adequate supply of shoreline parks and other recreational facilities suitable for public recreation;

(v) Ensuring public recreational uses of county, state, and federally owned or controlled shoreline lands and waters having recreational value consistent with public safety standards and conservation of natural resources;

(vi) Adopting water quality standards and regulating point and nonpoint sources of pollution to protect, and where feasible, restore the recreational value of coastal waters;

(vii) Developing new shoreline recreational opportunities, where appropriate, such as artificial lagoons, artificial beaches, and artificial reefs for surfing and fishing; and

(viii) Encouraging reasonable dedication of shoreline areas with recreational value for public use as part of discretionary approvals or permits by the land use commission, board of land and natural resources, and county authorities; and crediting such dedication against the requirements of section 46-6.

Discussion:

The project is being developed on private lands with private funds. Development of the project will create new passive recreation open-space along the shoreline in the form of two new beach parks to be managed for public use and shoreline access. In addition, the Kahuku Golf Course will continue to be managed and maintained for public use. The project will not encroach on the sand beach. No coastal recreational resources will be damaged by the proposed improvements.

Water quality will be protected during construction through the application of Best Management Practices in accordance with NPDES permit regulations. Proposed improvements will not alter existing drainage patterns. Following construction, landscaping will be used to stabilize soils and prevent sediment discharge in storm water runoff.

2. Historic resources

Objective: *Protect, preserve, and, where desirable, restore those natural and manmade historic and prehistoric resources in the coastal zone management area that are significant in Hawaiian and American history and culture.*

Policies:

- (A) Identify and analyze significant archaeological resources;*
- (B) Maximize information retention through preservation of remains and artifacts or salvage operations; and*
- (C) Support state goals for protection, restoration, interpretation, and display of historic resources.*

Discussion:

There are no known archaeological or historic sites within the project sites. An archaeological inventory study, including subsurface testing is being conducted for the project. None of the State designated sites in the area will be disturbed by project activities. The project site does contain Jaucas sand deposits. This soil type is associated with traditional Hawaiian burial practices and is commonly found to contain subsurface cultural deposits. The SHPD is being actively consulted throughout the planning and development process regarding the presence of

burial or archaeological sites in the project area. No recorded sites are known within the project area, however burials have been found in sandy areas along other segments of the Kahuku shoreline. The known presence of burials in similar conditions indicates the possibility that others may be found during excavation activities.

To avert potential impacts to historic and archaeological resources, the applicant is currently working with the SHPD to develop appropriate mitigation measures. An archaeological inventory survey is being conducted by a qualified archaeologist based on an Archaeological Inventory Survey Plan approved by SHPD. The findings of the inventory survey will be submitted to SHPD for review and approval. In accordance with Chapter 6E, HRS, construction activities will not commence until the SHPD has provided written concurrence that “no effect” to historic sites will result from proposed project activities.

During construction activities, there is a possibility of encountering unknown or unexpected cultural features, deposits, or burials. If this situation occurs, work in the area will be suspended immediately until the monitoring archaeologist evaluates the significance of the findings. The SHPD will be immediately notified to determine the appropriate course of action.

No impacts to cultural practices will result from the proposed landscaping and roadway improvements. Project activities will occur entirely within developed areas. Project activities will not diminish the availability of any plant type for use in cultural practices. The proposed project will not interrupt access to coastal areas or to hunting or gathering grounds. Proposed improvements will not block existing view planes, and will not obstruct any natural features or landmarks.

The proposed improvements are being constructed on previously disturbed lands that have undergone intensive modification during decades of continuous use. The project site is dominated by common, introduced plant species not identified with traditional gathering practices. Native flora or fauna found at the project site are relatively common and can be readily found throughout the Kahuku area. No protected, rare or endangered species will be impacted by the project. Due to the proximity of residential areas and the highway, no hunting is permitted in the project area.

3. Scenic and open space resources

Objective: *Protect, preserve, and, where desirable, restore or improve the quality of coastal scenic and open space resources.*

Policies:

- (A) Identify valued scenic resources in the coastal zone management area;*
- (B) Ensure that new developments are compatible with their visual environment by designing and locating such developments to minimize the alteration of natural landforms and existing public views to and along the shoreline;*
- (C) Preserve, maintain, and, where desirable, improve and restore shoreline open space and scenic resources; and*
- (D) Encourage those developments that are not coastal dependent to locate in inland areas.*

Discussion:

The proposed improvements conform to the Coastal Zone Management Program Objective 3, Scenic and Open Space, which encourages the protection, preservation and where desirable, restoration or improvement of the quality of coastal scenic and open space resources.

Within the project site, the dunes and shoreline are visible from a limited number areas within the community including certain sections of the golf course, locations along the golf course access road adjacent to the catholic cemetery, from the cemetery itself, and from a few of the residences at the makai edge of KV5. The presence of the planned golf course residences houses will be apparent from these locations, however the houses will be subject to development restrictions that will mitigate visual impacts and preserve ocean views from vantage points that currently provide such a view.

From the shoreline, some of the houses may be partially visible looking mauka through breaks in the dunes. For the most part, the voluntary “primary dune” setback will situate the houses a minimum of 100 feet, and in most cases more than 150 feet mauka from the vegetated shoreline and behind the crest of the primary dune. As such, the houses will be hidden from view. In locations where homes are in view, only the upper portions of the structures will be visible.

Measures proposed to mitigate visual impacts include:

- Building footprints will be limited, lots sized and setbacks enforced to preserve visual space between the new residences with uninterrupted views to the ocean.

- New houses will be subject to height restrictions of 25 feet in accordance with zoning standards.
- Exterior building materials, colors, lighting and landscaping will be subject to design controls to ensure compatibility with the appearance of the surrounding natural landscape.

Based on the proposed mitigation measures, no significant adverse visual impacts to the shoreline are anticipated to result from the proposed action.

4. Coastal ecosystems

Objective: *Protect valuable coastal ecosystems, including reefs, from disruption and minimize adverse impacts on all coastal ecosystems.*

Policies:

(A) Exercise an overall conservation ethic, and practice stewardship in the protection, use, and development of marine and coastal resources;

(B) Improve the technical basis for natural resource management;

(C) Preserve valuable coastal ecosystems, including reefs, of significant biological or economic importance;

(D) Minimize disruption or degradation of coastal water ecosystems by effective regulation of stream diversions, channelization, and similar land and water uses, recognizing competing water needs; and

(E) Promote water quantity and quality planning and management practices that reflect the tolerance of fresh water and marine ecosystems and maintain and enhance water quality through the development and implementation of point and nonpoint source water pollution control measures.

Discussion:

The proposed project is not expected have any adverse affects on marine resources. Project activities do not involve alterations to stream channels or other water bodies or water sources. Improvements will preserve open space along the shoreline.

During construction, best management practices will be employed in compliance with NPDES permit requirements to prevent pollutant discharge in storm water runoff. Discharge pollution prevention measures will be installed for each project action as required by project activities. Measures to prevent sediment discharge in storm water runoff during construction will be in

place and functional before project activities begin and will be maintained throughout the construction period. Runoff and discharge pollution prevention measures will be incorporated into a site-specific Best Management Practices (BMP) plan by the project contractor. Following construction, landscaping will be used to stabilize soils and prevent sediment discharge in storm water runoff.

5. Economic uses

Objective: *Provide public or private facilities and improvements important to the State's economy in suitable locations.*

Policies:

- (A) Concentrate coastal dependent development in appropriate areas;*
- (B) Ensure that coastal dependent development such as harbors and ports, and coastal related development such as visitor industry facilities and energy generating facilities, are located, designed, and constructed to minimize adverse social, visual, and environmental impacts in the coastal zone management area; and*
- (C) Direct the location and expansion of coastal dependent developments to areas presently designated and used for such developments and permit reasonable long-term growth at such areas, and permit coastal dependent development outside of presently designated areas when:
 - (i) Use of presently designated locations is not feasible;*
 - (ii) Adverse environmental effects are minimized; and*
 - (iii) The development is important to the State's economy.**

Discussion:

The project is being developed on private lands with private funds. The planned improvements are being developed to provide 72 existing households in Kahuku Village within an opportunity for home ownership under an affordable housing program. In addition, the project seeks to upgrade deteriorating infrastructure and utilities.

The project has been assessed for social, visual, and environmental impacts in accordance with Chapter 343, HRS. With the implementation of mitigation measures outlined in this document, no adverse impacts are expected to result from this project.

6. Coastal hazards

Objective: *Reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion, subsidence, and pollution.*

Policies:

(A) Develop and communicate adequate information about storm wave, tsunami, flood, erosion, subsidence, and point and nonpoint source pollution hazards;

(B) Control development in areas subject to storm wave, tsunami, flood, erosion, hurricane, wind, subsidence, and point and nonpoint source pollution hazards;

(C) Ensure that developments comply with requirements of the Federal Flood Insurance Program; and

(D) Prevent coastal flooding from inland projects.

Discussion:

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Map No. 15003C0030 F, dated September 30, 2004, shows that the project site is in flood zones X, VE and AE, thus is subject to flood inundation from the 100-year flood as well wave velocity hazard. Base flood elevations have been determined for zone VE and AE lands. A portion of the dunes along the shoreline are located within the VE zone with base flood elevations ranging from 14 feet above msl along the southern half of the shoreline, to 16 feet above msl at the northern-most segment adjacent to the historic Japanese cemetery. Approximately half of Kahuku Village 5 "New Camp" is located within Zone AE, which generally expands out from the Mālaekahana Stream channel to define the flood plain. Base flood elevations in this zone range from 9 to 13 feet above msl. In addition, a portion of the proposed country lots at the north end of the project area are located within zone AE with base flood elevation ranging from 11 to 12 feet above msl.

The threat from tsunamis pose a threat to coastal settlements throughout the Hawaiian island chain. The north shore of O'ahu has experienced several severe tsunami events in the past century, most notably the 1946 East Aleutian tsunami and the 1957 Central Aleutian tsunami, each of which had maximum wave run-up elevations in excess of 20 feet in Kahuku and caused loss of life and property.

The project site, with the exception of the shoreline dunes and areas bordering Mālaekahana Stream channel, is located outside of the County's tsunami evacuation zone. The height and depth of the dunes creates a buffer that slows wave velocity and offers some protection from

the force of tsunami waves. For this reason, the coastal dune system will be preserved to serve as a protective buffer from tsunami waves and other ocean storm events. While preservation of the dunes does not eliminate the hazard posed by tsunami, it will function to absorb the initial force of tsunami waves and slow down wave run-up velocity.

The planned drainage system will provide a significant improvement over existing conditions and will eliminate the ponding and rutting currently experienced in the village after storm events. The improvements will not, however, result in a significant reduction of the flood plain boundary. Approximately half of the existing residences will remain within the 100-year flood zone boundaries following construction of the planned drainage improvements. The floorboards of the existing post and pier houses located within the flood plain will, in most cases, remain below the designated flood elevations.

Given that the existing village residences were constructed long before the current flood elevations were established and that, based on oral testimony of long-time village residents, the homes have never experienced flooding to the floorboard level during even the most severe flood events in the community, it is recommended that the existing residences be allowed to remain in their current location. The planned development will not exacerbate existing flood hazards or contribute to conditions that could cause flooding.

7. Managing development

Objective: *Improve the development review process, communication, and public participation in the management of coastal resources and hazards.*

Policies:

- (A) Use, implement, and enforce existing law effectively to the maximum extent possible in managing present and future coastal zone development;*
- (B) Facilitate timely processing of applications for development permits and resolve overlapping or conflicting permit requirements; and*
- (C) Communicate the potential short and long-term impacts of proposed significant coastal developments early in their life cycle and in terms understandable to the public to facilitate public participation in the planning and review process.*

Discussion:

The proposed development is being developed as an affordable housing subdivision under the provisions of HRS 201(h) which allow for exemptions from the LUO. The requested exemptions from the zoning and subdivision codes are described in **Section 2.2**.

All work activities will be conducted in compliance with federal, state, and county environmental rules and regulations. This environmental assessment document is prepared to identify and, where necessary, propose mitigation measures to address impacts anticipated from the construction and operation of proposed improvements. This document will be published for public review and comment in compliance with procedures set forth in HRS Chapter 343.

8. Public participation;

Objective: *Stimulate public awareness, education, and participation in coastal management.*

Policies:

(A) Promote public involvement in coastal zone management processes;

(B) Disseminate information on coastal management issues by means of educational materials, published reports, staff contact, and public workshops for persons and organizations concerned with coastal issues, developments, and government activities; and

(C) Organize workshops, policy dialogues, and site-specific mediations to respond to coastal issues and conflicts.

Discussion:

The proposed plan has been developed through two years of regular meetings with the Kahuku Village Association and individual members of the Kahuku community. The plan has been presented to the Ko'olau Loa Neighborhood Board, the Kahuku Community Association, and to numerous county agencies and departments. In addition, an information package containing a project map and description was distributed to federal, state, and county agencies, public interest groups, community organizations, and individuals in order to solicit input during plan development.

Public involvement in the project will continue with a community meeting during the Draft EA publication period, and during public hearings in the Kahuku community and before the City Council that will be conducted as part of the SMA permit and HRS 201(h) application process.

Public notice of the proposed action will be provided through publication of the environmental assessment and SMA permit application in the OEQC Bulletin. As part of the environmental review process, the public will have an opportunity to review and comment on the project during the 30-day public review period. All public comments will be addressed in writing. Mitigation measures will be developed where appropriate to address issues and conflicts raised during public review of the project.

9. Beach protection;

Objective: *Protect beaches for public use and recreation.*

Policies:

(A) Locate new structures inland from the shoreline setback to conserve open space, minimize interference with natural shoreline processes, and minimize loss of improvements due to erosion;

(B) Prohibit construction of private erosion-protection structures seaward of the shoreline, except when they result in improved aesthetic and engineering solutions to erosion at the sites and do not interfere with existing recreational and waterline activities; and

(C) Minimize the construction of public erosion-protection structures seaward of the shoreline.

Discussion:

All proposed improvements are designed to conform to rules relating to shoreline setbacks (ROH Chapter 23). All development activities will take place more than 100 feet mauka of the certified shoreline (Shoreline Certification File Number OA-1171, Certification date March 08, 2008) based on a voluntary "primary dune" setback line designated by the owner in consultation with coastal engineers Sea Engineering, Inc.

10. Marine resources

Objective: *Promote the protection, use, and development of marine and coastal resources to assure their sustainability.*

Policies:

(A) Ensure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial;

(B) Coordinate the management of marine and coastal resources and activities to improve effectiveness and efficiency;

(C) Assert and articulate the interests of the State as a partner with federal agencies in the sound management of ocean resources within the United States exclusive economic zone;

(D) Promote research, study, and understanding of ocean processes, marine life, and other ocean resources in order to acquire and inventory information necessary to understand how ocean development activities relate to and impact upon ocean and coastal resources; and

(E) Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources.

Discussion:

The following studies were undertaken to evaluate existing shoreline conditions and processes at the project site:

- *Dune Characterization and Coastal Hazard Analysis Memo Report*, prepared by Sea Engineering, April 2008.
- *Kahuku Beach Shoreline Change*, prepared by the University of Hawaii Coastal Geology Group, March 2008.

In addition, studies of terrestrial and marine flora and fauna were undertaken along the shoreline for this project. The findings of those reports are described in **Section 3.1.9 – Flora and Fauna**.

On the basis of these studies, the concerns expressed by coastal resource experts, government agencies, and community members, and its own understanding of the importance of preserving coastal resources, Continental Pacific, LLC, the owner, recognizes the following principles for the planned development:

- The beach at Kahuku Village is, in accordance with established Hawaiian law, a public trust asset. Public access to the shoreline and ocean is a right preserved in the Hawaiian Constitution for the citizens of Hawaii.
- Any action that damages or threatens to damage the beach is of direct concern to the public trust.
- Beach loss and narrowing, and coastal dune grading that accompanies coastal development causes environmental and ecological damage to natural resources and habitats.” (DLNR, COEMAP, p.4)
- In the case of undeveloped shorelines, a level of avoidance of flooding and erosion hazards can be achieved with the use of an increased construction setback from the shoreline. (DLNR COEMAP, p.30)

Planned mitigation measures include:

- All proposed improvements will be designed to conform to rules relating to shoreline setbacks (ROH Chapter 23). All grading and development activities will be constructed more than 60 feet mauka of the certified shoreline with the possible exception of limited improvements proposed for resource protection, including:
 - installation of mesh fencing around select Wedge-tailed Shearwater nesting areas to protect against predation by terrestrial mammals; and,
 - installation of pier and beam boardwalks to restrict access through the dunes and mitigate damage to vegetation and sandy soils from foot traffic.
- A voluntary building setback line will be established behind the primary dune system based on the dune characterization study prepared by Sea Engineering. All grading activities and building construction will be undertaken mauka of the primary dune setback line, with the possible exception of resource protection measures noted above.
- Building sites will be located at a minimum elevation of 20 feet above msl where there is a reasonable degree of safety from storm wave runup and inundation, and will be setback behind the primary dune which will offer protection from ocean storm forces.
- Building methods and materials will be designed to minimize impacts on property and personal health and safety in the coastal environment. See **Section 2.1.2** for details.
- Each shoreline lot will have one, designated path through the dunes to provide access to the shoreline. Use of protective pier and beam boardwalks may be considered through the dunes to mitigate damage to the dune eco-system from foot traffic.
- Prohibition of motor vehicle activity within the beach dunes will be enforced. The planned presence of residences along the mauka edge of the dunes will create an added level of vigilance to deter unauthorized vehicle use within the dune system.

It is hoped that this project may serve as an example of responsible coastal development

4.6.3 FLOOD HAZARD DISTRICT REQUIREMENTS, LUO SECTION 9.10

The Land Use Ordinance, Section 9.10 Flood Hazard Districts: provides a written guide for the development of the Flood zone. The purpose of the guide is to protect life and property and reduce public costs for flood control and rescue and relief efforts, thereby promoting the safety, health, convenience and general welfare of the community. The following section describes the proposed project in relation to LUO Section 9.10.

According to Section 9.10-2 Establishment of Districts, Flood Hazard Districts include all lands within the flood hazard zones delineated on the Flood Insurance Rate Map (FIRM), as prepared by the Federal Insurance Administration, Federal Emergency Management Agency.

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Map No. 15003C0030 F, dated September 30, 2004, shows that the project site is in flood zones X, VE and AE, thus is subject to flood inundation from the 100-year flood as well wave velocity hazard. Base flood elevations have been determined for zone VE and AE lands. A portion of the dunes along the shoreline are located within the VE zone with base flood elevations ranging from 14 feet above msl along the southern half of the shoreline, to 16 feet above msl at the northern-most segment adjacent to the historic Japanese cemetery. Approximately half of Kahuku Village 5 "New Camp" is located within Zone AE, which generally expands out from the Mālaekahana Stream channel to define the flood plain. Base flood elevations in this zone range from 9 to 13 feet above msl. In addition, a portion of the proposed country lots at the north end of the project area are located within zone AE with base flood elevation ranging from 11 to 12 feet above msl.

The threat from tsunamis pose a threat to coastal settlements throughout the Hawaiian island chain. The north shore of O'ahu has experienced several severe tsunami events in the past century, most notably the 1946 East Aleutian tsunami and the 1957 Central Aleutian tsunami, each of which had maximum wave run-up elevations in excess of 20 feet in Kahuku and caused loss of life and property.

The project site, with the exception of the shoreline dunes and areas bordering Mālaekahana Stream channel, is located outside of the County's tsunami evacuation zone. The height and depth of the dunes creates a buffer that slows wave velocity and offers some protection from the force of tsunami waves. For this reason, the coastal dune system will be preserved to serve as a protective buffer from tsunami waves and other ocean storm events. While preservation of the dunes does not eliminate the hazard posed by tsunami, it will function to absorb the initial force of tsunami waves and slow down wave run-up velocity.

The planned drainage system will provide a significant improvement over existing conditions and will eliminate the ponding and rutting currently experienced in the village after storm events. The improvements will not, however, result in a significant reduction of the flood plain boundary. Approximately half of the existing residences will remain within the 100-year flood zone boundaries following construction of the planned drainage improvements. The

floorboards of the existing post and pier houses located within the flood plain will, in most cases, remain below the designated flood elevations.

Given that the existing village residences were constructed long before the current flood elevations were established and that, based on oral testimony of long-time village residents, the homes have never experienced flooding to the floorboard level during even the most severe flood events in the community, it is recommended that the existing residences be allowed to remain in their current location. The planned development will not exacerbate existing flood hazards or contribute to conditions that could cause flooding.

4.7 CERTIFIED SHORELINE SURVEY

A survey of the project shoreline was certified on March 04, 2008 (Shoreline Certification File Number OA-1117). All proposed improvements are designed to conform to rules relating to shoreline setbacks (ROH Chapter 23). All development activities will occur more than 100 feet mauka of the certified shoreline based on a voluntary “primary dune” setback line established by a coastal engineer. The voluntary setback line is in excess of the county designated shoreline setback of 60 feet, as described in Section 2.2.1. See Figure 3-2, and Appendix C.

SECTION 5

Necessary Permits and Approvals

5.1 CITY AND COUNTY OF HONOLULU

The following permits and approvals are required from the City and County of Honolulu, Department of Planning and Permitting:

- Building Permit
- Grading, Grubbing, and Stockpiling Permits
- Shoreline Setback Determination (see **Section 4.7**)

From the City Council

- Special Management Area Permit (see **Section 4.6**)
- Minor Shoreline Structure Permit
- HRS Section 201(h) Subdivision Application

5.2 STATE OF HAWAII

The following permits are required by the State of Hawaii:

- NPDES Permit for Construction Related Discharges - Department of Health

The following approvals/ review are required by the State of Hawaii:

- Air Pollution and Noise Control - Department of Health
- Archaeological Review - Department of Land and Natural Resources
- Shoreline Survey Certification – Department of Land and Natural Resources
- Public Access - Commission on Persons with Disabilities

5.3 FEDERAL AGENCIES

No Federal permits or approvals are required for this project. The Army Corps of Engineers will be contacted during the Draft EA review period for a determination of Department of the Army jurisdiction.

5.4 UTILITY COMPANIES

Construction documents will be reviewed by the following private utility companies:

- Hawaiian Electric Company
- GTE Hawaiian Telephone Company Incorporated
- Verizon Hawaii
- Pacific Light Net, Inc.

SECTION 6

Organizations and Agencies Consulted During the Preparation of the Draft EA

6.1 CITY AND COUNTY OF HONOLULU

Board of Water Supply
Department of Planning and Permitting
 Civil Engineering Branch
 Traffic Review Branch
 Zoning
Ko'olauloa Neighborhood Board, No. 28

6.2 STATE OF HAWAII

Department of Accounting and General Services
Department of Health, Clean Water Branch
Department of Land and Natural Resources (DLNR)
 Office of Conservation and Coastal Lands
 State Historic Preservation Division
Department of Transportation, Highways Division
University of Hawaii, Coastal Geology Group

6.3 FEDERAL AGENCIES

Army Corps of Engineers

6.4 PRIVATE ORGANIZATIONS / INDIVIDUALS

Kahuku Village Association
Kahuku Community Association
Hawaiian Electric Company, Inc.
Verizon Hawaii, Inc.

SECTION 7

Organizations and Agencies Consulted During the 30-Day DEA Review Period

7.1 CITY AND COUNTY OF HONOLULU

Board of Water Supply
Department of Design and Construction
Department of Environmental Services
Department of Planning and Permitting
 Civil Engineering Branch
 Traffic Review Branch
 Zoning
Ko'olauloa Neighborhood Board, No. 28

72 STATE OF HAWAII

Department of Health,
 Clean Water Branch
 Noise and Radiation Branch
Department of Land and Natural Resources
DLNR - State Historic Preservation Division
Department of Transportation, Highways Division
Kahuku Library

73 FEDERAL AGENCIES

Department of the Army, Corps of Engineers
US Fish and Wildlife Service

SECTION 8

Determination

The potential effects of the proposed project are evaluated based on the significance criteria in section 11-200-12 (Hawaii Administrative Rules, revised in 1996). The following is a summary of the potential effects of the action.

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

Proposed development will be constructed within the previously disturbed lands that have undergone decades of modification. No previously undisturbed areas are included in the project area. No loss or destruction of any cultural resource or protected plant or animal species is anticipated to result from the project.

Surveys of botanical resources conducted in the project area found no threatened or endangered plant species. Faunal surveys noted the presence of one endangered and endemic waterfowl foraging away from the adjacent wildlife refuge, and six indigenous protected bird species. The proposed improvements will not involve the use or destruction of wetland habitat frequented by these birds. In addition, one endangered green sea turtle was observed on the beach in front of the project property. Preservation of the shoreline dunes will minimize impacts to the beach as a habitat for

No recorded archaeological sites are known from the project property. None of the sites known from the project region and recorded with State Historic Preservation Division will be affected by project activities.

The project site contains Jaucas sand deposits, which are associated with traditional Hawaiian burial practices and commonly found to contain cultural deposits. A qualified archaeologist has been employed to conduct an archaeological inventory survey (AIS), including subsurface testing, based on an Archaeological Inventory Plan approved by the SHPD. The AIS will include preparation of a monitoring plan for construction activities. The monitoring plan will be submitted to SHPD for review and approval. In accordance with Chapter 6E, HRS, construction activities will not commence until the

SHPD has provided written concurrence that “no effect” to historic sites will result from proposed project activities.

There is always the possibility of encountering unknown or unexpected cultural features, deposits, or burials during construction. If this situation occurs, work in the area will be suspended immediately until the monitoring archaeologist has the opportunity to evaluate the significance of the findings. The Historic Preservation Division of the State DLNR would be immediately notified to determine the appropriate course of action.

(2) Curtails the range of beneficial uses of the environment:

The project will not curtail the range of beneficial uses of the environment. Planned improvements have been significantly revised to avoid impacts to sensitive and unique coastal resources in response to community concerns and expert opinions. All planned development activities will be located within previously disturbed and modified lands. Creation of the two planned beach lots and preservation of the beach dunes will provide legal public beach access in lieu of trespassing and ensure continued enjoyment of the shoreline by the public.

(3) Conflicts with the State’s long-term environmental policies or goals and guidelines as expressed in chapter 344, HRS:

The project will be undertaken in a manner that conforms with Chapter 344, HRS, State Environmental Policy. The proposed collection system will provide a public benefit by providing affordable housing opportunities, creating public shoreline access and recreational resources in the form of two beach parks, preserving Kahuku Golf Course for public use, and preserving coastal open space.

(4) Substantially affects the economic or social welfare of the community or State:

The proposed project will provide a social welfare benefit by providing the existing 72 households in Kahuku Village 5 and an additional 60+ low-income families with the opportunity for home ownership through an affordable housing program. In addition, the project will upgrade existing, deteriorating infrastructure and utilities.

The proposed project is not expected to have any adverse economic impacts. Economic

impacts from the proposed project will result from construction jobs, services, and procurements in the form of construction supplies and equipment. These benefits will be temporary however, and will cease when the project is complete. Long-term benefits are likely to result from increased demand for goods and services from the influx of 60+ families.

(5) Substantially affects public health:

The proposed project will not have an adverse effect on public health. Planned improvements will provide a public health benefit by replacing the existing cesspools with new septic leachfield or aerobic system. Additionally, the water system will be upgraded to meet BWS standards for fire flow protection. Roadway improvements will similarly be developed to facilitate access by emergency and solid waste service vehicles and mitigate air quality impacts from dust.

Noise and air quality impacts resulting from construction activities will be mitigated by requiring the project contractor to comply with the provisions of HAR, Chapter 11-46, Community Noise Control, and Chapter 11-59 and 11-60, regarding Air Pollution Control.

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

The proposed development will result in an increase in population in Kahuku Village with corresponding demand for public services. Approximately 60- 80 new families are expected to reside full-time in the village, joining the existing 72 households. This represents full, year-round residency in the village vacant lots and year-round residency in approximately half of the golf course and country lots which will likely serve as second homes or vacation homes. The majority of the additional residents are expected to be families from the North Shore communities responding to the affordable housing opportunity, thus there is not expected to be a significant net impact on public services.

(7) Involves a substantial degradation of environmental quality:

The proposed project is not anticipated to involve a substantial degradation of environmental quality. Project activities will occur in areas that have already

experienced extensive development and modification to the natural environment. The following planned improvements will result in a benefit to the environment:

- Replacement of existing cesspools with septic leach field and/or aerobic units will improve public health conditions and minimize the potential for pollutant discharges to ground water.
- Roadway and drainage improvements, including widening and paving existing dirt roads, will result in air quality improvements by mitigating dust, and will eliminate stagnant ponding in uneven and rutted road surfaces that provides breeding habitat for mosquitoes.
- Preservation of the beach dunes through application of the voluntary “primary dune” development setback will ensure that the sand dunes continue to function as a natural protective buffer from erosional and ocean storm forces, and will continue to provide habitat to constituent plant and animal species. The presence of homeowners mauka of the dunes will provide an increased level of vigilance to curtail uses (ATV, 4WD, beach fires, etc.) that degrade the dune environment.

Project activities will be conducted in compliance with state and county rules and regulations related to environmental quality and public health, as described elsewhere in this document.

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

Cumulative impacts result from a series of projects that individually do not generate significant adverse effects, but collectively add up to a significant negative impact on the environment. The proposed project is being developed as a single project. No substantial effect to existing environmental conditions will result from this project. The proposed development does not involve a commitment to larger actions.

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

While endangered and endemic waterfowl are known to frequent the adjacent James Campbell Wildlife Refuge, proposed project activities will not take place near that habitat. The proposed project will occur in an area that has been subject to substantial modification and use over time. No rare, threatened, or endangered species are known to inhabit the project site. The proposed project is not anticipated to have substantial effects on rare, threatened, or endangered species, or their habitats.

(10) Detrimentially affects air or water quality or ambient noise levels:

The project is not anticipated to result in significant adverse effects on the areas long-term air or water quality or ambient noise levels. Runoff from construction areas will be regulated under NPDES permit conditions. Best management practices (BMPs) will be employed to prevent soil loss and sediment discharges from work sites. Project activities will comply with DOH regulations as set forth in Hawaii Administrative Rules, Title 11 Chapter 54 - Water Quality Standards, and Chapter 55 - Water Pollution Controls.

Construction-related exhaust emissions and dust generation will be mitigated by requiring that the project contractor comply with HAR Chapter 11-59 and 60, regarding Air Pollution Control. Construction related impacts to air quality will be temporary and will cease when construction is completed. Long-term air quality impacts are related to the typical residential use and use of internal combustion vehicles on the Kamehameha Highway. Long-term impacts from vehicular sources are not anticipated to increase over existing conditions as a result of this project.

Temporary noise impacts related to construction activities will occur, but will cease when the project is completed. Project activities will be conducted in compliance with noise level standards for residential areas, as set forth in Hawaii Administrative Rules (HAR), Chapter 11-46, "Community Noise Control".

(11) Affects or is likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters:

The project site, with the exception of the shoreline dunes and areas bordering Mālaekahana Stream channel, is located outside of the County's tsunami evacuation zone. The height and depth of the dunes creates a buffer that slows wave velocity and offers some protection from the force of tsunami waves.

The project site is in FEMA/FIRM flood zones X, VE and AE, thus is subject to flood inundation from the 100-year flood as well wave velocity hazard. Base flood elevations have been determined for zone VE and AE lands. A portion of the dunes along the shoreline are located within the VE zone with base flood elevations ranging from 14 feet above msl along the southern half of the shoreline, to 16 feet above msl at the northern-

most segment adjacent to the historic Japanese cemetery. Approximately half of Kahuku Village 5 "New Camp" is located within Zone AE, which generally expands out from the Mālaekahana Stream channel to define the flood plain. Base flood elevations in this zone range from 9 to 13 feet above msl. In addition, a portion of the proposed country lots at the north end of the project area are located within zone AE with base flood elevation ranging from 11 to 12 feet above msl.

The planned drainage system will provide a significant improvement over existing conditions and will eliminate the ponding and rutting currently experienced in the village after storm events. The improvements will not, however, result in a significant reduction of the flood plain boundary. Approximately half of the existing residences will remain within the 100-year flood zone boundaries following construction of the planned drainage improvements. The floorboards of the existing post and pier houses located within the flood plain will, in most cases, remain below the designated flood elevations.

Given that the existing village residences were constructed long before the current flood elevations were established and that, based on oral testimony of long-time village residents, the homes have never experienced flooding to the floorboard level during even the most severe flood events in the community, it is recommended that the existing residences be allowed to remain in their current location. The planned development will not exacerbate existing flood hazards or contribute to conditions that could cause flooding.

The shoreline fronting the project site was recently studied by the University of Hawaii Coastal Geology Group and found to be stable or accreting. To minimize coastal erosion hazard, the beach dune system will be preserved to function as a protective buffer and sand reservoir for beach replenishment following a storm event.

(12) Substantially affects scenic vistas and viewplanes identified in county or states plans or studies:

No designated view planes or scenic vistas occur within the project site or surroundings. The presence of the shoreline houses will be apparent from the golf course and limited locations at the makai edge of KV5 residential areas, however the shoreline houses will be subject to development restrictions that will mitigate visual impacts and preserve ocean views. In addition, the two planned beach parks will provide the public with

direct access and views to the ocean.

From the shoreline, some of the houses may be partially visible looking mauka through breaks in the dunes. For the most part, the voluntary “primary dune” setback will situate the houses a minimum of 100 feet, and in most cases more than 150 feet mauka from the vegetated shoreline and behind the crest of the primary dune. As such, the houses will be largely hidden from view. In locations where homes are in view, only the upper portions of the structures will be visible.

The potential for unwanted light spillage and glare from proposed street lighting and residential lighting at the shoreline lots will be mitigated by shielding all light fixtures and aiming them downward. Lighting in the remaining areas of KV5 will not significantly change from existing conditions.

Based on the proposed mitigation measures, no significant adverse visual impacts to the shoreline are anticipated to result from the proposed action. Temporary visual impacts will result from the operation of vehicles and heavy equipment during construction. However, these impacts will be temporary and will cease when the project is complete.

(13) Requires substantial energy consumption:

Construction activities associated with the project will require high, short-term energy use. Energy demands will increase with the additional residential development, however the project is not anticipated to result in a substantial increase in energy consumption over existing conditions. Further, increased energy requirements should be viewed in consideration of the public benefits from the affordable housing opportunities created by the project.

In accordance with the provisions set forth in Chapter 343, Hawaii Revised Statutes, and the significance criteria set forth in Hawaii Administrative Rules, Section 11-200-12, it is anticipated that the proposed project will have no significant adverse impacts to social welfare, natural resources economic conditions, water quality, air quality, existing utilities, noise levels, archaeological sites, or wildlife habitat. Potential impacts should be minor and will be mitigated by measures described in this document.

SECTION 9

References

- AECOS, Inc., (2008) *Biological and Water Quality Surveys of Mālaekahana Stream and the Marine Environment off the Proposed Kahuku Village Subdivision in Kahuku, O'ahu*. Kailua, HI.
- Cultural Surveys Hawaii, Inc., (2008) *Archaeological Inventory Survey Plan for the Kahuku Village Subdivision Project, Kahuku, Kaena, and Malalekahana Ahupua'a, Ko'olau Loa District, O'ahu Island, Kailua, HI.*
- Cultural Surveys Hawaii, Inc., (2008) *Addendum to an Archaeological Inventory Survey Plan for the Kahuku Village Subdivision Project, Addressing Agricultural Lots and Cesspool Replacement, Kahuku, Kaena, and Malalekahana Ahupua'a, Ko'olau Loa District, O'ahu Island, Kailua, HI.*
- Cultural Surveys Hawaii, Inc., (2008) *Interim Report - Cultural Impact Assessment for the Kahuku Village Subdivision Project, Kahuku, Kaena, and Malalekahana Ahupua'a, Ko'olau Loa District, O'ahu Island, Kailua, HI.*
- Data@Work, Cassiday, Ricky (2008) *Kahuku Affordable Housing Market*, Honolulu, HI.
- Data@Work, Cassiday, Ricky (2008) *Kahuku Socio-Economic Study*, Honolulu, HI.
- Coastal Lands Program, Land Division, Department of Land and Natural Resource (DLNR), (1999) *Hawaii Coastal Erosion Management Plan (COEMAP)*. Honolulu, HI.
- Department of Planning and Permitting, City & County of Honolulu, (1999) *Ko'olau Loa Sustainable Communities Plan (ROH, Ch. 24, Article 6)*. Honolulu, HI.
- Development Strategies, Inc & Tropical Crops Services (2007) *Agricultural Feasibility Report, Village Golf Course Subdivision, Kahuku, Ko'olau Loa*, Honolulu, HI.
- Federal Emergency Management Agency (FEMA), (2000) *Federal Insurance Rate Map (FIRM), City and County of Honolulu. Map No. 15003C0030*

- Hwang, David (1981) *Beach Changes as Revealed by Aerial Photographs*, State of Hawaii, Department of Planning and Economic Development, Urban and Regional Planning Program. Honolulu, HI.
- Hwang, David (2005) *Hawaii Coastal Hazard Mitigation Guidebook*, prepared for Office of Conservation and Coastal Lands (OCCL), Department of Land and Natural Resource (DLNR), State of Hawaii. Honolulu, HI.
- LeGrande Biological Surveys, Inc. (2008) *Flora & Fauna Resources Assessment for the Kahuku Village Subdivision Project, Kahuku, O'ahu, Hawaii*. Waialua, HI.
- Sea Engineering, Inc. (1988) *O'ahu Shoreline Study, Path 1 Data on Beach Changes*, Prepared for the City and County of Honolulu. Honolulu, HI.
- Sea Engineering, Inc. (2008) *Memorandum: Kahuku Golf Course Beach Coastal Evaluation, March 3, 2008*. Waimanalo, HI.
- University of Hawaii, Coastal Geology Group, (2008) *Kahuku Beach Shoreline Change Study*, Honolulu, HI.
- University of Hawaii, Department of Geography, (1983) *Atlas of Hawai'i*, University of Hawai'i Press, Honolulu, HI.
- U.S. Department of Agriculture, (1972) *Soil Survey of Islands of Kauai, O'ahu, Maui, Molokai, and Lanai, State of Hawai'i*. U.S. Department of Agriculture, Soil Conservation Service and University of Hawai'i Agriculture Experiment Station, Washington, D.C.

APPENDICES

- Appendix A Public Meetings / Outreach Documentation
- Appendix B Agency Pre-Consultation Letters
- Appendix C Certified Shoreline Documents
- Appendix D Archaeological Inventory Survey
- Appendix E Cultural Impact Assessment
- Appendix F Terrestrial Flora and Fauna Inventory
- Appendix G Biological and Water Quality Survey of Surface and Marine Waters
- Appendix H Socio-Economic Study
- Appendix I Market Study
- Appendix J Dune Characterization Study
- Appendix K Coastal Change Study
- Appendix L Agricultural Feasibility Study
- Appendix M Traffic Study
- Appendix N Existing House Floor Plans and Elevations
- Appendix O List of Current Kahuku Village Leaseholder Residents
- Appendix P Resolution 06-032 Supporting Preservation of Plantation Communities

Appendix A

Public Meetings / Outreach Documentation

Meetings & Events relating to Continental Pacific's Purchase Proposal

April 4, 2006	Mayor Hannemann called a meeting in Laie with the leaders of Kahuku and his staff (Private residence)	October 17, 2006	KVA Phase V Committee meeting to complete 10 Key Elements survey. (Community Center) (40 in favor, 25 opposed, 7 abstained)
May 4, 2006	KVA held a community pot luck (Community Center) Re: Condemnation resolution	November 1, 2006	KVA Phase V Special Committee met with Abe Lee Realty re: CPR and EUP process. (Boardroom)
May 23, 2006	Mayor called a meeting with Kahuku leaders, his staff and Continental Pacific (Honolulu Hale)	November 8, 2006	KVA Phase V Tenant Committee Meeting - Mitchell Imanaka/CPR attorney re: HOA (community center)
May 29, 2006	Mayor called a public meeting to introduce Continental Pacific at Kahuku (Cafeteria) 10 key elements proposal	November 14, 2006	KVA Phase V Tenant Committee Meeting - Guests: Eric Morrison & Abe Lee Realty (community center)
June 5, 2006	KVA Board called meeting with Kahuku Community Association Board & Jr. Re: CP proposal (boardroom)	November 25, 2006	Continental Pacific Celebration Party (Hospital grounds)
June 10, 2006	KVA Informational meeting re: CP proposal - first survey (cafeteria)	December 9, 2006	KVA Informational Meeting - Phase V Reports, Gary Kurokawa Property Tax Division,
June 24, 2006	KVA Annual Membership Meeting - current board re-elected (Community Center) Phase V update conducted	January 11, 2007	Neighborhood Board #28 monthly meeting - Continental Pacific Introduction of the 10 key elements proposal
August 11, 2006	KVA Board meeting with CP - Negotiating meeting (Boardroom)	January 23, 2007	Continental Pacific met with Lea Hong, Trust for Public Land
August 17, 2006	Kahuku Community Association General Meeting - CP Public introduction/brief overview of the 10 key elements proposal (community center)	February 12, 2007	KVA Phase V Tenant Committee Meeting
September 16, 2006	KVA Board meeting with CP - Negotiating meeting (Boardroom)	March 19, 2007	KVA Phase V Tenant Committee Meeting
September 20, 2006	Continental Pacific (Eric Morrison & Jeff Wallace) met at Jeff Compoc's (Private residence with opposition)	April 13, 2007	KVA Conference Call (special committee meeting)
September 21-28, 2006	Continental Pacific held 9 Small group meetings (62 attended) plus 3 special make-up meetings. (Community Center)	April 16, 2007	KVA Phase V Tenant committee Meeting (committee appointments/development updates)
September 29, 2006	Phase V Tenant Committee Meeting (update)	May 14, 2007	KVA Phase V Covenants Committee Meeting (community center)
		May 16, 2007	KVA Phase V Special Committee Meeting (rent increases/Letter of Intent)
		May 21, 2007	KVA Phase V Tenant Committee Meeting (Guest: FHB) Letter of Intent/covenants

June 13, 2007	KVA Board, Continental Pacific and Special Committee (Boardroom) re: Letter of Intent	January 21, 2008	KVA Phase V Tenant Committee Meeting (Guest: Hawaii Home Ownership Center Orientation)
June 18, 2007	KVA Phase V Tenant Committee Meeting - discussion re: Letter of Intent	January 22, 2008	KVA Special Board Meeting (DLNR National Register - Phase V update)
June 20, 2007	KVA Phase V Special Committee Meeting	February 25, 2008	KVA Phase V Tenant Committee Meeting (development update)
July 5, 2007	KVA Regular Board Meeting (Phase V development update)	February 27, 2008	Continental Pacific meeting at R.M. Towill (KVA represented)
July 11, 2007	KVA Phase V special committee meeting (preparation for the small group meetings)	February 27, 2008	KVA Board Meeting (Phase V update)
July 24-26, 2007	Continental Pacific special small group meetings (discuss Letter of Intent, EUP, 201H, CPR) Guests: Dan Ide/Dennis Enomoto/Eric Morrison	March 3, 2008	KVA and Hawaii Home Ownership Center Orientation (Processing for tenants in Phase V)
July 30, 2007	KVA Annual Meeting (special presentation Phase V comparison chart, covenants, Letter of Intent)	March 4, 2008	Governor Linda Lingle "Talk Story" meeting at Kahuku High School. (Question asked if she will try to save Kahuku beach from development/see response letter to KVA dated February 29, 2008)
August 11, 2007	KVA Informational Meeting (included update of Phase V)	March 11, 2008	KVA Board Meeting (Phase V update)
Sept. 17, 2007	KVA Phase V Tenant Committee Meeting (Guest: Abe Lee)		
October 11, 2007	DPP meeting with CP (KVA represented)		
October 15, 2007	KVA Phase V Tenant Committee Meeting (update)		
November 2, 2007	KVA met with Mitchell Imanaka offices (CP proposal)		
November 5, 2007	KVA Board Meeting (Guests: Eric Morrison - CP)		
November 19, 2007	KVA Phase V Tenant Committee Meeting (Guest: Eric Morrison)		
November 30, 2007	CP special tenant map meeting (6 tenants)		
December 3, 2007	CP special tenant map meeting (7 tenants)		
December 19, 2007	KVA made a presentation to High School Students (re: the Phase V development)		

**CONTINENTAL PACIFIC
KAHUKU TEN KEY ELEMENTS - DEVELOPMENT PROPOSAL
2006-2007**

**Continental Pacific Proposal
KVA Correspondence 2006 - 2008**

November 7, 2006 Letter to Kahuku community Association (re: consensus vote)
 November 7, 2006 Letter to Neighborhood Board (re: consensus vote)
 November 7, 2006 Letter to Director of Property Tax division
 March 20, 2007 Letter to Kahuku Community Association
 May 3, 2007 Letter to Romy Cachola (re: Phase V history & CP proposal)
 August 7, 2007 Letter to City Councilman Dela Cruz (re: Development comparison)
 November 6, 2007 Letter to Stubenberg (request for KVA to be included in HOA covenants)
 November 26, 2007 Package mailed to Neighborhood Board #28 (Dec Dec Letts)
 January 26, 2008 Letter to Mayor (re: CP and property tax moratorium)
 January 31, 2008 Letter to Governor (re: beachfront)
 February 4, 2008 Letter to Board & Water Supply (re: water allotments for Phase V)

Background history of the Continental Pacific Development Proposal:

April 4, 2006 the Mayor and his Staff came to Laie to meet with the leaders past and present of Kahuku to hear their concerns regarding the future of the Kahuku Village Residents. Over the next two weeks the Mayor and his staff met with Campbell Estate and Continental Pacific. After much discussion and review of different options, it was determined that this proposal was the most viable and had the least density and impact to the surrounding communities than any of the other options. The Proposal met the majority of the concerns which were voiced at the first meeting with the Mayor. Including, affordable housing, maintenance of the golf course, rural infrastructure, fee simple ownership, and guaranteed financing.

May 23, 2006 the leaders from the Kahuku Village Association and the Kahuku Community Association along with other interested community leaders were asked to come to Honolulu Hale and were introduced to the Continental Pacific Representatives and the Development Proposal. At that meeting the only other option presented included a development plan of 320 fee simple homes to be built on the golf course property.

May 29, 2006 the Mayor and his staff came to a special meeting held at the Kahuku High School Cafeteria to introduce Continental Pacific Representatives Eric Morrison and Jere Henderson. The 10 Key Elements were presented to the residents. The Mayor encouraged the residents to support the proposal.

June 5, 2006 the Kahuku Village Association called a meeting with the Kahuku Community Association Board of Directors, and Mr. Jr. Primacio to discuss and receive feedback, questions and concerns regarding the 10 Key Elements.

August 11, 2006 Continental Pacific met with the Kahuku Village Associations Board of Directors to discuss other possible options and address concerns voiced by KCA and other members of the community.

August 17, 2006 Continental Pacific attended the Kahuku Community Associations General Meeting introducing themselves and announcing the final signing of the land sale.

Other supporting hand-outs

Brief History of the 10 Key Elements
 KVA Comparison Chart
 "Matter of Economics" flyer
 FAQ from small group meetings

September 20, 2006 Continental Pacific representatives met with a group of concerned individuals at a private residence regarding the 10 Key Elements.

September 21-28, 2006 Continental Pacific Representatives and the KVA Phase V Committee met with 69 of 72 residents in small groups of 6-8. Residents impacted by the sale were encouraged to ask questions and voice their concerns regarding the 10 Key Elements proposal.

October 17, 2006 KVA Phase V Committee held a meeting to conduct a survey to determine whether the majority of tenants were in favor or opposed to moving forward with the proposal. The results of the survey were 40 in favor, 25 opposed and 7 abstained.

November 14, 2006 The Kahuku Village Association's Phase V Committee along with Continental Pacific held a meeting to introduce to the KVA residents Abe Lee of Abe Lee Realty who was hired to begin the CPR process.

December 9, 2006 KVA held a membership meeting to go over the Existing Use Permit and CPR Processes. Gary Kurokawa from the City & County Property Tax Division was there to answer questions regarding Property Tax. Continental Pacific's representative was present.

January 23, 2006 Continental Pacific's Representative met with Lea Hong of the Trust for Public Land. The Trust for Public Lands response at this time is not positive.

It is the position of Continental Pacific and the Kahuku Village Association to honor the majority of our tenants who voiced their desires to become homeowners and purchase the existing property fee simple. The Phase V Committee is holding monthly meetings to inform the KVA residents of the status of the proposal. A monthly newsletter is distributed to the KVA tenants. Presently Continental Pacific is in the process of completing the CPR requirements and Existing Use Permit applications.

TEN KEY ELEMENTS

1	CPR existing 75 houses and land. Offer to occupants for average of \$75,000 each. Offer infill vacant lots to remaining KVA residents at preferential prices. (Use rural standards - under 201H)
2	18 Oceanfront Country Lots (minimum 1 acre) (Rural standards)
3	Support Agricultural Developments in Marconi Road.
4	Subdivide Malaekahana Point into single ranch lot (20+acres)
5	P-2 Area (old Adams field) possible recreational cabins
6	9 to 12 Agriculture lots (north end of golf course)
7	Donate 2 private beach parks to community (one on each end of the golf course)
8	Owner financing available at 10% to existing occupants. Will rent to elderly who cannot afford to buy.
9	Donate 9 hole Golf Course (some reconfigured holes) to approved entity with maintenance covenant.
10	Donate 2 Cemeteries to approved entity

AG-2 - Agricultural Zoning (5 acres/3 for livestock, 2 for other uses)

P-2 - General Preservation District (minimum 5 acres)

C - Country (1 acre minimum) agricultural uses allowed

Phase V - Continental Pacific Purchase Proposal - 2007
Existing Use Permit (EUP) - Information worksheet as of 4/16/07

Requirements	Timeline/Action	Agency
1. Completion of CPR map	CP has preliminary map/determine lots	(CP)
2. Architectural drawings of all structures	2 weeks (1 house, rainbow school remaining)	Architect/surveyor
3. Obtain building inspection letter	requested appointment	DPP/Abe Lee
4. Completion of landscaping plans	current 2-3 weeks	DPP
5. Completion of hedge line master plan (boundaries)	current 2-3 weeks	DPP
6. Written statement of site/project description	verification from tenant, affidavit regarding the actual age of the homes.	DPP
7. Photographs of each unit	completing now	Abe Lee Realty
8. Submit all plans (EUP) application	Need letter from inspector, 4-6 weeks after submission	DPP
9. Pave roads, sprinklers or fire hydrants, other infrastructure required	after EUP	

Depending on scope of the project, 3-6 months to prepare documents, and 45 days from acceptance of EUP application.

Right now buildings are Legal non-conforming (residential)

Information supplied by: Abe Lee Realty

Continental Pacific - Development Plan - Phase V East Kahuku

Original Proposal to Campbell Estate

1. Condominimize and sell off existing 75 houses @ \$175,000 (\$13,125,000)
2. Develop 60 acre golf course and oceanfront under law 201G as follows:
 320 house lots as follows:
 160 for affordable housing @ \$75,000
 115 medium range lots @ \$250,000
 45 (80') oceanfront lots @ \$1 million
 16 one acre lots for 800 sq. ft. recreation homes
 9 (2-5 acre) agriculture lots \$600,000

Current proposal to Community

1. Condominimize and sell, finance or lease 75 houses @ \$75,000
2. Conditionally donate golf course to a qualified non-profit for benefit to Kahuku Community - restricted for continued use
3. Donate to same as above a +/- 2 acre ocean park on North side
4. Develop and sell 18 oceanfront lots
5. Develop and sell 9 (2-5 acre) agriculture lots
6. Develop and sell four 5-acre cabin-recreation lots

With interest and holding costs this deal is "break-even" at best. We would have to have overwhelming community and political support. This plan would go together with two country developments on other property adjacent to Turtle Bay - 30 large country lots on 270 acres. In addition the community would need to support SMA's and zoning at county council meetings.

This possible proposal considers that all lots will be on septic tanks, have fire protection, ag-standard paved roads (except recreation cabins), and not be obligated to have curbs, gutters, storm drains, sidewalks or street lights. The infrastructure costs may need to be adjusted after an engineer does calculations.

After talking with county planning persons and our review of sub-division rules, we have decided the best way to handle this area is as follows: we determine the historical use of the property by taking the 1969 aerial photograph of the property, do an overlay of the then-existing houses and lots and continue to allow the same density as then but allow, through the CPR, that density to be moved in the case where a house has been destroyed or removed.

Phase V Development Comparison Chart

KFC Airport, Inc., an engineering management firm with a long-history with KVA was recently retained to review viable options to develop Phase V. KFC solicited opinions from several long-time members of Oahu who have considerable, and successful experience, in the area of property development and management throughout Oahu and the State. None of these people have either a direct or indirect interest in the proposed project.

These developers were presented options (1 through 4) as summarized in the attached table. In their opinion: Options 3 & 4 were the most viable and should be seriously considered by KVA. Presenting a unique "window of opportunity" for the tenants of KVA. Options 1 & 2, while viable, are not likely to happen without great cost to KVA both financially and in time spent. Neither option 1 or 2 present a "guaranteed" outcome. The risks are higher given what is being offered via Continental Pacific. Both 1 & 2 represent longer timelines and do not guarantee that Continental Properties will not proceed without KVA's direct involvement.

Development Process	Estimated Time line	Benefits received by the community	Concerns/risks to be considered	Cost Factor
OPTION 1. KVA: Purchase Land through commercial loan A. Tenants remain as renters until flood mitigation is complete then tenants sub-divide. B. Tenants use USDA Rural Development low interest loan to complete infrastructure requirements.	Unknown - dependant upon flood mitigation.		1. Does not guarantee elimination of 18 oceanfront lots. 2. No immediate ownership 3. Puts financial burden on the existing tenants 4. Uncertain schedule for flood mitigation. 5. Does not guarantee golf course to remain open space.	Rental increase (to be determined) for repayment of commercial loan for land purchase Additional rental increase to cover infrastructure and other development costs. (Sub-dividing etc.)

Phase V- Continental Pacific Purchase Proposal - 2007 CPR Information worksheet as of 4/16/07

Requirements	Timeline/Action
1. Completion of CPR map	CP has map needs to determine lots
2. Obtain building permits package	(little information received from DPP)
3. Architectural drawings of all structures	2 remaining, 1 appointment made, 2 weeks
4. Obtain building inspection letter	Inspector 2-3 weeks
5. Order the Preliminary Title Report	Abe Lee has preliminary report
6. Attorney prepares CPR documents	need city inspector letter
7. Send out 120 day letter to tenants	120 days. Notifying tenants of legal right to purchase
8. Recordation of the CPR Declaration & By-Laws at the Bureau of Conveyance	2-3 week process (DPP) Need letter from the city, blue prints...
9. File CPR application at the Real Estate Commission	4-6 week process
10. Prepare preliminary budget for condominium association	- covenants - budget by professional management co.
11. Upon issuance of final public report place owner-occupant ad in the newspaper	after #9
12. Follow-up with the Bureau of Conveyance on the TMK numbers for the units	after #8 Tax office issues TMK 6 - 12 months for them to come directly to new owners.

Depending on scope of the project, 2-6 months to prepare documents, and 1-3 months from acceptance of CPR application. Generally, projects can take from approximately 5 months to over 1 year to complete.

Phase V Development Comparison Chart

Development Process	Estimated Time line	Benefits received by the community	Concerns/risks to be considered	Cost Factor
<p>OPTION 3. Continental Pacific: Develops Phase V using the 10 Key Plan.</p> <p>A. Existing tenants purchase existing lots;</p> <p>B. Other KVA tenants receive option to purchase at an affordable price.</p>	12-18 months from 201H approval	<ol style="list-style-type: none"> 1. Includes two community oceanfront parks. 2. Includes two existing cemeteries. 3. Allows Golf Course to remain in perpetuity. 4. Provides only for existing families and their children. 5. Least added burden on infrastructure. 6. Infrastructure costs included (paved roads, septic and required fire safety). 7. Interior property tax rates. (least impact). 8. Offers rentals for existing elderly tenants who can not afford to buy. 9. Immediate ownership. 	<ol style="list-style-type: none"> 1. Includes 18 oceanfront lots. (Not in keeping with current character) 2. Only provides for KVA tenants and their children. 3. Association dues for common areas. (i.e. roads & water system) 	<ol style="list-style-type: none"> 1. Lot: \$75,000 average existing lot cost. 2. Structure/House: \$200,000 target to maintain afford- ability.

Phase V Development Comparison Chart

Development Process	Estimated Time line	Benefits received by the community	Concerns/risks to be considered	Cost Factor
<p>OPTION 2. City & County: A. Condemns the beach and golf course and residential area.</p> <p>B. Tenants remain renters until Flood Mitigation is complete.</p> <p>CI. After Flood Mitigation the City works with KVA to subdivide and to develop affordable housing for Phase V or C2. KVA buys land from city and uses USDA rural development funds.</p>	Unknown - dependant upon flood mitigation.	<ol style="list-style-type: none"> 1. Eliminates 18 oceanfront lots 2. Golf course & beach become public. 3. Becomes a city approved sub-division. 	<ol style="list-style-type: none"> 1. KVA houses remain as rentals (with rental increase) until flood mitigation is complete. 2. Lacks Mayors support. 3. Long term maintenance concerns for the City. 4. Uncertain schedule for flood mitigation. 5. Increases taxpayers burden. 6. No immediate ownership. 	<ol style="list-style-type: none"> 1. Rental increase (to be determined) 2. Infrastructure costs passed on to tenants. (est. 6-8 million) 3. Land purchase costs passed on to tenants. (Est. 4-6 million)

SATURDAY MAY 10, 2006
 KAHUKU HIGH SCHOOL CAFETERIA
 9:00 A.M. TO 12:00 P.M.

INFORMATION MEETING FOR THE VILLAGERS TO LEARN MORE ABOUT THE MAYORS PROPOSAL WITH CONTINENTAL PACIFIC. THIS IS THE TIME FOR ALL OF YOU TO DECIDE WHAT YOU WANT THE VILLAGE TO LOOK LIKE IN THE FUTURE.

PLEASE COME AND VOICE YOUR QUESTIONS AND CONCERNS REGARDING THIS PROPOSAL. THE MAYORS STAFF WILL BE THERE TO ANSWER QUESTIONS.

Phase V Development Comparison Chart

Development Process	Estimated Time line	Benefits received by the community	Concerns/risks to be considered	Cost Factor
OPTION 4. Continental Pacific: Develops 300-400 homes on golf course parcel: A. Sells existing lots to existing tenants. B. Gives preferential pricing to other KVA tenants	2 years	1. Eliminates the 18 homes on the oceanfront. 2. All KVA tenants receive the option. 3. New homes become City approved subdivision 4. Provides for sale to non-Phase V KVA tenants. 5. Immediate ownership.	1. Loss of rural lifestyle. 2. Greater burden on infrastructure. 3. Higher property tax rates. 4. Loss of the golf course.	1. Cost to KVA tenants to be determined.

June 10, 2006
Phase V - Meeting
Kahuku High School Cafeteria
Agenda

**MAYOR TO MEET WITH KAHUKU COMMUNITY;
PROSPECTIVE BUYER TO PRESENT PROPOSAL FOR PHASE V**

WHERE: KAHUKU HIGH SCHOOL CAFETERIA

WHEN: MONDAY, MAY 29, 2006

TIME: 1:00 P.M.

PLEASE BE THERE TO HEAR THE PROPOSAL AND ASK ALL OF YOUR QUESTIONS. KVA WILL BE HAVING A MEETING AT A LATER DATE TO DISCUSS THE OPTIONS AND HEAR FROM YOU WHICH DIRECTION YOU WISH TO PURSUE.

Introduction of Handouts & Review:

Outline of other proposals and Morrison proposal Survey (Questionnaire)

How would it work:
Morrison Proposal (Overview of process)

Map with estimated houses (total 150). Ariel Map/overview with 1969 Map

Financing (Investors, VA, Conventional, FHA, Rural Development)

House Model Introduction

House rehab process

Rentals (KVA manage)

Flood requirements (house height)

Survey (Questionnaire) including Name and House # of each tenant.

Are you: in favor/against/conditions/alternatives/questions

KAHUKU VILLAGE ASSOCIATION SEPTEMBER - 2006 - NEWSLETTER

Kahuku Community Association

KCA held a meeting 8/17/06. The agenda included Jr. Primacio giving a brief history of Kahuku, Jason Borderson from Tetra-Tech went over their final clean-up phase for the sugar mill area. Diane Tafua was introduced as the new District Park Recreation Director taking Ben Samson's place. Continental Pacific's Eric Morrison and Jerry Henderson announced that the land sale closed, they stated that there are no middle men in this process to keep the cost down and they are hopeful they will receive the communities support so Phase V

can move forward. Kirt Fraustet and Jr. Primacio introduced the Managers Ridge development plan which consists of 144 lots of which 106 lots are 6,000 sq. feet, 37 are 1/2 acre lots, 5 acre banana patch and 1 acre park. Average cost for house and lot on 6,000 sq. feet is estimated at \$325,000. Present Hawaii, Moe Mahi and Eric Campbell shared that they have purchased 452 acres behind the Catholic Church. Campbell Estate represented by Lloyd Haraguchi commented that "he believes that the new land owners, Continental Pacific will give the villagers the opportunity for the future". Clayton Hee encouraged the community to work together. Michael Magohay's representative stated the same. Donavan Dela Cruz' representative went over the CIP Budget which includes dredging of streams, district park parking lot expansion, storm drains, police station roof repair and the Resolution 06-288 going before the budget committee on 8/23 at 9 a.m. The floor was opened for questions and comments meeting was adjourned at 9:00 p.m.

Kahuku Community Fund - This fund is overseen by the Hawaii Community Foundation a non-profit grant dispersing organization, they are working together with a 5 member board, made up of 2 Kahuku Community Association Board of Directors, 2 Neighborhood Board 28 Board of Directors and 1 Kahuku Village Association Board of Director, they are determining the guidelines & requirements for disbursement. The fund now has a total of 1 million dollars, some of which will be set aside in perpetuity to insure grants for the future. They are not able to accept applications at this time, hopefully the application process will be finalized by beginning of 2007.

Phase V - Continental Pacific finalized the land sale on August 17, 2006. The board met with them on August 15, to express the concerns of the tenants. There were positive answers regarding the ability to purchase fee simple in the flood area as well as the ability to re-build in the event of a catastrophic event. Small group meetings will be held to go over the options and allow for a vote, as well as financial counseling options. The office will be calling to set up each tenants meeting time.

Phase IV Update

August 23, 2006 resolution 06-288, which is asking for approval to extend the lease for the Phase IV city owned property until 2010 was on the agenda for City Council. Leslie Llanos and Debbie Sarsona testified on behalf of the tenants of KVA. The resolution was adopted and will go to full council, it is expected to pass. We are waiting to hear from the Army Corp of Engineers regarding the final report of the feasibility study.

Fishing Gate

Alberto Vendiola has been hired to check the beach and report any violations to the fishing club agreement. The office hours for fishing club members is Monday & Wednesday 9 a.m. - 12:30 p.m. and Fridays 9 a.m. - 4:30 p.m. The cost is \$20.00 a year for Kahuku residents. Just a reminder, unauthorized vehicles are no longer allowed to drive on the beach and all members are required to attend one beach clean-up a year.

Kahuku's Ledgends

"The native of Kahuku lived in a narrow mountain-bound seaside world ruled by kapus of chiefs and priests and surrounded by sacred heiaus wherein they worshipped. Everywhere were rocks and pools and land points all with accompanying legend that gave meaning to the surroundings. They used the mature leaves of the hala tree for floors, walls, mats, sails of the great canoes and small things like sandals and kites which could fly high in the winds of Kahuku. Dogs, chickens and pigs were raised to add to the fish and poi and sweet potato. These and all the items of the Kahuku's garden had been brought by far-sighted ancestors to create a livable existence in the new lands. They also brought sugarcane and the Kahuku planted it in clumps as windbreaks about his house, prizing the cane for its sweetness. Little did they know that one day great fields of sugarcane would cover the whole KoolauLoa district and slowly, like a green mantle falling across the landscape, it would obliterate all the crumbling remnants and traces of their past."

(An excerpt from The Kahuku Sugar Mill Story by Barbara Wilcox an Island Heritage Book)

Phase IV history

In 1968 Alexander & Baldwin announced that they would shut down the Kahuku Sugar Mill. In 1971, the Kahuku Plantation was closed down leaving some 240 plantation camp families in the lurch. Not only were hundreds of workers left jobless, but the plantation closure threatened the families with the loss of their homes. Fearing for their livelihood and their homes, the townspeople formed the Kahuku Housing Corporation (KHC) to manage the town and take over A&B's old lease which was scheduled to expire on June 30, 1983. Each family wishing to remain in the town was sold one share in the corporation for \$100 and the head of the household was given one vote in Village affairs. This group elected a 15-member Board of Directors, who elected the officers of KHC and a general manager to run the day to day operations. The Kahukuans had become their own government and landlord wrapped into one. KHC collected rents, made repairs on the homes, maintained the town's lighting and water systems, paid Campbell Estate a lease fee from each tenant on the residential land and all property tax. The villagers voiced that they wanted to own the land they were living on, and a development plan was formulated to begin the process. (To be continued.)

Announcements

Labor Day is a holiday the office will be opened on Wednesday, September 6th.

KVA Small Group Meeting Agenda September 2006

KVA - Opening remarks and introduction of CP Representatives

Plan taken from community leaders input given directly to the Mayor

Proposal receives full support from the Mayor for the permit process
(which is essential to overcome the flood issues.)

Mayor checked out CP (to determine whether they keep their word)

Least amount of impact to the community

Saves the golf course (keeps area open)

Allows for rural infrastructure

Affordable (allows fee simple and rentals)

KVA did request consideration of other options (all determined not feasible)

Continental Pacific - Eric Morrison/Jeff Wallace

Map proposal with beachfront homes

Review Points on proposal

Questions/discussion

KVA - Overview of projected Phase V Planning Committee

Continental Pacific representative

3 KVA Board of Directors

City Representative (for consultation purposes)

CPR Lawyer (for consultation purposes)

Financial Representative (Bank/Broker firm)

Outside observer - (member of the community, not living in Phase V)

Working committees:

Kokua for house repairs/labor work

Researchers for financial matches/other funding

Covenants/House models/Project specifics

Refreshments/Meals for volunteers

Sign-up sheet for working committees (Any recommendations from these committees will be brought to the KVA Board and then to the tenants for final approval.)

KVA - Announcement: Meeting October 17, 2006 at 7pm at the Community Center for tenants to vote yes or no on this proposal. There will be a notice mailed to each tenant. Voting for assigned tenants only. One vote per household.

Final Comments - If the majority votes no, Continental Pacific has said that they will: raise the rent, to recoup their monies and put the land up for sale at market value.

Continental Pacific Development Proposal - Small Group Meeting Questions Frequently Asked Questions

Question: What costs will Continental Pacific be responsible for?

Answer: There are certain requirements CP will have to meet before the CPR (Condominium Property Regime) will be approved. Those improvements will be the responsibility of CP and will be common sense improvements for health and safety. Improvements will include roads (to rural standards), fire safety (water sprinklers or fire hydrants), septic tanks (1 per 10,000 sq. ft), house improvements in accordance with the inspectors check list (working together with KVA and the Kokua committee to limit costs), possible street lights. These are the known requirements at this time.

Question: How will the boundary lines be determined?

Answer: CP will send a surveyor to go over with each assigned tenant the existing boundaries as of August 2006 when CP purchased the property. The actual square footage for each existing house will be determined at that time.

Question: Can I make my lot larger?

Answer: If the lots are increased in size outside of their current boundaries, there would be an additional cost for those lots. It will also lessen the number of empty lots which will benefit those tenants that are in the flood way, Phase IV area and Highway Mauka..

Question: Are the lines on the current map exact?

Answer: No, the number of lots and the boundary lines will be determined by the surveyor, CP representative and the existing assigned tenant.

Question: Is the \$75,000 for 5,000 sq. ft. only?

Answer: After the boundary lines and lot sizes are determined the lot cost will be an average of the total number of lots, based on \$75,000 for 5,000 sq. ft. That means that the average may end up being more than 5,000 sq. feet and anything over that will be an additional cost. It is dependant on the total number of lots. The actual numbers will not be known until the lines are determined.

Question: Will the tenants in the flood way be allowed to rebuild?

Answer: This will be one of the allowances asked for in the 201H variance.

Question: What is a 201H variance?

Answer: The 201H is a variance utilized only for affordable housing projects. This variance will be developed from the input of CP and their specialists, the KVA development committee and others. It will cover any areas that are of concern such as: rebuilding the homes in the floodway, rural infrastructure and fee simple conversion. After the application has been completed it will be presented to our Representative Donavan Dela Cruz who will then submit it to the City Council for approval. Once it has been submitted to the City Council they will have 45 days to approve or disapprove. This variance will be key in keeping our project low impact and affordable. This process will require the full support of the community.

Question: Will we be on the Board and Water Supply?

Answer: We will continue to receive water from BWS. The Association will read our individual meters and bill the homeowners. Either the Association or BWS will read the main meter.

Question: Do the beachfront home lots have to be so large?

Answer: At present the area is zoned agricultural which means the lots have to be at least 1 acre each. We can request that it be re-zoned to R-5 (residential). This will allow CP to make the lots smaller and possibly cluster them in two groups, or keep them all together in the middle, allowing for more open areas and access.

Question: If the beachfront land is re-zoned to R-5 will CP (Continental Pacific) create more lots?
Answer: The number of lots will remain at 18.

Question: If the beachfront lots are re-zoned to R-5 will there be any restrictions made as far as the number of houses on each lot and height restrictions etc.? (Under current R-5 rules you are allowed to build 1 house per 5,000 sf)
Answer: Whatever restrictions would apply to the beachfront homes would also apply to all other lots. These types of covenants will be discussed, in committee and community meetings, and determined by a majority.

Question: Who will get the empty lots?

Answer: First CP would like to make those lots available to those tenants in the flood way. Second, to those on the Phase IV & city owned land areas as well as tenants on the Highway Mauka area. CP would like to keep the property in the hands of plantation workers and their children.

Question: What about the lots in the floodway?

Answer: Final sale and development of these lots will be dependant upon the passing of the 201H variance.

Question: Will the lots be purchased fee simple?

Answer: This will be one of the conditions submitted in the 201H variance. That is why full community support is needed to make sure the variance is passed. The Mayor has already expressed his support of this proposal.

Question: Can my family help me purchase?

Answer: Yes, we would encourage this.

Question: What if I can not get financing?

Answer: CP is willing to finance affected tenants at 10% for 30 years. This is a last resort if other lower interest financing is not available.

Question: If I don't want to buy will I have to move?

Answer: No. KVA will acquire the property from CP and keep it as a rental.

Question: What are the prices for the 9 agriculture lots?

Answer: That has not been determined at this time.

Question: Who will own the golf course and run it?

Answer: The Association will have the deed to the Golf Course, with the conditions that it will remain a golf course in the future. CP will interview interested persons who want to manage the property. CP would like to see a low-key Club House and Restaurant. A portion of the income received from the Golf Course will go to the Homeowners Association and could be used to maintain the parks, cemeteries and common areas.

Question: Can I build a new house right away?

Answer: We will need to work with the existing conditions, until the CPR and 201H variance processes have been completed. A new house can be built after the lot had been conveyed fee simple to the tenant.

Question: Can I build any house I want?

Answer: The Association will have a committee that will look at affordable plantation style homes that meet the criteria of the covenants. These models will be presented to the tenants for review and a selected group will be approved.

Question: What do I have to do as a tenant?

Answer: The most important thing is for all of the tenants and community to work together and support the project. Especially going to City Council in support of the 201H Variance. There will be changes as we move through the process, but we (CP) will be committed to keeping everything as low-impact and rural as possible.

Question: What will happen to Adams Field?

Answer: Because of zoning there are limited uses. One use is for recreational cabins. We are looking at proposals for that purpose.

Question: What will happen to the point called Reynolds area?

Answer: Because of zoning this area is limited to ranch lands. It will remain open space. We are working with an interested buyer, who will use it as ranch land.

Question: What will happen to the 2 cemeteries and who will be responsible for them?

Answer: A committee will look at what needs to be done and the most effective ways of maintaining the areas. The Association will be responsible to maintain the cemeteries. That is why the management of the Golf Course will be so important, monies received from the golf course to the Association will defray any costs to the tenants for this maintenance.

Question: If the lot is out of the flood way and the tenant wants to build a new one, what requirement if any would they need to meet?

Answer: New homes would be allowed only after the 201H variance is approved. After the process is completed and the homes are conveyed fee simple, it will be up to the new owner (tenant). All existing requirements for city permits would apply.

Question: Why can't we go on the sewer system?

Answer: The cost to redo all the sewer lines in Phase V would make the project unaffordable.

Question: Can the city resend the 201H variance?

Answer: In order to reverse the 201H variance a new petition would have to be completed and given to our City Council Member giving the reasons. Full community support would be needed.

Question: Can I use my own contractor to bring my house up to code?

Answer: KVA has been encouraging tenants to make repairs on their homes. Policy states that a letter with a brief description of the desired improvements should be given to the Board for approval prior to construction.

Question: Who will make the improvements on my house after the city inspection is completed?

Answer: This will be a joint effort between CP, the existing tenant and the Kokuia committee. The committee will include a licensed carpenter, plumber, electrician along with labor volunteers from the community.

Question: Are the roads going to be private after the lots are sold fee simple?

Answer: Yes. There is a possibility that some things like trash pick-up will still be available as part of the 201H variance. There will be a homeowners association that will manage the roads and common areas. The monthly cost will be determined by the amount of needed maintenance and the number of tenants in Phase V. The income received from the Golf Course will also defray these costs.

Question: Can the people in the flood way get a permit?

Answer: The 201H variance will be asking to build in the flood way.

PHASE V PLANNING COMMITTEE MEETING

DATE: TUESDAY OCTOBER 17, 2006

TIME: 7:00 P.M.

PLACE: KAHUKU COMMUNITY CENTER

The purpose of this meeting is to have a consensus vote regarding the 10 Key Plan Elements listed on the Continental Pacific proposal map. KVA held small group meetings with the majority of tenants in Phase V. Continental Pacific also met with other tenants individually and in smaller group meetings. They have made themselves accessible to any tenants wishing to talk with them. KVA and Continental Pacific now need to know the direction you want to take regarding this current proposal. Please review the attached questions and answers that were brought up at the tenant meetings. Each assigned tenant will have one vote to decide whether they are in favor of moving forward or opposed. If you are unable to attend or you would like to have someone else vote in your place, please go to the office to make the arrangements.

Question: Will the rent be raised? Why?

Answer: CP (Continental Pacific) will have to make a few gradual increases in rent in order to help pay for the current mortgage and initial expenses. KVA will determine how much of that will need to come directly from the tenants. CP will not raise the rent to market value, since they believe the market value rates are too high. Up until recently CP had not received any monies from KVA, due to a condition set in the original contract with Campbell Estate. This condition has been changed and now CP will be receiving the \$100.00 per house per month previously paid to Campbell Estate. CP believes that with the cooperation of the tenants and the support of the City officials, things can be done quickly and with the least amount of impact.

Question: Can a person in the flood way get a loan?

Answer: CP (Continental Pacific) will guarantee loans for our tenants in the flood way at the same rates for other tenants, 10% for 30 years.

Question: What are the plans for the Marconi land?

Answer: CP will not change the zoning. They will clean-up and divide the area into smaller agricultural lots, utilizing the 201H variance to allow rural infrastructure and limited street lights etc.

Question: What is the time line for completion?

Answer: This is dependant upon the passing of the 201H variance. Once the variance is approved by City Council, CP projects 18 - 24 months to completion.

Definition of CPR (Condominium Property Regime)

Hawaii Revised Statutes 514A-3 defines condominium as this special way of owning property. It states that a condominium is "the ownership of single units, with common elements, located on property within the condominium property regime." In a condominium property regime, every member owns their own apartment or single family home unit and all the members jointly own the common elements.

KAHUKU VILLAGE ASSOCIATION, INC.
P.O. BOX 398 • KAHUKU, HAWAII 96731-0398
PHONE: 293-4488

Statement to the Phase 5 Folks - 10/17/06

Hello everyone and aloha,

Sorry I could not be there today to address you all again directly before you complete the survey. I am out of country. I want to thank you all again for taking the time to meet with me and discuss the 10 key points to the plan.

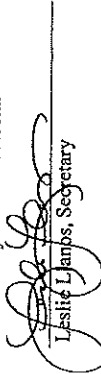
We have come a long way since we first met with the elders and leaders of Kahuku in the Mayor's office and with the community as a whole with the mayor again in the school cafeteria nearly three months ago. As far as we know, we are the only developer to meet with folks before we even owned the property. And since these initial meetings Jere or I believe we have met with members of every household in Phase 5. I have also met with those individuals and groups who, for their own reasons, did not want to attend the meetings sponsored by the KVA. All told, I reckon I have attended nearly thirty meetings with the good people of Kahuku concerning this plan over the last two months.

As evidenced by your frequently asked questions you have a very good understanding of the main points of the plan. I have heard that a few folks have asked why we need to do this survey now. As I have done my best to explain, we are just like you. We have bills to pay. And they are from the bank. We are not a billion dollar plus trust. In the greater picture of developers we are small guys. Further, it is clear by the good questions you have asked over the past two plus months and that we have done our best to answer that you know the plan well. This plan is one that was made with your input from the very beginning. As outsiders, we listened to what you had told the mayor and his people initially and we have continued to listen closely to what you all have to say. As a result, several substantial changes have been made to the original plan - all to the benefit of those of you living in Phase 5 and possibly Phase IV and the highway area as well. We have now reserved

**SPECIAL PHASE V COMMITTEE MEETING
MINUTES-OCTOBER 17, 2006, 6:00 P.M.
KAHUKU COMMUNITY CENTER**

1. CALL TO ORDER: 6:15 P.M.
2. CONTINENTAL PACIFIC SURVEY PURPOSAL: The 72 tenants that reside on the Continental Pacific property were called to this meeting to take a consensus of whether or not they agree or disagree with the Continental Pacific Proposal. A statement from Jere Henderson and Eric Morrison was read since they were unable to attend the meet. (statement attached)
3. APPOINTMENT OF TELLERS: Lisa Evangelista, Dorn Tubal, Anthony Pickard and Debbie Sarsona were appointed tellers.
4. SURVEY FORMS: Tenants signed in for their survey that was by secret ballot. 65 out of 72 completed the survey. The secret surveys results were read: 65 signed in, 40 agreed with the CP proposal and 25 disagreed with the CP Proposal. The results indicated that the majority of those who took the survey were in support of the Continental Pacific Proposal.
5. MOTION: A motion was made by the majority of the Board of Directors to move forward with the proposal, requesting that Continental Pacific put some type of agreement in writing. The motion was accepted.
6. ADJOURNMENT: 7:15 P.M.

Recorded by: Debbie Sarsona



Leslie Lianos, Secretary

Kahuku Village Association - November 2006 Newsletter

Wednesday, July 6, 2006 a Council Committee Meeting was held and the order of business was the Mayor's Affordable Housing Advisory Committee. Deborah Kim Morikawa, Director, Department of Community Services, submitted the Final Report and Recommendations. The Advisory Committee was comprised of individuals from seventeen business and government agencies and focused on workable recommendations to affordable housing policies that would help address the short- and long- term affordable housing needs with minimal budgetary impact. Key recommendations such as streamlining permitting processes; maintaining and creating new development incentives; preserving current affordable rental housing were included. Another point she stressed was that the government should not be developing affordable housing but rather be encouraging private developers, through various incentives, to develop the housing. *(A copy of these minutes are available in the office)* This is important to both of our developments.

Phase IV Update: Jimmy Leonardi met with the City Department of Community Services to discuss concerns with the upcoming developments in Kahuku that Phase IV water and sewage needs not be overflooked. It was recommended that a letter be sent to DPP to confirm Phase IV water and sewage allotments. This letter was mailed.

Phase V Update:

The Committee meeting held on October 17, 2006 accomplished what it was meant to and 69 out of 72 tenants completed the survey. The results were 40 in favor, 25 opposed. 7 families did not complete a survey. This results in a 55% majority. Continental Pacific was encouraged by the numbers and will be setting up a meeting with the tenants in the near future. A motion by the majority of the Board of Directors was made to move forward with the proposal, requesting that Continental Pacific put some type of agreement in writing, as soon as possible. Thank you to all those families who took the time to complete the survey. The full committee will meet again this month to work on questions regarding the floodway area. There will be a **Special Phase V Committee Meeting on Tuesday, November 14, 2006 at 6:30 p.m. at the Kahuku Community Center.** This is an important meeting for all the tenants in Phase V. There will be a **KVA Membership Meeting Saturday, December 2, 2006 at 9:00 a.m. at the Kahuku Community Center** to review, answer questions and inform all our members where we are, and where we are headed. Flyers will be mailed to all **KVA Members**. If you are not a member of KVA at this time, we would recommend that you join now; this will insure that you do not miss out on any up coming information.

Condominium Property Regime (CPR) - Explanation: Condominiums are a different type of ownership created in the 1960s of real property unlike subdivisions, which have been in existence for centuries. Hawaii is a leader in the development of condominium laws. Condominiums were at one time only high-rise buildings, town houses or apartment buildings that were converted to condos and sold to individual buyers. Within the last 15 years, single-family homes on one lot were condominiumized because the property could not be subdivided or the owner chose to do a condo project rather than subdivide. A condominium project is created by recording the master deed or lease, declaration of the condo project, by-laws of the project and the condo maps at the Bureau of Conveyances or at Land Court. A land owner may choose to do a condo project because although he has enough land to build the number of units, the lot configuration may not be conducive or preclude a subdivision from being approved. The lots may be too narrow, or the access to the lot may be a flag driveway, or the lot may be too steep and the grade is unacceptable for a subdivision *(in our case we are have flood designated areas and want to retain our rural infrastructure)*.
Definition: A condominium is, "the ownership of single units, with common elements, located on property within the condominium property regime." In a condominium property regime, every

lots to be for those of you living in the flood way. Originally, we had hoped to sell these same lots, but as it was pointed out at one of our meetings that the folks living in Kahuku Village have always "paddled together". We have since agreed to reserve any further lots which may be available to those people living in Phase 4 and the highway area. And finally, if there are any lots remaining we have promised them at the lowest price possible to the children of those of you living in Phase 5 now. Also, originally we had planned on building recreational cabins on the P-2 property. Instead, we have found a buyer who will keep it as is. These changes represent millions of dollars of potential revenue that will not go to us.

A very few people have complained the \$75,000. For a home and lot near the ocean is not "that good a price". You only have to ask most anyone if \$75,000 is not only a great price, but a once in a lifetime chance to buy, finally, the home and lot you and your families have been living in for generations at a price at least \$100,000 below what is considered by law to be affordable housing. You need only ask those people who have plans to build hundreds of homes on Gunstock Ranch and Managers Ridge what price, on average, they will be selling their homes for to confirm just what a great opportunity this plan is for you to finally own your place and land under it.

Including the 72 plus homes and lots to be, the infrastructure improvements, the golf course, two cemeteries and two parks, we are either selling or giving away at significant loss over 90% of our land. We are acting as your bank and developer.

This survey today is an important first step to making the plan a reality. Working together we can do something very special here in Kahuku. Whatever the outcome, we wish you all the very best in life.

Aloha

Eric Morrison and Jere Henderson (Continental Pacific)

member owns their own apartment or unit and all the members jointly own the common elements.

Kahuku Community Association (KCA) Announcements:

General Membership Meeting is Thursday, November 16, 2006 @ 7p.m. at the Kahuku Community Center.

Community Association Christmas Program, Friday, December 22, 2006 @ 6:30 p.m. Kahuku Community Center. Bring the whole family for the fun!!!

Other Announcements:

Beach clean-up was a success. There were 4 tenants and 13 fishing club members that signed in. Thank you to all who participated.

The office will be closed on Thursday, November 23rd and Friday, November 24, 2006 to celebrate the Thanksgiving Holiday. Be safe and enjoy the holiday with your family and friends. The Board of Directors and Staff hope you have a great holiday!

KAHUKU VILLAGE ASSOCIATION, INC.
P.O. BOX 398 • KAHUKU, HAWAII 96731-0398
PHONE: 293-4488

Phase V Committee Meeting Minutes

November 8, 2006 at 6:00 p.m.

Kahuku Community Center

Called to Order: 6:10 p.m.

Attendance: Leslie Llanos (Chair)

John and Kay Errett
Dana Shigemitsu
Sherry Martinez
Jim Camit
Time Shea, Jr.
Desiree Heder
Herbert Hirotsu
Junior Primacio
Angel Adversalo
Dorn Tubal
Joshua Primacio
Laura Pickard
Kay Afajava
Ashley Stibbard (left early)

Discussion regarding the Existing Use Permit hand-out and the meetings coming up, prepare specific questions for Abe Lee and CP...those concerned about the beach were challenged to search out alternative ways of purchasing that area. Handouts: Agenda & EUP C&C paper.

Questions:

Maintenance fee and rent as one payment?

Cemetery - do all the tenants have to pay for that upkeep? If they don't want to? Adams Field - who will maintain that area?

How come they could sell Adams Field to a different person without letting us know, since that was part of the the 10 key elements? If they can do that then they can just change anything else.

? To Mitchell - Who sets up the homeowners association? The developer writes up by-laws recorded to set up condo process...tenants would need to determine if we should incorporate or not, there are pros and cons, would need to discuss that at the appropriate time.

Jr. 2) Septic tanks - clarify 10,000 gallon septic tank for a lot that is 5,000 sq ft?

Jr. 1) KVA retained Mitchell? Yes

KAHUKU VILLAGE ASSOCIATION, INC.
P.O. BOX 398 • KAHUKU, HAWAII 96731-0398
PHONE: 293-4486

PHASE V – COMMITTEE MEETING-AGENDA
NOVEMBER 14, 2006 - 6:30 p.m.
KAHUKU COMMUNITY CENTER

OPENING COMMENTS:

The purpose of this meeting is to introduce tenants to Abe Lee of Abe Lee Realty and his team. They have been hired by Continental Pacific to process the CPR application and obtain the Existing Use Permit. Abe Lee and his team will be working with the architect, surveyor and house inspector. They will also be working closely with you, the tenants through the purchasing process. They have been doing projects using the CPR and Existing Use Permits for the past 10 years and conduct seminars to teach other Realtors the process.

INTRODUCTION:

Eric Morrison of Continental Pacific, Abe Lee, Jacob Lee and Dane Martin from Abe Lee Realty.

ABE LEE REALTY:

Brief introduction to the CPR process and the Existing Use Permit process.

“The purpose of the EU permit, a “grandfather” provision, is to recognize the hardship imposed upon uses that were legally established, but may not comply with current zoning standards.”
(Department of Planning and Permitting, City & County of Honolulu)

QUESTION & ANSWERS: Open to the tenants

ANNOUNCEMENTS:

November 25, 2006 @ 12:00 p.m. - 4:00 p.m., Continental Pacific Party
December 2, 2006 @ 9:00 a.m. KVA Information Meeting

Jr. 3) Flooding in Phase V affects 30 homes? Bridge built in 1999 - find out the specifics about whether the new bridge should have reduced the lines for the flooding. When they did it. R.M. Towill?

Jr. 4) Suggest - paper trail of everything we do - what happened and when Kay - CPR process will buy house, lot and 4 pins?

Joshua - What if Continental Pacific cannot sell the beachfront lots? Is the whole project contingent upon that?

CP originally said that they could only put homes where they use to be by the 1969 map, has that changed? Can they put as many as they want now?

Existing lot is 7,500 sf are new lots going to be the average or smaller, 5,000 sf?

Clarify the average lot size and price as soon as possible?

Big concern - for switch ups because of what they did with Adams Field and Hwy Mauka.

Do we have it in writing re: they will complete the residents area first? No (verbally they said they would do the tenants area first).

Comments regarding Eric: being defensive and not very professional. They should have letterhead when they respond to us in writing. He has said things to them like: well it is not our fault if some of the old people can not buy... "this is the proposal take it or leave it" that is what got some of the tenants defensive.

How will the tenants know if they should fix their house or wait for an open lot if they are in the floodway?...when can they know for sure that they will be able to stay and purchase the existing house? (Kay)

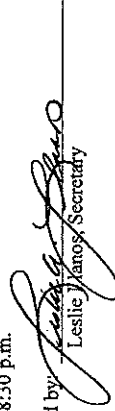
Joshua suggested using Strategic Planning or Strategic Research in lieu of Negotiating team. Leslie suggested "Talk Story" or us the term suggest, request etc...instead of negotiating team.

Call Pake Boy direct, do not call his father's house he will not answer.

Kit model homes? Do people have to take the kit home? Can they build whatever they want, if they can afford it? Can they tear down there house now and rebuild?

Meeting Adjourned: 8:30 p.m.

Respectfully submitted by


Leslie Jones, Secretary

Kahuku Village Association - DECEMBER 2006

Newsletter

Phase V Committee Meeting
Agenda - Nov. 14, 2006
Kahuku Community Center

Statement:

The majority of the Board of Directors has voted to move forward with the Continental Pacific Proposal with the recommendation that Continental Pacific put some type of agreement together as soon as possible for each tenant.

For the purpose of this project the **full Committee** consists of a working team which includes the consulting expertise of professionals such as; Mitchell Imanaka (CPR/Association Lawyer), Grace Kam (Insurance Agent), Abe Lee Realty (CPR/Existing Use Permit) along with 3 Board of Directors and members of the community. This team of people will research information and formulate questions and answers, pertinent to the project, and participate with the hands on work needed to accomplish the tasks required.

For the purpose of this project the **working committee** refers to a small group designated to research pertinent information and requirements that will affect specific areas of the project. (i.e. carpenters, electricians, association requirement, covenants etc.) Small working committees will also organize community volunteers to accomplish such goals as home rehabilitation and yard enhancement.

It is important that we all work together to minimize adverse effects and concentrate on the specific concerns that are in front of us. It is imperative that committee members be objective and respectful while representing the residents of Phase V.

Special Guests & Handout Discussion:

CPR/Association - Representative for: (Mitchell Imanaka - CPR Lawyer)

Explanation of the CPR process and information regarding the home owner association.

Existing Use Permit - Handout

Reference to Abe Lee Realty (www.abeleerealty.com) Next Tuesday the 14th @ 6:30p.m., KVA CC Abe Lee will be here to answer questions directly. All Phase V tenants are encouraged to come to this meeting. We could use some volunteers to help make reminder calls for this meeting.

Trust for Public Land (Lea Hong 524-8564 or 524-8563)

Position regarding the availability of funds to preserve the Kahuku Beachfront. Message from Lea Hong: premature for them to get involved. "Only deal with willing land owners, at this time we don't think this land owner is at a price that we could get involved." "Unless things change and the land owner decides they want to abandon their plans."

Open Discussion - Committee members

Meeting Adjourned:

Kahuku Village Membership Information Meeting: There is a Kahuku Village Association, Inc. Membership Information Meeting scheduled for Saturday, December 9, 2006 at 9:00 a.m. at the Kahuku Community Center. Continental Pacific, Abe Lee Realty and a representative from the property tax office will be there to discuss Phase V issues. Leslie Llanos Chairperson of the Phase V committee will give a full update of the two past committee meetings and discuss the progress of the surveyor and architect. No voting or business will be conducted at this meeting. The purpose of this meeting is to update the membership on current issues. Please attend to ask any questions you may have.

KAHUKU VILLAGE MEMBERSHIP: All Kahuku Village Association, Inc. membership expires on December 31, 2006. An application is enclosed for your convenience. If you wish to apply, please complete the application and submit it to the KVA office. We are mailing only one application, if more than one person per household wishes to apply, more applications is available at the office. The membership fee is still only ten dollars for the year.

Phase IV Update: Jimmy Leonardi Chairperson of the Phase IV committee has received confirmation letters from DPP and BWS on the water allotment and sewer needs for Phase IV. Army Corps of Engineers is still meeting with the agencies going over their findings on the Kahuku Watershed Flood Study. It looks like sometime in January they will be scheduling a workshop for the community. We will keep you posted.

Kahuku Community Association (KCA) Announcements:

The Kahuku Community Association Annual Community Christmas Party with Santa will be held on Friday, December 22, 2006 at 6:00 p.m. at the Kahuku Community Center. Please bring your children and enjoy this event.

Other Announcements:

We hope many of you had the opportunity to attend the celebration party on November 25, 2006 put on by Continental Pacific. The food and entertainment was great! The Mayor, Representative Magaoy and many community leaders joined in the celebration. Continental Pacific is very pleased with the decision of the majority to move forward with the proposal and wanted to celebrate that event.

In December they are having a drive to pick up any cars that you may want to get rid of. Please contact the office to let us know if you want a car removed from your yard. We will make the arrangements for pick up. Please take advantage of this opportunity to clean up our community.

Our condolences go to the family of Juan Daguio our tenant of New Camp 473. He passed away in November.

Our office will be closed at 12:30 p.m. on Friday, December 22nd and Friday, December 29th. We will also be closed all day December 25, 2006. The Board of Directors and office staff wish you all a very happy holiday with your family and friends. Be safe and we hope 2007 will bring good things to Kahuku.

Kahuku Village Association January 2007 - Newsletter

KAHUKU VILLAGE ASSOCIATION, INC.
P.O. BOX 998 • KAHUKU, HAWAII 96731-0998
PHONE: 293-4488

Phase V

Committee Report - December 9, 2006 **KVA Membership Meeting**

KVA Membership Informational Meeting was held on December 9, 2006 at the Kahuku Community Center. Guests included Eric Morrison from Continental Pacific, Gary Kurokawa from the Department of Budget and Fiscal Services Property Tax Division and Abe Lee, Dante Martin and Lynn Nishiki of Abe Lee Realty. Gary Kurokawa responded to a letter from KVA regarding Property tax issues and especially the concern about the beachfront homes and their effect on the current residents. He stated that the beach front homes would not directly affect the property tax for our village residents. Property tax assessments would be determined by a variety of factors such as the age of the home and the market value of similar homes in the interior areas of Kahuku town. There are exemptions that are available. A hand-out on tax exemptions and the written response to KVA from the City are available in the office for anyone interested. Abe Lee from Abe Lee Realty went over the CPR (Condominium Property Regime) and the EUP (Existing Use Permit) processes. He said the first steps will be for the architect to complete the measurements of each home and all structures on the property. Simultaneously the surveyor will take the perimeter measurements of the existing TMK to begin the actual mapping process. Eric Morrison of Continental Pacific stated that they have been in contact with the Trust for Public Land and are not counting that out as a possibility for the beachfront area. He also said that it is important that we all work together. Leslie Llanos gave a report of the two Phase V Committee meetings in November. Jimmy Leonard discussed the 7 new landowners in Kahuku. These new landowners include Continental Pacific (Phase V), Lucky Enterprise (Commercial area), Managers Ridges LLC, Mamar'u Real Estates, Present Hawaii, Rina Enterprises (Sugar Mill) and the City & County (Phase IV). Leonard also reported on KVA correspondence sent to the Board and Water Supply regarding the water rights allocation for Phase IV & V. Verification of the water rights allocation was received in writing for Phase IV (177 allotments) and Phase V (92 allotments) developments.

Phase V Committee meetings: On November 8th the committee was introduced to Mitchell Imanaka who specializes in CPR Law. He has been retained by KVA to assist us with questions regarding Association issues and the CPR process. Also discussed was the Trust for Public Land and the possibilities of their involvement with the beachfront area. On November 14th the committee had a meeting at the Community Center to introduce the village residents to Abe Lee and his team. Abe Lee discussed the CPR (Condominium Property Regime) and the EUP (Existing Use Permit), hand-outs were provided and are available in the office.

Phase V Progress: The architect has completed his measurements of most of the homes and will be putting together drawings of all the structures. These individual drawings will be placed on the map that is being completed by the survey firm. The survey firm has completed only the perimeter lines and will be completing the actual lot (boundary) lines in the future.

Submitted by: Leslie Llanos

Kahuku Village Association Membership: All memberships have expired as of December 31, 2006. If you haven't submitted your new application sent to you in December please remember to come in and renew your membership. It is important for all residents to be members to have a voice on these important issues facing us at this time.

The office will be closed on Monday, January 1st, and on Monday, January 15, 2007. We hope everyone has a safe and Happy New Year! To avoid the late fee rent must be paid in full by 4:30 pm on Friday, January 12, 2007.

1. Results of the survey. 40 yes, 25 no and 7 abstain
(These numbers were encouraging to CP. They decided to begin the process and retain the professionals needed to start. Beginning with the surveyor, architect).
2. Two past committee meetings:
November 8, 2006 - This was with residents who had signed up in the office and were interested on serving on a committee.
§ Introduced Mitchell Imanaka who has been retained by KVA on behalf of the residents to help with Association Issues and Review of CPR documents.
§ Handout for the Existing Use Permit.
§ Discussion regarding the Trust for Public Land. (Director Lea Hong left a message that at the present time the price is beyond their budget, we can contact her if anything changes)
3. **November 14, 2006** - Introduction of Abe Lee Realty and their Team. Eric Morrison from Continental Pacific
§ Introduction to the CPR process & Existing Use Permit
3. Progress of completing the architect and initial surveyor mapping.
4. Announcements: Thank you to Continental Pacific for throwing such a nice party.

KAHUKU VILLAGE ASSOCIATION FEBRUARY - 2007 - NEWSLETTER

KAHUKU VILLAGE ASSOCIATION, INC.
P.O. BOX 398 • KAHUKU, HAWAII 96731-0398
PHONE: 283-4488

WATER SHUT OFF: The annual Backflow Prevention Assembly test will be performed on Friday, February 9, 2007 at 10:00 a.m. for approximately one hour. We appreciate your cooperation and for being prepared for this inconvenience.

Phase V Informational Meetings will begin monthly starting Monday, February 12, 2007 at 6:30 p.m.

These meetings will be held in the large room of the Community Center. Beginning March 2007 they will be held on the 3rd Monday of each month, same time and location. We encourage all KVA tenants to attend these meetings. Attending will give you the opportunity to get the up-dated information first hand on where we are with the Continental Pacific Purchase proposal. Presently Abe Lee Realty is working with the surveyors to complete the application process for the Condominium Property Regime (CPR) and Existing Use Permit (EUP). Once completed these applications will go to the Department of Permitting and Planning (DPP) for review and approval. DPP will either approve or respond with comments on what will need to be done in order to have them approved. Another step of the process is the 201H variance. This is part of the Hawaii Revised Statutes (HRS) for affordable housing. The process will be explained and a glossary of terms will be available at the information meeting. One of the main purposes of the 201H variance is to work in conjunction with or in place of the Existing Use Permit where needed. This is to ensure that all our tenants can remain where they are and either rebuild or rehab their existing houses and allow for rural roads and lighting. KVA has requested a full review of the 201H contents prior to its completion and submission to the City Council. This information will be brought to the tenants at a monthly information meeting.

For your information to this date there have not been any other options or proposals submitted or suggested to Continental Pacific or KVA. Please be aware that any petitions circulating are not affiliated or supported by KVA. The majority of the KVA board supports the Continental Pacific Proposal because the majority of the tenants who reside on the property purchased by Continental Pacific are in favor of the Proposal. Signing these types of petitions could have adverse consequences on the current purchase proposal.

Continental Pacific did meet with the Trust for Public Land Director, Lea Hong on January 23, 2007. KVA is requesting a written response from the Trust for Public Land on the results of that meeting. Please understand that the Beach front lots will not be developed until the CPR has been completed and a written agreement has been made with the existing tenants. These beach front lots will also be subject to an Environmental Impact Statement (EIS) and Environmental Assessment (EA). There are no zoning changes required for the development of the beachfront lots. Currently the beachfront TMK is zoned A-2, which allows for Country A-g Lots (1 acre minimum).

Questions have come up regarding what affect the Phase V project will have on those KVA assigned tenants living outside of Phase V. All KVA assigned tenants living outside of Phase V will have a priority in the purchase of remaining open lots in the Phase V project area.

On January 17, 2007 the office staff and two Board of Directors took the bus along with representatives from Kahuku Hospital to the Capitol for the Opening Ceremonies of the State Legislature. We spent time with our Representatives Magaoy and his staff as well as met with Senator Hee.

We want to make it clear to all of the KVA tenants who are the landowners of the property where you are residing. All of New Camp, Ocean View and Highway Makai and 3 homes in Main Camp number 286, 287

Kahuku Village Association
Phase V- Commitree Meeting, Minutes
Monday February 12, 2007, 6:30 p.m.
Kahuku Community Center

Members Present:

Leslie Llanos - Chair
Jim Camit
Sherry Martinez

Meeting Called to Order: 6:40 p.m.

Ten Key Elements/Glossary of Terms/201H FAQ Sheet:

Handouts/Brief overview

Correspondence:

Trust for Public Land
Board and Water Supply (Water Allotment)

Update:

Abe Lee Realty progress with Existing Use Permit
Dan Ide and Dennis Enimoto have been hired to begin the process for the 201H
(Preliminary study)

Announcements:

Neighborhood Board Presentation - Thursday, March 8, 2007 at 7p.m.
Next Committee Meeting - Monday, March 19, 2007 at 6:30 p.m.

Meeting Adjourned: 8:45 p.m.

KAHUKU VILLAGE ASSOCIATION - NEWSLETTER MARCH 2007

PHASE IV UPDATE:

The Army Corps of Engineers (ACOE) will hold a public meeting to discuss the results of the Kahuku Watershed Flood study on **Tuesday March 6, 2007 at 6:00 p.m. at the Kahuku Community Center**. The objective of the study was to identify and evaluate engineering solutions relating to flood control protection for the Ohia Stream and Hospital Ditch. Determine whether a Federal interest exists in participating in Preconstruction Engineering and Design, and Construction phases. Anyone interested is invited to attend.

PHASE V UPDATE:

Retraction: Last month's newsletter stated that there would be no zone change for the beachfront lots. That was inaccurate. There will be a zone change from A-2 to Country or R-5 for the beachfront. This would be the only zone change required for the project at this time.

The Phase V Committee is conducting monthly informational meetings. The purpose of these meetings is to update all tenants of the progress being made with the current Continental Pacific proposal. The next meeting will be held **Monday March 19, 2007 at 6:30 P.M. at the Kahuku Community Center**. Guests will include Abe Lee Realty.

Update of the January 12, 2007 Phase V information meeting: Three fact sheets were handed out 1.) Basic history of the "Ten Key Elements" plan 2.) Glossary of Terms 3.) 201H Frequently Asked Questions sheet. These hand-outs are available in the office. Relating correspondence received: E-mail response from Lea Hong the Director of the Trust for Public Land. She stated that "the price Continental Pacific wants for the land is not feasible for TPL to raise," also the Board and Water Supply responded to our letter regarding the current water allotment for the Phase V area. Currently we have "92 total allotments". Currently Abe Lee Realty still has two homes to measure before they can complete the first stage of the CPR map. This is required for both the Existing Use Permit and the CPR application packet. **KVA's presentation to the Neighborhood Board will be deferred until such time that the CPR map is completed.** The next Neighborhood Board: March 8, 2007 at 6:30 p.m. Hauula Satellite Building.

In reference to a letter received by KVA requesting the Board of Directors and Continental Pacific to allow Junior Primacio, Glenn Maghanoy and Joe Pickard to be part of a negotiating team, We, the KVA board and Continental Pacific appreciate their desire to serve in such a capacity but do not feel it is beneficial to the process. Rather it is our desire to communicate directly with the tenants and hear their questions and concerns first hand. This helps us to develop a greater trust and openness with all the current residents of KVA. It is important to know that it is your voice that we want to hear. You are the negotiating committee, it is at these meetings that we as a whole must speak up and voice our concerns, ask the questions so everyone can hear the answers and show Continental Pacific and Abe Lee that we are working together.

VILLAGE MAINTENANCE:

We were able to tow away 61 cars out of our village. Special thanks to Jeff Wallace of Continental Pacific for putting this together and to Campbell Estate for paying for it. The Board of Directors at their meetings have approved road repairs to continue. This will take place once the weather permits after the rainy season. After the recent wind storms, please report any tree safety concerns to the office.

FISHING GATE: Wanda Napeahi, our Fishing Gate and Community Center employee has moved on to another opportunity. We will miss her and wish her the best. We welcome Leleiga Afemata-Marasco to this position. Give her your aloha, the Community Center telephone number is 293-2423 and the hours are 9:00 to noon on Mondays and Wednesdays and from 9:00 to noon and 1:30 to 4:30 p.m. on Fridays.

Our condolences to the Graychocea and Eltagonde families.

The office will be closed Monday, March 26, 2007 in observance of Prince Kuhio Day.

and 289 are under a 1. 30 month lease with Continental Pacific. The seven homes on Highway Mauka number 776, 788, 796, 800, 804, 808 and 816 are under a month to month lease with Kamaun Real Estate, L.L.C. All of the homes in Walkerville and Main Camp and Highway Mauka number 669, 674 and 676 are on a month to month lease with the City and County of Honolulu. If you have any questions as to who owns the land where you are residing, please contact the KVA office at 293-4488.

Phase IV update: KVA has learned from the Army Corp of Engineers that the date of the next public meeting will probably be sometime in March. We will keep you informed. For your information, the KVA assigned tenants living in Phase IV will be allowed to remain where they are until such time as the Phase IV project begins.

Fishing Club News: The Kahuku Fishing Club held a beach clean-up on January 20th. There were 14 members and 20 students from Mililani High School that participated. The next clean-up will be April 22, 2007 at 8:00a.m., please contact Wanda at 293-2423 if you wish to attend. There is an opening for a Security Guard and Beach Clean-up coordinator that is posted in the office. You must own a 4 X 4 vehicle and a current G.E. Tax license to be eligible. Applications will be accepted until February 9, 2007.

Kahuku Community Center: Reminder that Assigned Tenants of KVA are entitled to one free use of the Community Center for a party once a fiscal year from July 1st to June 30th. The Assigned Tenant must be current on their rent for six consecutive months prior to the free use. If the Assigned Tenant does not use the privilege that fiscal year it expires and does not carry over to the new fiscal year. The deposit is still required to reserve the use of the Center.

The next Kahuku Community Association meeting will be held on Thursday, February 15, 2007 at 7:00 p.m.

Our condolences to the families of Faustino (Pino) Panag, Tranquilino Camit, Elizabeth Makaiau and Agripina (Joyce) Aubrey.

The office will be closed on Monday, February 19, 2007 for Presidents Day.

Happy Valentines Day! Be sure to tell someone that you LOVE them!

KAHUKU VILLAGE ASSOCIATION, INC.
P.O. BOX 398 • KAHUKU, HAWAII 96731-0398
PHONE: 293-4488

KVA - Phase V Committee Meeting
March 19, 2007 - Kahuku Community Center
Minutes

AGENDA
PHASE V - COMMITTEE MEETING
MARCH 19, 2007
KAHUKU COMMUNITY CENTER

STATEMENT:

This committee meeting is for the purpose of updating the tenants as to the progress of the Phase V development and the Continental Pacific purchase proposal. Anyone who is not a tenant of KVA is requested to leave at this time.

CONTINENTAL PACIFIC UPDATE:

Abe Lee Realty update on the Existing Use Permit and the CPR application. Letter being drafted to CP from KVA requesting first right of refusal and plan to request condemnation from the state. KVA will deliver a letter requesting the Representatives to submit a resolution to condemn the golf course and beachfront land.

COMMUNITY SUSTAINABLE PLAN

Handout - Spoke with Lowell Chun from the Department of Planning and Permitting they will hold a public meeting for the Community Sustainable Plan in late spring. Letter to KCA requesting they take the lead on a survey of all Kahuku residents.

SENATE BILL 851

Handout - Review SB 851 How does it affect the tenants of KVA. If the bill passes according to Eric it will immediately affect the property by decreasing its value and lower their ability to provide for the infrastructure. Letter of opposition is available. Meeting scheduled with Representatives Ito and Magaoy. Correspondence from KVA to Clayton Hee, response letter from Clayton Hee and a return response from KVA. =-j-p position is that this bill should encompass the entire State of Hawaii and should not single out one district.

ANNOUNCEMENTS:

Next Phase V Committee Meeting April 16, 2007

Abe Lee Realty will be out taking pictures of houses and hedge lines in the coming week, this is for the Existing Use Permit application.

I) Called to Order: 6:38 p.m.

II) Purpose

Questions regarding who is on the committee, need to clarify the set-up and make a separate flyer for the tenants so they understand they are all invited. Jimmy Carnit and Sherry Martinez are the co-chairs. The tenants are the committee. KVA will request first right of refusal to Continental Pacific. KVA looking at condemnation of the golf course and beachfront.

III) Abe Lee Realty

One tenant remaining to draw up his house. Margaret questioned why her neighbor did not have anyone going in her house. There will be people walking around the village to take pictures and also inspectors will be out looking at the houses in the near future. Issues: Flood area, condition of houses, non permitted additions. CPR process takes about a month normally then a public report gets issued. The inspector is from the city. The approval is from the Real Estate Commission. Flood, more than half of the area is in the flood area. The city & county have their own flood guidelines. It is difficult to work with Federal government. Right now Abe Lee is only working with the city. If things don't pass we will take it to the mayor to see what he can do. Tenant requested a flow chart for a visual view of the CPR and EU process.

IV) Community Sustainable Plan

Ko'olau Loa sustainable Plan is due in the next 3 months. KVA writing a letter to KCA asking them to take the lead and conduct a survey for the community to see what overall picture they would like to see in the area. KVA will not get involved in the survey but will want to support KCA doing the survey.

V) Senate Bill 851

Introduced and passed the Senate. Purpose to stop development within 750 foot set-back from shoreline. Talked to DPP and DLNR regarding the set-back, it would affect financially and time. Anyone who came in the office was asked to submit a testimony.

VI) Announcements: Next Phase V Committee Meeting in April and Abe Lee taking pictures. KVA will not be presenting at the NB28 until the appropriate time.

VII) Adjourned: 7:35 p.m.

KAHUKU VILLAGE ASSOCIATION APRIL 2007 - NEWSLETTER

Phase V Update: March 19, 2006 the Phase V Committee held a committee meeting in which all the tenants were invited. Abe Lee Realty reported that they were almost finished with the drawings for the houses and were presently scheduling with one last tenant. After the drawings are completed and submitted the city inspectors will come out and look at the conditions of the homes and determine any new additions. The CPR process usually takes about a month and then a public report is issued. There are two different inspectors both from the city, one is for the Existing Use Permit and the other is for the CPR application. Abe Lee stated that they are hoping for a clean letter from the inspectors, if not they will go to the Mayor for help. They are also dealing with the Federal Government FEMA regarding the flood issues affecting the proposal.

KVA sent a letter to Continental Pacific requesting a "Letter of Intent" which will legally document their proposal and its intent. Also included in that letter is notification of a letter mailed to Representative Magaoay requesting that the State seek to condemn the beachfront and golf course, and asking CP to give KVA first right of refusal in the event CP decides to sell. Also discussed at the meeting was the Community Sustainable Plan which is put together by the Department of Permitting and Planning. They will be conducting their public meetings in late spring. We will keep you informed of that meeting date.

Last on the agenda was the status of Senate Bill 851. The Phase V Committee requested a meeting with Rep. Ken Ito, Chair and Rep. Magaoay. This bill would have caused an increase in cost to the CP project. Letters were sent to Senator Clayton Hee, Rep. Magaoay and Rep. Ken Ito.

The Phase V Committee would like to invite all KVA tenants to a committee meeting to be updated on the Continental Pacific Proposal on Monday, April 16, 2007 @ 6:30 p.m. at the Kahuku Community Center.

Phase IV Update: The Army Corp of Engineers (ACOE) met with the community on March 6, 2007 regarding the Kahuku Watershed Study. Representatives from Fish and Wildlife and Department of Land and Natural Resources (DLNR) were present. A coordinated effort between ACOE, DPP and DLNR was put together to begin the 3 phase process for flood mitigation. This meeting was to report on the first step called the Feasibility Study. Unfortunately the Feasibility study was terminated at the preliminary draft since it was determined that the project would not be cost effective. There was, however a Local Project Feature included which would allow the Department of Education (DOE) as a State agency to become involved, whereby the flood mitigation efforts could continue. KVA has drafted a letter for the Department of Education requesting that they become involved in the flood mitigation efforts along with a letter to the Kahuku Community Association requesting that they work together with KVA, Campbell Estate and Continental Pacific to find a solution to the overgrowth of the Hospital Ditch and Matakahana Streams. This would help to deter further flooding for the agricultural farms and residential areas.

Jim Leonardi is collecting Kahuku Lunch Tokens and Plantation or Pineapple Bangos. He is willing to pay for these items. He can be contacted at 293-1129. A display will be at the Kahuku Library for a short period.

Fishing Club: Beach Clean-up: There will be a beach clean-up on April 21, 2007. Sign in starts at 8:00 a.m. at the Japanese graveyard turn around area.

This month the 15th falls on a Sunday. To avoid a late fee your rent must be paid in full by Friday, April 13, 2007 before 4:30 p.m.

The Office will be closed on Friday, April 6, 2007 in observance of Good Friday.

KAHUKU VILLAGE ASSOCIATION, INC.
P.O. BOX 398 • KAHUKU, HAWAII 96731-0398
PHONE: 293-4488

**Phase V Committee Meeting
Minutes**

**Monday, April 16, 2007
6:30 p.m.**

Called to Order: 6:40 p.m.

Committee Board Members Present:

Chair Leslie Llanos, Co-chair Sherry Martinez, Co-chair Joshua Primacio, Co-chair Jimmy Camit, Secretary Michaela Primacio. Guest: Abe Lee, Tenants: See sign-in sheet.

Committee Appointments:

Announcement of appointments and their position. See agenda.
Joshua helping with the covenants and Michaela helping with survey.

Abe Lee Realty Update:

Review of EUP and CPR process. See attached worksheets. They are hoping to wrap up their paperwork within 4-6 months.

Report on Financial/Grant availability:

Sherry reported the availability of grant and loan moneys for rehab or new home construction. Tenants would need to let the Committee know that they will be needing these funds. The survey questionnaire will help to determine the need and how many tenants will require help. Some grants and loans are for groups and others for individuals. Income levels will determine their eligibility. Another factor is whether a home is in the flood way.

Donavan Dela Cruz update:

Reid Matsuura handed out a paper and was encouraging tenants to call or e-mail their comments regarding keeping the golf course public. The city council will be discussing the issue Tuesday April 17, 2007 at 1:00 p.m.

Announcements:

Next Committee Meeting will be Monday May 21, 2007 at 6:30 p.m. at the KCC.

Beach Clean-up this Saturday April 21, 2007 at 8:00 a.m. Japanese graveyard turnaround.

Meeting Adjourned: 9:15 p.m.

Questions/Answers:

- Q: Why is sprinkler systems in EUP?
A: DPP requirement because of health and safety.
- Q: Will a new water system need to be put in?
A: That has not yet been determined.
- Q: The homeowners need to know what they are buying into. What cost will roll over to the homeowner? Things like the septic tanks, water, empty lots?
A: CP is working to get those answers, that is why the existing use permit is critical. (LL)
- Q: Does each home have it's own meter.
A: Yes, there is one main meter on the highway. (LL)
- Q: Was the water meter situation brought up to Continental Pacific when they bought the place?
A: We don't know but they are aware of it now?
Q: How much did CP pay for it? (JP)
A: I can not speak for CP on that. I am a consultant to CP I am not the developer. (AL)
my job is to get the EUP & CPR.
- Q: Could you give scenarios of what could happen with the inspectors?
A: Inspectors will do their inspection, write up a report and they will let us know from there. I have never worked on a project of this size and that had a lot of illegal stuff. Its up to the city, we may need the Mayor to approve/deny.
- Q: Does KVA have records of when the homes were built? (AL)
A: No, we will need to get that information in written affidavits from tenants that were here back then. (LL)
- Q: Who is doing the drawing on fencing/landscaping?
A: Abe Lee Realty and CP are working out the boundary lines. CP will make the determination.
- Q: Will I be able to rent my house instead of buy?
A: CP and KVA will work to make that happen if necessary. (AL & LL)
- Q: Is the CPR map including 2 empty lots?
A: All existing and new designated lots will be on that map. (AL)
- Q: Who does the zoning, 201H?
A: The key people are the city inspectors. The 201H is written up by another group of people and is submitted to city council. (AL)
- Q: Can inspectors condemn land?
A: Has to be really bad. (AL)
- Q: Are we going to be responsible to bringing our homes up to code?
A: That will be dependant upon the inspector and the tenants decision whether to keep the existing home or build new.
- Q: How many chances do you get for a clean bill of health from the inspectors?
A: They will let you know what violations there are and give you a set time to fix them, as long as you fix them you should get the letter. They will come back out again if needed. (AL)
- Q: When do we stop paying rent to KVA?
A: After the purchase is complete and the new association has been set up.
- Q: What will happen to the \$84K surplus, is that going to help phase V tenants purchase homes?
A: Some of that money is from other tenants and will need to be divided fairly. The Board will take suggestions from the tenants and decide.

Kahuku Village Association - Newsletter May 2007

Phase IV update: Jimmy Leonardi attended a meeting with Debbie Morikawa at the Department of Community Services regarding the partnership of the City with the Department of Education to continue flood mitigation work through the Army Corp of Engineers. This will be a collaborative effort to alleviate flooding at the high school and surrounding residential areas and may be beneficial to Kahuku Village Associations projects. Phase IV lot reservationists will be receiving notice on updates from the committee in the near future.

Phase V update: At the Monday, April 16, 2007 Committee Meeting Chair Leslie Llanos made Committee appointments: Jimmy Camit - Finance, Sherry Martinez - Grants, Joshua Primacio - Covenants, Michaela Primacio - Secretary. Guests: Abe Lee reported that they will be trying to wrap up all their paperwork within 4-6 months. Sherry Martinez reported on grants and loan moneys available for rehab or new home construction. Reid Matsunura from Donovan Dela Cruz office reported on a City Council meeting to be held April 17, 2007 at 1:00 p.m. regarding the Kahuku Golf Course. Transcripts of the Council Meeting are available along with the Committee Meeting Minutes in the office.

The Phase V Covenants committee will be having a meeting Monday May 14, 2007 at 6:00 p.m. at the Community Center conference room. Any tenants interested are invited.

The Phase V Committee will have another update meeting for all tenants on Monday May 21, 2007 at 6:30 p.m. at the Kahuku Community Center

Village Maintenance: Reminder to tenants if you have plants growing close to your house please cut back the branches to keep your roof and house from damage. The Laie Refuse is asking your cooperation to water down the roads in front of your home the morning of rubbish collection days to keep the dust down. Do not give permission for people to pick coconuts or fruits if the tree is not in your yard. Common areas are the office's responsibility.

Beach/Fishing Gate: Thank you to all those who participated in the beach clean-up. We had a total of 28 fisherman and 2 tenants. The next clean-up will be July 21, 2007.

Community Center: Welcome to Tenille Marasco, a new addition to our staff. The direct line to the Center is 293-2423. Hours of operation are Mondays and Wednesdays 9:00 am to Noon and Fridays 9:00 am to 12:30 and 1:30 to 4:30 pm.

Announcements:
Condolences to the Herminigildo Mandac family.
Congratulations to Don & Suzette Graychocha on the birth of a son.
To avoid a late fee rents must be paid in full by 4:30 pm Monday, May 14, 2007.
Monday May 28, 2007 is Memorial Day and the office will be closed.

Phase V- Continental Pacific Purchase Proposal - 2007 CPR Information worksheet as of 4/16/07

Requirements	Timeline
1. Completion of CPR map	CP has map needs to determine lots
2. Obtain building permits package	(little information received)
3. Architectural drawings of all structures	2 remaining, 1 appointment made
4. Obtain building inspection letter	Inspector 2-3 weeks
5. Order the Preliminary Title Report	Abe Lee has preliminary report
6. Attorney prepares CPR documents	need city inspector letter
7. Send out 120 day letter to tenants	120 days. Legal right to purchase
8. Recordation of the CPR Declaration & By-Laws at the Bureau of Conveyance	2-3 week process (DPP) Need letter from the city, blue prints...
9. File CPR application at the Real Estate Commission	4-6 week process
10. Prepare preliminary budget for condominium association	- covenants - budget by professional management co.
11. Upon issuance of final public report place owner-occupant ad in the newspaper	after #9
12. Follow-up with the Bureau of Conveyance on the TMK numbers for the units	after #8 Tax office issues TMK 6 - 12 months for them to come directly to new owners.

Depending on scope of the project, 2-6 months to prepare documents, and 1-3 months from acceptance of CPR application. Generally, projects can take from approximately 5 months to over 1 year to complete.

COVENANTS COMMITTEE

May 14th 2007
6:00 p.m.

Roll Call
Joshua K. Primacio
Junior Primacio
Eddie Canunay

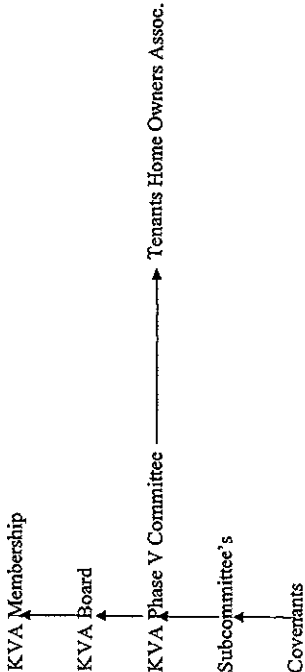
Herbert Hirotsu
Sherry & Jr. Martinez

Opening discussion

We are here to talk about covenants for the home owners association. This first meeting is to get a feel of things from everyone. We are here to put together a set of covenants for the Phase V home owners association.
Covenant according to the dictionary means: a formal agreement. A contract.
We are a recommendations committee on covenant issues.

Discussion

- 1) First we discussed the organizational structure of our committee. We want to ensure we are in order and following protocol. So as Follows:



Recommendations to organizational structure

- A. minutes to be available at KVA office.
- B. KVA membership and tenants should be aware of the covenants committee and the work performed.
- C. The committee chair would like the right to give minutes to KVA membership, the tenants, or anyone who asks as he/she sees fit.

- 2) Next we discussed issues and area's of concern. The issues are as follows:

- A. Water System
- B. What kind of fire protection will their be?

- C. Will the roads be paved.
- D. What about the septic tanks.
- E. Vacant lots being apart of the homeowners association.
- F. Rental issues
- G. Property taxes
- H. And the many more that will need to be addressed.

- 3) We then discussed what to the committee is most important.

What is most important to the committee is the best interest of the tenants. We believe the best interest of the tenants is to minimize the cost or fees that the new home owners association will have to incur. All the issues discussed in #2 (the issues and areas of concern) will be the responsibility of either the home owners or the land owners. So it is important to understand the importance of these issues.

The people need to know what they are agreeing to in the covenants. In order for the covenants committee to make justifiable and sensible decisions for recommendation, we need more answers and know what the land owner is committing to before the home owners take over and a covenants is made. What are the common grounds, and what do they intell.

We want the best deal for the tenants. We as a committee know that our tenants are going to have to pay for rent, utilities, daily living, education, ect., and of course the association fees. We want to minimize these fees as much as possible. In order to do this we have some recommendations.

Recommendations

- 1. we need a response in writing as soon as possible as to the land owners plans, which include:
 - A. a draft or a preliminary subdivision map
 - B. what is the process of their plans
 - C. what is their budget they are committing to for Phase V and a break down of this.
 - D. We need to know what they are committing to do so that we know what will be the responsibility of the home owners, and what cost will they have to incur.

CONCLUSION

In conclusion, the structure will keep us in order. There are many issues that need answers. For us as a covenants committee to make sensible decisions for recommendation we need more information. We cannot set rules, regulation, and guidelines, if we don't know what we are agreeing to. To move forward we must have these recommendations defined.

CO-COMMITTEE CHAIR OF PHASE V COVENANTS
JOSHUA K. PRIMACIO

KAHUKU VILLAGE ASSOCIATION, INC.
P.O. BOX 398 • KAHUKU, HAWAII 96731-0398
PHONE: 293-4488

KVA Committee Meeting
May 16, 2007 @ 6:30 p.m.
KVA Community Center - Conference Room
Agenda

Committee Reports:
Chair: Leslie Llanos - City Council & Continental Pacific
Covenants Committee: Joshua Primacio (May 14 meeting)
Finance Committee: - Jimmy Camit
Grant/Loan Committee: Sherry Martinez

Letter of Intent: Discussion. How should we set up the process for signing?

Rent Increases: Discussion. 115 total tenants. Should any increases be divided up between all the tenants? Highway Mauka letter received asking for total \$300.00 a month each home. Presently we are sending \$100.00. Increase of \$200.00 a month for 7 houses. Increase of \$12.20 per 115 tenants. Continental Pacific requesting a proposal for a rental increase bringing rents up to \$750.00 a month. Board's recommendation is to increase only a total of \$300.00 each house in increments of \$100.00 over a 6 month period. Requesting that the income received be used for house renovations. (Will the highway mauka and those on city land have the same increase?)

City Council: KVA response letter to Romy Cachola

Agenda for May 21st meeting:
KVA Chair - LOI
Dan Ide - CP representative (LOI)
Sara - First Hawaiian Bank
Reid Maturra - announcements/comments
Joshua Primacio - Covenants
Sherry Martinez - Grant writer introduce?

Other Issues: Recommendations to the Board of Directors?

KAHUKU VILLAGE ASSOCIATION, INC.
P.O. BOX 398 • KAHUKU, HAWAII 96731-0398
PHONE: 293-4488

KVA Committee Meeting
May 16, 2007 @ 6:30 p.m.
KVA Community Center - Conference Room
Minutes

Called to order: 6:40 p.m.

Members Present: Leslie Llanos, Michaela Primacio, Jr. Primacio, Jr. Martinez and Sherry Martinez & Jim Camit

Committee Reports:

Chair: Leslie Llanos - City Council & Continental Pacific.
U.H. Study was done determined flood mitigation needed to be completed in order to do affordable housing. USDA Rural Development Funds are not available for anything in a flood zone. Eric Morrison working with FEMA to change flood line. 1986 Malaekahana Flood feasibility study was done. Requirement was to put Levi's. Need to work with all parties towards flood mitigation.

Covenants Committee: Joshua Primacio (May 14 meeting, minutes attached)
Research whether the 18 lots will be a part of the HOA.

Letter of Intent: Board of Directors supports the Letter of Intent. Discussion. Suggestions to include the words "paved roads" instead of reasonable roads. Move specific information on whether fire hydrant or sprinkler. Change Malaekahana to Makahou Point.

Rent Increases: Discussion. 115 total tenants. Should any increases be divided up between all the tenants? Highway Mauka letter received asking for total \$300.00 a month each home. Presently we are sending \$100.00. Increase of \$200.00 a month for 7 houses. Increase of \$12.20 per 115 tenants. Continental Pacific requesting a proposal for a rental increase bringing rents up to \$750.00 a month. Board's recommendation is to increase only a total of \$300.00 each house in increments of \$100.00 over a 6 month period. Requesting that the income received be used for house renovations. (Will the highway mauka and those on city land have the same increase?)
Currently there is no written request from Continental. Suggest to use a portion of the excess in the budget to cover rental increases for now.

City Council: KVA response letter to Romy Cachola (attached)

Agenda for May 21st meeting:
KVA Chair - LOI
Dan Ide - CP representative (LOI)
Sara - First Hawaiian Bank
Reid Maturra - announcements/comments
Joshua Primacio - Covenants
Sherry Martinez - Grant writer introduce

Adjourned: 8:40 p.m

KAHUKU VILLAGE ASSOCIATION, INC.
P.O. BOX 398 • KAHUKU, HAWAII 96731-0398
PHONE: 293-4488

KVA Committee Meeting Minutes
May 21, 2007, 6:30 p.m.
KVA Community Center

Call to Order: 6:40 p.m.

Phase V Committee Members present: Leslie Llanos, Chair, Sherry Martinez, Kel Primacio, Joshua Primacio, Jr, Primacio. Guests: Sara Cadiz & Michelle Dulia, Loan Officers - First Hawaiian Bank and Professional Grant writer Kalika Ishol.

First Hawaiian Bank: Sara Cadiz & Michelle Dulia. Topic: Loans/Financing. For an average loan of \$75,000 types of loans include Construction and Equity Lines (remodeling). Typical 20 or 30 year loans include the land and home. Insurance for hurricane, flood and hazard are required. Insurance, property tax and interest are included in the monthly payments. There are Conforming Loans/Non-conforming Loans and Land Loans. Too early to tell what a person would qualify for. Important to get finances in order now and pay off credit cards and other loans. It is good to get your credit score. If anyone needs help she is available for advice at the Kahuku Branch.

Grants: Kalika Ishol reported on different grants that could assist the tenants for either remodeling, construction and down payment for land purchase.

Continental Pacific Update: (Presented by Leslie Llanos)

Abe Lee Update:

- # Waiting on City inspector to schedule tour through the village.
- # Existing Use Permit paperwork is being completed and should be ready within 2-3 weeks
- # CPR application is not submitted until inspectors letter is received
- # Drawings for Rainbow School have been completed.

City Council Update:

- # Transcripts from the May 17 City Council meeting available, Kahuku Golf Course was discussed.
- # Letter from KVA to Council Chair Romy Cachola in response to the Council meeting distributed (attachments available to those who want them).

Letter of Intent:

Received draft of the LOI and faxed it to Mitchell Imanaka (KVA attorney) for review, committee made some recommendations and will report on that at the next committee meeting.

Covenants Committee Report: Joshua Primacio (Covenant committee minutes available). Committee would like to wait until more information is available before making a recommendation to the Board regarding covenants to govern the new Homeowners association.

Flood Mitigation: Leslie spoke with the ACOE Milton Yashimoto and he said that Senator Inouye's office is putting together the wording to submit for FY Budget 08. They are working with the DOE and will use the information put together from the feasibility study. This does not include Dead Man's Gulch. He suggested to contact the DLNR to find out what they are working on for that area.

Announcements: Trash Pick-up has been suspended until further notice. KVA working to purchase large bins to use with the city's front end service, which is free. Tenants are suggest to call action line and the Mayor's complaint office. KVA was told that because of the "Clean Water Act" the city can no longer oil the roads and the employees are claiming that it is a safety hazard because of the dust. The employees have refused to pick-up the trash.

Dan Ide and Dennis Enomoto who have been hired by Continental Pacific to represent them will be at the next meeting to introduce themselves.

Meeting Adjourned: 7:55 p.m.

Submitted by: 
Leslie Llanos, Secretary

KAHUKU VILLAGE ASSOCIATION JUNE 2007 - NEWSLETTER

Phase IV Update: Milton Yoshimoto with the Army Corp of Engineers said that Senator Inouye's office is putting together the directive language to submit a request for funding for flood mitigation monies for FY Budget 08. They are unofficially working with the DOE and will use the information already put together from the recent feasibility study. This will begin the process for flood mitigation from the high school to hospital ditch.

Phase V Update: A Phase V Committee meeting was held Monday May 21, 2007 at 6:30p.m. Sara Cadiz & Michelle Dulia from First Hawaiian Bank attended. Topic: Loans/Financing. For an average loan of \$75,000 types of loans include Construction and Equity Lines (remodeling). Typical 20 or 30 year loans include the land and home. Insurance for hurricane, flood and hazard are required. Insurance, property tax and interest are included in the monthly payments. Too early to tell what a person would qualify for. Important to get finances in order now and pay off credit cards and other loans. It is good to get your credit score. If anyone needs help she is available for advice at the Kahuku Branch. Grant writer Kalika Ishol attended and reported on different grants that could assist the tenants for remodeling, new construction and down payment for land purchase. Tenants who need these funds are encouraged to sign up at the office. **Abe Lee Update:** They are waiting for the City inspector to schedule a tour through the village as part of the CPR process. Drawings for Rainbow School are now complete. They are completing the Existing Use Permit paperwork and should be ready to submit within 2-3 weeks. **City Council update:** May 17th City Council met and discussed the Kahuku Golf Course and the City's intentions. Transcripts are available. Letter from KVA to Council Chair Romy Cachola and Rod Tam in response to the meeting was distributed and is available at the office. **Letter of Intent update:** KVA received a draft and faxed it to Mitchell Imanaka (KVA CPR Attorney) for review. Committee made some recommendations and will report on that at the next meeting.

The Phase V - Committee will hold the next Meeting on Monday, June 18, 2007 at 6:30 p.m. at the Kahuku Community Center **All KVA tenants are invited**

Fishing Club/Community Center: If you see anyone driving a vehicle on the beach please report their license number and description of vehicle to the office at 293-2423.

Village Maintenance: Trees considered to be unsafe or dangerous have been cut through out the village. We are currently working on scheduling of road repairs since the rainy weather has subsided.

Announcements: The City is no longer picking up trash on the dirt roads of our village. They have informed us that their employees are concerned that the dust is a health hazard. This situation has come up time and time again over the years and instead of fighting a continuing battle KVA has decided to implement the City's Front End service which is free for the tenants who live on the dirt roads. For the tenants who live on the highway and on the paved area in New Camp trash pick up will continue as usual on Tuesdays and Fridays. There are rules regarding the City trash pick up and a copy is attached for your convenience. Trash will not be picked up if the bag or container has been broken or spilled over. We encourage you to tie your trash bags securely and use containers with secure lids. Currently we are waiting for the delivery of two bins to service those tenants who do not live on the paved roads. One will be located in New Camp on the paved road on the last corner before going to Ocean View. The

second bin will be located at the entrance to Walkerville. We ask cooperation of the tenants who have elderly neighbors to be a good neighbor and take their rubbish to the bin. Pick up days for the front end service will be Wednesdays and Saturdays. The bins will be kept locked and open at 5:00 pm the evening before pick up days and locked after collection. There are also rules for what type of rubbish can be put in these bins. We will get that information to you before the program is started. In the meantime if you want your trash picked up please bag it correctly and place on the paved roads using consideration to not block tenant's driveways. You may wish to call Acton Line at 591-0222 or the Mayor's complaint line at 523-4381 to make your concerns heard. Bulky item pickup will continue as before, if you have a large item to be picked up you need to call 293-3657 to make arrangements.

The office will be closed on Monday June 11, 2007 in observance of Kam Day.

Residential Refuse Collection

Do you know the rules for putting out your trash?

To help the City provide safe, efficient service, you must follow these rules:

In both Manual and Automated Collection Systems

- Place refuse at curb by 6:00 a.m. on collection days, but not before 6:00 p.m. on previous evening. Do not leave containers at the curb on non-collection days.
- Bag trash before placing in container, especially loose, lightweight material that scatter - loose plastic bags, packing material, saw dust.
- Drain and wrap garbage (food scraps).
- Securely wrap any items that might cause injury or illness, such as sharp glass, bulbs or metal and animal feces.
- Pour motor oil into oil-absorbent boxes before placing in the trash.
- No liquids, concrete, construction debris, soil or rocks.
- No radioactive material. If someone in your household has received radioactive medical treatment, waste such as tissue paper and diapers may become contaminated through contact with that person. Please contact your neighborhood collection yard. City personnel will come to your house to test these items. A single contaminated tissue can trigger the safety sensors at the disposal facilities and require isolation and inspection of the entire truckload of waste.
- Go to instructions for proper disposal of Household Hazardous Waste.

In the Manual Collection System

- Refuse should not exceed 75 pounds per container.
- Householder is responsible for providing containers no larger than 35 gallons. Not durable containers, such as plastic bags, may be used if they are able to contain refuse securely at all times.

KAHUKU VILLAGE ASSOCIATION, INC.
P.O. BOX 398 • KAHUKU, HAWAII 96731-0398
PHONE: 293-4488

**Phase V Committee Meeting
June 5, 2007 - Agenda
KCC Conference Room**

Comparison Chart: Sent letter to KFC requesting their assistance in putting it together for the next Phase V tenant meeting. Development and administrative cost estimates for other options for the Phase V area.

Letter of Intent: E-mailed LOI to Mitchell Imanaka for review, he looked it over and said it was good. Shared with him our concern regarding the wording for reasonable roads. Suggested to Eric and Dan that it be changed to "reasonably paved roads". Discussion on scheduling the individual or small group meetings to give the tenants the opportunity to sign.

Next Phase V Committee Meeting: June 18, 2007 meeting agenda:

- § Dan Ide & Dennis Enomoto will do a 20 minute presentation of who they are and what role they will play in the CP development. *Asking for any recommendations re: (height restrictions, house style etc.) They will be putting together all the paperwork and wording for the 201H and other documents.*
- § Letter of Intent: Give it out and explain the process.
- § Comparison Chart overview

Meeting Adjourned

**Phase V Committee Meeting
June 18, 2007
Kahuku Community Center
Minutes**

Call to Order: Meeting called to order at 6:45 p.m.

Members and Guests: Leslie Llanos, Sherry Martinez, Jim Camit, Josh Primacio & Jr. Primacio.
Guest: Dennis Enomoto, Dan Ide and Abe Lee.

Dan Ide and Dennis Enomoto of Palekana Properties, Inc. introduced themselves and explained their role as facilitators for the project. They will be helping to walk the EU and 201H processes through the city agencies. They will be present at the meetings with the tenants regarding the Letter of Intent from Continental Pacific. Tenants reviewed the letter of intent which was handed out. Current status of homes is legal non-conforming. Continental's objective is to give the tenants the most flexibility, the 201H will allow for that. Abe-Lee commented that after the city inspection of the homes we will know their recommendations and work from there. At present the completed map has 72 existing lots, 2 commercial and 31 vacant lots.

Announcements: Tenants will be contacted to schedule a meeting to sign the Letter of Intent and answer any questions regarding the LOI and the CPR map.

Community Sustainable Plan is proceeding and tenants will be informed of the upcoming public meetings.

Phase V Committee working on a comparison chart regarding development in Kahuku to help better inform all the tenants and residents the cost and effect of other options.

Joshua Primacio, Chair of the Covenants committee will be working on questions relating to the sale of the lots, such as: one house per lot, style of homes, height of homes, re-selling of homes. He will notify tenants when the meeting is scheduled.

Annual Membership Meeting June 30, 2007 @ 9:30 a.m. Kahuku Community Center

Next Phase V Committee Update Meeting July 16, 2007 at 6:30 p.m. at the Kahuku Community Center.

Meeting Adjourned: 8:45 p.m.

KAHUKU VILLAGE ASSOCIATION, INC.
P.O. BOX 398 • KAHUKU, HAWAII 96731-0398
PHONE: 293-4488

KAHUKU VILLAGE ASSOCIATION, INC.
P.O. BOX 398 • KAHUKU, HAWAII 96731-0398
PHONE: 293-4488

Phase V Committee Meeting
Wednesday, June 20, 2007, 6:30 p.m.
KVA Conference Center
Minutes

Kahuku Village Association
Annual Membership Meeting
Phase V - Committee Report
Saturday, June 30, 2007

Members present: Leslie Llanos, Joshua Primacio, Michaela Primacio, Jr. Primacio

Members absent: Jimmy Camit and Sherry Martinez

Called to Order: 6:45 p.m.

I) Letter of Intent - Reviewed the draft letter to mail to all the assigned tenants to update them and notify them that they will be called to schedule a time for a meeting re: Phase V CPR map and the LOI signing.

There will be 4 meetings with Dan Ide (list of questions attached to relate to Dan Ide and Eric)

Discussion on the changes on the LOI, Reid Matsuura to e-mail some comments re: the city's council possible concerns or suggestions of the wording.

II) Review of the CPR map. Original average size of lots per CP was to be 5,000 - 7,000 sq feet. The current map shows the lot sizes to be 11,000 sq feet.

We will need tenants participation and input.

CPR related issues regarding the sub-dividing of the lots after they have been entitled over to the individual owner fee simple. One house per lot and the style and height. Issues for the covenants committee to review and propose appropriate course of action.

Announcements:

Annual Membership meeting June 30, 2007 @ 9:00 a.m., Community Center, Main room
Committee meeting set for the following

Next Phase V core committee meeting Wednesday, July 4, 2007 @ 5:30 at the Conference room.

Meeting Adjourned: 8:20 p.m.

Phase V Committee appointments:

Jim Camit (Financial)

Joshua Primacio (Covenants)

Sherry Martinez (Grants)

Jr. Primacio (Covenants)

Michaela Primacio (Secretary)

Special Committee Meetings

March 20, 2007 (City Council)

April 13, 2007 (Conference call)

May 16, 2007

June 13, 2007

June 20, 2007

Monthly Tenant Information meetings held: (Minutes available in office)

February 12, 2007

March 19, 2007

April 16, 2007

May 14, 2007 (Covenants Committee)

May 21, 2007

June 18, 2007

DPP Ko'olau Loa Community Sustainable Plan

Made contact with Department of Planning and Permitting coordinator for the update. Referred all information regarding current proposal from Continental Pacific. Upcoming public forum meetings schedule will be posted in the KVA Monthly Newsletter.

KAHUKU VILLAGE ASSOCIATION JULY 2007 - NEWSLETTER

Phase V Development Comparison
KFC Project Management Engineering Firm was retained to review viable options to develop Phase V.

1. KVA purchase (TMK 016 and a portion of TMK 027)
2. City Condemnation (Eminent Domain)
3. Continental Pacific (Ten Key Elements)
4. Continental Pacific (Development of the Golf Course)

KFC solicited opinions from several long-time members of Oahu who have considerable, and successful experience, in the area of property development and management throughout Oahu and the State. None of these people have either a direct or indirect interest in the proposed project. These developers were presented options (1 through 4) as summarized in the attached table. In their opinion: Options 3 & 4 were the most viable and should be seriously considered by KVA. Options 1 & 2, while viable, are not likely to happen without great cost to KVA both financially and in time spent. Neither option presents a "guaranteed" outcome. The risks are higher given what is being offered via Continental Pacific. Both 1 & 2 represent longer timelines and do not guarantee that Continental Properties will not proceed without KVA's direct involvement.

Letter of Intent

KVA requested a formal letter of intent from Continental Pacific which was received June 2007. The LOI was reviewed changes were approved. LOI was approved by the Board of Directors. A copy will be sent to each tenant with a cover letter. Meetings to be scheduled in July with tenants and Continental Pacific Representatives from Palekana Properties, Inc.

General Membership Meeting: At the Annual meeting President, Noreen Cristobal gave the message, Jimmy Leonardi reported on the Phase IV (update presented at the open forum), Leslie Llanos made Phase V Committee Report (update presented at the open forum) and Jim Camit reported on the budget. Election of Officers: Leslie Llanos and Sherry Martinez were presented by the Nominating Committee. Jr. Primacio and John Errett were nominated from the floor. A total of 241 votes cast. 120 members were present. The secret ballot count: Leslie Llanos - 79, Sherry Martinez - 66, Jr. Primacio - 55 and John Errett - 41. There was a one vote overage which had no effect on the ballot). Leslie Llanos and Sherry Martinez were each elected for a 2 year term. The new Board of Directors for 2007 - 2008 is Noreen Cristobal, President, Jimmy Leonardi, Vice President, Jim Camit, Treasurer, Leslie Llanos, Secretary and Sherry Martinez, Director. A KVA Information Meeting will be scheduled soon and all members will be notified.

Phase IV Update: Jimmy Leonardi, Chair of Phase IV wants you to know that the project is still alive. His committee is working on updating the lot reservations list making sure telephone numbers and addresses are current so an update letter can be mailed out.

Phase V Update: Leslie Llanos presented a Development Comparison Chart on the 4 most viable options available to KVA (available in the office). The Letter of Intent was received from Continental Pacific and has been reviewed and accepted by the Board of Directors. All assigned Tenants will be receiving a copy of the Letter of Intent in the mail and will be called to schedule a meeting with Palekana Properties, Inc representatives for Continental Pacific. These meetings will replace the July Phase V Tenant Committee meeting. The purpose of the meeting will be to review and answer questions related to the current CPR map (completed by Abe Lee Realty) and the Letter of Intent. The Phase V Committee has also made contact with the Department of Permitting and Planning, Ko'olau Loa Communities Sustainable Department. They will be scheduling three public meetings within the next few months to gather input from the community on all the proposed development in our area.

Trash Pick-up Schedule: Front End Trash pick up using the bins located in New Camp (on the main road near Sherry Martinez house) and in Walkerville (before the first house across from Mrs. Togo) will begin Wednesday, July 4, 2007. The trash bins will be emptied on Wednesdays and Saturdays. The bins will be unlocked at 5:00 p.m. the evening before pick up and locked after the bin is emptied. Please remember to only place items that would be picked up in your regular trash. No Construction, green waste, hazardous waste or bulky items are allowed in the bins. Trash must be in bags and tied closed. Regular trash pick up will continue on the paved roads on Tuesdays and Fridays. Please call the office if you have any questions.

Fishing Club/Beach Clean-up: It is time for another beach clean-up Saturday July 21, 2007 at 8:30 a.m. we meet at the Japanese Graveyard turnaround. Drinks and bags provided. All fishing club members must attend at least one beach clean-up a year in order to renew the yearly membership.

Respectfully submitted by

Leslie Llanos, Phase V Chairman

Over →

KAHUKU VILLAGE ASSOCIATION, INC.
P.O. BOX 398 • KAHUKU, HAWAII 96731-0398
PHONE: 293-4488

Condolences: Our deepest sympathy to Jacinto Limbaga's family, past tenants of New Camp who moved to the Kahuku Senior Citizen housing.

Announcements: Some of our tenants have tree cuttings in their yards and would like you to take them if you are interested. Please call the office if you are interested.

Road repair is scheduled to begin sometime in July for all of the camps.

The 15th falls on a Sunday this month. To avoid the late fee please be sure your rent is paid in full by 4:30 p.m. on Friday, July 13, 2007.

The office will be closed on Wednesday, to observe the 4th of July celebration.

**KVA Phase V Committee Meeting
Minutes
July 11, 2007 - 6:30 p.m.
Community Center Conference Room**

Call to Order: 6:30 p.m.

Members Present: Leslie Llanos, Sherry Martinez, Lisa Evangelista, Jim Camit, Joshua Primacio.

Letter of Intent:

Meeting dates scheduled for Tuesday 07/24/07 at 3 & 6 pm (Dan & Dennis). And Thursday 07/26/07 at 3 & 6 p.m (Dan). Optional if needed Saturday 07/28/07 at 9:30 a.m. LOI with changes has been sent to Eric for final o.k. Will mail out with cover letter by the end of this week.

Grants: (Sherry Martinez)

Kalika Ishol has been retained to begin the research for applicable grants. Also suggested was using Mary Anne Long for advisor.

Covenants: (Joshua Primacio)

Suggestions for the survey that will be passed out at the LOI meetings. Next meeting July 23, 2007 from 6 - 8 p.m. at the Community Center Conference room. Next scheduled core committee meeting: July 18, 2007. The KVA board of directors, Dan Ide and Dennis Enomoto will be present.

Meeting Adjourned: 7:15 p.m.

KAHUKU VILLAGE ASSOCIATION, INC.

P.O. BOX 388 • KAHUKU, HAWAII 96731-0388
PHONE: 293-4488

Phase V Committee Meeting

Wednesday July 18, 2007

6:30 p.m. - Community Center Conference Room

Meeting Called to Order: 6:35 p.m.

Members present: Noreen Cristobal, Jimmy Leonardi, Jim Camit, Leslie Llanos, Sherry Martinez and Joshua Primasio. Guest: Dan Ide, Dennis Enomoto and Eric Morrison.

Continental Update: Eric met with Bob Sumitomo because he is the head of a steering committee started by Donovan Dela Cruz re: agricultural lands. They are doing studies and having meetings which they are not including Continental Pacific. Eric would like KVA to look into this. Eric said they are having people come to them with different plans which they are listening to, but they are turning them down. They are committed to this plan up to the 201H. If the 201H goes through the lots will average 10,000 sf making it \$7.50 a square foot. That will apply to the entire area if the EUP is approved. They can not give actual figures until the 201H and the EU goes through. Ownership is the only security out here. If the 201H does not go through they will have to go with another plan and the \$75,000 average will not apply and the golf course will have to be divided. They will make it as affordable as possible.

Golf Course: Continental has been contacted by Ken Zeitz (478-3466) who is working with the United States Golfers Association a non-profit group. They work with Tiger Woods and other professionals to encourage programs for the youth. Looking at USDA monies, need work on the water issues.

Letter of Intent: Discussion. CP wanted to disclose the option of sub-dividing the golf course into 20+ acre lots and that is why they put it in the LOI. That will not happen unless the 201H does not go through as planned. Meetings scheduled for July 24 and 26 at 3 & 6. All 72 tenants have been notified. 51 are scheduled to date. Dan & Dennis will answer questions.

201H process: R.M. Towill has been hired to write the 201H application.

- Steps:**
1. Application submission (goes to different agencies)
 2. Support from Agencies (30 days to comment to DPP) Exemptions
 3. Spearhead Public Support (Rally/News/Local television/North Shore News)
 4. City Council (Individual meetings/Letters/calls to members from community)

Existing Use Permit (EUP): Existing use maps have been submitted. Inspectors are working on the scheduling. Estimated times are mid-end of August.

Meeting Adjourned: 8:10 p.m.

CONTINENTAL PACIFIC, LLC

P.O. Box 1350, Santa Rosa Beach, FL 32459

July 20, 2007

**To: Kahuku Village Association and
Residents of Phase 5 of Kahuku Village**

Re: Continental Pacific Letter of Intent

Dear Ladies and Gentlemen:

Continental Pacific, LLC ("Continental") is the fee owner of various properties located makai of Kamehameha Highway, in Kahuku, Oahu, Hawaii, identified by current Tax Map Key Nos. (1) 5-6-2-10, 5-6-2-16 and 5-6-2-27, which include residential land in Kahuku Village and the Kahuku Golf Course. Over the last year, Continental has had numerous positive discussions with Honolulu Mayor Mufi Hannemann and his staff and members of the Kahuku Village Association, the Kahuku Community Association, and the Phase V Committee of the Kahuku Village Association regarding Continental's development of its Kahuku properties.

Continental intends to develop the Kahuku properties in accordance with their desire to keep Kahuku, Kahuku. To this end, Continental has developed an integrated plan, comprised of each of the following key elements:

1. **Home ownership for Kahuku Villagers.** The property surrounding the existing 72 houses, known as (a portion of) Kahuku Village, will be subdivided first into one or two large lots, which lots will be submitted to a new Condominium Property Regime. The house lots, and possibly the vacant lots, will be condominium units. Continental will also make reasonable road (including paving), septic and safety improvements (in accordance with county requirements) in the common areas defined by the condominium documents. The house lots will be offered for sale to the current occupants at an average price of \$75,000.

2. **Financing.** If necessary, Continental will offer owner financing at 10% interest per year. For those elderly occupants who absolutely cannot afford to purchase, Continental will consider continuing their monthly rental, but the rent would have to be adjusted upward from the current amount.

3. Bring Villages back. If Continental determines that the vacant, infill lots can be built upon and are within the county and condominium laws and regulations, the lots will be modestly improved and sold to villagers in Phase 4 and in the flood way in Phase 5. Continental would supply architectural standards that would complement the theme of the existing Kahuku Village.

4. Private beaches for the community. Two private beach parks, one at either end of the Kahuku Golf Course, will be donated to the community through the Kahuku Village Association or the condominium owners association.

5. Kahuku Golf Course. The 9-hole Kahuku Golf Course (with some reconfiguration of the hold locations) will be donated or leased (in perpetuity) to an entity acceptable to Continental and subject to a maintenance covenant.

6. Donate the cemeteries. The two cemeteries located in the area will be donated to an entity acceptable to Continental.

7. Oceanside Lots. Continental will develop 18 lots on the oceanside of the Kahuku Golf Course. These will be large lots (minimum 43,560 square feet or 1 acre) developed in a country setting. We will need a zoning change from AG-2 (2 acre parcels) to Country (1 acre parcels) or R-5.

8. Makahoa Point. Makahoa Point will be subdivided and sold as a single ranch lot (25+ acres in size) to Jim Reynolds who has been a long time tenant of that property, and he intends to keep it in its current use with no further subdivision.

9. Adams Field. We reserve the right to establish a camping area at the old Adams Field area, which is a permitted use under the existing P-2 zoning, and may be developed with recreational camping cabins, or sold outright.

10. Agricultural Lots. The remaining area at the north end of the Kahuku Golf Course will be kept in agriculture and developed into 9 to 12 agricultural lots (minimum 2 acres in size).


Acceptance of all of the components of Continental's plan is required to achieve the goals of home ownership and keeping Kahuku, Kahuku. The inability to achieve any one element will seriously delay and may even prohibit the completion of other elements. Continental cannot afford to sell and finance the units in Kahuku Village at below market prices and to donate park lands and the Kahuku Golf Course without being able to develop Continental's remaining properties. If Continental's plan is not acceptable to you and you would prefer that the County or State government go through

the process of condemnation and eminent domain, Continental would also welcome those proceedings for any or all of the property.

The work has begun, but Continental's development of the Kahuku properties, including zoning changes and subdivision approval, will require support and cooperation of the Kahuku community and our government to ensure that all of the elements of the plan can be accomplished for the benefit of the residents of Kahuku and the City and County of Honolulu, as well as Continental. If you support Continental's plan, please sign below so that Continental can continue to move forward with these goals.

If you have any questions about the elements of Continental's development plan, please call Jere Henderson at (808) 960-4343, or email him at jere@oplandoo.com.

Sincerely,


Joe A. Allan
for Continental Pacific, LLC


Assigned Tenant (Signature)

S. Melana Becerra
Assigned Tenant (Print)

31 Aug 07 351 Meters
Date House#/Camp

Phase V Covenant's Meeting

July 23, 2007

6:00pm-KVA Conference Room

For general distribution to Phase V tenants

Chair: Joshua Primacio called meeting to order

Recorder: Nalani Mattox-Primacio

Agenda available:

- I. Call to Order
- II. Roll Call (sign-in)
- III. Approval of Minutes
- IV. Purpose of Meeting:
- V. Address Covenants, rules, conditions, restriction "Line Items"
- VI. Discussion or ideas on "Line Items"
- VII. Recommendations
- VIII. Announcements
- IX. Adjournment

Line Items*(no order)

- Roads
- Parking
- Plantation-Look
- Height Restrictions
- Common Grounds <maintenance
- Homeowners Organization
- By-Laws, governing body, budget
- Parks/Cemetery
- Safety
- Speed bumps, signs
- Lot's
- #'s of houses
- Water System/Septic
- Fire hydrants
- Name of Homeowners Organization
- Garbage
- Visitors/Guests
- Enforcement/Rule Violation
- Curb Appeal
- Animals
- Membership
- Rentals

**Line items open to additions per committee 7/23/07*

Phase V Covenant's Meeting

July 23, 2007

6:00pm-KVA Conference Room

For general distribution to Phase V tenants

- open lot's that are undevelopable would revert to homeowner association.

Recommendations of Committee on July 23, 2007

- Ask KVA for Phase V tenants contract info or flyer to include in KVA notices and newsletters
- Find out Park size
- Find out about C&C access to beach
- Find out about rebuilding info
- Committee suggests open meetings for all including info distribution and invitations
- Final Covenants Committee recommendation to Home Owners should be by majority vote by Phase V tenants.

PAU

Note: original recorder sheets on file with Covenant Committee Chair Joshua Primacio

Phase V Covenant's Meeting

July 30, 2007

6:00pm-KVA Conference Room

For general distribution to Phase V tenants

Recommendations of Committee on July 23, 2007

- Ask KVA for Phase V tenants contract info or flyer to include in KVA notices and newsletters
- Find out Park size
- Find out about C&C access to beach
- Find out about rebuilding info
- Committee suggests open meetings for all including info distribution and invitations
- Final Covenants Committee recommendation to Home Owners should be by majority vote by Phase V tenants.

Recommendations of Committee on July 30, 2007

- NONE

PAU

Note: original recorder sheets on file with Covenant Committee Chair Joshua Primacio

KAHUKU VILLAGE ASSOCIATION, INC.

P.O. BOX 398 • KAHUKU, HAWAII 96731-0398
PHONE: 293-4488

Phase V Committee Meeting
Tuesday - July 24, 2007/July 26, 2007 - 3 & 6 p.m.
Kahuku Community Center
Combined Minutes

Chair: Leslie Llanos

Guests: 07/24/07 Dan Ide and Dennis Enomoto of Palakana Properties. 07/26/07 @ 3 p.m. Eric Morrison & Dan Ide. 6 p.m. Dan Ide, Palakan Properties. Board members present at different times.

Village Development Survey distributed to tenants. Tenants requested to complete and turn in at the end of the meeting.

Current CPR (Condominium Property Regime) Map on display along with original 10 Key Elements Map.

Dan & Dennis stated that they got involved because they believe this is the best deal for the tenants to keep Kahuku, Kauku. They will be helping to facilitate the process for the Existing Use and Condominium Property Regime and 201H applications.

201H Variance - R.M. Towill has been retained to prepare the first draft of the 201H application. The 201H is a Hawaii Revised Statute that allows for Affordable Housing development. This includes waivers and variances for the purpose of affordable housing. It allows for special circumstances to customize development standards producing a more affordable and cost effective project. The application will describe the project from the beginning of the process to the end. It will include background history and a comprehensive land map. The land map will include any additional vacant lots. The application will also include specifics on the timeline for the development of infrastructure for the Phase V lots, oceanfront lots, parks, cemeteries, golf course, Adams Field and the agriculture and commercial areas. The process itself is described below and will take approximately 1 year.

1. The first draft of the 201H application is reviewed by Continental Pacific, Palakana Properties and the Kahuku Village Association to be sure that all practical items are included. The first draft is expected to be completed within the next two months. A Phase V Committee meeting will be held to allow the tenants the opportunity to review and comment on the application.
2. Submission of the final 201H application goes to the Department of Permitting and Planning (DPP). The final application is circulated and

Currently the city recognizes Phase V as two large tax map keys. The CPR will create the individual tax map keys (TMK) for each lot in the Phase V project. This will allow individual fee simple ownership. When a CPR is approved the City then acknowledges each lot individually. The completed application which consists of the measurements, drawings and photos of all existing structures on the Phase V properties is included along with the map designating the boundary lines. The completed package is sent to the State Real Estate Commission for approval.

Existing Use Permit (EUP) - Dan Ide and Dennis Enomoto are currently working with zoning inspectors to schedule a walk through of the Phase V area. Tenants will be notified as soon as possible. Inspectors will be looking primarily for non permitted structures. Easy corner tents will need to be taken down temporarily. Dan & Dennis have requested a more defined list from the zoning inspectors of what they will be looking at. Presently the inspectors are looking to schedule ending of August.

Comments: Many details will become clear as we move along in the process. It is important to know that Continental Pacific is allowing the tenants to be a part of this whole process. It is also to our benefit that the Mayor is very supportive of this proposal. A time line of the process will be put together for the tenants. Presently the approximate average lot is 10,000 sq. feet. The exact cost will not be known until the EUP is approved. The EUP will allow for construction and residential loans.

Meeting Adjourned

reviewed by all the different departmental services such as waste, sewer, transportation, ambulance, fire, police etc. for comments. The application includes specific details regarding development standards for infrastructure requirements. After each department has reviewed the application it is returned to the Permitting Department with recommendations.

3. Continental Pacific, Palakana Properties and the Kahuku Village Association work together to meet any recommendations.
4. Department of Permitting and Planning holds Public Hearings (coordinated community support efforts will be essential in this stage). Then the final review and approval process.
5. The reviewed and approved application is sent to the City Council for approval. (This will entail more public support and testimonies from tenants at City Council).

Letter of Intent (LOI) - Dan Ide and Dennis Enomoto reviewed and answered questions regarding the Letter of Intent received from Continental Pacific. The purpose of the Letter of Intent is to give the tenants a written statement of what they intend to do with the property. The Letter of Intent is dependant upon the passing of the 201H Affordable Housing variance. Phase V tenants are requested to sign the Letter of Intent and return to Continental Pacific via KVA. Signing the LOI will show Continental Pacific that you (the tenant) are in support of the project. It will also allow the KVA Board to support the proposal on your behalf before City Council. The average lot is 10,000 sq. ft. for the \$75,000. A list of the most frequently asked questions from the meeting will be made available as soon as possible.

Condominium Property Regime (CPR) - The current CPR map is available and in the process of being renumbered. It is projected to be completed end of July beginning of August. By law Continental Pacific will be required to put together the final covenants for the New Home Owners Association. This New Home Owners Association will manage all the common areas. The common areas will include the parks (if they remain private), open areas, roads and water system. The Phase V Covenants Committee is in the process of putting together the tenants input and recommendations for the new association. All the tenants of KVA are encouraged to attend all committee meetings. It is important that tenants concerns are heard and included in the covenants and by-laws to the new home owners association. Upcoming Phase V Committee meetings for the Covenants are scheduled Monday July 30th, August 6th and August 13th at 6 p.m. in the Kahuku Community Center, main room. A Phase V Committee overall update is scheduled for Monday August 20, 2007 at 6:30 p.m. All tenants are welcome.

Phase V Covenants Meeting

August 6, 2007

6:00pm-KVA Main Room (moved by consensus)
For general distribution to Phase V tenants

Chair: Joshua Primacio called meeting to order 6:05pm
Recorder: Nalani Mattox-Primacio
Meeting moved to KVA big room due to bigger attendance (not enough seats)
Re-convened at 6:15pm

Agenda posted:

- I. Call to Order
- II. Roll Call (sign-in)
- III. Approval of Minutes 7/30/07 (Copies of 7/23/07 and 7/30/07 minutes passed out)
- IV. Purpose of Meeting:
- V. Address Covenants, rules, conditions, restriction "Line Items"
- VI. Continue discussion or ideas on "Line Items"
- VII. Recommendations
- VIII. Announcements
- IX. Adjournment

Line Items*(no order-discussed 7/23/07-8/6/07)

- Roads
- Parking
- Plantation-Look
- Height Restrictions
- Common Grounds <maintenance
- Homeowners Organization
- By-Laws, governing body, budget
- Parks/Cemetery
- Safety
- Speed bumps, signs
- Lot's
- #'s of houses
- Water System/Septic
- Fire hydrants
- Name of Homeowners Organization
- Garbage
- Visitors/Guests
- Enforcement/Rule Violation
- Curb Appeal
- Animals
- Membership
- Rentals
- House Rules (added 8/6/07)
- Property Tax (added 8/6/07)
- Fines (added 8/6/07)

*Line Items open to additions per committee 7/23/07

Phase V Covenants Meeting

August 6, 2007

6:00pm-KVA Main Room (moved by consensus)
For general distribution to Phase V tenants

Discussion on Line Items: Curb Appeal

- Does not pertain to house itself.
- It is the Homeowner's responsibility what is allowable by law and addressing health and safety.
- Height restrictions on walls/fences
- Permit from homeowner needs to be "approved" by homeowner's assn.
- OR
- Permit from homeowner must be "shared" by homeowner's assn.
- Undecided

Discussion on Line Items: Animals

- No Livestock in assn. area or common area: pigs, goats, cows, horses
- Follow the leash law for dogs
- Follow the law for all animals (discussion on chickens)

Discussion on Line Items: Name of Homeowner's Assn. (suggestions)

- Kahuku Plantation Community Association (KPCA)
- Kahuku New Camp Community Association (KNCCA)
- Committee looking for additional suggestions
- Legally it would be: Association of Dwelling Homeowners: __name__ (AODO __)

Discussion on Line Items: Enforcement/Rule Violation

- Notification of violation to homeowner would include: 1) Call 2) Written 3) Warning 4) Action
- Signs in community based on rules
- The enforcer should be the managing agent
- How do we break down the violations? Pay attention to health and safety.
- Define the common areas and the road to start breakdown on violation understanding.
 How wide is the road?
- Possibility of security guard was discussed
- House Rules need to become line item (see above)
- Homeowner assn. has right to fine homeowner for violations.

Discussion on Line Items: Renters

- How assn. addresses renters:
- The homeowner needs to inform renters and assume responsibility for the enforcement of assn. rules and covenants to their renters.
- Homeowner must inform the assn. that they are renting out their property.

KAHUKU VILLAGE ASSOCIATION AUGUST 2007 - NEWLETTER

A Kahuku Village Association Informational Meeting is scheduled for August 11, 2007 at 9:00 a.m.

Trash Issues: Jimmy Leonardi and Debbie Sarsona attended a meeting with city officials of the Environmental Services and Administration regarding the trash pick-up concerns. We are requesting something in writing from the City stating why our trash pick up was discontinued on the dirt roads. Full service will continue only on the paved roads; trash pick ups on Tuesdays and Fridays and bulky items on the 2nd Monday of the month and appliances on the 2nd Thursday of the month. We did however get bulky item pick up re-established for the dirt road areas. Please call KVA and we will schedule pick up for you in front of your house. If you live on the dirt roads and you choose to place your trash on the paved area it is important you be considerate of your neighbors who live on the paved roads. Trash must be placed in plastic bags and tied and put in containers with tight lids to keep the animals from getting into the trash. Trash must be placed in front of a house; trash will not be picked up on areas of the paved roads where there is no house. Please do not place your trash in front of the bins on the paved area it will not be picked up. Please have consideration not to block driveways and pick up your container as soon as possible after trash pick up. If the container spills and the trash falls all over the road, the person whose trash spilled is responsible to clean up the mess. If this method is not convenient for you please use the bins which is called "front end service". Please do not place your trash on top of the bins. The bins are kept locked to keep outsiders from filling them up. You kept your trash at your house until the night before pick up before this service was available. The bins will be opened the morning before trash pick up at 8:00 a.m. and locked after trash pick up. The bin service pick up is on Wednesdays and Saturdays. We have more bins on order and they are scheduled to arrive next month. We are still working on this, we appreciate your patience.

Phase V Update: The Phase V Committee held meetings with impacted tenants and Continental Pacific representatives from Palakana Properties. The purpose of the meetings was to answer any questions regarding the current Letter of Intent. The Letter of Intent was mailed to each tenant with a copy of the current Development Comparison Chart (available in the office). Tenants are requested to sign the Letter of Intent as a show of support and return to Continental Pacific via KVA. Combined minutes and the most frequently asked questions from the smaller group meetings are available in the office. If you did not complete and return your survey please do so as soon as possible. Extra surveys are available in the office. It is important that we have everyone's input.

Upcoming Meetings scheduled:

Phase V - Covenantants Committee
Monday, August 6, 2007 at 6 p.m.
Monday, August 13, 2007 at 6 p.m.

Phase V – Committee Tenant Update Meeting Monday, August 20, 2007 at 6:30 p.m.

All Phase V Tenants are encouraged to attend these meetings

All meetings will be held at the Kahuku Community Center - Main room
Issues to be discussed will include the Covenantants for the New Homeowners association, grant processes for loans and house renovations, the 201H, Existing Use & CPR processes.

Fishing Club/Beach Gate: The Beach Clean-up was held Saturday July 21, 2007. The next clean-up is scheduled for October 20, 2007. Many of our fishermen showed up to keep the beach clean. Mahalo.

Phase V Covenantants Meeting

August 6, 2007

6:00pm-KVA Main Room (moved by consensus)
For general distribution to Phase V tenants

- It is the intention of KVA to convert any rental ownership from them to the homeowner's assn.

Discussion on Line Items: Height restrictions

- If no (2) story allowed, then committee would like to maximize the building of the house on the lot.

Discussion on Line Items: Membership

- Every Homeowners must be a member
- Membership must be in By-Laws also (have matching descriptions)
- Resale discussion: What is the amount of time to allow resale?
- Options: 1) Resale + improvements
2) Market price

Recommendations of Committee on August 6, 2007

- Committee needs definitions for the start of the covenants.
 - Follow up on the green open space request with Continental Pacific.
 - Committee will review KVA House Rules for use in covenants
- Leslie Lantos to bring House Rules and survey results for everyone on 8/13/07.*
- Chair to write out the process for all tenants in a letter form.
 - Committee intends to cluster line items on 8/13/07 for categorizing.
- What needs to be in the By-Laws vs. the covenants?*

PAU

Note: original recorder sheets on file with Covenant Committee Chair Joshua Primacio

August 11, 2007 - KVA Informational Meeting: Jimmy Leonardi reported on the trash pick-up for the Phase V area that stopped in May. We have asked the city to reimburse KVA for the cost of the bins. The issue is the workers health/welfare because of the dust. Sherry Martinez reported on the Sugar Mill soil cleaning project in Main Camp. The project received approval from the Department of Health and the City and should be completed within 6 - 8 months. Jim Camit reported on the rental increases and current opinion survey sent to tenants.

Phase V Committee Meeting
Monday August 20, 2007 - 6:30 p.m.
Kahuku Community Center

I) Development Update: Dan Ide and Dennis Enomoto of Palakana Properties said they were still working with the inspectors to schedule the village walk through. It looks like it will entail a 2-3 day visit. They want to finish within one week. Talked about the current CPR map. They are working to arrange a map meeting between the tenants and the surveyor to address any issues prior to the map being submitted. Continental Pacific and Abe Lee Realty are working to complete the Phase II portion of the map. It was determined that it was best to add any extra lots before submitting the map to avoid any other changes and to be sure there would be only one Homeowners association. R.M. Towill is looking at putting out the first draft for the 201H application by October. Palakana properties will review the application first and then bring it before the tenants at a Committee meeting.

II) Covenant's Committee Update: Joshua Primacio gave an update of the purpose of the committee and announced the next meeting. All covenant committee minutes are available in the office. After the committee has put together the information a consensus vote will be taken.

III) Grants Committee Update: Sherry Martinez reported on the hiring of Kalika Ishol to research grants for home improvement and down payments. She has submitted a list and we are reviewing the options. If any tenants are interested they need to put their name at the office and she will contact them.

IV) Flood Mitigation Update: Leslie Llanos reported that Jimmy Leonardi spoke with the Army Corp of Engineers, Milton Yamamoto. They will do another study on the Maleakana end of Kahuku. Pending money from the State which is available. Milton seems hopeful that the results will benefit Phase IV and V.

V) Questions and Comments from Tenants: (Q) Will the tenants own the property outright. (A) Yes. Fee Simple. (Q) Who will have the priority for the vacant lots? (A) The discussion has been that we would ask Continental Pacific to use the same priority list being used for vacant house selection. Continental Pacific has stated in item #3 of the "Letter of Intent" that they are willing to sell to villagers. (Q) Are there unforeseen costs for the water system? (A) Continental Pacific has said that they will be responsible to pay for improvements in order to meet the requirements set by the city after the inspections. If there are other factors or specifications made by the tenants then we could possibly look into grants to assist if it is needed. (Q) Will the 201H application have some of the answers to our questions? (A) Yes.

VI) Announcements: Next Covenant Committee Meeting set for Monday August 27, 2007 @ 6 p.m. August 30, 2007. City's Community Sustainable Plan will have it's first Public Meeting at the Laie Elementary School, Cafeteria from 7-9 p.m. The next Phase V Committee meeting Update for tenants will be on September 17, 2007 @ 6p.m. at the Kahuku Community Center

V) Meeting Adjourned: 8:50 p.m.

Phase IV Update: The Army Corp of Engineers plan to do another study on the Maleakana end of Kahuku, using existing data. Milton Yamamoto seems hopeful that the results will benefit Phase IV and V. KVA Board hired a grant writer to complete the CDBG application for more monies. The Phase IV Committee is in the process of updating the original list. Sign-up for that committee is in the office.

Phase V Update: Monday August 20, 2007 update meeting included Dan Ide and Dennis Enomoto. They are still working with the inspectors to schedule a date. They are also working to schedule meetings with the surveyor and the tenants to go over each individual lot. R. M. Towill has been retained by Continental Pacific to begin the 201H application. Dan and Dennis will review the draft and bring it to the Committee meeting for review. This application will have answers to many of our questions regarding more detailed specifications. The application will be sent to all the appropriate government agencies for review once it is completed. Monday August 6th and 13th the covenants committee met and discussed line items to be addressed by tenants for the New Association. Minutes are available in the office. The results of these meetings are being compiled and will be sent to each tenant for review. A special meeting will be held to conduct a consensus vote in order to finalize a completed package to recommend to the Board of Directors.

Phase V tenants are encouraged to sign and returned your "Letter of Intent" from Continental Pacific we ask that you do so as soon as possible. All signed Letters of Intent that we have received have been forwarded to Continental Pacific. If you are interested in purchasing your existing house this is the time to take advantage of this opportunity and let Continental Pacific know by signing the Letter of Intent.

Upcoming meetings
Covenant's Committee Meeting, September 10, 2007 @ 6:00 p.m.
Phase V Committee Meeting, September 17, 2007 @ 6:00 p.m.

*Meetings will be held in the Kahuku Community Center, Main room.
All Phase V Tenants are encouraged to attend these meetings.*

New Water Rates: Board of Water Supply increased the water rate from \$2.24 to \$2.51 per 1000 gallons effective July 1, 2007. So your September invoice will reflect an additional water charge for water used from July 1, 2007 to July 18, 2007.

Rental Increase Survey's: If you have not turned in your survey please do so at this time as the Board of Directors will be making a decision at there next meeting. Please turn them in so the Board of Directors can take your vote into consideration on there decision.

Announcements: Reminder the 15th falls on a Saturday this month so to avoid the late fee your rent must be paid in full by 4:30 p.m. Friday September 14th. The office will be closed Monday September 3rd for Labor Day.

KAHUKU VILLAGE ASSOCIATION, INC.

P.O. BOX 368 • KAHUKU, HAWAII 96731-0368

PHONE: 283 4488

KVA Information Meeting - Notes

Saturday May 10, 2008, 9:00 a.m.

Kahuku Community Center

5)

Phase V Update: Leslie Llanos handed out a statement of the reasons why KVA is in support of the Continental Pacific project and then introduced Continental Pacific Representatives, Tim Reynolds, Eric Morrison and Jim Niermann from R.M. Towill. Current project maps were displayed. Continental Pacific became the owners in 2006. It consisted of 3 Tax Map Keys not subdivided. It is a costly process to subdivide. CP is willing to work cooperatively with KVA to put affordable housing. Surveyors/architects came out and developed a proposal to residents for the residential area. The average lot being 10,000 sq. ft. with 67 vacant lots (KVA requested additional lots in order to accommodate other plantations residents outside of Phase V). The 201H process will allow variances for the existing use permit, since the homes are not presently recognized by the city. The existing use permit will allow residents to rebuild or make additions etc. It will also allow the lots to be divided for residents to purchase fee simple with the common areas owned by the Homeowners Assoc. The 201H will help expedite the process. 80% of the lots are affordable and 20% agriculture lots including 18 oceanfront lots which are at market value. The ocean lots do not include homes at time of purchase. The plan includes the golf course and 2 beach parks (allowing for greater public access) and 2 cemeteries. A letter including an appraisal was sent to the Governor requesting her to consider purchasing the beach parcel. In the meantime the process needs to move forward. Tim Reynolds stated that he has known the Henderson family for 25 plus years and has known them to be thoughtful and generous, especially of the environment. The project is constantly changing allowing the preservation of the village with ownership to the plantation people. CP has been approached by other developers who are not interested in preserving the community. CP is committed to preserve the property. They are currently at the Environmental Assessment Stage which includes a 30 day General Public comment period. After the comment period CP will have 30 days to respond. The Environmental Assessment will be posted online. The final Environmental Assessment will be included in the 201H application that will go before the City Council. This development plan creates much lower density than other plans. Jim Niermann the project planner stated that there are changes to the ocean front lots putting them back off the ocean eco system. This will mean that the golf course will have to be reconfigured but will remain 9 holes. This was as a result of the Coastal Shoreline Study. This new setback is 100 - 250 feet from the shoreline. Some roads will use the agricultural standards of 26 ft. for access roads and 44 ft. for the main road. Request to have the interior roads at 20ft. are being considered. The current water line does not meet Board and Water Supply standards for fire protection to service the fire hydrants so CP has decided to include a new potable water service at that same time. The Cesspools will all have to be changed one at a time. Currently there are 10 gang cesspools that will have to be addressed first. Then the others will be done in phases. Some telephone poles will have to be replaced because of roats. Flood/drainage issues are being addressed by looking at alternatives such as changes to the stream channel by increasing the capacity through grading closest to the new bridge. Possible underground piping from Kam Highway along stream channel. The Army Corp is also looking at flood mitigation for the High School which could benefit Phase V. A request was made that a meeting for the people in the impact area be held before the application is submitted. Tim Reynolds responded that the meeting today is informational and that there is a public comment period prior to the Environmental Assessment being submitted.

Page 2 of 3

Meeting Called to Order: 9:15 a.m.

- 1) Margen Cristobal, President, KVA: Welcome/Introduce Speakers/Standing Rules
- 2) Kahuku Wind Farm Presentation: Presented by Donna Lynn Deln Cruz and Noelani representing First Wind. As of May 1, 2008 there name is First Wind they own and operate the wind farms. They have a habitat conservation plan to benefit and identify species that could be impacted from the wind farm. Kahuku is an excellent wind source. They purchased a 506 Acre parcel from Continental Pacific. Electricity sold to HECO, 12 turbines proposal has been accepted by HECO negotiating interconnect refinement study. Conditional Use Permit completed. Benefits to the community are education, agriculture, Kahuku Hospital and flood mitigation/erosion control. Can save us 143,000 barrels of oil a year. Contact information: www.kahukuwind.com, www.firstwind.com.
- 3) State National Historic Places Registry: Katie Kastner and Astrid Liebermann presenters. There are 2 steps to the State register. First the property must be over 50 years old. Based on a standard criteria. If the home qualifies for the State Registry then it is recommended for the National Register. Main advantage is a property tax exemption that allows a yearly \$100 cost. All changes to the structure must be approved, based on the criteria. If changes are made to the house that do not meet the guidelines the home owner will have to repay the back property taxes. The area could be nominated as a district and then transferred to individual residential properties after the sale is complete. Another option is to register individually. The only site registered in Kahuku in 1998 is one home in Phase II. There are 5 archeological sites recorded. The Sugar Mill could be part of the District State register. The guidelines are for the interior and exterior. They include such things as moldings, door knobs, windows, flooring etc. The preference is to keep the home at the same level as the original.
- 4) Phase IV Update: Jimmy Leonardi introduced Brian Bowers from Bowers & Kuboto. There first priority after being hired by KVA was to get Phases I, II, & III infrastructure turned over to the city. This was accomplished and the city is now responsible for the roads. The second priority was to work to move Phase IV forward. Phase IV is still ongoing and we are actively engaged in pursuing Phase IV. Recently we have had meetings with the city and they are still behind the development. The issues are not simple. The Army Corp of Engineers flood study cost benefit analysis did not work out, slowing the progress. Currently the Malaekahana study could lead to some flood mitigation measures that may allow development. Don't give up hope. Because of the flood plain the present area and homes would need to be raised to meet the elevation standards requiring fill that would cost millions making the cost unaffordable.

Page 1 of 3

The process includes reports from experts on every issue so we will have time to be updated and to digest the information. Leslie Llanos commented that Monthly Phase V Committee meetings are being held for that purpose along with the monthly newsletter informing residents of KVA. The Department of Permitting and Planning will hold formal meetings in the community. There will also be Council hearings where the public can testify and comment. A question regarding the Cultural Impact Assessment was asked. Tim Reynolds answered that the process started in November 07. There are Public copies at the library on PDF files. Or you can go to the Office of Environmental Control website. KVA will have copies. Overnil this project is for the plantation people and your support is essential. City officials need to hear from the people.

6) **Real Property Tax Assessment Department:** Represented by Robin Freitas. Handed out standard guidelines for property tax assessments. Exemptions are available if you qualify with low income households or elderly on fixed incomes. The beachfront values will not affect property values for the interior housing development. The tax office assesses Kuluaku by following the Chapter 8 ordinance. Value based on market and costs improvements and what is there physically. The common areas will be assessed to each individual home owner. KVA wants to introduce a proposed ordinance for a Property Tax moratorium which would allow the assessments to be treated differently if it passes. Noreen Cristobal stated that KVA is submitting the request to the Mayor and Council Member Donovan Dela Cruz for the special tax moratorium ordinance and that it will have to be approved by the council.

Final Comments: KVA and Continental Pacific need the input and support from area residents. T-shirts have been printed and are available at the KVA office. We all need to come to the meetings with our shirts. This project needs to go to allow the residents to be owners. Please let the Governor, Mayor and City Council members know that you want this and support it. We appreciate your questions today.

Meeting Adjourned: 10:55 a.m.

KAHUKU VILLAGE ASSOCIATION, INC.
56-576 KAMEHAMEHA HIGHWAY
P.O. BOX 398 KAHUKU HI 96731
PH: 293-4488 FAX: 293-4490

FACSIMILE TRANSMITTAL

To: Jim Nuermeier Date: 5/29/08
Company: R.M. Towill Fax Number: 842-1927
From: Leoluca Lane

Total number of pages transmitting including cover page: 4

Remarks:

This message is intended only for the use of the individual or entity to which it is addressed, and may contain information that is privileged, confidential and exempt from disclosure under applicable law. If the reader of this message is not the intended recipient, or the employee or agent responsible for delivering the message to the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please notify us immediately by telephone, and return the original message to us at the fax number above or by mail to the address above. Mahalo.

If you do not receive all of the pages, please call us as soon as possible.



Appendix B

Agency Pre-Consultation Letters

KAHUKU VILLAGE ASSOCIATION, INC.

P.O. BOX 368 • KAHUKU, HAWAII 96731-0368
PHONE: 293-4488

October 11, 2006

To: Mayor Mufi Hannemann
City & County of Honolulu
530 S. King St., Room 300
Honolulu Hawaii 96813

From: Jimmy Leonardi
Vice-President, Kahuku Village Association

Subject: Kahuku Village Phase V - Continental Pacific Proposal

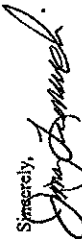
We wanted to inform you that KVA recently sponsored 12 small group meetings with Continental Pacific (CP) and the tenants living in the Phase V area. These meetings allowed the CP representatives and the tenants the opportunity to discuss the current proposal for individual ownership of the existing residential lots, via the CPR (Condominium Property Regime) process. CP has met twice with the tenants in open forum and now in small groups. This effort has been made in order to educate the tenants of the CP proposal, the CPR process and the State 201H variance as the avenues to achieve fee simple home ownership of the existing homes and lots. In order to find out the direction the tenants wish to precede KVA is holding a special Phase V - Planning Committee meeting. Each assigned tenant, one per household, is being asked to complete a survey on Tuesday evening October 17, 2006 at 7p.m. at the Kahuku Community Center. The results of this survey from the tenants will allow the Board of Directors to understand the wishes of the majority of those that reside on the property so they as a Board can make a decision whether to move forward with the 10 Key Elements on the Proposed CP Plan.

The 10 Key Elements are:

- Kahuku Village Residential Area: CPR existing approximately 75 houses and land. Offer to occupants for average of \$75,000 each. Offer infill vacant lots to Phase 4 Kahuku Village residents at preferential prices. Develop additional lots to complete Village area (rural standards-under 201H)
- 18 Oceanfront Lots. Rezoned to Country (min.1 acre) via density transferred from R-5. CPR or subdivide with rural standard under 201H.
- Support Ag. Developments in Marconi Road Area.
- Subdivide Malaekahana Point into single ranch lot (20+ acres, P-2).
- P-2 Area (old Adams Field) used for recreational cabins and related activities.
- 9 to 12 Ag. Lots (AG-2) north of the Golf Course.
- 2 private beach parks (community use).
- Owner financing at 10% to existing occupants. Will rent to elderly who cannot afford to buy.
- Will donate 9-hole golf Course (some reconfigured holes) to approved entity with maintenance covenant.
- Will donate 2 Cemeteries to approved entity.

A copy of the map with the 10 Key Elements is attached along with the questions and answers that were developed during the small meetings with the tenants. We are sincerely grateful for all you have done to help the residents of Kahuku Village reach this stage. We are excited for the process ahead and believe the majority of our tenants are ready to move forward to achieve affordable fee simple ownership. We will let you know the results of this matter.

Sincerely,


Jimmy Leonardi
Vice-President

Enclosures

CC: City Council Chair Donovan Dela Cruz
State Senator Clayton Hee
State Representative Michael Magaony
Deborah Morikawa, Director Dept. Community Services

Continental Pacific Development Proposal - Small Group Meeting Questions Frequently Asked Questions

Question: What costs will Continental Pacific be responsible for?

Answer: There are certain requirements CP will have to meet before the CPR (Condominium Property Regime) will be approved. Those improvements will be the responsibility of CP and will be common sense improvements for health and safety. Improvements will include roads (to rural standards), fire safety (water sprinklers or fire hydrants), septic tanks (1 per 10,000 sq. ft.), house improvements in accordance with the inspectors check list (working together with KVA and the Kokua committee to limit costs), possible street lights. These are the known requirements at this time.

Question: How will the boundary lines be determined?

Answer: CP will send a surveyor to go over with each assigned tenant the existing boundaries as of August 2006 when CP purchased the property. The actual square footage for each existing house will be determined at that time.

Question: Can I make my lot larger?

Answer: If the lots are increased in size outside of their current boundaries, there would be an additional cost for those lots. It will also lessen the number of empty lots which will benefit those tenants that are in the flood way, Phase IV area and Highway Mauka.

Question: Are the lines on the current map exact?

Answer: No, the number of lots and the boundary lines will be determined by the surveyor, CP representative and the existing assigned tenant.

Question: Is the \$75,000 for 5,000 sq. ft. only?

Answer: After the boundary lines and lot sizes are determined the lot cost will be an average of the total number of lots, based on \$75,000 for 5,000 sq. ft. That means that the average may end up being more than 5,000 sq. feet and anything over that will be an additional cost. It is dependent on the total number of lots. The actual numbers will not be known until the lines are determined.

Question: Will the tenants in the flood way be allowed to rebuild?

Answer: This will be one of the allowances asked for in the 201H variance.

Question: What is a 201H variance?

Answer: The 201H is a variance utilized only for affordable housing projects. This variance will be developed from the input of CP and their specialists, the KVA development committee and others. It will cover any areas that are of concern such as: rebuilding the homes in the floodway, rural infrastructure and fee simple conversion. After the application has been completed it will be presented to our Representative Donovan Dela Cruz who will then submit it to the City Council for approval. Once it has been submitted to the City Council they will have 45 days to approve or disapprove. This variance will be key in keeping our project low impact and affordable. This process will require the full support of the community.

Question: Will we be on the Board and Water Supply?

Answer: We will continue to receive water from BWS. The Association will read our individual meters and bill the homeowners. Either the Association or BWS will read the main meter.

Question: Do the beachfront home lots have to be so large?

Answer: At present the area is zoned agricultural which means the lots have to be at least 1 acre each. We can request that it be re-zoned to R-5 (residential). This will allow CP to make the lots smaller and possibly cluster them in two groups, or keep them all together in the middle, allowing for more open areas and access.

Question: If the beachfront land is re-zoned to R-5 will CP (Continental Pacific) create more lots?

Answer: The number of lots will remain at 18.

Question: If the beachfront lots are re-zoned to R-5 will there be any restrictions made as far as the number of houses on each lot and height restrictions etc.? (Under current R-5 rules you are allowed to build 1 house per 5,000 sq ft)

Answer: Whatever restrictions would apply to the beachfront homes would also apply to all other lots. These types of covenants will be discussed, in committee and community meetings, and determined by a majority.

Question: Who will get the empty lots?

Answer: First CP would like to make those lots available to those tenants in the flood way. Second, to those on the Phase IV & city owned land areas as well as tenants on the Highway Mauka area. CP would like to keep the property in the hands of plantation workers and their children.

Question: What about the lots in the floodway?

Answer: Final sale and development of these lots will be dependant upon the passing of the 201H variance.

Question: Will the lots be purchased fee simple?

Answer: This will be one of the conditions submitted in the 201H variance. That is why full community support is needed to make sure the variance is passed. The Mayor has already expressed his support of this proposal.

Question: Can my family help me purchase?

Answer: Yes, we would encourage this.

Question: What if I can not get financing?

Answer: CP is willing to finance affected tenants at 10% for 30 years. This is a last resort if other lower interest financing is not available.

Question: If I don't want to buy will I have to move?

Answer: No. KVA will acquire the property from CP and keep it as a rental.

Question: What are the prices for the 9 agriculture lots?

Answer: That has not been determined at this time.

Question: Who will own the golf course and run it?

Answer: The Association will have the deed to the Golf Course, with the conditions that it will remain a golf course in the future. CP will interview interested persons who want to manage the property. CP would like to see a low-key Club House and Restaurant. A portion of the income received from the Golf Course will go to the Homeowners Association and could be used to maintain the parks, cemeteries and common areas.

Question: Can I build a new house right away?

Answer: We will need to work with the existing conditions, until the CPR and 201H variance processes have been completed. A new house can be built after the lot had been conveyed fee simple to the tenant.

Question: Can I build any house I want?

Answer: The Association will have a committee that will look at affordable plantation style homes that meet the criteria of the covenants. These models will be presented to the tenants for review and a selected group will be approved.

Question: What do I have to do as a tenant?

Answer: The most important thing is for all of the tenants and community to work together and support the project. Especially going to City Council in support of the 201H Variance. There will be changes as we move through the process, but we (CP) will be committed to keeping everything as low-impact and rural as possible.

Question: What will happen to Adams Field?

Answer: Because of zoning there are limited uses. One use is for recreational cabins. We are looking at proposals for that purpose.

Question: What will happen to the point called Reynolds area?

Answer: Because of zoning this area is limited to ranch lands. It will remain open space. We are working with an interested buyer, who will use it as ranch land.

Question: What will happen to the 2 cemeteries and who will be responsible for them?

Answer: A committee will look at what needs to be done and the most effective ways of maintaining the areas. The Association will be responsible to maintain the cemeteries. That is why the management of the Golf Course will be so important, monies received from the golf course to the Association will defray any costs to the tenants for this maintenance.

Question: If the lot is out of the flood way and the tenant wants to build a new one, what requirement if any would they need to meet?

Answer: New homes would be allowed only after the 201H variance is approved. After the process is completed and the homes are conveyed fee simple, it will be up to the new owner (tenant). All existing requirements for city permits would apply.

Question: Why can't we go on the sewer system?

Answer: The cost to redo all the sewer lines in Phase V would make the project unaffordable.

Question: Can the city rescind the 201H variance?

Answer: In order to reverse the 201H variance a new petition would have to be completed and given to our City Council Member giving the reasons. Full community support would be needed.

Question: Can I use my own contractor to bring my house up to code?

Answer: KVA has been encouraging tenants to make repairs on their homes. Policy states that a letter with a brief description of the desired improvements should be given to the Board for approval prior to construction.

Question: Who will make the improvements on my house after the city inspection is completed?

Answer: This will be a joint effort between CP, the existing tenant and the Kokua committee. The committee will include a licensed carpenter, plumber, electrician along with labor volunteers from the community.

Question: Are the roads going to be private after the lots are sold fee simple?

Answer: Yes. There is a possibility that some things like trash pick-up will still be available as part of the 201H variance. There will be a homeowners association that will manage the roads and common areas. The monthly cost will be determined by the amount of needed maintenance and the number of tenants in Phase V. The income received from the Golf Course will also defray these costs.

Question: Can the people in the flood way get a permit?

Answer: The 201H variance will be asking to build in the flood way.

Question: Will the rent be raised? Why?

Answer: CP (Continental Pacific) will have to make a few gradual increases in rent in order to help pay for the current mortgage and initial expenses. KVA will determine how much of that will need to come directly from the tenants. CP will not raise the rent to market value, since they believe the market value rates are too high. Up until recently CP had not received any monies from KVA, due to a condition set in the original contract with Campbell Estate. This condition has been changed and now CP will be receiving the \$100.00 per house per month previously paid to Campbell Estate. CP believes that with the cooperation of the tenants and the support of the City officials, things can be done quickly and with the least amount of impact.

Question: Can a person in the flood way get a loan?

Answer: CP (Continental Pacific) will guarantee loans for our tenants in the flood way at the same rates for other tenants, 10% for 30 years.

Question: What are the plans for the Marconi land?

Answer: CP will not change the zoning. They will clean-up and divide the area into smaller agricultural lots, utilizing the 201H variance to allow rural infrastructure and limited street lights etc.

Question: What is the time line for completion?

Answer: This is dependent upon the passing of the 201H variance. Once the variance is approved by City Council, CP projects 18 - 24 months to completion.

Definition of CPR (Condominium Property Regime)

Hawaii Revised Statutes 514A-3 defines condominium as this special way of owning property. It states that a condominium is, "the ownership of single units, with common elements, located on property within the condominium property regime." In a condominium property regime, every member owns their own apartment or single family home unit and all the members jointly own the common elements.

KAHUKU VILLAGE ASSOCIATION, INC.

P.O. BOX 388 • KAHUKU, HAWAII 96731-0388
PHONE: 293-4488

November 7, 2006

Honorable Mayor Hanneman
City and County of Honolulu
530 S. King St., Room 300
Honolulu HI 96813

Re: Kahuku Village Association
Phase V/Continental Pacific Property

Dear Mayor Hanneman:

Aloha. We wanted to follow-up on our previous correspondence and continue an open dialog as to the progress of the Kahuku Village Phase V transition.

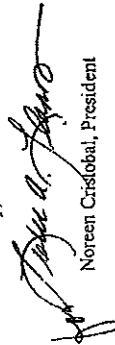
After meeting with each tenant and explaining the proposal in detail as well as compiling a most frequently asked questions list for the tenants review, Continental Pacific together with the KVA conducted a consensus survey to determine those in favor and those opposed to the 10 Key Elements. Out of 72 tenants the results of the survey were 40 in favor, 25 opposed and 7 abstained. This results in a 55% majority. We believe that as we continue to resolve unanswered questions regarding property tax, homeowner's association dues and flood related concerns we will have an even greater majority. One of the primary concerns of those opposed has to do with the 18 beachfront homes. KVA and Continental Pacific are encouraging these individuals to look at other alternatives to purchase the area, such as State Condemnation, Trust for Public Land and the Office of Hawaiian Affairs. Continental Pacific has communicated that they are willing to sell the area to any qualified buyer. If however no alternative is found the proposal will proceed as presented.

This is an extremely challenging time for our residents, it encompasses many changes the majority of which we believe are a benefit to our people. KVA is excited to move forward endorsing Continental Pacific. We will continue to solicit your support as we move forward with the CPR process and the 2011H variance.

Continental Pacific is very pleased with the results of the tenants' survey. They are planning a celebration and would like to invite you to this event. It is scheduled for Saturday, November 25, 2006 at noon under a tent on the Kahuku Hospital lawn. An official invitation will be mailed to you shortly.

If you have any other questions or you would like a personal presentation of the proposal please contact the KVA office at 293-4488.

Sincerely,



Noreen Cristobal, President

CC: Governor Linda Lingle
City Council Chair Dorovan Dela Cruz
Senator Clayton Hee
Representative Michael Magaoy

KAHUKU VILLAGE ASSOCIATION, INC.
P.O. BOX 388 • KAHUKU, HAWAII 96731-0388
PHONE: 283-4488

November 7, 2006

Kahuku Community Association
Board of Directors
P.O. Box 333
Kahuku, Hawaii 96731

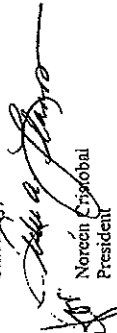
Aloha Board Members,

We are pleased to inform you that for the record by majority Kahuku Village Association board of directors has recently endorsed Continental Pacific's proposal and is working with the tenants and the CP representatives to provide fee simple home ownership at a very affordable price to our current residents. This past month KVA and the representatives from Continental Pacific held small group meetings to inform the tenants of the proposal, and put pertinent questions and answers together for their review. After these small group meetings a special meeting was held to determine the position of the tenants, each of the 72 households/assigned tenants was given one survey to complete, whether they were in favor of moving forward with the proposal or not. The survey resulted in a 55% majority to move forward. We believe that as we continue to resolve unanswered questions regarding property tax, homeowner's association dues and flood related concerns we will have an even greater majority.

Continental Pacific was pleased with the results of the survey and has decided to hold a party. We would like to invite the board members of Kahuku Community Association to this celebration to be held on Saturday, November 25, 2006 at noon on the lawn of Kahuku Hospital. A formal invitation will be sent to you in the mail.

The Kahuku Village Association and Continental Pacific would like to make a formal presentation to your board at your next regular board meeting, please contact the office at 293-4488 to schedule this meeting. This is an extremely challenging time for our community as a whole, bringing about many changes, most of which we believe are a benefit to the residents of Kahuku. We hope that we can count on your support for this proposal as we work to accomplish the goal of affordable fee simple home ownership for the tenants of the KVA.

Sincerely,



Noreen Christobal
President

KAHUKU VILLAGE ASSOCIATION, INC.
P.O. BOX 388 • KAHUKU, HAWAII 96731-0388
PHONE: 283-4488

November 7, 2006

Dee Dee Letts, President
Board of Directors
Koolauloa Neighborhood Board #28
c/o Neighborhood Commission
Honolulu HI 96813

Re: Kahuku Village Association, Inc.
Phase V

Phase V

Dear Dee Dee:

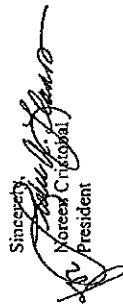
Jimmy Leonard
Treasurer

Ledie Jones
Secretary

It has come to our attention that Margaret Primacio, a current Board of Director, attended your last meeting and was asked to speak on behalf of KVA and the tenants. Our concern is that our Board consists of five members. Our understanding of the answers she gave was of her own personal opinion and not that of the majority of the Kahuku Village Association Board.

For the record the majority of the board members of Kahuku Village Association has recently endorsed Continental Pacific's proposal and is working with the tenants and the CP representatives to provide fee simple home ownership at a very affordable price to the current residents of the purchased property known as Phase V. Recently KVA and the representatives from Continental Pacific held small group meetings to inform all of the tenants who reside on the property of the proposal, and put pertinent questions and answers together for their review. After these meetings a special meeting was held to determine the position of these tenants. Each of the 72 households/assigned tenants was given one survey to complete, whether they were in favor of moving forward with the proposal or whether they were against. The survey resulted in a 55% majority to move forward. We believe that as we continue to resolve unanswered questions regarding property tax, homeowner's association dues and flood related concerns we will have an even greater majority. We are still in the preliminary stages of this process and have yet to bring these results to the entire Kahuku Village Association membership. Kahuku Community Association Board of Directors and membership and to your Neighborhood Board.

We apologize for the confusion and misrepresentation. Please be assured that we are working together with the residents to address all of their concerns. We would like to schedule a representative from Kahuku Village Association and Continental Pacific for your next board meeting agenda. Please contact the office at 293-4488 and ask to speak to our office manager, Debbie Sarsona to confirm the date and time.

Sincerely,

Noreen Christobal
President

KAHUKU VILLAGE ASSOCIATION, INC.

November 7, 2006 P.O. BOX 388 • KAHUKU, HAWAII 96731-0388
PHONE: 293-4488

Mary Patricia Waterhouse, Director
Department of Budget & Fiscal Svcs.
City & County of Honolulu
530 S. King St., Rm. 208
Honolulu HI 96813

Re: Property Tax Assessment Issue

Dear Ms. Waterhouse:

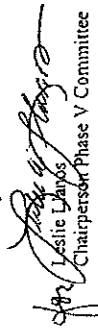
I am writing on behalf of the residents of the Kahuku Village Association (KVA), Continental Pacific, a private developer and the tenants of Phase V of Kahuku Village, are in the process of converting rental units over to CPR for individual purchase in Kahuku. Part of the proposal in this project includes 18 lots and homes to be built on the beach front, which is parallel to our current residential area. The major concern of all of the residents is the affect these million dollar homes will have on individual property tax rates, now and in the future.

We are requesting a response in writing regarding the process by which these assessments are determined and an estimate of the financial affect these 18 homes could possibly have on the current residents of Kahuku. The proposed residential project, which is classified as low-income, includes approximately 125 lots, being sold for a cost of \$75,000 to \$125,000 for the land and existing homes. The vacant lots in the residential area will include a kit home with an estimated cost of \$200,000 to \$325,000. The 18 vacant beach front lots will be sold for at least one million each; with the additional cost of a large up-scale home. Our tenants and the community at large are very concerned with the consequences these beach front homes will have on the surrounding area.

We all would appreciate any written information you could send us to help us understand how this situation will impact our community. If at all possible, we would like a representative from the assessment division to attend our Kahuku Village Association membership meeting to explain this property tax assessment concern. The meeting is scheduled for Saturday, December 2, 2006 at 9:00 a.m. at the Kahuku Community Center located at 56-576 Kamehameha Highway in Kahuku.

Your attention to this matter is greatly appreciated. Our mailing address and office telephone number can be found above on our letterhead. If I am not available should you have any questions, please ask for our office manager, Debbie Sarsona.

Sincerely,


Leslie Danos
Chairperson Phase V Committee

CC: Mayor Hameman
Governor Linda Lingie
City Council Chair Donovan DeLa Cruz
Representative Michael Magaory

DEPARTMENT OF BUDGET AND FISCAL SERVICES

CITY AND COUNTY OF HONOLULU

REAL PROPERTY ASSESSMENT DIVISION
842 BETHEL STREET, 7TH FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 527-5508 • FAX: (808) 521-1647
WWW.HONOLULU.CGO



MUFF HANNEMANN
Mayor

MARY PATRICIA WATERHOUSE
DIRECTOR

PATRICK T. KUBOTA
DEPUTY DIRECTOR
GARY T. KUBOKAWA
ADMINISTRATOR

NOV 15 2006

November 14, 2006

Ms. Leslie Llanos, Chairperson
Phase V Committee
Kahuku Village Association, Inc.
P.O. Box 398
Kahuku, Hawaii 96731-0398

Dear Ms. Llanos:

Subject: Real Property Assessments for Proposed Residential Subdivision

I have been asked by Ms. Mary Patricia Waterhouse, Director, Department of Budget and Fiscal Services, to address your concerns regarding the real property assessments for the proposed residential subdivision known as Phase V of Kahuku Village.

According to your letter dated November 7, 2006, this project will consist of selling existing homes and vacant lots in addition to 18 oceanfront lots. The assessments for real property tax purposes will be based on the market value of each property. Your main concern is the impact the oceanfront properties will have on the assessments of the other properties within this subdivision.

For valuation purposes, we would place the oceanfront properties in a separate group whereby the assessments would be based on sales of oceanfront properties. The same would apply to the interior properties, in which they would be placed in separate group and assessed based on sales of interior properties. Other factors that would affect the assessments besides their location include the size, age and quality of the house.

If you have additional questions or concerns regarding the real property assessments, you can contact me at 527-5937.

Sincerely,

Robert O. Magola
Assistant Real Property Administrator

cc: Mary Patricia Waterhouse
Director of Budget and Fiscal Services



REAL PROPERTY TAX EXEMPTIONS
AND TAX CREDIT FOR HOMEOWNERS
CITY AND COUNTY OF HONOLULU

The real property tax exemptions and tax credit are types of tax relief that can reduce a homeowner's tax bill if certain criteria are met. The real property tax is calculated based on the following factors:

Property Value - Exemption (if applicable) = Net Taxable Value
Net Taxable Value x Tax Rate (per \$1,000 of value) = Tax
Tax - Tax Credit (for qualified homeowners) = Tax Billing

Exemptions

An exemption is an amount deducted from a property's value to arrive at the net taxable value. The real property tax is calculated by multiplying the net taxable value by the tax rate.

To apply for an exemption, you must file with the Real Property Assessment Division, Department of Budget and Fiscal Services. If you qualify for an exemption, it will appear on the Real Property Assessment Notice that is mailed to you on December 15th. The Real Property Assessment Notice is not a tax bill, but a notification that shows the new assessment for the coming tax year. The exemption will also be included in the tax calculation and tax bill mailed to you on July 20th.

Most exemptions require a one-time filing, except for the In Lieu Of Home Exemption For Homeowners Age 75 And Older Whose Household Qualifies As Low-Income, which requires filing every 5 years.

Home Exemption Page 2
In Lieu Of Home Exemption For Homeowners Age 75
And Older Whose Household Qualifies As Low-Income Page 3
Blind, Deaf, Or Totally Disabled Exemption Page 4
Hansen's Disease (Leprosy) Exemption Page 5
Totally Disabled Veterans Exemption Page 6

Tax Credit

The tax credit can also reduce the real property tax for a homeowner. It is equal to the amount by which the real property tax exceeds a percentage of income, subject to income limits and other requirements. To apply for the tax credit, you must file annually with Treasury Division, Department of Budget and Fiscal Services. For qualified applicants, the tax credit will be applied to the amount due on the tax bill that is mailed to you on July 20th.

Real Property Tax Credit For Homeowners Page 7

Home Exemption

Purpose: Exemption for real property owned and occupied as the owner's principal home.

When To File: On or before September 30th preceding the tax year. This year the filing deadline is October 2, 2006 since September 30th falls on a weekend. If you file and qualify for the exemption, it will apply to the tax year that begins July 1, 2007, and ends on June 30, 2008. The exemption will appear on the Real Property Assessment Notice mailed to you on December 15, 2006, and will also be included in the tax calculation and tax bill mailed to you on July 20, 2007.

You apply for this exemption office. If there is a change in status that affects the exemption, you must notify the Real Property Assessment Division within 30 days.

- What To File:**
- Form BFS-RP-P-3
 - To receive the home exemption, include a photocopy of your proof of age such as a driver's license, state identification, birth certificate, or other government or legal document.
 - The form is available at the Real Property Assessment Division and on the Internet at www.honolulu.gov/rpa/form.htm. You can also request the form by calling the telephone numbers listed below.

Exemption Amounts For Tax Year July 1, 2006 to June 30, 2007: To qualify for the multiple home exemption you must be 55 years or older on or before June 30th preceding the tax year for which the exemption is claimed.

Under Age 55 (basic home exemption)	\$40,000
Age 55 to 59 (multiple home exemption)	\$60,000
Age 60 to 64 (multiple home exemption)	\$80,000
Age 65 to 69 (multiple home exemption)	\$100,000
Age 70 and over (multiple home exemption)	\$120,000

New Exemption Amounts For Tax Year July 1, 2007 to June 30, 2008: To qualify for the \$120,000 home exemption you must be 65 years or older on or before June 30th preceding the tax year for which the exemption is claimed.

Under Age 64	\$80,000
Age 65 and over	\$120,000

Where To File: Real Property Assessment Division
842 Bethel Street, Basement
Honolulu, Hawaii 96813
Telephone: 527-5510 or 527-5539

Real Property Assessment Division
1000 Ulukouia Street, #206
Kapolei, Hawaii 96707
Telephone: 692-5541

If you mail the form and supporting documentation to the Real Property Assessment Division, it must be postmarked by the United States Postal Service no later than October 2, 2006.

In Lieu Of Home Exemption For Homeowners Age 75 Years And Older Whose Household Qualifies As Low-Income

Purpose: Exemption for real property owned and occupied as the owner's principal home whereby the owner is age 75 years or older and the total household income qualifies as low-income.

When To File: On or before September 30th preceding the tax year. This year the filing deadline is October 2, 2006 since September 30th falls on a weekend. If you file and qualify for the exemption, it will apply to the tax year that begins July 1, 2007, and ends on June 30, 2008. The exemption will appear on the Real Property Assessment Notice mailed to you on December 15, 2006, and will also be included in the tax calculation and tax bill mailed to you on July 20, 2007.

To receive this exemption you must file every 5 years, which is based on the age categories shown below.

- What To File:**
- Form BFS-RP-P-4, Claim For Exemption; if you currently do not have a home exemption, you must also file Form BFS-RP-P-3 (Home Exemption).
 - Copy of Federal or State Income tax return; if none was filed, then complete Form BFS-RP-P-4A, Household Income Declaration.
 - Form BFS-RP-P-4B, Permission To Release Information
 - Copy of Federal Form SSA-1099, Social Security Benefit Statement, which shows the total Social Security benefits paid to you last year.
 - The forms and instructions are available at the Real Property Assessment Division and on the Internet at www.honolulu.gov/rpa/form.htm. You can also request the forms by calling the telephone numbers listed below.

Exemption Amount: The exemption amount is deducted from the property's value. To qualify for this exemption, you must be 75 years or older on or before June 30th preceding the tax year for which the exemption is claimed and the household income does not exceed the low-income limits established by the United States Department of Housing and Urban Development.

Age 75 to 79	\$140,000
Age 80 to 84	\$160,000
Age 85 to 89	\$180,000
Age 90 and over	\$200,000

Where To File: Real Property Assessment Division
842 Bethel Street, Basement
Honolulu, Hawaii 96813
Telephone: 527-5510 or 527-5539

Real Property Assessment Division
1000 Ulukouia Street, #206
Kapolei, Hawaii 96707
Telephone: 692-5541

If you mail the forms and supporting documentation to the Real Property Assessment Division, it must be postmarked by the United States Postal Service no later than October 2, 2006.

Blind, Deaf, Or Totally Disabled Exemption

Purpose: Exemption for real property owned by a person who is blind, deaf, or totally disabled. This exemption can be applied to real property that is already receiving a home exemption or other real property that is owned by the claimant.

When To File: On or before September 30th preceding the tax year. This year the filing deadline is October 2, 2006 since September 30th falls on a weekend. If you file and qualify for the exemption, it will apply to the tax year that begins July 1, 2007, and ends on June 30, 2008. The exemption will appear on the Real Property Assessment Notice mailed to you on December 15, 2006, and will also be included in the tax calculation and tax bill mailed to you on July 20, 2007.

You apply for this exemption once. If there is a change in status that affects the exemption, you must notify the Real Property Assessment Division within 30 days.

- What To File:**
- Form BFS-RP-P-6
 - Certified physician's report (Form N-172 or N-857)

• The forms and instructions are available at the Real Property Assessment Division and on the Internet at www.honolulu.gov/rpa/form.htm. You can also request the forms by calling the telephone numbers listed below.

Exemption Amount: The maximum amount of this exemption is \$25,000 of the taxable value.

Where To File: Real Property Assessment Division
842 Bethel Street, Basement
Honolulu, Hawaii 96813
Telephone: 527-5510 or 527-5539

If you mail the form and supporting documentation to the Real Property Assessment Division, it must be postmarked by the United States Postal Service no later than October 2, 2006.

Hansen's Disease (Leprosy) Exemption

Purpose: Exemption for real property owned by a person who has been declared by authority of law to be a person affected by leprosy and is confined due to this illness. If you are on a temporary release status, the exemption will remain in effect during this period. This exemption can be applied to real property that is already receiving a home exemption or other real property that is owned by the claimant.

When To File: On or before September 30th preceding the tax year. This year the filing deadline is October 2, 2006 since September 30th falls on a weekend. If you file and qualify for the exemption, it will apply to the tax year that begins July 1, 2007, and ends on June 30, 2008. The exemption will appear on the Real Property Assessment Notice mailed to you on December 15, 2006, and will also be included in the tax calculation and tax bill mailed to you on July 20, 2007.

You apply for this exemption once. If there is a change in status that affects the exemption, you must notify the Real Property Assessment Division within 30 days.

- What To File:**
- Form BFS-RP-P-6

• The form and instructions are available at the Real Property Assessment Division and on the Internet at www.honolulu.gov/rpa/form.htm. You can also request the form by calling the telephone numbers listed below.

Exemption Amount: The maximum amount of this exemption is \$25,000 of the taxable value.

Where To File: Real Property Assessment Division
842 Bethel Street, Basement
Honolulu, Hawaii 96813
Telephone: 527-5510 or 527-5539

If you mail the form and supporting documentation to the Real Property Assessment Division, it must be postmarked by the United States Postal Service no later than October 2, 2006.

Totally Disabled Veterans Exemption

Purpose: Exemption for real property owned and occupied by a veteran who is totally disabled due to injuries received while on active duty with the U.S. Armed Forces and includes widows or widowers of a totally disabled veteran who remains unmarried and continues to own and occupy the home.

When To File: There is no annual filing deadline and the exemption will take effect beginning with the next tax payment date provided the claim for exemption is filed on or before June 30th for the first tax payment or December 31st for the second tax payment.

You apply for this exemption once. If there is a change in status that affects the exemption, you must notify the Real Property Assessment Division within 30 days.

What To File:

- Form BFS-RP-P-68

- The form and instructions are available at the Real Property Assessment Division and on the Internet at www.honolulu.gov/rpa/form.htm. You can also request the form by calling the telephone numbers listed below.

Exemption Amount: The real property will be fully exempt, subject to the minimum real property tax of \$100.

Where To File:

Real Property Assessment Division	Real Property Assessment Division
842 Bethel Street, Basement	1000 Uluohia Street, #206
Honolulu, Hawaii 96813	Kapolei, Hawaii 96707
Telephone: 527-5510 or 527-5539	Telephone: 692-5541

9/27/06

Page 6

RPAD/BFS/CCHNL

Real Property Tax Credit For Homeowners

Purpose: Tax credit for an owner who has qualified for a home exemption, regardless of age, and who meets the requirements under the ordinance. If you have qualified for an exemption, you can also apply for the tax credit and a determination will be made regarding your eligibility.

This tax credit is not to be confused with the one-time \$200 tax adjustment for homeowners for the 2006-2007 tax year.

When To File: On or before September 30th preceding the tax year. This year the filing deadline is October 2, 2006 since September 30th falls on a weekend.

If you apply by the filing deadline and qualify for the tax credit, it will apply to the 2007-2008 tax year and also retroactively to the 2006-2007 tax year. Hereafter, to receive the tax credit you must file annually.

What To File: The instructions and Form T-RPT100 are available at the Treasury Division and on the Internet at www.honolulu.hi.us/budget/treasury_division.htm. You can also request the instructions and form by calling the telephone number listed below.

Tax Credit Amount: The tax credit is equal to the amount by which the taxes owed for the tax year immediately succeeding the date of the application for the tax credit exceeds 4% of the title holders' combined income for the calendar year immediately preceding the date of the application. The title holders' combined income shall not exceed \$50,000. Neither you nor any title holder of the property can own real property elsewhere.

Where To File:

Current Collections Section	Department of Budget and Fiscal Services
	Division of Treasury
	530 South King Street, Room 115
	Honolulu, Hawaii 96813
	Telephone: 523-4836

If you mail the form and supporting documentation to the Division of Treasury, it must be postmarked by the United States Postal Service no later than October 2, 2006.

9/27/06

Page 7

RPAD/BFS/CCHNL

KAHUKU VILLAGE ASSOCIATION, INC.
P.O. BOX 398 • KAHUKU, HAWAII 96731-0398
PHONE: 293-4488

March 12, 2007

State Senator Clayton hee
State Capital Room 228
Honolulu, Hawaii 96813

Dear Senator Hee,

Thank you for responding to our faxed letters of opposition to SB851. After clearly reviewing the bill it has been made evident that it will in fact affect the Continental Pacific's Development Proposal. The proposal includes the 18 homes on the beach and the affordable fee simple land transaction allowing the current residents to own their existing homes.

Even though the bill has passed out of the Senate and has moved over to the House, I believe it is important for you to understand our interpretation of the bill and it's affect on our current affordable housing project. The Continental Pacific proposal is two fold, one portion is dependant upon the other. All the infrastructure and other project costs are being assumed by Continental Pacific. After speaking with the Department of Land and Natural Resources, Division of Historic Preservation, it was clear that SB851 would impact the Continental Pacific proposal by increasing the cost and hindering the completion date.

Although the bill uses terms such as urges, suggest and strongly encourages it also uses the term requires when referring to "a New Historic and Cultural Assessment". This cultural assessment would serve to increase the cost. It is already a requirement of the City & County, Department of Planning and Permitting for any development of this size to undergo an Environmental Impact Statement. This bill even though originally designed to cause the "Oaktree" development to alter their original master plan, as stated within the original bill, does not specify who the developer is and therefore is interpreted to mean any and all developers for the entire district within the seven hundred and fifty foot set back.

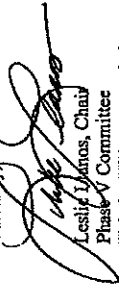
The setback of seven hundred fifty feet is also not reasonable considering it was based on DLNR records of burials for a specific location which do not apply to the entire district. It is documented in the "Sites of Oahu" specific recorded burial sites, of which none exist within the area being developed by Continental Pacific. It is also important to note that the Ko'olanua area is not the only district where burial sites have been recorded. It is unfortunate that the individuals working to put this Bill together were not looking towards the overall protection of Hawaii's resources but were instead seemingly trying to promote a particular agenda. The recorded and non-recorded Historic sites are a valuable resource to all the people living in Hawaii and should be protected, but one area on Oahu should not be singled out. It would seem to be in the best interest of all Island residents for this bill to encompass the entire State of Hawaii and the ancient artifacts and burial sites throughout our great State. It is a great

disappointment that this greater view was not seen by the 22 Senators that voted yes to this Bill. I would have hoped that more research and thought would have been put into something so vital to the cultural and historic preservation of our Islands.

As you know a new day has come for the Kahuku area with the sale of thousands of acres of land. It is our responsibility to make creative and responsible choices that will protect our resources and still provide the needed housing and jobs for the original resident of the Ko'olanua area. We believe the Continental Pacific proposal keeps this commitment by offsetting the costs to the residents therefore, allowing the purchase of fee simple lots to be truly affordable.

We hope that you will support us in this effort and see the total vision for a community that respects the past and lives in the present. We have called your office to request a meeting with you at your convenience. We are looking forward to sharing our view of options for the future of the Kahuku Village Association residents.

Sincerely,



Leslie Manos, Chair
Phase V Committee
Kahuku Village Association
(808) 293-4488

cc: 22 residents of Kahuku

KAHUKU VILLAGE ASSOCIATION, INC.

P.O. BOX 988 • KAHUKU, HAWAII 96731-0988
PHONE: 283-4488

March 20, 2007

Representative Ken Ito
Hawaii State Capitol, 420
415 South Beretania Street
Honolulu, Hawaii 96813

Honorable Chair Ito:

We implore you to vote no on SB851. After careful review of SB851 it has been made evident that it will adversely affect the Continental Pacific's Development Proposal. The proposal includes the 18 homes on the beach and the affordable fee simple land transaction allowing the current residents to own their existing homes and lots. The Continental Pacific proposal is two fold, one portion is dependant upon the other. All the infrastructure and other project costs are being assumed by Continental Pacific. After speaking with the Department of Land and Natural Resources (DLNR), Division of Historic Preservation, it was clear that SB851 would impact the Continental Pacific proposal by increasing the cost of the project, hindering the completion date and lowering the value of the land.

Although the bill uses terms such as urges, suggest and strongly encourages it also uses the term requires when referring to "a New Historic and Cultural Assessment". This cultural assessment would serve to increase the cost. It is already a requirement of the City & County, Department of Planning and Permitting for any development of this size to undergo an Environmental Impact Statement. This bill even though originally designed to cause the "Oaktree" development to alter their original master plan, as stated within the original bill, does not specify who the developer is and therefore is interpreted to mean any and all developers for the entire district within the seven hundred and fifty foot set back.

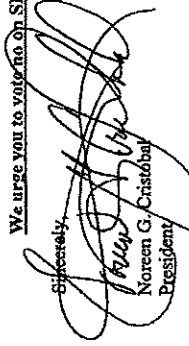
The setback of seven hundred fifty feet is also not reasonable considering it was based on DLNR records of burials for a specific location which do not apply to the entire district. It is documented in the "Sites of Oahu" specific recorded burial sites, of which none exist within the area being developed by Continental Pacific. It is also important to note that the Ko'olau Loa area is not the only district where burial sites have been recorded. It is unfortunate that the individuals working to put this Bill together were not looking towards the overall protection of Hawaii's resources but were instead seemingly trying to promote a particular agenda. The recorded and non-recorded Historic sites are a valuable resource to all the people living in Hawaii and should be protected, but one area on Oahu should not be singled out.

It would seem to be in the best interest of all Island residents for this bill to encompass the entire State of Hawaii and the ancient artifacts and burial sites throughout our great State. It is a great disappointment that this greater view was not seen by the 22 Senators that voted yes to this Bill. I would have hoped that more research and thought would have been put into something so vital to the cultural and historic preservation of our Islands.

As you know a new day has come for the Kahuku area with the sale of thousands of acres of land. It is our responsibility to make creative and responsible choices that will protect our resources and still provide the needed housing and jobs for the original resident of the Ko'olau Loa area. We believe the Continental Pacific proposal keeps this commitment by offsetting the costs to the residents therefore, allowing the purchase of fee simple lots to be truly affordable.

We urge you to vote no on SB851.

Sincerely,



Noreen G. Cristóbal
President

cc:

Governor Linda Lingde
Mayor Mufi Hanneman
Council Member Donovan DeLa Cruz

KAHUKU VILLAGE ASSOCIATION, INC.

P.O. BOX 388 • KAHUKU, HAWAII 96731-0388
PHONE: 293-4488

March 20, 2007

Warren Soh, President
Kahuku Community Association
P.O. Box 333
Kahuku HI 96731

Re: Community Sustainable Plan

Dear Warren:

As I am sure you are aware the Department of Permitting and Planning will be coming to the Ko'olau Loa area in late spring to update the current Communities Sustainable Plan. Kahuku Village Association would like to suggest that the Kahuku Community Association work together with a private entity to create a survey of the residents living in the Kahuku area. This survey should include the proposed Turtle Bay expansion and the different developments proposed for the Kahuku area. We believe it is essential that the residents of Kahuku are given the opportunity to share their concerns and opinions.

After discussing such a survey with Lowell Chun the Chief of the Community Action Plans Branch, DPP it was determined that it should be done using a professional group specifically hired for that purpose. At this time the CAPB does not have a budget to include such a survey and would therefore want the community to work together to acquire funds to hire a professional group. It is our hope that Kahuku Community Association will take the lead to determine the concerns of the Kahuku residents.

The Kahuku Village Association would like to support this effort and would be happy to help in any way that is appropriate.


Noreen G. Cristobal
President

Cc: Mayor Mufi Hammernan
Councilmember Donovan Dela Cruz
Lowell Chun, DPP
Neighborhood Board #28

KAHUKU VILLAGE ASSOCIATION, INC.

P.O. BOX 388 • KAHUKU, HAWAII 96731-0388
PHONE: 293-4488

May 3, 2007

Councilmember Romy M. Cachola
District VII
530 S. King Street, Room 202
Honolulu, Hawaii 96813

Honorable Cachola;

I am writing in response to a committee meeting held on April 17, 2007 where much of the discussions centered upon the current land issues here in Kahuku. The Kahuku Village Association (KVA) represents the original plantation workers and their families. I would like to share with you some relevant information that may help you to have a better understanding of our situation. Part of the controversy is the current Continental Pacific 10 Key Proposal as it was presented to the tenants of the KVA. Attached are copies of Resolution 06-071 CD1, Continental Pacific's original offer, a Brief History of the proposal, a list of Frequently Asked Questions from our small group meetings held with Continental Pacific representatives and the tenants. Also, a letter from KVA to the Director of Budget and Fiscal Services and their response regarding the property tax issue.

This actually all began when the Sugarmill closed in 1971, Campbell Estate gave the community leaders until 1983, when the lease expired, to find alternative ways of providing for the existing families. In 1983 the Kahuku Village Association was formed as a 501(c) with its primary purpose being to facilitate development of affordable housing. A plan was put together and CDBG funds were appropriated for the purpose. Phases I, II and III were completed and a total of 108 affordable homes were built. The final phase of the project is Phase IV which consists of 177 affordable homes and is located behind the Sugar Mill in an area that is listed to be within a floodway. Unfortunately, twice over the past 10 years excessive rain has caused flooding in Kahuku Village. Currently the project is stalled until flood mitigation efforts are successful.

Seeking other alternatives in 2003 the KVA Board of Directors met with Campbell Estate representatives prior to their liquidation requesting that they allow the tenants to purchase the existing residential properties. After reviewing the project in its entirety and recognizing the flooding issues relating to Phase V, Campbell Estate backed away and would no longer discuss the possibilities of acting with KVA as the developers. Then the KVA Board of Directors hired KFC Inc. a private engineering firm, and enlisted the pro bono services of University of Hawaii graduate students. They independently conducted a thorough review of the options to complete Phases IV and/or V. It was determined at that time that unless flood mitigation materialized Phase IV could not be completed as an affordable housing project. Phase V would suffer the same fate if left to rely on City, State or Federal funding. Private funds were determined to be the fastest and most affordable way to accomplish home ownership.

Recently the Army Corp of Engineers sponsored by City and State agencies completed their feasibility study on the Kahuku Watershed. Unfortunately early on in the study it was determined that no finances for flood mitigation would be available based on cost ratio. The matter was referred back to Inouye's office and sent to Department of Education since the Kahuku High School is plagued with flooding issues. This only means that a new feasibility study will need to be conducted and if history repeats itself, which it often does, it will take another 4 years to complete preliminary studies.

In February 2006 Councilmember Donovan Dela Cruz introduced Resolution 06-071 CD1 to condemn the beachfront, golf course and residential areas in Kahuku. (attachment #1). This resolution caused the Mayor to initiate a joint meeting with Campbell Estate and Continental Pacific representatives to discuss alternatives to condemnation because the City did not have the money. On May 29, 2006, the Mayor and his staff came to a meeting at Kahuku High School to introduce Continental Pacific representatives and their 10 Key Proposal (attachment #2 & #4). Two plans were introduced on the table. (attachment #3) The first included replacing the existing golf course, which is out of the flood area, with 300 - 400 homes, a percentage of which would be qualified as affordable. The second which is referred to as the 10 Key Element Proposal was introduced as the most "viable" plan. It accounted for infrastructure costs to be included with the average purchase price of \$75,000 for existing tenants and allowing for rural infrastructure by means of the 201H variance. This plan however included the 18 beach front lots. The reason given for the decision to put 18 lots on the oceanfront was to avoid excessive property tax costs to the current residents (attachment #5) while allowing Continental Pacific to re-coop their investment and offset development costs. This plan including the 18 oceanfront lots would need the support of the tenants, local residents as well as the City Council.

It is in the City Councils hands at this time to determine whether they will find a way to purchase the golf course and beachfront at market value for public purposes. Presently the Department of Planning and Permitting is preparing for their review of the Ko'olanua Sustainable Communities Plan. This plan which was completed in 1999 did not address the issues of growing families, flood mitigation or the changes that were up ahead in regards to the Campbell Estate Land sales that have occurred in the past few years. The only housing allowance for the Kahuku area is Phase IV which has proved to be inadequate and unrealistic for current times. As you are aware families are having to double up or worse they are having to move out of the area. Another issue is the beachfront area adjacent to the golf course which currently is not open to public traffic except by walking from the golf course parking lot. The village is considered private property and parking within the village is prohibited unless you are visiting a tenant. What I am saying is that there has not been any public access available for at least 15 years. The Continental Pacific plan gives back two parks to be given to the community one on each end of the golf course. It also places a condition of terms on the golf course parcel that it can not be used for anything else. Another issue that is relevant in reference to the Community Sustainable Plan is that there has never been a scenic view of the beachfront from Kam Highway.

KVA's primary responsibility is to keep our families here in Kahuku and allow them the opportunity to purchase their own property. The current Continental Pacific 10 Key Proposal

allows existing tenants to purchase their existing lots and even allows for any extra "infill" lots to be sold at preferential prices to the other tenants of KVA whether they be on private or city land. It is worthy to mention that these tenants are the original families and have lived here for generations.

Continental Pacific has to date kept their word and continued to follow through with the Condominium Property Regime (CPR) and Existing Use Permit (EUP) processes in order to give the tenants a written contract or agreement of sale. The KVA has requested a "Letter of Intent" until such time as an actual contract can be legally presented to the tenants. We expect to have the Letter of Intent within two weeks.

A decision from the City Council regarding their position on the beachfront property and the golf course will be crucial in determining the future of Kahuku Village. We respectfully request a meeting with you to discuss the future of our residents. We can be reached at 293-4488 or 293-4489. We appreciate your time and effort in this matter.

Sincerely,



Leslie Lijames
Chairman Phase V Committee
kahukuvillage001@hawaii.rr.com

cc: Governor Linda Lingle
Senator Clayton Hee
Representative Magaosa
Mayor Mufi Hanneman
Donovan Dela Cruz
Lowell Chun, DPP
Neighborhood Board #28
Kahuku Community Association

attachments: #1 Resolution 06-071 CD1
#2 Brief History of Ten Key Proposal
#3 Continental Pacific's original offer
#4 Continental Pacific FAQ
#5 Letter from Property Tax Division

KAHUKU VILLAGE ASSOCIATION, INC.

P.O. BOX 388 • KAHUKU, HAWAII 96731-0388
PHONE: 293-4488

August 7, 2007

Council Member Donovan Dela Cruz
City & County of Honolulu
530 S. King Street, Room 202
Honolulu, Hawaii 96813

Honorable Council Member Dela Cruz:

As you are aware the current tenants of the Kahuku Village Association are going through many changes as a result of the liquidation of Campbell Estate Lands. In an effort to seek out alternative options available to our tenants KVA retained KFC Airport. The main purpose of retaining KFC was to acquire an unbiased opinion from professionals. We asked them to look at four different development alternatives and include any other possibilities and their effects to the tenants. Enclosed is a Development Comparison Chart of the four most reliable options available.

While we understand that there are many obstacles ahead of us, we are committed to our purpose of accomplishing "fee simple" home ownership for our current tenants, the original descendants of the plantation workers. We believe that looking at the project as a whole reveals that the Continental Pacific proposal will produce the least amount of change (current Letter of Intent attached). Other alternatives will drastically change the current landscape. While the 18 ocean lots are controversial they are also necessary to the economic balance that is needed to allow the current tenants the affordability of home ownership and keep the golf course as an open area. Presently the access and use of the beachfront is limited, the Continental Pacific Proposal would allow greater access and possibly two public beach parks. If you are aware or believe there are other alternatives to the current land situation, please advise us of these alternatives.

While change is inevitable it is imperative that we educate ourselves to the consequences of other alternatives that could follow and eliminate a rural environment. Such as hundreds of condominiums or 300 - 400 homes on the golf course. And even though the 18 oceanfront lots seem drastic, they will allow the existing tenants to purchase the properties keeping with rural standards and open space that is desired by all.

We invite you to attend our next Phase V Committee Meetings, scheduled for Monday August 13, 2007 @ 6:00 p.m. and Monday, August 20, 2007 at 6:30 p.m. A Kahuku Village Association Informational Meeting will be held on Saturday, August 11, 2007 at 9:00 a.m. All meetings will be at the Kahuku Community Center, main room. Enclosed are Phase V Committee Meeting Minutes for your information.

It is vital to the tenants of KVA that we have your support of this project. We appreciate your time and effort and look forward to working with you as we move forward in accomplishing the goal of affordable fee simple housing.

Mahalo,



Leslie Eklund
Chair, Phase V Committee

cc: Governor, Linda Lingle
Senator Clayton Hee
Representative Michael Magaony
Mayor Mufi Hannemann
Neighborhood Board #28, c/o Dee Dee Letts
Kahuku Community Association

Enclosures: Development Comparison Chart
Continental Pacific Letter of Intent
Phase V Committee Meeting Minutes 07/24-07/26/07
Phase V Governance Committee Meeting 07/30/07

Planning
 Engineering
 Environmental Services
 Photogrammetry
 Surveying
 Construction Management



2024 N. King Street
 Suite 200
 Honolulu, Hawaii 96819-2170
 Telephone 808 942 1133
 Fax 808 942 1337
 email rmtowill@hawaii.com

BOARD OF WATER SUPPLY
 CITY AND COUNTY OF HONOLULU
 630 SOUTH BERETANIA STREET
 HONOLULU, HI 96843



February 25, 2008

RAFI HANREIMANN, Mayor
 DANIELA Y. B. CHUNG, Chairman
 SAMUEL T. HAGA
 ALYX J. PARK
 ROBERT K. GUNDIFF
 MARC C. TILVER
 CHAC I. NISHIMURA, Ex-Officio
 BRENNON T. MORIOKA, Ex-Officio
 CLIFFORD P. LUIA
 Manager and Chief Engineer
 DEAN A. HUKAHOA
 Deputy Manager and Chief Engineer

January 24, 2008

Mr. Robert K. Chun, P.E.
 Customer Care Unit, Project Review Section
 Board of Water Supply (BWS)
 City & County of Honolulu
 630 South Beretania Street
 Honolulu, Hawaii 96843

Dear Mr. Chun,

Kahuku Village Water Service Allocation
TMK 5-6-02: 5, 10, 12, 16, and 27
Kaliuku, Koolauloa, Oahu, Hawaii

This letter is written in follow-up to our meeting with you on Wednesday, January 23, 2008 regarding water service allocation for the Kahuku Village plan area. Based on our discussion, we understand that existing, available water allocation for Kahuku Village is as follows:

Approved Water Allocation (Individual Residences)	
Development Area Kahuku Village Phase 5	147
Future Coastal Lots	18
Total	165

Out of the total water allocation for 165 residential units, 72 existing residences currently have water service. Water service for an additional 93 residences is available. Further, we understand that water facility charges have already been paid for 92 residential units. Therefore, 73 units will be subject to water facility charges in the future.

We respectfully request written confirmation from BWS that the stated Kahuku Village water allocation is current and correct.

We greatly appreciate your time with us yesterday. If you have any questions or require additional information, please contact me at 748-7463.

Best regards,

Jim Niermann, AICP
 Senior Planner

cc: Continental Pacific, LLC; Jere Henderson, Jeremy Henderson, Eric Morrison, Tim Reynolds

Mr. Jim Niermann, AICP
 R.M. Towill Corporation
 2024 North King Street, Suite 200
 Honolulu, Hawaii 96819-3470

Dear Mr. Niermann:

Subject: Your Letter Dated January 24, 2008 Requesting the Availability of Water to the Proposed Kahuku Village V and Future Coastal Lots. TMK: 5-6-2-3,10,12,16,27

Thank you for your letter on the proposed Kahuku Village V and future coastal lots.

The existing water system is presently adequate to accommodate the proposed 147 units of Kahuku Village V and 18 future coastal lots. However, please be advised that this information is based upon current data and, therefore, the Board of Water Supply reserves the right to change any position or information stated herein up until the final approval of your building permit application. The final decision on the availability of water will be confirmed when the building permit application is submitted for approval.

We confirm that Kahuku Village Association has allocated 92 units to the Kahuku Village V development. These 92 units received credit from the Kahuku Village Conversion Improvement District Project and are not required to pay our Water System Facilities Charges. The remaining 73 units will be required to pay our Water System Facilities Charges for resource development, transmission and daily storage.

The on-site fire protection requirements should be coordinated with the Fire Prevention Bureau of the Honolulu Fire Department.

If you have any questions, please contact Robert Chun at 748-5443.

Very truly yours,

 KEITH S. SHIDA
 Program Administrator
 Customer Care Division

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HI 96845



February 25, 2008

Ms. Deborah Sarsona
Administrative Manager
Kahuku Village Association, Inc.
P.O. Box 398
Kahuku, Hawaii 96731-0398

Dear Ms. Sarsona:

Subject: Your Letter Dated February 4, 2008 on the Water Allocation for Kahuku Village Phase V

Thank you for your letter allocating the remaining balance of 92 units to Continental Pacific for Kahuku Village Phase V.

We confirm that the water allocation for 177 units of Kahuku Village IV is still valid.

If you have any questions, please contact Robert Chun at 748-5443.

Very truly yours,

KEITH S. SHIDA
Program Administrator
Customer Care Division

cc: Jim Niermann, R.M. Towill Corporation

Pre-Consultation

Laurence K. Lau, Acting Director
OEQC
235 S. Beretania St., Suite 702
Honolulu, Hawaii 96813

Ms. Lauren Morawski
O'ahu Archaeologist
State Historic Preservation Division
Dept. of Land & Natural Resources
601 Kamohila Blvd., Rm. 555
Kapolei, HI 96707

Glenn M. Yasui
Highways Administrator
Dept. of Transportation
869 Punchbowl Street
Honolulu, HI 96813

Tomas See, Chief
Waste Water Branch
State Dept. of Health
P.O. Box 3378
Honolulu, HI 96801

Clifford Lurn, Chief Engineer
Board of Water Supply
630 South Beretania Street
Honolulu, HI 96813

Eric Takamura, Director
Dept. of Environmental Services
650 South King Street
Honolulu, HI 96813

Henry Eng, Director
Dept. of Planning & Permitting
650 South King Street
Honolulu, HI 96813

Ben Lui-Kwan
Traffic Review Branch
Dept. of Planning & Permitting
650 South King Street
Honolulu, HI 96813

Wayne Yoshioka, Director
Dept. of Transportation Services
650 South King Street
Honolulu, HI 96813

Brigadier General John W. Peabody
Commander & Division Engineer
U.S. Army Corps of Engineers
Pacific Ocean Division, Building 230
Fort Shafter, HI 96858-5440

Kahuku Neighborhood Board
c/o Neighborhood Commission Office
530 South King Street, Room 400
Honolulu, Hawaii 96813

Councilman Donovan M. Dela Cruz
Honolulu City Council
530 S. King Street, Room 202
Honolulu, HI 96813

Sam Leremo, Administrator
Office of Conservation and Coastal Lands
1151 Punchbowl Street, Room 131
Honolulu, Hawaii 96813

Lester K. C. Chang, Director
Dept. of Parks & Recreation
650 South King Street
Honolulu, HI 96813

Dana Takahara-Dias, Deputy Director
Golf Courses Division
Department of Enterprise Services
City & County of Honolulu
404 Kapahulu Avenue
Honolulu, Hawaii 96815

KEITH SHIDA
SAUL T. HAY
ALLY J. PARK
ROBERT K. GUNDIRF
HANG C. THICK

CRAIG I. NISHIMURA, Ex-Officio
BRIAN T. MORIYAMA, Ex-Officio
CLIFFORD P. LUM
Manager and Chief Engineer

DEAN A. HAKAMA
Deputy Manager and Chief Engineer

DEA Distribution -
in addition to the addresses above.

Theodore E. Liu, Director
DBED&T
Office of Planning
235 South Beretania Street, 6th Floor
Honolulu, HI 96813

Laura H. Thielm, Chairperson
Dept. of Land & Natural Resources
P. O. Box 621
Honolulu, Hawaii 96809

Doug Tom, Program Manager
Coastal Zone Management Program
235 South Beretania Street, Suite 600
Leiopapa a Kamehameha Building
Honolulu, Hawaii 96813

Craig I. Nishimura, P.E.
Director and Chief Engineer
Dept. of Facility Maintenance
650 South King Street
Honolulu, HI 96813

Kenneth G. Silva, Chief
Honolulu Fire Dept.
3375 Koopaka St., Suite H425
Honolulu, HI 96819

Boisse Correa, Chief
Honolulu Police Dept.
801 South Beretania Street
Honolulu, HI 96813

Hawaii State Library
Hawaii Documents Center
478 South King St.
Honolulu, HI 96813

Kahuku Public Library
56-490 Kamehameha Hwy
Kahuku, HI 96731

Micha K. Kane, Chairman
Hawaiian Homes Commission
Dept. of Hawaiian Home Lands
P. O. Box 1879
Honolulu, HI 96805

Haunani Apoliona, Chairperson
Office of Hawaiian Affairs
711 Kapiolani Boulevard, Suite 1250
Honolulu, HI 96813



CONTINENTAL PACIFIC, LLC

office 850.278.1000
fax 850.278.1004

March 12, 2008

Re: Proposed Development Plan at Kahuku Village Parcel

To Whom it May Concern:

Continental Pacific, LLC is primarily a family-owned and operated land development group based in Santa Rosa Beach, Florida. We have been in business for over 35 years developing rural land in a low-density, large lot fashion including several recent developments on the big island (*see attached Press & Informational Packet on Continental Pacific LLC*).

In 2006, we acquired several parcels of land on the north shore of Oahu from the Campbell estate including a 172-acre parcel that includes the Kahuku golf course and the Kahuku Village plantation homes (*see attached Master Plan Map*). At the time of our acquisition of the Kahuku parcel, the village was occupied by 72 plantation home families living in 72 separate structures some dating back 90 years or more served by deteriorating roads and cesspools and with many located in floodway without a drainage plan. Based on newspaper accounts from 2006, the villagers were seeking two assurances from Campbell: (1) that they would be given an opportunity to purchase their homes at affordable prices and, (2) that the village and surrounding land would not be urbanized in the process.

During this time period, the City Council for the City and County of Honolulu passed Resolution 06-032 "Supporting the Preservation of Residential Homes in Former Plantation Owned Housing Areas and Urging the Owners of Land on Which Present or Former Plantations are located to Subdivide the Land and Allow Current Tenants to Acquire Ownership of the Property" (*see attached Resolution*).

For the past year and a half we have met with every plantation resident and with village and community associations (*see attached Northshore Community Outreach Summary*) as well as state and county departments and land planners to try and devise a plan that meets the village concerns; advances the cause outlined in the resolution; is consistent with county, state and federal laws; and allows for a reasonable profit for our efforts. Toward this end, we have formulated a development plan for the village and surrounding lands (*see attached Master Plan Map*) that envisions the following:

- A sale of all 72 existing structures and 50 additional lots to locals with a preference for current residents and their families at an average sales price of \$75,000 which we believe to be far below fair market value.
- Road improvements to and through the village, a one-to-one exchange of cesspools for septic systems and a flood remediation plan for homes and lots within the existing floodway at our sole expense.
- Preservation of the Kahuku Golf Course as a public, daily fee course.

- Subdivision of the property just north of the current golf course and just south of the shoreline into 18 single-family residential lots averaging 20,000 square feet per lot but with the restrictive covenants designed to minimize interference with golf course views and coastal, marine and biological processes.
- Subdivision of the property at the northeast corner of the parcel into 12 large country lots.
- Improvements to the Kahuku Golf Course to replace deteriorated facilities including construction, at our sole expense, of a new clubhouse and caretaker house, and the addition of a tennis court.
- Creation of 2 beach parks at either end of the 18 residential lots for use by the villagers for fishing and other recreational activities.

We plan to present our proposal to the Honolulu Council via a Section 201(h) affordable housing and/or other appropriate applications. However, prior to doing so and in accordance with applicable law, we have commissioned R. M. Towill to conduct an environmental assessment of the Plan to determine the environmental, social, cultural and economic impacts of our proposal. The assessment will be more extensive than a typical assessment and will include at least 12 separate studies under the direction of island experts (*see attached List of Studies for Kahuku Village*). The draft environmental assessment will be published by OEQC in the Environmental Notice and all interested parties will have 30 days to comment on any aspect of the Plan.

By this letter we are giving you a preliminary view of the project and an opportunity to comment prior to publication of the draft. We are also extending to you an offer to meet with our staff personally prior to publication of the draft to discuss any aspect of the Plan. To schedule an appointment please call Sharon Savage at (850) 278-1000 between the hours of 8:00 a.m. to 5:00 p.m. (Central Daylight Savings Time – a 5 hour time difference) or email us at sharon@cplandco.com. We can be available to meet with you or your designee at most any time and place on Oahu between March 10 and March 24, 2008.

With kindest regards, I am,

Sincerely,



F. Reynolds Henderson

Enclosures



CONTINENTAL PACIFIC, LLC

850.278.1000 office
850.278.1004 fax

March 7, 2008

Mr. Tim Reynolds
1330 Ala Moana #2908
Honolulu, Hawaii 96814

Re: Proposed Development Plan at Kahuku Village Parcel

Dear Tim:

Continental Pacific, LLC is primarily a family-owned and operated land development group based in Santa Rosa Beach, Florida. We have been in business for over 35 years developing rural land in a low-density, large lot fashion including several recent developments on the big island (*see attached Press & Informational Packet on Continental Pacific LLC*).

In 2006, we acquired several parcels of land on the north shore of Oahu from the Campbell estate including a 172-acre parcel that includes the Kahuku golf course and the Kahuku Village plantation homes (*see attached Master Plan Map*). At the time of our acquisition of the Kahuku parcel, the village was occupied by 72 plantation home families living in 72 separate structures some dating back 90 years or more served by deteriorating roads and cesspools and with many located in floodway without a drainage plan. Based on newspaper accounts from 2006, the villagers were seeking two assurances from Campbell: (1) that they would be given an opportunity to purchase their homes at affordable prices and, (2) that the village and surrounding land would not be urbanized in the process.

During this time period, the City Council of the City and County of Honolulu passed Resolution 06-032 "Supporting the Preservation of Residential Homes in Former Plantation Owned Housing Areas and Urging the Owners of Land on Which Present or Former Plantations are located to Subdivide the Land and Allow Current Tenants to Acquire Ownership of the Property" (*see attached Resolution*).

For the past year and a half we have met with every plantation resident and with village and community associations (*see attached Northshore Community Outreach Summary*) as well as state and county departments and land planners to try and devise a plan that meets the village concerns; advances the cause outlined in the resolution; is consistent with county, state and federal laws; and allows for a reasonable profit for our efforts. Toward this end, we have formulated a development plan for the village and surrounding lands (*see attached Master Plan Map*) that envisions the following:

- A sale of all 72 existing structures and 50 additional lots to locals with a preference for current residents and their families at an average sales price of \$75,000 which we believe to be far below fair market value.
- Road improvements to and through the village, a one-to-one exchange of cesspools for septic systems and a flood remediation plan for homes and lots within the existing floodway at our sole expense.
- Preservation of the Kahuku Golf Course as a public, daily fee course.

www.continental-pacific.com

249 Mack Bayou Loop | Suite 301 | Santa Rosa Beach, FL 32459
Post Office Box 1350 | Santa Rosa Beach, FL 32459

- Subdivision of the property just north of the current golf course and just south of the shoreline into 18 single-family residential lots averaging 20,000 square feet per lot but with the restrictive covenants designed to minimize interference with golf course views and coastal, marine and biological processes.
- Subdivision of the property at the northeast corner of the parcel into 12 large country lots.
- Improvements to the Kahuku Golf Course to replace deteriorated facilities including construction, at our sole expense, of a new clubhouse and caretaker house, and the addition of a tennis court.
- Creation of 2 beach parks at either end of the 18 residential lots for use by the villagers for fishing and other recreational activities.

We plan to present our proposal to the Honolulu Council via a Section 201(h) affordable housing and/or other appropriate applications. However, prior to doing so and in accordance with applicable law, we have commissioned R. M. Towill to conduct an environmental assessment of the Plan to determine the environmental, social, cultural and economic impacts of our proposal. The assessment will be more extensive than a typical assessment and will include at least 12 separate studies under the direction of island experts (*see attached List of Studies for Kahuku Village*). The draft environmental assessment will be published by OECC in the Environmental Notice and all interested parties will have 30 days to comment on any aspect of the Plan.

By this letter we are giving you a preliminary view of the project and an opportunity to comment prior to publication of the draft. We are also extending to you an offer to meet with our staff personally prior to publication of the draft to discuss any aspect of the Plan. To schedule an appointment please call Sharon Savage at (850) 278-1000 between the hours of 8:00 a.m. to 5:00 p.m. (Central Daylight Savings Time - a 5 hour time difference) or email us at sharon@cplandco.com. We can be available to meet with you or your designee at most any time and place on Oahu between March 10 and March 24, 2008.

With kindest regards, I am,

Sincerely,



F. Reynolds Henderson

Enclosures

INFORMATIONAL PACKET FOR CONTINENTAL PACIFIC, LLC PROJECT IN KAHUKU VILLAGE

INFORMATIONAL PACKET

TABLE OF CONTENTS

- I. Area Location Map
- II. Press & Informational Packet on Continental Pacific, L.L.C.
- III. Master Plan Map with 201(H) Key Elements
- IV. Site Plan Map
- V. Resolution - 1978 Hawaii Law Supporting Plantation Legislation / Recent Plantation Law
- VI. Northshore Community Outreach Summary
- VII. List of Studies for Kahuku Village



PRESS & INFORMATIONAL PACKET FOR CONTINENTAL PACIFIC, LLC IN HAWAII

Description of CP

Continental Pacific, LLC is a small business with 4 owner/members and 8 full time employees based in Santa Rosa Beach, FL. The two founding members, Jere Henderson and Barron Strothers, partnered in the late 1980's to combine their experience with agriculture and banking for purchasing large tracts of timberland. The focus was on leasing, timber harvesting, timber planting, and selling land at discounted prices.

In 2000 Continental Pacific, LLC was formed by Jere and Barron along with Jeremy Henderson and Reynolds Henderson. Since its inception, Continental Pacific has worked with planning departments and communities on Agricultural land issues.

To read more on the description of Continental Pacific please visit www.cplandco.com.

Continental Pacific and the Big Island

Continental Pacific has been doing business on the Big Island since 1997 with its first land purchase in the Puna District. In 2001 Continental Pacific bought its first property on the Hamakua Coast in Pepekeo. Through much work with the Hawaii County Planning Department and the Pepekeo community, the company has been able to secure for future generations both shoreline and fishing access. Continental Pacific is donating \$15,000 per lot on the sale of the Pepekeo lots to the Pepekeo Community Association. Continental Pacific has also donated a 4 acre beach park in the Hakalau area to the County of Hawaii. The Hakalau Beach Park is one of the select areas on the Hamakua Coast to access the beach. With this donation, the access is now open to the public.

Continental Pacific and the Kahuku Community

Continental Pacific purchased approximately 506 acres on the mauka side of Turtle Bay Resort. In 2006 the company purchased 230 acres in the Kahuku Village from the James Campbell Estate. Continental Pacific also purchased the land that the Kahuku Hospital resides and is currently working with the community to keep the emergency room operational.

Pepekeo Community Association
P. O. Box 877
Pepekeo, HI 96783

To: Continental Pacific, LLC
Barron Strothers, Jere Henderson, Reynolds Henderson
Peter K. Kubota, Attorney-At-Law

Aloha Barron, Jere, Reynolds and Peter!

It has been a 1-0-0-0-n-g 5 years of challenges, opportunities, and education for the Pepekeo community, and the partners and associates of Continental Pacific! Along every step of the way, the value and importance of continuing to foster this relationship was disguised in numerous hurdles that, unassumingly, presents a model of the potential success for guiding the development and direction of change in the communities we live in.

We are, indeed, fortunate to have these opportunities to grow, strengthen and unify our communities and, at the same time, be afforded the chance to share and preserve our lifestyle, practices and traditions. The invaluable legacy that you have acknowledged and honored by engaging in community dialog to preserve the Pepekeo fishing accesses in perpetuity, and your continued support will long be remembered and will serve as a model for other communities.

Do not change this style but continue to actively be inquisitive and supportive of our community. By initially coming to the table with us and continuing to dialog, the resulting contributions toward the enrichment of our community are recognized and appreciated. We have the accesses that our fishermen identified, possible resolution(s) to access management concerns, the 'almost permanent' vehicular access easements, starting funds for Phase II of the Kulaimano Recreation Center, 'grubbed' land at the present Kulaimano Community Center location, donations for various community events and communication with our 'new' neighbors. We have gained new friendships and renewed old ones, engaged in problem-solving discussions and strategies, remained focused on the vision of preserving our practices and traditions for future generations, and, most importantly, we have all been receptive, contributing, active and valuable participants in building community! We certainly have come a long way and what a journey!

Mahalo nani for the experiences for growth. . . in our community and in our relationships. I find that the need for this sincere and warm expression of appreciation to all of you is long overdue. Know that it is filled with our deep and heartfelt *aloha!*

Sincerely,
Lorraine Mendoza, President
Pepekeo Community Association
Pepekeo Fishing Access Association

TESTIMONIALS ABOUT CP



Ed Johnson
Hawaiian Kava farmer

"Continental Pacific has been a surprisingly good neighbor. When you consider the history here in Hawaii of companies coming in, you consider them as land developers who plan to break up the land... CP is like, almost mythical because they are so nice. They bend over backwards for the community.... I have seen behind the scenes myself that Continental Pacific has done everything right."

"The way Continental Pacific has brought on these changes and the positive effect they've had, the cleaning up they've done, the open access to the ocean, the way they have paid attention to what the community has said, is like no other company I've ever run across from the mainland."

"CP set aside gravesite properties and gave one site it's own Tax Map Key... They were remarkably positive in regards to preserving access and historical grave sites."

On community fishing access: "CP stepped up to the plate (on fishing access)."

"They have made a very fair fishing access plan."



Daniel Loeffler
Hawaiian sweet corn farmer

"The Pepekeo area is perfect for farming, it has a perfect climate... Very nice area for farming. Continental Pacific has been about the best landlord I have ever dealt with." They help you when you need it... cleaning the roads, ditches etc... Continental Pacific bought land and wanted to develop it, but they do it a right way. They are helping out a lot of the farmers and also the public... There is a lot of access to beaches where most people would just close it off."

"Continental Pacific works with the community and also with the farmers."

"Continental Pacific does a good job, and I hope they do a good job wherever they go next."



David Kuakela
Hay farmer

"I've been farming about 25 years now doing cattle feed. I like the area very much. There is enough rainfall here so we don't have to irrigate. Continental Pacific has been an excellent neighbor... They are the only ones that patronized the community and did a lot of things for them"

"Continental Pacific is the kind of people who work with you and help you."

"Continental Pacific is the kind of people I like to have in my community."

Mike Miyahira
CFO for Hawaiian Rainbows LLC (A company which CP sold property in Pepekeo)

"Continental gave us a really good deal (on our property)."

"We have promoted the idea or concept of farming tropical fruit orchards."

"It has been a pleasure working with Barron Strother and Jere Henderson. We have come to respect them (Continental Pacific) a heck of a lot. They are good business people and good developers. They

carry thru on what they promise to do and you are fair and reasonable. I think we have enjoyed a very good working relationship with them"

"Continental Pacific has been very generous as far as access is concerned and supporting the community thru giving money, time and other type of things. I think they want to be a part of the community they work in, they want to leave better than when you bought it and so, I think they are good for the community they work in."



Mrs. Betty Barlow (lot owner in Pepekeo)
Farmer for 35 years. Been in Pepekeo for 2 years.

"I love the (Pepeekeo) area, it's beautiful. Farming here is good."

"I have no complaints about Continental Pacific and have lots to say about their employees who are really, really, special and I think that they certainly contribute to the good name of Continental Pacific."

"There are five accesses here in this subdivision and I think that is more than enough."

"I bought pretty early on... And I felt I made a wise investment."

"I feel the subdivision is beautiful, it's laid out very nicely"

Jim Quinn
A local sawmill owner- Hawaii Island Hardwoods.

"It's a nice environment here."

"CP does a good job of keeping the property up, and seem to be responsible residents of this neighborhood."

"It's great to be able to do business in a comfortable setting, and we've established that and we appreciate working with Continental Pacific."



Tim Withers
Pepeekeo resident, local store owner, and farmer.

"The Hamakua Pepeekeo area is pretty hard to beat"

"CP has been so cooperative with me, and all I have heard has been positive about Continental Pacific."

"They (Continental Pacific) look at a long term type of view, not quickly (short term). They wanted to make sure that it (Pepeekeo) stays the way it is for years to come and have kept the ambience of this area in tack."

"If I ask for something to help me, you (Continental Pacific) are right there to help me, and I can't thank you enough."

"I love you guys a lot."

MASTER PLAN MAP





CITY COUNCIL
CITY AND COUNTY OF HONOLULU
HONOLULU, HAWAII

No. 06-032

RESOLUTION

SUPPORTING THE PRESERVATION OF RESIDENTIAL HOMES IN FORMER PLANTATION OWNED HOUSING AREAS AND URGING THE OWNERS OF LAND ON WHICH PRESENT OR FORMER PLANTATIONS ARE LOCATED TO SUBDIVIDE THE LAND AND ALLOW CURRENT TENANTS TO ACQUIRE OWNERSHIP OF THE PROPERTY.

WHEREAS, during Hawaii's plantation era, sugar and pineapple plantations constructed housing and related improvements for their workers; and

WHEREAS, living in these plantation houses became a unique way of life for residents of these communities; and

WHEREAS, some plantation towns, such as those in Kahuiku, Waialua, Kunia, and Poamoho, are still occupied and functioning as housing areas for present and retired plantation workers; and

WHEREAS, in recognition of the historic and cultural significance of the plantation era, the city's development plans place an emphasis on preserving resources from that period in Hawaii's history; and

WHEREAS, for example, Section 3.7 of the Central Oahu Sustainable Communities Plan (SCP) provides general policies, planning principles, and guidelines for preservation and maintenance of the plantation villages at Kunia and Poamoho; and

WHEREAS, among the guidelines to implement the policies and planning principles for the Central Oahu Plantation Villages are:

- "Existing historic plantation houses should be rehabilitated as part of an assisted housing program."
- "Rental dwellings should be rehabilitated and converted for sale, giving preference to existing residents to minimize displacement and retain the sense of community."
- "Residential areas should be rehabilitated with an emphasis on affordable home ownership opportunities for existing residents."

and



CITY COUNCIL
CITY AND COUNTY OF HONOLULU
HONOLULU, HAWAII

No. 06-032

RESOLUTION

WHEREAS, similarly, the North Shore SCP provides guidelines for the preservation of the plantation town character of Waialua Country Town and states that "the scale and sense of Waialua as a small rural plantation town should be preserved and enhanced"; and

WHEREAS, however, with the termination of sugar and pineapple plantations due to changing economic times and changes in the ownership of the land on which the plantations are located, residents of the plantation towns, many of whom are on month-to-month tenancies, are faced with the prospect that they may be displaced and their plantation-era homes razed; and

WHEREAS, the Council recognizes the importance of preserving the plantation communities and providing for plantation workers who could be displaced from their homes without the development of affordable housing strategies to enable plantation housing residents to continue residing in their communities; now, therefore,

BE IT RESOLVED by the Council of the City and County of Honolulu that the Council hereby expresses its support for the preservation of residential homes in former plantation owned housing areas; and

BE IT FURTHER RESOLVED that the owners of land on which present or former plantations are located are urged to subdivide the land and allow current tenants to acquire ownership of the property; and

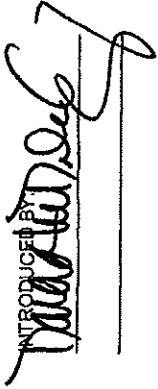


CITY COUNCIL
CITY AND COUNTY OF HONOLULU
HONOLULU, HAWAII

No. 06-032

RESOLUTION

BE IT FINALLY RESOLVED that copies of this Resolution be transmitted to the George Galbraith Trust, Del Monte Fresh Produce (Hawaii), Inc., Dole Food Co. Hawaii, Castle & Cooke Hawaii, the Estate of James Campbell, Kahuku Villages Association, Inc., and the Poamoho Camp Community Association.

INTRODUCED BY


Councilmembers

DATE OF INTRODUCTION:

JAN 26 2006

Honolulu, Hawaii

(OCS/012306/ct)

NORTHSHORE COMMUNITY OUTREACH SUMMARY

By: Eric Morrison

- In May of 2006 Jeremiah Henderson and I (Eric Morrison), met with approximately ten to fifteen village leaders and elders from Kahuku. During this two plus hour meeting which included Mayor Hanemann and County and State personnel, Jeremiah and I laid out the basics of our Section 201 (H) Plan for Phase V of Kahuku Village. This plan was formed following at least a half a dozen meetings with County and State officials who had spent the prior year or more polling the residents of Kahuku as to their thinking when it came to any development there.
- In late May of 2006 (Memorial Day) Jeremiah Henderson and I, at the request of Mayor Hanemann, met in the Kahuku High School gym with hundreds of folks. At this meeting Mayor Hanemann introduced us to the community and we described the fundamentals of our Section 201 (H) Plan and took questions from audience members for over two hours.
- From June of 2006 to the third week of August when Continental Pacific, my employer, closed on the purchase of Phase V of Kahuku Village, I met on at least 10 or more separate occasions with members of the Kahuku Village Association and village residents to discuss and explain our plan. All of these meetings took place before we even owned the land.
- From September through December of 2006, I met with the Koolauloa's Health and Wellness Center board, the Director and several board members of the Kahuku Hospital, and the Kahuku Village Association Board and members on at least three or more occasions. I also met with residents of the village who for one reason or another did not want to be and are not members of the Kahuku Village Association. I met with these folks in their backyards and homes on at least three or more occasions. One of these sessions lasted over three hours and included what maps we had at that time. Jeff Wallace, our ranch foreman, accompanied me on most of these meetings.
- In 2007, as our plan came into sharper focus, I attended monthly village meetings (12 of them) at the request of Leslie Llanos who is a Kahuku Village Association Board Member on a regular basis. Not satisfied, Ms. Llanos and I held small group meetings with the residents of Phase V of Kahuku Village. We met with members of every household: all 72 of them. Ms. Llanos has a meeting schedule which I believe is included in this information packet; however, if memory serves, we conducted at least 15 of these sessions that all lasted at least ninety minutes. When appropriate, we included (at our expense) engineers and planners working on the Section 201 (H) Plan. City officials also came to the monthly meetings as well to discuss tax and planning issues. We went into great detail on issues such as Existing Use Permits, Flood Ways and Zones, and the Section 201 (H) Plan Map and the process itself.
- Following these many meetings, the village residents voted (paper ballot) overwhelmingly in favor of the Section 201 (H) Plan. Later, in the summer of 2007, these

**LIST OF STUDIES
TO DETERMINE ENVIRONMENTAL,
SOCIAL AND ECONOMIC IMPACTS OF
PROPOSED DEVELOPMENT PROJECT AT KAHUKU VILLAGE**

WASTEWATER TREATMENT STUDY (R. M. Towill) – A study is being conducted in consultation with the Department of Health regarding the handling of wastewater on the Kahuku Village parcel.

WATER QUALITY IMPACT STUDY (AECOS) - An assessment describing the water quality and aquatic biological resources of the project site including existing drainage channels and impounded bodies of water.

FLORA AND FAUNA IMPACT STUDY (Mava Legrande) – A study of the faunal, avifaunal and botanical characteristics of the Kahuku Village parcel and potential impacts on plants and wildlife from the proposed development plan.

ARCHAEOLOGICAL IMPACT STUDY (Cultural Surveys Hawaii) - An archaeological survey of the project area and of the potential effect of the planned uses will be prepared for review and approval by DLNR, SHPD in accordance with Chapter 6E, HRS.

CULTURAL IMPACT STUDY (Cultural Survey Hawaii) - An assessment describing the historical land use context of the site and its relationship to traditional and contemporary cultural practices.

COASTAL PROCESSES STUDY (Sea Engineering) - Assessment utilizing prior oceanographic data prepared by R. M. Towill for Oceanit to describing coastal ocean currents, bathymetry, sediment transport and other ocean related conditions.

MARKET STUDY (Rick Cassidy/ Data at Work) – A study of the demand for and value of the Kahuku Village parcel and various sub-parcels contained therein both without development and if the proposed development plan is approved.

TRAFFIC IMPACT STUDY (The Traffic Management Consultant, Inc.) - An assessment of the impacts of traffic generated by the project and recommending necessary highway connection improvements that will be submitted to DOT-Highways for review and approval.

FLOOD REMEDIATION AND DRAINAGE STUDY (R. M. Towill) - Drainage master plan to develop alternatives to mitigate flooding within the Kahuku Village.

AGRICULTURAL LAND USE STUDY (Development Strategies, LLC) – A study of the agricultural lands encompassed within the Kahuku Village parcel.

MARINE AND STREAM BIOLOGICAL IMPACTS STUDY (AECOS) - An assessment to describe the coastal near shore waters and to characterize species types, abundance and distribution.

SOCIO-ECONOMIC IMPACT STUDY (Rick Cassidy) – A study of the social and economic characteristics of the present Kahuku Village community and surrounding area and the impact the proposed development plan would have on such characteristics, if any.

same residents signed, again in overwhelming numbers, a Letter of Intent in favor of our Section 201 (F) Plan. Presently, 76% of the residents have signed this Letter of Intent and another 10% have verbally committed to do so at a later date.

- In December of 2007, Jeremiah Henderson and I met together or individually on at least seven separate occasions with residents or family members of residents of Phase V of the village who wished to make changes to the proposed lot lines of our Section 201 (F) Plan. All requests were met to the best of our ability.
- During 2007, Jeremiah Henderson and I attended a Kahuku Community Association meeting at their Board's request. I also attended, spoke, and fielded questions for over an hour at a Koolauloa's Neighborhood Board Meeting chaired by Ms. Dee Dee Letts.
- I am also a member of the North Shore Sustainability Study Committee which includes residents of Phase V of Kahuku Village. Sound and balanced development of the North Shore is our charge. To date, I have attended at least four of these meetings all along the North Shore. Continental Pacific is also a member of the Natural Resource Conservation Service's Soil/Equip Program on the North Shore. We work closely with Federal engineers and local farmers to preserve the valuable topsoil and farmland on the North Shore.
- All told, Continental Pacific, through its owners or employees, has met with community members of Kahuku at least 55 separate times over the past year and a half. And we are not done yet. Substantial changes have been made to the Section 201 (F) Plan as a result of these many meetings. We very much appreciate the input and insights of the folks of Kahuku. Together, we continue to move forward toward a day when the residents of Phase V will own their own homes and land.

POLICE DEPARTMENT
CITY AND COUNTY OF HONOLULU
801 SOUTH BEREANIA STREET - HONOLULU, HI
TELEPHONE: (808) 528-3111 - INTERNET: WWW.HC

MURF HANNEMANN
MAYOR



March 13, 2008

OUR REFERENCE BS-KP

Mr. F. Reynolds Henderson
Continental Pacific, LLC
249 Mack Bayou Loop, Suite 301
Santa Rosa Beach, Florida 32459

Dear Mr. Henderson:


This is in response to your letter of March 7, 2008, requesting comments on a proposed development plan at Kahuku Village Parcel.

This project should have no significant impact on the facilities or operations of the Honolulu Police Department.

If there are any questions, please call Acting Major Nyle Dolera of District 4 at 247-2166 or Mr. Brandon Stone of the Executive Office at 529-3644.

Sincerely,

BOISSE P. CORREA
Chief of Police

By 
DEBORA A. TANDAL
Assistant Chief of Police
Support Services Bureau

DEPARTMENT OF PARKS AND RECREATION
CITY AND COUNTY OF HONOLULU
KAPOLEI HALE, 1000 ULUOHIA STREET, STE. 309 • KAPOLEI, HAWAII 96707
Phone: (808) 768-3003 • FAX: 768-3053 • Internet: www.honolulu.gov

MURF HANNEMANN
MAYOR



March 17, 2008

Mr. F. Reynolds Henderson
Continental Pacific, LLC
249 Mack Bayou Loop, Suite 301
Santa Rosa Beach, Florida 32459

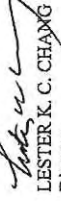
Dear Mr. Henderson:

Subject: Proposed Development Plan at Kahuku Village

Thank you for the opportunity to review and comment on Continental Pacific, LLC's proposed development plan at Kahuku Village.

The Department of Parks and Recreation has no comment at this time however, we look forward to participating as a consulted party to the Environmental Assessment for this project.

Should you have any questions, please contact Mr. John Reid, Planner, at 768-3017.


LESTER K. C. CHANG
Director

LKCC:jr
(323902)

LESTER K. C. CHANG
DIRECTOR
GAIL Y. HARAGUCHI
DEPUTY DIRECTOR

Wastewater Branch
Environmental Management Division
State Department of Health
310 ALA MOANA BOULEVARD, ROOM 308
HONOLULU, HAWAII 96814



STATE OF HAWAII
DEPARTMENT OF HEALTH
P.O. BOX 3078
HONOLULU, HAWAII 96821

March 20, 2008

CHYOMI LEINAALA PUNING, M.D.
DIRECTOR OF HEALTH

In reply, please refer to:
EMD / WBI

Mr. F. Reynolds Henderson
Continental Pacific, LLC
249 Mack Bayou Loop, Suite 301
Santa Rosa Beach, Florida 32459

Dear Mr. Henderson:

Subject: Proposed Development Plan at Kahuku Village Parcel

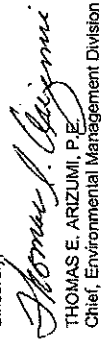
The Department of Health acknowledges receipt of your letter dated March 10, 2008 and the informational packet for the development project in Kahuku Village. The Department understands that this project will involve a one-to-one exchange of cesspools for septic tank systems for the 72 existing structures and include an additional 50 lots that will be sold to current residents. The project will also involve subdivision of the property just north of the Kahuku Golf Course and just south of the shoreline into 16 single-family residential lots averaging 20,000 square feet per lot.

We have the following comments to offer. The subject project is located in the Critical Wastewater Disposal Area (CWDA) as determined by the Oahu Wastewater Advisory Committee where no new cesspools will be allowed. It is also located in the Pass Zone where construction of individual wastewater systems is allowed. Please be informed that if the project involves the development of more than fifty (50) residential lots, a variance may need to be submitted to our Wastewater Branch.

All wastewater plans for the one-to-one exchange of cesspools for septic tank systems for the 72 existing structures must conform to applicable provisions of the Hawaii Administrative Rules, Chapter 11-62, "Wastewater Systems." We reserve the right to review the detailed wastewater plans for conformance to applicable rules.

Should you have any questions, please contact the Planning & Design Section of the Wastewater Branch at 586-4294.

Sincerely,


THOMAS E. ARIZUMI, P.E.
Chief, Environmental Management Division

SP:cle

HONOLULU FIRE DEPARTMENT
CITY AND COUNTY OF HONOLULU

City South Street
Honolulu, HI 96813-6007
Phone: 808-725-7130 Fax: 808-723-7111 Internet: www.honolulu.gov/hfd



MUF HANNEMANA
MAYOR

KENNETH G. SILVA
FIRE CHIEF
ALVIN K. TOMIYA
DEPUTY FIRE CHIEF

April 1, 2008

Mr. F. Reynolds Henderson
Continental Pacific, LLC
249 Mack Bayou Loop, Suite 301
Santa Rosa Beach, Florida 32459

Dear Mr. Henderson:

Subject: Proposed Development Plan at Kahuku Village Parcel

In response to your letter dated March 7, 2008, regarding the above-mentioned subject, the Honolulu Fire Department (HFD) reviewed the material provided and requires that the following be complied with:

1. Provide a fire apparatus access road for every facility, building, or portion of a building hereafter constructed or moved into or within the jurisdiction when any portion of the facility or any portion of an exterior wall of the first story of the building is located more than 150 feet (45 720 mm) from fire apparatus access as measured by an approved route around the exterior of the building or facility. (1997 Uniform Fire Code, Section 902.2.1.)
 2. Provide a water supply, approved by the county, capable of supplying the required fire flow for fire protection to all premises upon which facilities or buildings, or portions thereof, are hereafter constructed or moved into or within the county.
- On-site fire hydrants and mains capable of supplying the required fire flow shall be provided when any portion of the facility or building is in excess of the 150 feet (45 720 mm) from a water supply on a fire apparatus access road, as measured by an approved route around the exterior of the facility or building. (1997 Uniform Fire Code, Section 903.2, as amended.)

Mr. F. Reynolds Henderson
Page 2
April 1, 2008

3. Submit civil drawings to the HFD for review and approval.

In addition, please note that our new address is:

Honolulu Fire Department
636 South Street
Honolulu, Hawaii 96813

Should you have any questions, please call Battalion Chief Socrates Bratakos of our Fire Prevention Bureau at 808-723-7451.

Sincerely,



KENNETH G. SILVA
Fire Chief

KGS/SK:bh



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
Office of Conservation and Coastal Lands

POST OFFICE BOX 621
HONOLULU, HAWAII 96809
April 25, 2008

DLNR:OCCL.:CC

Mr. F. Reynolds Henderson
Continental Pacific, LLC
249 Mack Bayou Loop, Suite 301
Santa Rosa Beach, FL 32459

Dear Mr. Henderson,

SUBJECT: Kahuku Village Parcel, Shoreline Subdivision Plan, Kahuku, Oahu, Hawaii
TMK (1) 5-6-002:010

Correspondence: OA-08-191
MAY - 6 2008

The Department of Land and Natural Resources' (DLNR) Office of Conservation and Coastal Lands (OCCL) has received your March 2008 package detailing the proposed subdivision of Kahuku Village Parcel, TMK (1) 5-6-002:010, Oahu, Hawaii. The OCCL appreciates the early consultation. This provides our office the ability to present information that we feel is critical to the protection of our natural resources, and the protection of coastal communities from coastal hazards. These topics are discussed in the Hawaii Coastal Hazard Mitigation Guidebook, which we have attached for your information and use. The guidebook promotes early consultation in the development review process.

The proposed subdivision plan shows approximately 18 oceanfront lots, located makai of the Kahuku Golf Course, in the frontal dunes. The OCCL opposes projects that impact coastal dune systems. Coastal dunes act as a primary natural barrier for coastal hazards. This first line of defense for coastal hazards has been identified as an important portion of the natural coastal environment in the Coastal Erosion Management Plan (COEMAP), and in the State Hazard Mitigation Plan that has been approved by FEMA. COEMAP was adopted by the DLNR in 2000, as the primary guidance document for coastal management, and was endorsed by the City & County of Honolulu. Dunes providing protection from coastal hazards have been documented in areas affected by the 2005 Indian Ocean tsunami, and Gulf and East Coast shorelines during the 2004 through 2007 hurricane seasons.

Additionally, coastal dunes are an interconnected portion of the littoral sediment system, providing sand to the beach during storm and high wave events. This provides additional protection to the resource by allowing the system to rapidly accommodate large energy changes in the wave environment. The beach and dune are part of the same coastal sediment system. This entire system is characterized as highly dynamic, and is not suitable substrate for development. Ideally, these parcels will not be located in, and development started in, areas that are known to be eroding or highly vulnerable to other coastal hazards.

LATONA K. TITZLEN
DIRECTOR
BOARD OF LAND AND NATURAL RESOURCES
COMMISSIONER OF WATER RESOURCES MANAGEMENT
KUSSELLA V. TISHIE
FIRE CHIEF
STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
OFFICE OF CONSERVATION AND COASTAL LANDS
1505 ALI'OLE DRIVE, SUITE 200
HONOLULU, HAWAII 96813
PHONE: (808) 586-2500
FAX: (808) 586-2501
WWW.DLNR.HAWAII.GOV

This situation is exacerbated when the shoreline is actively eroding. The Coastal Geology Group has calculated long term erosion rates for the area. Rates are calculated at shore perpendicular transects located every 20 meters along the coast. These rates can be found at:

http://soest.hawaii.edu/coastal/webfile/Oahu/erosionmaps/KahukuBeach_72dpi.jpg

Annual erosion rates for this area range from greater than one foot per year to greater than three feet per year of erosion. FEMA reports indicate that the average life expectancy for wood framed coastal structures is 70 years, and large or stone structures is 100 years. Under these conditions, the shoreline could migrate 70 feet, to greater than 300 feet, inland during the lifetime of the initial structure. It is important to note that a standard 60 foot setback, with even the lowest annual erosion rate, will result in any structure being threatened by coastal erosion during its lifetime.

The Hawaii Coastal Hazard Mitigation Guidebook (attachment) delves into the many facets of hazard mitigation, and provides a rational and economic framework for each stage of the development process. Proper siting, orientation, and sizing of shorefront parcels are critical for preventing and mitigating future coastal hazards. Preventing subdivision and urbanization of the coastal dunes is a significant step in preventing future property losses and protecting the health, welfare, and safety of the public.

This area was significantly affected by the 1946 tsunami, receives very large winter surf, and has an actively eroding shoreline. The proposed shoreline subdivision places the oceanfront lots in an precarious situation, perched on shifting coastal sands with limited room or options for landward migration.

Should you have any questions, please call Sea Grant Extension Agent Chris Conger, 808-587-0049, at the OCCCL.

Sincerely,

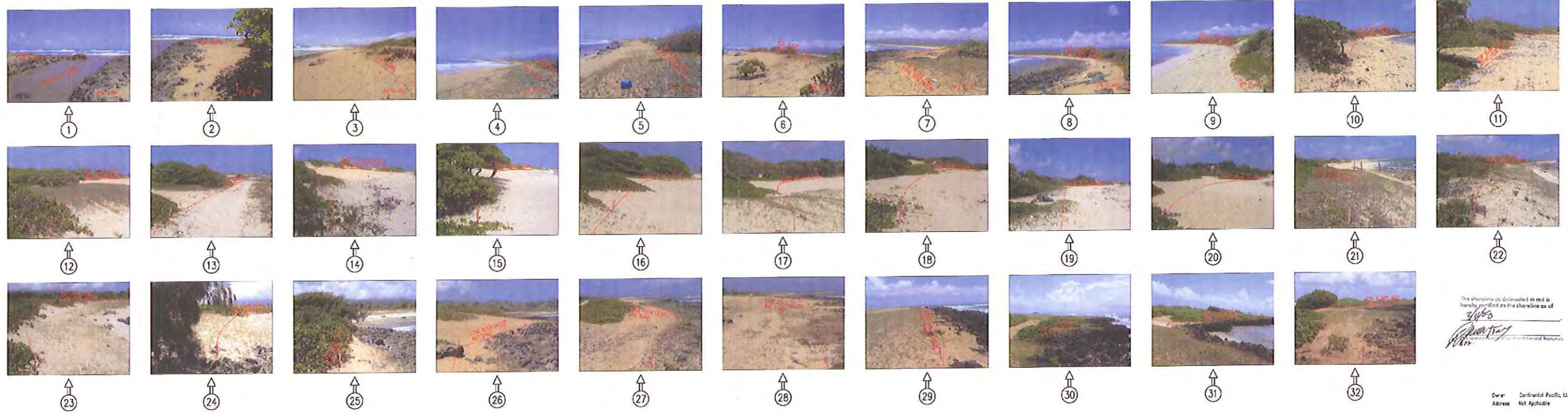
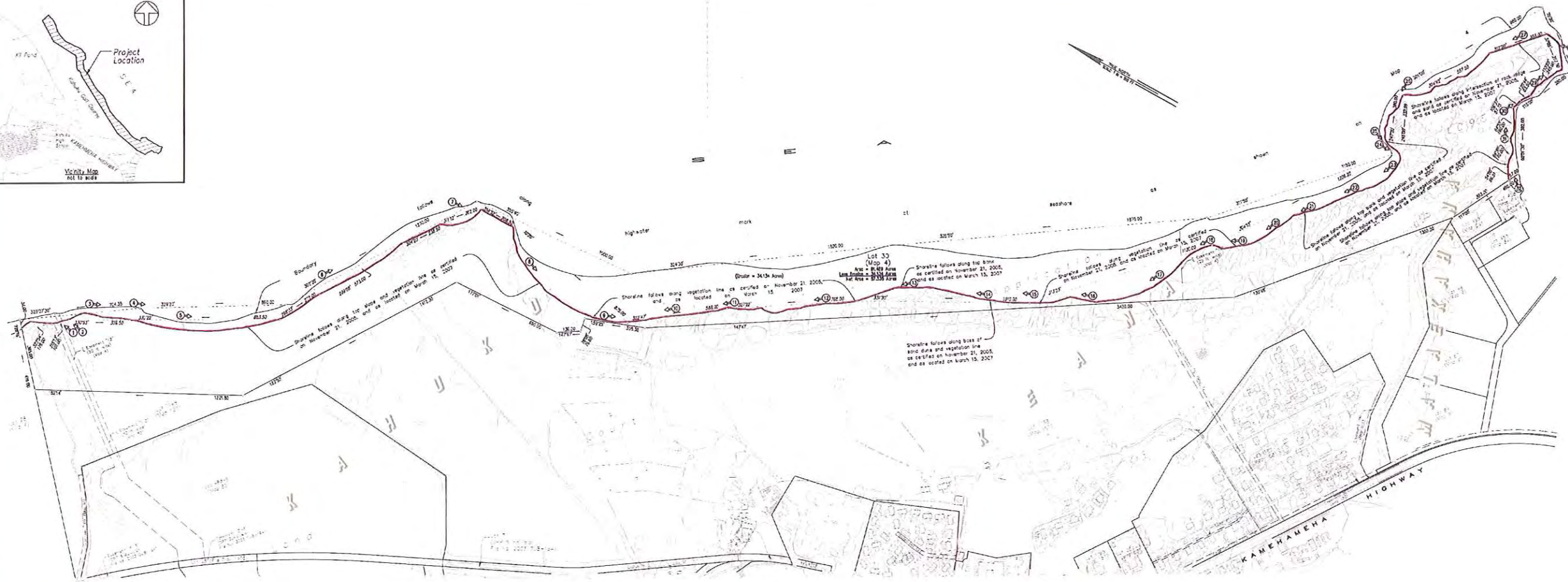
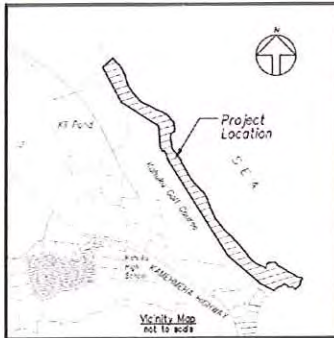


Samuel J. Lemmo, ADMINISTRATOR
Office of Conservation and Coastal Lands

- CC: Chairperson
- Oahu Board Member
- Oahu Land Agent
- C&C Department of Planning and Permitting
- Kahuku Neighborhood Board

Appendix C

Certified Shoreline Documents

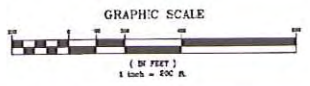


The shoreline as delineated in red is hereby certified as the shoreline as of
[Signature]
 Surveyor General

Owner: Continental Pacific, LLC
 Address: Not Applicable

S.W. Eastman
 This map was prepared by me or under my direct supervision.
 State of Hawaii
 Surveyor General
 License Number 10058

Shoreline Survey
 Lot 30
 as Shown on Map 4
 of Land Court Application 1095
 at Hanalei, Keolu, Moloakalani, Koa'u'oa, Oahu, Hawaii
 T.M.K.: (1) 5-6-02: 10



Notes
 Admin. data related to Government Survey Preparation Station "TULU" A.
 1 Shoreline Photo, Direction, and ID Number
 Photos taken on April 26, 2007
 Between 6:00 AM and 12:30 PM

Appendix D

Archaeological Inventory Survey

**Archaeological Inventory Survey Plan for the
Kahuku Village Subdivision Project,
Kahuku, Keana, and Mālaekahana Ahupua'a,
Ko'olaupia District, O'ahu Island**

TMK: [1] 5-6-002:003, 010, 012, 016, and 027

Prepared for
R.M. Towill Corporation

Prepared by
Constance R. O'Hare, B. A.,
David W. Shideler, M.A.,
and
Hallett H. Hammatt, Ph.D.

Cultural Surveys Hawaii's, Inc.
Kailua, Hawaii
(Job Code: KAHUKU 3)

February 2008

O'ahu Office
P.O. Box 1114
Kailua, Hawaii's 96734
Ph.: (808) 262-9972
Fax: (808) 262-4950

Maui Office
16 S. Market Street, Suite 2N
Wailuku, Hawaii's 96793
Ph: (808) 242-9882
Fax: (808) 244-1994

www.culturalsurveys.com

Management Summary

Reference	Archaeological Inventory Survey Plan for the Kahuku Village Subdivision Project, Kahuku, Keana, and Mālaekahana Ahupua'a, Ko'olaupia District, O'ahu Island, TMK: [1] 5-6-002:003, 010, 012, 016, and 027 (O'Hare, Shideler, and Hammatt 2008)
Date	February 2008
Project Number (S)	Cultural Surveys Hawaii's Inc. (CSH) KAHUKU 3
Investigation Permit Number	The fieldwork for the planned archaeological inventory survey investigation will likely be carried out under a 2008 archaeological permit number requested by CSH and to be issued by the Hawaii's State Historic Preservation Division/Department of Land and Natural Resources (SHPD/DLNR), per Hawaii's Administrative Rules (HAR) Chapter 13-282.
Project Location	The project area is located in Kahuku town seaward of Kamehameha Highway in coastal Ko'olaupia in portions of Kahuku, Keana, and Mālaekahana Ahupua'a. The <i>maikai</i> boundary is the coast, from Makahoa Point on the south end to the fishing area called Kahuahole on the north end. The <i>mauka</i> side is bound by Kamehameha Highway. This area is depicted on the 1998 USGS 7.5-Minute Series Topographic Map, Kahuku Quadrangle.
Land Jurisdiction	Continental Pacific, LLC
Project Description	The first phase of the project involves the development of 18 proposed beach lots. Subsequent phases of work are to be determined but present plans call for maintaining the Kahuku Golf Course and Kahuku Village areas.
Project Acreage	Approximately 200 acres
Historic Preservation Regulatory Context	The proposed Kahuku Village development project is subject to Hawaii's State environmental and historic preservation review legislation [Hawaii's Revised Statutes (HRS) Chapter 343 and HRS 6E-8/Hawaii's Administrative Rules (HAR) Chapter 13-13-275, respectively]. The current archaeological inventory survey plan was prepared in advance of a planned archaeological inventory survey of a seaward portion of the project area. To better define the scope of work for the archaeological inventory survey, this plan was prepared in accordance with the requirements for an archaeological inventory survey plan as stated in Hawaii's Administrative Rules (HAR) 13-284-5(c). The plan details the proposed methods of the inventory survey, per the requirements of Hawaii's Administrative Rules (HAR) Chapter 13-276

Summary of the Planned Inventory Survey Research Design

This archaeological inventory survey plan addresses a coastal strip of the Kahuku Village project area proposed for the development of 18 lots for single family homes. Surface and subsurface testing will be focused on the vacant 18 beachfront lots proposed for development. All 18 lots will be surveyed with pedestrian sweeps to locate any surface finds. Subsequent work will focus on backhoe assisted hand excavations of trenches. Five trenches will be excavated on each lot: two in the proposed house footprint, two in the proposed leach field, and one in the proposed septic tank location, for a minimum total of 90 trenches. A backhoe will be used to excavate any upper fill layers, if present. From the top surface of any Jaucus sand layers to below the water table or to the coral reef (whichever comes first), excavation will proceed with shovel test trenches (approximately 25 centimeters wide) to identify cultural layers, subsurface features, and burials. If no cultural deposits, artifacts or burials are found, the backhoe will be used to excavate a trench (80 centimeter) around the shovel test trench to below the water table or the coral reef. If cultural deposits, subsurface features, or burials are found, larger units around their location may be excavated by hand (shovel and trowel) to further expose or explore the findings.

Table of Contents

Management Summary i

Section 1 Introduction 1

1.1 Project Background 1

1.2 Environmental Setting 6

1.2.1 Natural Environment 6

1.2.2 Built Environment 6

Section 2 Background Research 8

2.1 Mythological and Traditional Accounts 8

2.1.1 Place Name Meanings 8

2.1.2 The Floating Land of Kahuku 8

2.1.3 Keana Cave 13

2.1.4 The Mullet of Peard Harbor and Makahoa Point at Mālaekahana 13

2.2 Historic Background 17

2.2.1 Early Historic Period 17

2.2.2 Mid- 1800s and the *Māhele* 18

2.2.3 Ranching in Kahuku: 1850-1880 21

2.2.4 Sugar and the Railroad at Kahuku: 1890-1971 24

2.2.5 World War II and the Military in Keana 28

2.2.6 Modern Land Use 29

Section 3 Previous Archaeological Research 34

3.1 Early Archaeological Surveys 35

3.2 Modern Archaeological Surveys 38

3.2.1 Ko'olauloa Housing Project, Kahuku Elementary School, Kahuku District Park 38

3.2.2 Kahuku Agricultural Park 39

3.2.3 Kahuku Sand Mining Project 39

3.2.4 Other Studies 40

3.2.5 Coastal Burials 41

3.3 Background Summary and Predictive Model for Keana 43

Section 4 Research Design 44

4.1 Personnel 44

4.2 Field Methods 44

4.3 Laboratory Methods 48

4.4 Historic Property Evaluation for Hawai'i Register Eligibility 48

4.5 Community Consultation 49

4.6 Report Preparation 49

Section 5 References Cited 51

Appendix A LCA Awards in Keana 58

Appendix B LCA Awards with Lele in Keana 60

List of Figures

Figure 1. U.S. Geological Survey 7.5-Minute Series Topographic Map, Kahuku Quadrangle, showing the project area (hatched area)..... 2

Figure 2. Tax Map Key (1) 5-6-002, showing project area..... 3

Figure 3. Aerial photograph, showing project area outlined in red..... 4

Figure 4. Proposed subdivision of lots owned by Continental Pacific, LLC for the Kahuku Village Subdivision Project..... 5

Figure 5. Soils map of the project area..... 7

Figure 6. 1881 Hawaiian Government Survey map (portion) of O'ahu, by W. D. Alexander, showing the project area within the ahupua'a of Kahuku, Keana, and Mālaekahana..... 9

Figure 7. 1890 map of Kahuku Sugar Plantation by A. B. Loebenstein (Sheet 2 of 2); LCA 4391.2 and 4329.2 are the only two *kālelewa* houselots claimed in Keana Ahupua'a.....20

Figure 8. 1851 Map of "Half of KEANA belonging to C. G. Hopkins, Esq."; note area labeled "Pen," probably a cattle pen and a cluster of L-shaped icons along the stream, possibly old terraces..... 22

Figure 9. 1919 War Department map, showing project area; map shows the location of the Japanese Cemetery and the railroad track within the northwest corner..... 26

Figure 10. Kahuku Plantation, circa 1920s, showing topography and numbered fields; note that the project area is not planted in sugar cane; the major portion of the project area is labeled "Recreation Area"..... 27

Figure 11. 1943 War Department Map, showing three airfields on the north coast of O'ahu..... 29

Figure 12. 1929-1930 U.S. Geological Survey map, Kahana Quad, showing project area; map shows the location of Japanese Cemetery and the Catholic Cemetery..... 30

Figure 13. 1943 War Department map, showing project area; map shows two cemeteries and "Wireless Pole"..... 31

Figure 14. 1954 Army Map Service map..... 32

Figure 15. 1978 Aerial Photograph..... 33

Figure 16. U.S. Geological Survey map, Kahuku Quadrangle, showing previous archaeological work in western Kahuku, Keana (shaded in pink), and Makahoa Point of Mālaekahana..... 36

Figure 17. U.S. Geological Survey map, Kahuku Quadrangle, showing coastal burial sites in Kahuku, Keana, and Makahoa Point of Mālaekahana..... 42

Figure 18. Example of possible placement of 5 trenches (20 foot or 6 meters long) in 1 of the 18 beach front lots; two trenches in the house foundation, two trenches in the leach field (marked by lines 50 to 60 feet *maika* of the certified shoreline), and one trench in the septic tank location..... 45

List of Tables

Table 1. Land Commission Awards in Keana Ahupua'a..... 21

Table 2. Previous Archaeological Work in Keana, eastern Kahuku, and Makahoa Point..... 34

Section 1 Introduction

1.1 Project Background

At the request of R. M. Towill Corporation, Cultural Surveys Hawai'i, Inc. (CSH) prepared this archaeological inventory survey plan for an approximately 15-acre coastal strip portion of the approximately 200-acre Kahuku Village Subdivision Project, Kahuku, Keana, and Mālaekahana Ahupua'a, Ko'olaupua District, O'ahu (TMK: [1] 5-6-002-003, 010, 012, 016, and 027). The project area is located in coastal Ko'olaupua in portions of Kahuku, Keana, and Mālaekahana Ahupua'a. The *makai* (seaward) boundary is the coast, from Makahoa Point on the south end to the fishing area called Kaluahoale on the north end. The *maika* (inland) side is bound by Kamehameha Highway. This area is depicted on the 1998 USGS 7.5-Minute Series Topographic Map, Kahuku Quadrangle (Figure 1), on Tax Map 1-5-6-002 (Figure 2), and on an aerial photograph (Figure 3).

Continental Pacific, LLC ("Continental") is the fee owner of various properties located *makai* of Kamehameha Highway, which includes residential land in Kahuku Village and the Kahuku Golf Course (Figure 4). Continental intends to develop the Kahuku properties in accordance with their desire to keep Kahuku, Kahuku. To this end, Continental has developed an integrated plan, comprised of the following elements:

1. The property surrounding the existing 72 houses, known as (a portion of) Kahuku Village, will be subdivided first into one or two large lots, which lots will be submitted to a new Condominium Property Regime. The house lots, and possibly the vacant lots, will be condominium units. Continental will also make reasonable road (including paving), septic and safety improvements (in accordance with county requirements) in the common areas defined by the condominium documents.
2. If Continental determines that the vacant lots can be built upon and are within the county and condominium laws and regulations, the lots will be modestly improved and sold to villagers. Continental would supply architectural standards that would complement the theme of the existing Kahuku Village.
3. Two private beach parks, one at either end of the Kahuku Golf Course, will be donated to the community through the Kahuku Village Association or the condominium owners association.
4. The 9-hole Kahuku Golf Course will be donated or leased (in perpetuity) to an entity acceptable to Continental and subject to a maintenance covenant.
5. The two cemeteries located in the area will be donated to an entity acceptable to Continental.
6. Continental will develop 18 lots on the *makai* side of the Kahuku Golf Course (the subject of the present plan). These will be large lots developed in a country setting.
7. Makahoa Point will be subdivided and sold as a single ranch lot (25+ acres in size) to Jim Reynolds who has been a long time tenant of that property. He intends to keep it in its current use with no further subdivision.

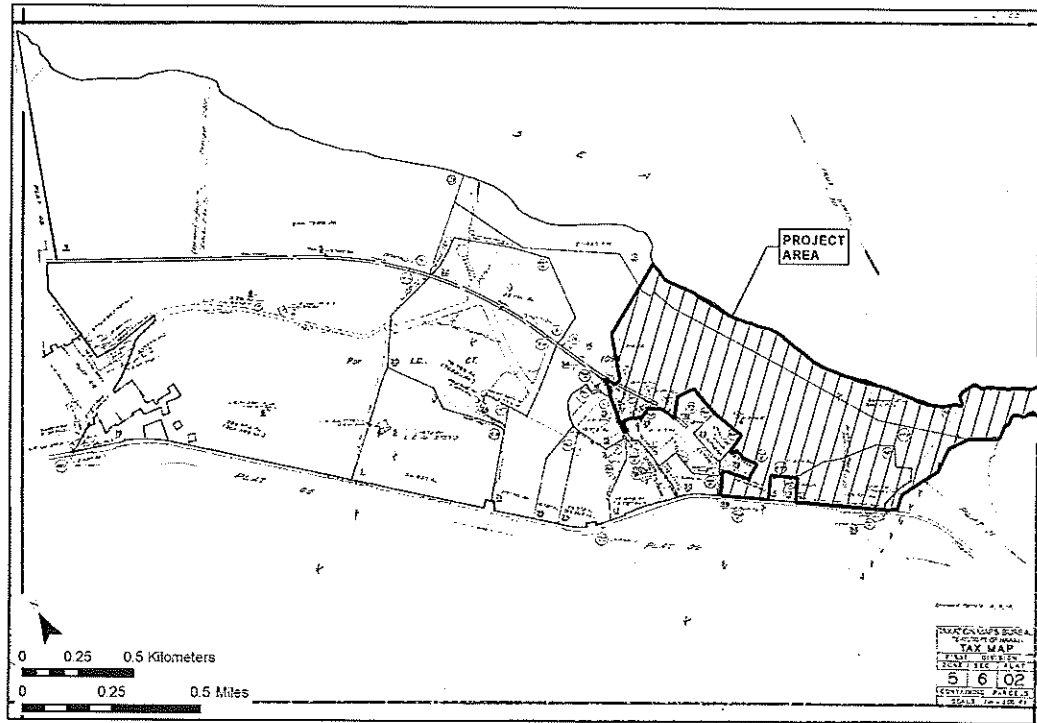


Figure 2. Tax Map Key (1) 5-6-002, showing project area

Archaeological Inventory Survey Plan for Kahuku Village Subdivision Project, Ko'olahele, O'ahu

TMK: [1] 5-6-002:003, 010, 012, 016, and 027

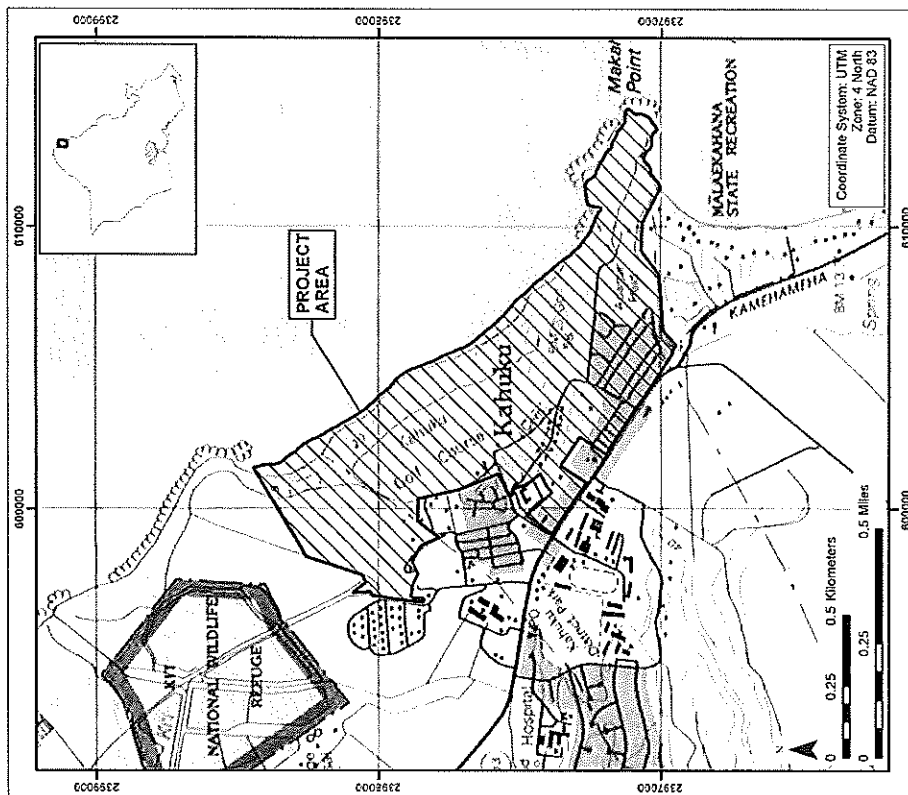


Figure 1. U.S. Geological Survey 7.5-Minute Series Topographic Map, Kahuku Quadrangle, showing the project area (hatched area)

Archaeological Inventory Survey Plan for Kahuku Village Subdivision Project, Ko'olahele, O'ahu

TMK: [1] 5-6-002:003, 010, 012, 016, and 027

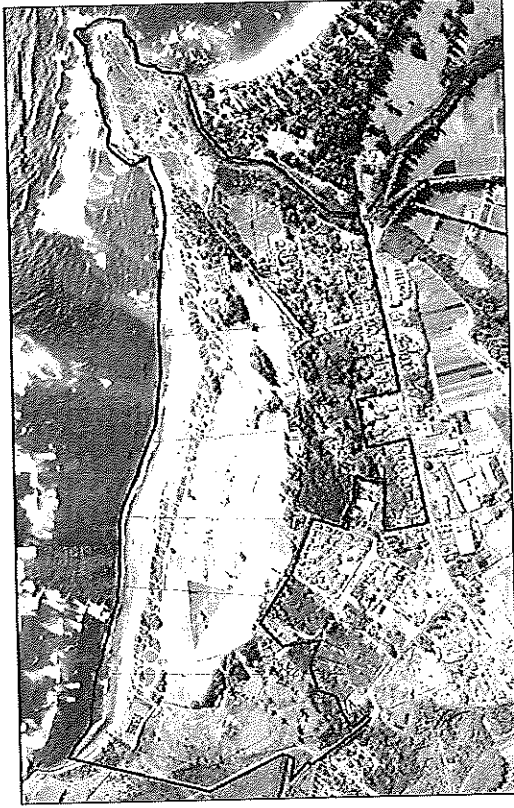


Figure 4. Proposed subdivision of lots owned by Continental Pacific, LLC for the Kahuku Village Subdivision Project

8. Continental reserves the right to establish a camping area at the old Adams Field area, which is a permitted use under the existing P-2 zoning, and may be developed with recreational camping cabins, or sold outright.
9. The remaining area at the north end of the Kahuku Golf Course will be kept in agriculture and developed into 9 to 12 agricultural lots (minimum 2 acres in size).

The proposed Kahuku Village Subdivision project is subject to Hawai'i State environmental and historic preservation review legislation [Hawai'i Revised Statutes (HRS) Chapter 343 and HRS 6E-8/Hawai'i Administrative Rules (HAR) Chapter 13-13-275, respectively]. The current archaeological inventory survey plan was prepared in advance of a planned archaeological inventory survey of a coastal strip of the Kahuku Village project area. To better define the scope of work for the archaeological inventory survey, this plan was prepared in accordance with the requirements for an archaeological inventory survey plan as stated in Hawai'i Administrative Rules (HAR) 13-284-5(c). The plan details the proposed methods of the inventory survey, per the requirements of Hawai'i Administrative Rules (HAR) Chapter 13-276.

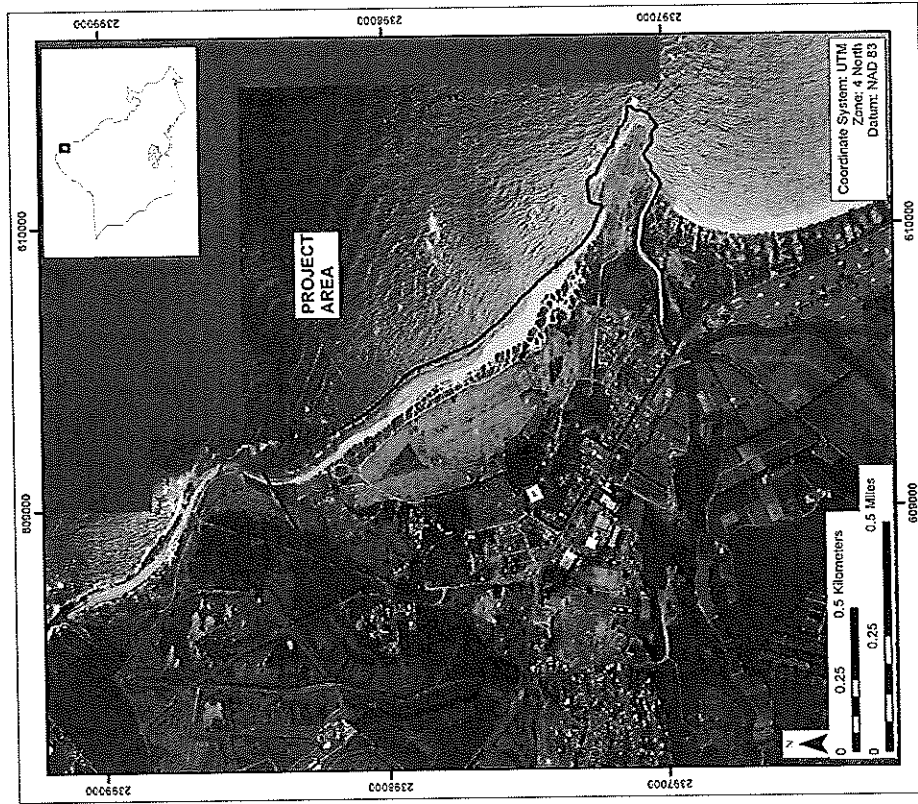


Figure 3. Aerial photograph, showing project area outlined in red

1.2 Environmental Setting

1.2.1 Natural Environment

The project area is located on the nearly-level and low-lying coastal plain of Kahuku, at the east of the northern tip of the island of O'ahu. Elevations within the project area range from approximately sea level to approximately 30 feet AMSL (above mean sea level). One small hill on the property, labeled Keana, is 58 feet high. The project area receives an average of approximately 1000 mm (39 in.) of annual rainfall (Giambelluca et al. 1986). Portions of the surrounding coastal plain are protected wetlands, including the Ki'i portion of the James Campbell National Wildlife Refuge, 0.25 kilometers northwest of the Kahuku Village project area.

Three type of soils occur within the Kahuku Village project area: Beaches (BS) in a narrow strip along the coast; Keau clay, saline, 0 to 2 percent slopes (KmbA), in a small section on the western side; and, Jaucus sand, 0 to 15 percent slope (JaC) in the remaining portion of the project area (Figure 5).

Beaches (BS) occur as sandy, gravelly, or cobbly areas, which are washed and reworked by ocean waves. The light-colored sands are derived from coral, coralline algae, and seashells.

The Jaucus series consists of excessively drained, calcareous soils. They occur as narrow strips on coastal plains, adjacent to the ocean. The soils developed from wind and water deposited sand derived from coral, coralline algae, and seashells. Areas with Jaucus sand, 0 to 15 percent slope (JaC) are used for pasture, sugarcane, truck crops, and urban development. The natural vegetation is *kiawe* (*Prosopis pallida*), *koa haole* (*Leucaena leucocephala*), bristly foxtail (*Pennisetum verticillatum*), bermudagrass (*Cynodon dactylon*), fingergrass (*Chloris* spp.), and Australian saltbush (*Atriplex semibaccata*).

The Keau series consists of poorly drained soils, which developed in alluvium deposited over reef limestone or consolidated coral sand. They are nearly level and gently sloping. The natural vegetation consists of *kiawe*, bermudagrass, bristly foxtail, and fingergrass. Areas of Keau clay, saline, 0 to 2 percent slopes (KmbA), are strongly affected by salts, and thus much of this land is barren or covered with pickleweed (*Batis maritima*). Many of these areas are being drained and filled for use for industrial sites, homesites, and parks.

1.2.2 Built Environment

Much of the land within the Kahuku Village project area is used as part of the Kahuku Municipal Golf Course, built in 1937. The golf course is landscaped with low grass and scattered monkeypod trees (*Samanea saman*). There are no lakes or ponds and the sand bunkers are small (Sandler 1990:66). On the *makai* boundary, there is a narrow beach, but no beach park facilities. On the *mauka* boundary, there are residential areas and community athletic parks (see Figure 4), such as the six-acre Adams Field, an area of baseball and softball fields. It is named for Andrew Adams, the manager of the Kahuku Plantation Company from 1904-1921 (Clark 1977:137).

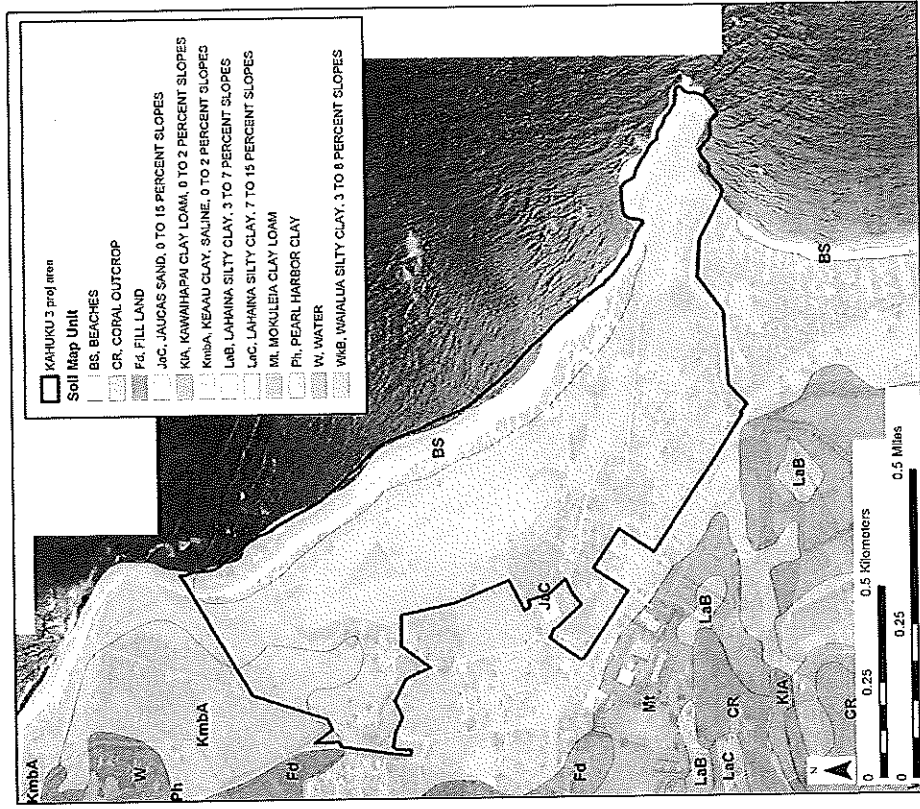


Figure 5. Soils map of the project area

Section 2 Background Research

2.1 Mythological and Traditional Accounts

The main, central section of the Kahuku village project area is within Keana Ahupua'a. A small portion of the northeastern corner is within Kahuku Ahupua'a, and the southeastern area around Makahoa Point is within Mālaekahana Ahupua'a (Figure 6). As more than 90 percent of the project area is within Keana Ahupua'a, the background research for the project will focus on this *ahupua'a*.

2.1.1 Place Name Meanings

The Kahuku village project area is along the Kahuku and Keana coasts and Makahoa Point in Mālaekahana. It extends on the north side to Kaluahole, a noted fishing ground. Kaluahole means the "pit, or cavern of the *āhole* fish" (Clark 2002:155; Pukui et al. 1974:78). The *āhole* is the Hawaiian Flagtail (*Kahila sandvicensis*), which Titcomb (1972:59) describes as "a common shore fish . . . when mature their habitat is the coral or lava caverns of the reef."

The Keana beach coastline begins at the northern end of Ka'ohana, a calcareous sand beach near the Japanese Cemetery. Ka'ohana means "the family" (Clark 2002:161). The beach fronting the Kahuku Golf Course, once known as Keone ō'io, is about 100 feet wide, with areas of exposed bedrock, sand over bedrock, and some high sand dunes. There is only one small beach area suitable for swimming, where a channel cuts through the reef. The traditional name for this channel was Keone ō'io, which means "the ō'io [bone fish] sands" (Clark 1977:137). This was a known excellent fishing spot for the ō'io fish (Bonefish; *Albula vulpes*), which travel in schools and can be caught with nets or lines at their feeding grounds (Titcomb 1972:120).

The beach ends at the south end at Makahoa Point in Mālaekahana Ahupua'a. Makahoa means "friendly point" (Pukui et al. 1974:140), or "a companion" (Clark 2002:228). It is famous as the point where the *'anae-holo* [large traveling mullet] (*Mugil cephalus*) stop on their annual trip from Pearl Harbor towards Lā'ie Clark 1977:138). At Makahoa Point, they stop and stay for a few weeks close to the shore, where they can be caught by nets (Titcomb 1972:65). The fish then turn around and swim back along the coast to their home in Pearl Harbor. The boundary between Keana and Mālaekahana is the mouth of Kea aulu Stream within Kea aulu Gulch. Kea aulu means "the growing roof" (Pukui et al. 1974:100) suggesting that traditional Hawaiian crops were grown along the stream and gulch.

2.1.2 The Floating Land of Kahuku

According to Hawaiian legend, the land of Kahuku from the shore to the middle of Waiale'e was once a floating island blown around by the trade winds. The floating island would bang against O'ahu creating a great disturbance, so the people living in the Ko'olauloa District secured the floating island to O'ahu with fishhooks. One end of the floating island was fastened to Kūki'o Pond, inland from Kahuku Point, and the other side fastened to a pool named Pōlou, on the seaward side of the old Kahuku sugar mill (Condé and Best 1973). The exact location of Pōlou Pond is not known, since it does not appear on early maps. The sugar mill was on the Kahuku/Keana boundary, so the pool may have been in Keana rather than Kahuku. McAllister,

Archaeological Inventory Survey Plan for Kahuku Village Subdivision Project, Ko'olauloa, O'ahu

TMK: [1] 5-6-002:003, 010, 012, 016, and 027

8

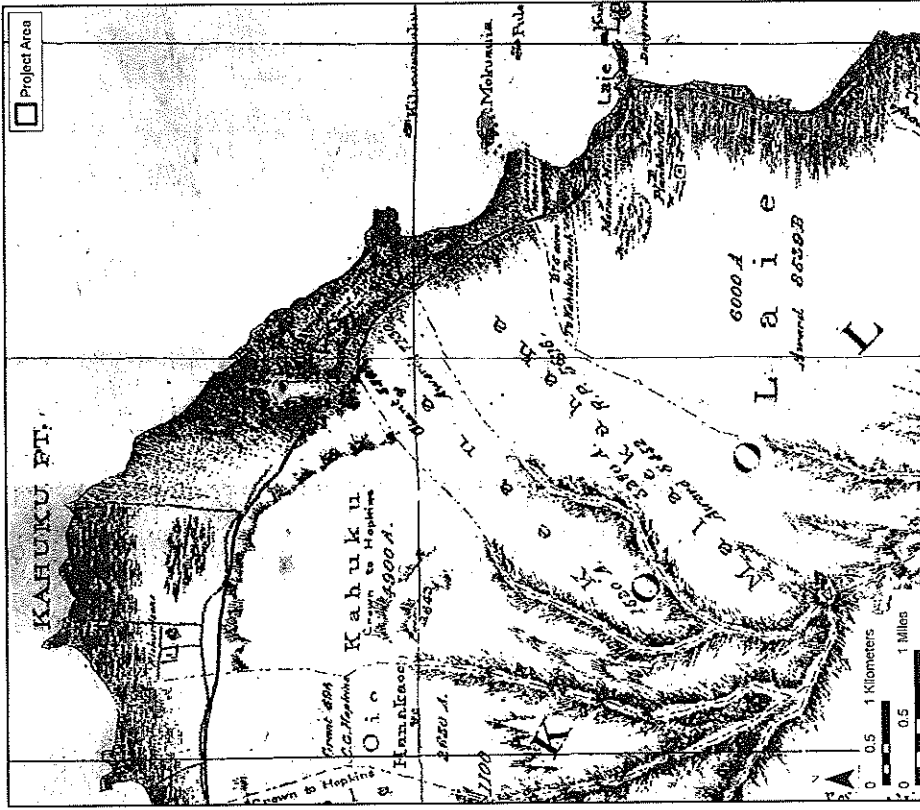


Figure 6. 1881 Hawaiian Government Survey map (portion) of O'ahu, by W. D. Alexander, showing the project area within the ahupua'a of Kahuku, Keana, and Mālaekahana

Archaeological Inventory Survey Plan for Kahuku Village Subdivision Project, Ko'olauloa, O'ahu

TMK: [1] 5-6-002:003, 010, 012, 016, and 027

9

in his manuscript on the sites of O'ahu, often records legendary sites, or features already destroyed before his 1930s survey of the island. Of Pōlou Pond, he states:

Site 271. Polou, formerly a pool of water, sea side of the Kahuku mill.

A story is told that Kahuku was once a land afloat, wafted about by the winds, drifting over the ocean. Just how it came to Oahu is not told, but old Hawaiians point out Polou, the place where Kahuku is fastened to Oahu. Formerly it was possible to dive into the pool and when a depth of 40 fathoms was reached, a shelf of rock was found upon which to rest. Forty fathoms deeper *punakea* (white line from coral) was reached and on looking toward Mālaekahana, the hook by which Kahuku was made fast could be seen. . . . Seaward of the Waialeale Industrial School, in another pool of water (known as Kalou) is the spot where Kahuku is attached to Waialeale. In the immediate vicinity of Polou was a stone known as Kanaloa [McAllister 1933:155].

According to *Geologic Map and Guide of the Island of Oahu, Hawaii* (Stearns 1939), various stands of the sea, one given the name Kahuku and the other Kahipa are visible in the District of Ko'olauloa. In the Kahuku area there exists:

beach limestone of the 55-foot stand of the sea which is overlain unconformably by stream-laid conglomerate which in turn is overlain by reef of the 95-foot stand of the sea and lithified dunes formed during the minus 60-foot stand of the sea (Stearns 1939:32).

It is possible to make a correlation between the Hawaiian legend of the floating island and the two depths found in the pool with the two stands of the sea, making the legend a descriptive explanation for the geology of the lands of Kahuku.

One Hawaiian has placed Pōlou pool in Keana, rather than Kahuku.

It [Kahuku] was a land that moved to and fro and it was Maui who pinned it down again. Polou (Site 271 Keana) and Kalou (Site 257 Waialeale) are deep water holes . . . All of the islands know the tale that Kahuku was an unstable land [Kahiona 1919].

In the legend of Hi'iaka, beloved sister of the volcano goddess Pele, the floating shore of Kahuku is also referenced. As Hi'iaka toured the island of O'ahu with her companions, they left the coast at Mālaekahana and traveled inland through Keana, on a trail later covered by the government road (now Kamehameha Highway) that led to Kahuku.

Hō'ea lākou nei i nā wahine e kapa 'ia nei 'o Lā'iemalo o a me Lā'iewai. Hala ia mau kaola 'āina iā lākou nei, hele ālaila lākou nei ma ia wahine alu, 'o ia ho'i kahi e kapa 'ia nei 'o Mālaekahana, a hō'ea i Kahuka. I ia wā ho'i, ua hele ia 'āina lewa i ke kai a pa ia pono i ka hala [Ho'oulmāhie 2000a:166].

They arrived at the places called Lā'iemalo'o and Lā'iewai. When they had passed the ridged boundaries of those lands, they went on through the next

district, Mālaekahana, and on to Kahuku. At that time, that land known to hover over the sea was held fast and secured in place by the hala [pandanus] trees [Ho'oulmāhie 2006b:155].

On the road, they met a *kupua* (supernatural creature that can change forms) named Lewa, an ancestor of Hi'iaka, who at first did not recognize her relative.

I ka 'ike 'ana mai ho'i o nei wahine iā lākou nei e hele aku ana, 'o ke kahua 'a'ela nō ia o ka 'ena o kona mau maka, pi'i ka inaina a ho'āla ho'i ka huhū, 'a'ole o kana mai. 'Ike ālaila lākou nei i ka wili mai o ka makani i ka lan o ka hala, lele pi'ikāki i 'ō a i 'ane'i, a ke ne'e maila ho'i ka ua i ka moana, i ia wā, . . . [Ho'oulmāhie 2006a:167].

When this woman saw them passing, it kindled a burning rage in her eyes, inspired her wrath, and awakened her boundless anger. They noticed the wind twirling the leaves of the hala trees, making them scatter everywhere as the rain moved in off the sea. . . . [Ho'oulmāhie 2006:157].

Hi'iaka chanted to Lewa, informing her of her association with the goddess Pele. Lewa heard and recognized Hi'iaka, but was at first too ashamed to answer. Hi'iaka chanted once more, asking for a reply, and Lewa finally responded, apologizing to Hi'iaka and stopping the blustery winds and rain. They met Lewa where she was sitting at Kahipa Point. She welcomed her guests and invited them to eat. Hi'iaka assented. Lewa sent her daughters, who could take the form of *kolou* ducks, to fetch food for her guests, including bundles of taro leaves for Hi'iaka. After they had eaten, Hi'iaka proclaimed to Lewa:

"O kou wahine nō kēia me noho ai a kaulana 'oe i kēia wahi. 'O nā ā anane'i o kāna iā, e kaulana ana ia mā ka hea 'ia 'ana 'o Nā Ū o Lewa, a kaulana pū ho'i ka 'āina 'o Kahuku nei, ka 'āina lewa i ke kai. . . .

He mea 'oia'i'o, ua kaulana maoli Nā Ū o Lewa me kēlā kipāpāli e kā iā ma lalo aku o ka hale wili o Kahuku, a ua kaulana nō ho'i 'o Kahuka he 'āina lewa i ke kai. Ua kō maoli kēia mau 'ōlelo a Hi'iaka i hō'ike aku ai iā Lewa [Ho'oulmāhie 2006a:168].

"This is where you will stay, and become well-known here. Those breast-shaped hills of ours will be commemorated in the epithet 'The Breasts of Lewa,' and the land of Kahuku will also be remembered as 'the land that floats on the sea.' . . .

The Breasts of Lewa, near the small cliffs below the Kahuku mill, are actually quite well-known, and Kahuku itself is famed as a "land that floats on the sea" [Ho'oulmāhie 2006b:158].

In this *mo'olelo* (story), there seems to be some play of words, as "*lewa*" can mean "hovering" as in the floating land of Kahuku, and can also mean "pendulous," as in a woman's breasts, as shown in this *mele* (chant) recorded by Emerson (1998:205):

Ka-hiipa, *na waiu olewa*,
Lele ana, ku ka mahiki akea,

^a Said to be the name of a mythological character, now applied to a place in Kahuku where the mountains present the form of two female breasts.

This interpretation is reinforced by the Hawaiian poetical saying "*Kahuku 'aina lewa*," meaning "Kahuku, the unstable land" (Pukui 1983:144-#1319).

The legend also refers to a specific geographic feature, a cave on Kalaeokahipa Ridge, in Kahuku, 2.5 kilometers west of the current project area. McAllister found the cave during his survey of O'ahu in the 1930s.

Site 267. Kalaeokahipa ridge.

The many caves in the porous formation were used as places of burial by the old Hawaiians. On the Waimea side is an overhanging ledge where formerly hung two stalactites from which water continually dripped. They very closely resembled the breasts of a woman, and this was said to be Nawaiuolewa [Lewa], a goddess of the region. Some years ago, a white man removed one of the stalactites, or breasts, according to the story, and the water immediately stopped dripping from the other. Kane and Kanaloa [Hawaiian gods] lived in the vicinity of the ridge; but that was at the time when the Kahuku plain was still under water, and waves lapped about Kalaeokahipa. The brothers are said to have obtained fish by dipping into two holes on opposite sides of a large rock which now lies in the cane field [McAllister 1933:154].

According to Samuel Kamakau, the legends of Lewa again ties into the pond Pōlou, which was probably located in Keana Ahupua'a.

Ua oleleia o Oahu ma ke moolelo a kekehi pou, he aina lewa o Oahu mamua, a hu puka hamama ka acao o Kahuku, nolaila ua kapu ia ka puka o Kahipa a me Nawaiuolewa, a o ka apama i pau i ia o Kahuku, a o na kilou i paa ai ka apama i kapiti ia, o Kilou a me Pōlou . . . [Kamakau, *Ke Au 'Oko 'a*, Oct. 6, 1870].

According to the traditions of some people, Oahu was said to have once been a floating land, *he 'aina lewa o Oahu*. The Kahuku side was a wide open gap (*puka hamama*) and this was called *Ka puka o Kahipa a me Nawaiuolewa*, "The opening of Kahipa and Nawaiuolewa." The piece of land that closed it up was called Kahuku, and the hooks [*kilou*] that made fast the piece of land and joined it to the island were called Kilou and Pōlou [Kamakau 1991:38-39].

Kahipa, Nawaiuolewa (meaning "the breasts of Lewa"), and Pōlou are also connected in a story on the formation of the island of O'ahu. According to Mary Pukui:

The "Hole of Kahipa and Nawaiuolewa" is pointed out today but the story is lost. Kamui, a woman 105 years old, told Mary Pukui that the two were brother and sister. Formerly the island of Oahu was broken into two islands, one ruled by the brother and the other by the sister. In order to make it one, the two sat down and

hooked their fingers together and drew the islands together. The hole marks the place where they sat [Pukui, Note 4, Chap 12 of Kamakau, part II, *Moolelo o Hawaii*, cited in Sterling and Summers 1978:151].

In a study of Hawaiian place names, names, Pukui places this pit or hole at Pōlou:

O'ahu was believed to have consisted of two islands ruled by a brother and sister who locked fingers to pull the islands together. They did this at a pool called Pōlou, perhaps a shortening of Pou-lou (hooked post) [Pukui et al. 1974:67].

2.1.3 Keana Cave

Keana Ahupua'a itself is named for a famous cave, which McAllister found "near the mountain side of the public school, Kahuku." In a chant to the goddess Pele, Nathaniel Emerson (1978:230-232) recorded the phrase *pahu-kapu a ka leo*, or to "proclaim the edict of silence." This edict, or *kānāwai*, belonged to Kānehikii, the god of thunder. Hekili (meaning "thunder") was once a man who had many enemies. When people cursed him, they were killed by lightning. "His enemies therefore plotted in their hearts to kill him and whispered about it in secret. While they whispered, thunder struck. His enemies ceased to plot and to think evil thoughts" (Kamakau 1991:69). Hekili became a *kahu* (guardian) to the thunder aspect of the god Kāne, or Kānehikii. The *kānāwai* of Kānehikii was *kōwanawana* (meaning "to whisper"), that no one could make even a small sound during sacred rites or while in his presence, which was marked by the sound of thunder (Kamakau 1991:22; Pukui and Elbert 1986:127).

He says [the friend] that when he was a boy, his mother, when a thunder-storm arose, would often say to him, "keep silence! That's Kane-hekili." In Kahuku, island of Oahu, at a place not far from the sugar-mill, is a cave, known as Keana. In former times this cave was the home where lived a mother, and her two sons. One day, having occasion to journey to a distance, she left them with this injunction, "if during my absence you hear the sound of thunder, keep still, make no disturbance, don't utter a word. If you do it will be your death." During her absence, there sprang up a violent storm of thunder and lightning, and the young lads made an outcry of alarm. Thereupon a thunderbolt struck them dead, turning their bodies into stone. Two pillar-shaped stones standing at the mouth of the cave are to this day pointed out in confirmation of the truth of this legend [Emerson 1978:233].

McAllister (1933:155) relocated this cave, stating the "rocks stand out prominently; one is much larger than the other and can easily be seen from the school grounds.

2.1.4 The Mullet of Pearl Harbor and Makahoa Point at Mālaekahana

McAllister (1933:155) recorded the remains of a fishing shrine at Makahoa Point at the west end of Mālaekahana Bay (eastern portion of the Kahuku Village project area). At Makahoa Point was a fishpond called Waipunaea, which according to legend was the place where mullet came that traveled all the way from Pearl Harbor. McAllister (1933:155) noted: "To this day schools of mullet come around the island to this northern point of Mālaekahana. They go no farther, and their apparent disappearance still mystifies the Hawaiians."

One version (Formander 1919:270-273) of the migrating mullet concerns a man named Maikoha, who was exiled by his father for breaking several *kapu* (tabus). Maikoha settled in Kaupō, Maui and changed into the first *waike* (paper mulberry) plant. His four sisters, Kaihuopala'ai, Kaihuko'a, Ihukoko, and Kaihuku'una, came in search of him, and found his *piko* (umbilical cord) beneath the *waike* plant. They left their brother in Kaupō and returned to O'ahu, landing first in 'Ewa (near Pearl Harbor) and then traveled along the coast to Wai'anae, Waiālua, and then to Lā'ie. At each of the three places, one sister marries a local man, and a certain type of fish that are accompanying them, also stays in that place. At the first and last stops, Pearl Harbor and Lā'ie, the associated fish are the mullet. At Lā'ie, the last sister marries a man named Lamiloa, which is also the name of the south point of Mālaekahana Bay.

... *hele mai la lakou a hiki ma Oahu.*

Ike aku la o Kaihuopala'ai i ka maikai o Kapapaapuhi, he kane e noho ana ma Honouliuli, ma Ewa. Moe iho la lana, a noho iho la o Kaihuopala'ai i laila a hiki i keia la. Oia kela loko kati e hoopuni ia nei i ka ana, nona na ia he mii loa, a hiki i keia kahanu ana.

A noho o Kaihuopala'ai i laila, hele aku la kona mau hoahanau a hiki ma Wai'anae, moe o Kaihuko'a me Kaena, he kane ia e noho ana i laila. He kanaka maikai loa o Kaena, a he 'i'i no hoi no Wai'anae. Nolaia, noho o Kaihuko'a malaila a hiki i keia ia, oia kela koo ma waho o ka lāe o kaena. A o na ia i hele pu mai me i, oia ka ulua, he kahala, ka mahimahi.

A noho ia i Wai'anae, hele aku kona mau hoahanau a hiki ma Waiālua, loa o Kawailoa ia Ihukoko, he kane ia, a noho iho la me ia. O ka ia i hele pu mai me Ihukoko, o ke aholehole.

A noho ia i laila, hele aku la o Kaihukunna, a hiki i Laie, loa o Laniloa, he kane ia, a noho iho la lana. O ka ia i hele mai me Kaihukunna, he ana, a hiki i keia la.

Translation:

Upon their arrival on O'ahu, Kaihuopala'ai saw a goodly man by the name of Kapapaapuhi [meaning "the eel flats"] who was living at Honouliuli, Ewa; she fell in love with him and they were united, so Kaihuopala'ai has remained in 'Ewa to this day. She was changed into that fish pond [Kapapa'apuhi] in which mullet ['anae] are kept and fattened, and this fish pond is used for that purpose to this day.

When Kaihuopala'ai decided to stay in Ewa, her sisters proceeded on to Wai'anae, where Kaihuko'a decided to make her home and she was married to Kaena, a man who was living at this place, a very handsome man and a chief of Wai'anae. So she remained in Wai'anae and she is there to this day. She changed into that fishing ground directly out from the Kaena Point, and the fishes that came with her were the *ulua* [crevalle], the *kahala* [amberjack], and the *mahimahi* [dolphin fish].

When Kaihuko'a decided to stay in Wai'anae, the remaining sisters continued on to Waiālua, where Kawailoa met Ihukoko. Kawailoa was a single man and as he fell in love with Ihukoko the two were united and they became husband and wife. Ihukoko remained here, and the fish that accompanied her from their home was the *aholehole* [flaigial].

When Ihukoko decided to remain in Waiālua, the sister that was left, Kaihuku'una, continued on her way until she came to Laie where she met Laniloa, a goodly man, and they lived together as husband and wife. The fish that came with her was the mullet and it too remained there to this day [Formander 1919 Vol. V, Part II:270-273].

The name of Maikoha's sister, Kaihu o pala'ai, which means "the nose of Pala'ai" (Pukui et al. 1974:68) is also the name the Hawaiians used for the west loch of Pearl Harbor. Beckwith (1918) says that Kaihuopala'ai changed into the fishpond near Kapapa'apuhi, which means "the eel flats." Kapapa'apuhi is identified on old maps as a point that juts into the loch; early Hawaiian settlement was focused on this area.

Maikoha and his sisters were the children of Hina'aimalama, a goddess of the undersea land of Kahikihonua'kele. "Hina'aimalama" means "Hina feeding on the moon," a name for the waning moon. Hina'aimalama was said to have "turned the moon into food and the stars into fish" (Formander [1919], Vol. V 266). The children of Hina'aimalama and Komikonika, nature gods associated with fertility, were the sons Kaneaukai, Kanehulikoa, Kanemilohai Kaneapua, and Maikoha, and the daughters Kaihuko'a, Ihuauu, Kaihuku'una, and Kaihuopala'ai (Formander 1919, Vol. V, Part II:266-8).

Raphaelson (1925) gives another version of this tale, and explains why the mullet stop at Mālaekahana:

... This is the story of Mālaekahana, the place where the mullet stops. This is the story of the unpractical fisherman who would not heed the wise warning of his practical wife.

But he had spells of genius, that fisherman, in spite of the fact that he was a stubborn, willful man.

"It is ridiculous," his wife had said to him when he had planted great quantities of sweet potatoes." What will you do with them? We cannot eat them; you cannot sell them; they will rot."

But he was stubborn. He gave no heed. And later his wife had a chance to say, "I told you so," which she said again and again, until finally, after a day of quarrelling, she made him promise to take the potatoes over to Pearl Harbor, where perhaps they could be sold. She went with him. But there to their dismay, they found that everyone in Pearl Harbor had plenty of sweet potatoes of their own.

Night came, and the fisherman and his wife bickered and quarreled. She nagged and grumbled all the while cooking a mess of the hated potatoes so that they could have something for supper. But he was angry and refused to eat. So she picked up the potatoes [sic] and, in a fit of temper, threw them into the sea.

Immediately then great schools of fish came crowding toward the shore. The eyes of the fisherman grew big. But he had no net, no way to catch the fish. He had nothing but sweet potatoes.

At last there came the big idea. The fisherman took his sweet potatoes and started back toward Kahana bay. At each inlet, he had his wife cook some of the potatoes and threw them into the sea. It took a long time to get home, but when at last they reached Kahana bay they were followed by great swarms of hungry mullet, which he caught in this net.

This is the explanation that is given of a strange phenomenon that occurs on the island of Oahu. The mullet appear every year, first in Pearl Harbor, then in each successive inlet, around the island until it finally reaches Malaekana [Mālaekahana] bay. Beyond this inlet there is mullet, but it is not the kind that swims from bay to bay.

Why did the fish not stop at Kahana bay? It is not told. It may be that they went on a little way in hopes of more sweet potatoes. No one seems to know.

And after Malaekana? Where does the mullet go from here? That too, no one knows. Unless, as the Hawaiians tell you, there is an underground tunnel through which they swim [Raphaelson 1925].

In a third version (Nakuina 1998:270-272), Ihuopala'ai is the brother of a woman living in Lā'ie. As the fish were scarce in Lā'ie, this woman sent her husband to Ihuopala'ai, who had the mullet follow her husband on his return trip, which was made along the shore around Makapu'u Point with the mullet following in the water. Makea tells me that Kaihuopala'ai's sister was named Mālaekahana.

The home of the anae-holo is at Honouliuli, Pearl Harbor, at a place called Ihuopalaai. They make periodical journeys around to the opposite side of the island, starting from Pu'uloa and going to windward, passing successively Kūmūmanu, Kālihi, Kou, Kalia, Waikiki, Kaalawai and so on, around to the Koolau side, ending at Lā'ie, and then returned by the same course to their starting point. This fish is not caught at Waianae, Kaena, Waialua, Wāimea or Kahuku because they do not run that way, though these places are well supplied with other kinds. The reason given for this is as follows:

Ihuopalaai had a Kū'ua, and this fish-god supplied anae Ihuopalaai's sister took a husband and went and lived with him at Laie, Ko'olaupua. In course of time a day came when there were no fish to be had. In her distress and desire for some

she be-thought herself of her brother, so she sent her husband to Honouliuli to ask Ihuopalaai for a supply, saying: "Go to Ihuopalaai, my brother, and ask him for fish. If he offers you dried fish refuse it by all means, do not take it, because it is such a long distance that you would not be able to carry enough to last us for any length of time."

When her husband arrived at Honouliuli he went to Ihuopalaai and asked him for fish. His brother-in-law gave him several large bundles of dried fish, one of which he could not very well lift, let alone carry a distance. This offer was refused and reply given according to instruction. Ihuopalaai sat thinking for some time and then told him to return home, saying: "You take the road on the Kona side of the island; do not sit, nor sleep on the way till you reach your own house."

The man started as directed and Ihuopalaai asked Kū'ua to send fish for his sister, and while journeying homeward as directed a school of fish was following in the sea, within the breakers. He did not obey fully the words of Ihuopalaai for he became so tired that he sat down on the way, but noticed whenever he did so that the fish rested too. The people seeing the school of fish went and caught them. Of course not knowing that this was his supply he did not realize that the people were taking his fish.

Reaching home he met his wife and told her he had brought no fish but had seen many all the way, and pointed out to her the school of anae-holo which was then resting abreast of their house. She told him it was their supply, sent by Ihuopalaai, his brother-in-law. They fished and got all they desired, whereupon the remainder returned by the same way till they reached Honouliuli where Ihuopalaai was living, and ever afterwards this variety of fish has come and gone the same way every year to this day, commencing sometime in October and ending in March or April.

2.2 Historic Background

2.2.1 Early Historic Period

As a narrow *āhupua'a* adjacent to the larger Kahuku Ahupua'a, the Keana area was often referred to as "Kāhuku." This became even more pronounced in the historic period, when Keana was one of several *āhupua'a* within the Kahuku Ranch and then the Kahuku Agricultural Company. Thus, in the following section, when reference is made to Kahuku, the information concerns not only Kāhuku Ahupua'a, but adjoining *āhupua'a*, including Keana.

The first historical reference to the Kahuku area was recorded in 1779 when the H.M.S. *Resolution* sailed along the north side of O'ahu. Lieutenant James King wrote:

It [O'ahu] is by far the finest island of the whole group. Nothing can exceed the verdure of the hills, the variety of wood and lawn, and the rich cultivated valleys, which the whole face of the country displayed. [McAllister 1933:153]

On February 28, 1779, in the journal of the *Resolution*, now captained by Charles Clerk due to the death of Captain James Cook at Kealahakua Bay on February 14, the following entry was written:

Run round the Noern [Northern] Extreme of the Isle [O'ahu] which terminates in a low point rather projecting [Kahuku Point], off it lay a ledge of rocks extending a full Mile into the Sea, many of them above the surface of the Water: the Country in this neighborhood is exceedingly fine and fertile: here is a large Village, in the midst of it is run up a high pyramid doubtlessly part of a Mori. [Beaglehole 1967:572]

In 1794, British Captain George Vancouver noted:

. . . In every other respect our examination confirmed the remarks of Captain King, excepting, that in point of cultivation or fertility, the country did not appear in so flourishing a state, nor to be so numerously inhabited, as he represented it to have been at that time, occasioned most probably by the constant hostilities that had existed since that period. [Vancouver 1798: Vol. III, 71]

It is likely, based on these early descriptions, that in the thirteen years separating Captain King's voyage from Captain Vancouver's, the environment of northern O'ahu had undergone significant changes. The probable cause for the decrease in cultivation was the decline in population due not only to "the constant hostilities" of the inhabitants, but also to the spread of venereal and other diseases introduced by Cook's expedition in 1778/1779, as well as other visiting ships in the years that followed.

During a circuit (counter-clockwise) of the island of O'ahu to view new schools in 1828, the missionary Levi Chamberlain stopped at a village in Kahuku:

Tuesday Feb. 5th. After breakfast I examined two schools, belonging to Laie & Malaekahana, and was pleased with the appearance of the scholars. At a quarter before 11 A.M., we set out for Kahuku, and after traveling about two hours over a level sandy country, arrived at the school house, where we found 83 scholars assembled, waiting to be examined. . . .

The natives tell a marvelous story respecting the origin of this district [*sic*], which they say floated in from the sea, and attached itself to the ancient shore of the island . . . [Chamberlain 1828]

The fact that Chamberlain did not mention a stop in Keana indicates that the population in this *ahupua'a* was not large enough to warrant the establishment of a schoolhouse. In 1833, E. O. Hall wrote of the Ko'olauloa District, "Much taro land lies waste, because the diminished population of the district does not require its cultivation" (in McAllister 1933:153).

2.2.2 Mid-1800s and the *Māhale*

In 1845, the Board of Commissioners to Quiet Land Titles, also called the Land Commission, was established "for the investigation and final ascertainment or rejection of all claims of private

individuals, whether natives or foreigners, to any landed property" (Chinen 1958:8). This led to the *Māhale*, the division of lands between the king of Hawaii, the *ali'i* (chiefs), and the common people, which introduced the concept of private property into the Hawaiian society. In 1848, Kamehameha III divided the land into four categories: certain lands to be reserved for himself and the royal house were known as Crown Lands; lands set aside to generate revenue for the government were known as Government Lands; lands claimed by *ali'i* and their *konohiki* (supervisors) were called Konohiki Lands; and habitation and agricultural plots claimed by the common people were called *kuleana* (Chinen 1958:8-15).

The entire *ahupua'a* of Keana was awarded to Kinimaka, a *konohiki* (overseer) and a court favorite of Kamehameha III. He was a *mahaiā hānai* (adopted parent) to David Kalākaua, sixth king of Hawai'i. Kinimaka retained one-half of the *ahupua'a*, giving back the other half to pay his commutation fees for the properties that he retained. This second half became part of the government lands. From old maps, it is evident that much of the coastal land of Keana was swamp or sand with exposed outcrop areas. The inland area of Keana is labeled as Kea'auu Gulch, but a year-round stream is not shown. E. Craighill Handy toured O'ahu in the 1940s with his informant, Kaleo, to record the remaining traditional agricultural fields of the island. In Keana, he states only that there "are said to have been no [taro] terraces up this stream, and Kaleo knows of none on the level land below.

In another study, Handy and Handy (1972:462) note of Malaekahana and Keana:

These two small *ahupua'a* intervening between La'ie and Kahuku (the northernmost tip of Oahu) show much the same pattern, in miniature, of dune coasts, elevated coral, and broken level land seaward from the hills. Each has a small stream. There were formerly some irrigated terraces in Malaekahana (Way-clear-for-work), but not in Keana (The-cave).

This may explain the paucity of Land Commission Awards in the waihona 'āina database (waihona.com). Only nine lots in Keana were claimed, and only 8 lots were awarded, including the *konohiki* award to Kinimaka, LCA 7130 (shown in Figure 7 and summarized in Table 1; text in full in Appendices A and B). It is possible that there were more awards. In two instances, awards are listed as within Keana, an *'ili* (smaller land division) of Kahuku. At this time, Keana had been generally subsumed into its larger neighbor to the west. It is possible that there were additional claims in Keana, but that they are listed as in the *ahupua'a* of Kahuku, with the *'ili* name not stated. In two awards (4329B and 4391), one lot in Keana is a housetop, with additional small garden areas in Keana and nearby *ahupua'a*.

The most striking aspect of these awards is the number of small parcels with one or more crops or resources. The parcels are not adjacent but *lele* ("jump") to other *'ili* and *ahupua'a*. This is probably an indication of the scarce resources; to collect all the necessities of life, the occupants of the coast had to collect the resources in a number of areas and *ahupua'a*. For LCA 4329 in La'ie, the claimant states "Because these claims of mine are so very scattered it is not practical to tell you, the Commissioners, of their boundaries." Presented below are the testimony for some of these lands

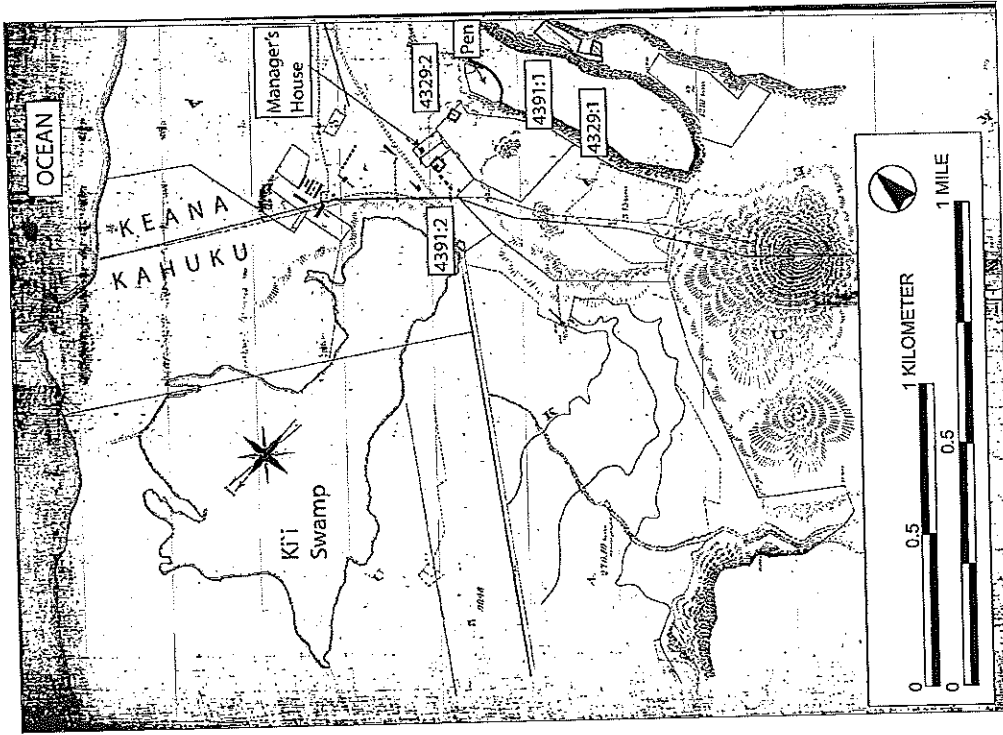


Figure 7. 1890 map of Kahuku Sugar Plantation by A. B. Loebenstein (Sheet 2 of 2); LCA 4391:2 and 4329:2 are the only two *kuleana* houselots claimed in Keana Ahupua'a

Table 1. Land Commission Awards in Keana Ahupua'a

LCA	Claimant	Ahupua'a	Land Use for Keana lots
2704	Hau	Kahuku, Keana	1 <i>wiliwili</i> tree
2729	Polena	Kahuku, Keana	2 <i>awa</i> gardens, 1 breadfruit garden, one <i>'ohi'a</i> garden
2732	Pukawale	Kahuku, Keana	2 <i>waike</i> gardens, 2 <i>koa</i> canoe trees
2785	Makakiekie	Kahuku, Keana	1 <i>awa</i> , five <i>koa</i> canoe trees
2931	Keaweieki	Kahuku	1 <i>malia</i> [garden] of <i>awa</i>
3712	Moku	Keana, Mālaekahana, Lā'ie, Kahuku	1 houselot in Keana; this claim was not awarded to Moku, but was claimed by the <i>konohiki</i>
4329 B	Kuapuhi	Keana, Mālaekahana, Kahuku	3 <i>'ili</i> [land] of sweet potato, one houselot in the <i>'ili</i> of Kamikaa, Keana
4391	Kala-waiamanu	Keana	3 <i>'ili waiwau</i> [herbs?], 1 <i>'ili</i> of sweet potatoes, 1 <i>'ili</i> of <i>waike</i> ; 1 houselot in <i>'ili</i> of Louana, Keana
7130	Kinimaka	Keana	<i>Konohiki</i> award; land use not given

In three of the awards, the claim for land in Keana consists of one or two gardens (*māla* or *'ili*) of *awa*. In five awards, the claim is for some type of tree, breadfruit, *koa*, *waike*, *wiliwili*, or *'ohi'a*. *Awa* grows best in wet areas with little direct sunlight. It was often planted or collected by Hawaiians just below the border of the lower forest zone, along streams, or at the base of wet escarpments (Handy and Handy 1972:192). In these six claims, the main houselots and taro lands are in Kahuku; the owners probably traveled to the uplands of Keana to gather forest resources, including *awa* planted under the shade of the trees. Only two of the awards claim gardens of sweet potatoes. These are the two coastal lots (LCA 4329B and 4391), which have 1 garden lot and 1 houselot within Keana Ahupua'a (see Figure 7).

In any case, the number of awards emphasizes that this area, part of the "Kahuku Plain" was not densely inhabited or used for irrigated fields by the mid-nineteenth century. None of these awards are within the project area, although the two Keana houselots (and nearby garden lots) on the *mauka* side of Kamehameha Highway are within 0.1 to 0.5 kilometers of the southern boundary of the project area.

2.2.3 Ranching in Kahuku: 1850-1880

From 1850 to 1851, Charles Gordon Hopkins purchased from Kamehameha III the *ahupua'a* of Kahuku, and several other *ahupua'a*, including the government land of one-half of Keana, on the north shore of O'ahu, shown on an 1851 map of Hopkins's Keana land (Figure 8). Hopkins then established an 8,000-acre cattle and sheep ranch known as the Kahuku Ranch (Korn 1958:211-212). It is also to be noted that in 1851 Hopkins became the agent for the rental and sale of the Crown Lands of Kamehameha III.

Lacking walls and fences to contain the vast herds of cattle and flocks of sheep, the animals trampled the small scattered homesteads and stripped the land of native vegetation. The

Hawaiians asked in vain for protection of their trees and vegetable patches. They wrote to the missionary, Emerson, who urged them to build fences and appealed to authorities on their behalf asking that government pounds be set up to enforce newly established trespass laws. As the *halia* [pandanus] forests began to disappear, the native Hawaiian population also began to disappear. Government censuses of the second half of the nineteenth century recorded the declining Hawaiian population in the Ko'olauloa District. A total population of 1,345 was recorded in the district in 1853. By 1860, the total had dropped to 1,187 and reached a low of 1,082 in 1878 (Schmitt 1977:12). Once well-populated, Kahuku became a lonely sheep and cattle ranch, famous for its prized English breeds and imported water fowl (Wilcox 1996:16).

According to Mrs. John Kaleo, an informant of J.G. McAllister in the 1930s:

She [Mrs. John Kaleo] remembers the time when trees, now found only on the mountains, covered the Kahuku plain, now a rather desolate, windswept area [McAllister 1933:153].

One can surmise that Mrs. John Kaleo could remember the Kahuku plain before and during the depletion of its vegetation due to the over-grazing of the sheep and cattle of the Kahuku Ranch. The relationship between cattle and the natural environment of Hawai'i has been described by William A. Bryan:

Since the coming of the whites there have been many causes . . . that have been at work bringing about a change in the natural conditions. Chief among the disturbing elements, however, have been the cattle. As early as 1815 they were recognized as a serious menace to the native forests. Roaming at will through the forests they and other animals, as goats and pigs, have done untold damage, and brought about conditions that have been most serious in many places . . . [Bryan 1915:226-227]

During the mid-nineteenth century, road construction connected Kahuku with the city of Honolulu.

On Oahu, what came to be called the "round-the-island road" - ancestor of Kamehameha Highway - extended from Honolulu to Ewa, thence across the central plateau to Waialua: from that place it ran along the coast past Kahuku and Kualoa to Kaneohe, where it joined the road which came over the Nuuanu pali [cliff] from Honolulu. In 1856, for the first time, a four-wheeled carriage drawn by a pair of horses was driven over the portion of this road between Honolulu and Kahuku. Three years later a Captain Coffin is reported to have driven with a carriage and span of horses from Honolulu to Kahuku one day in ten hours and to have returned the following day in eight hours. [Kuykendall 1953:25]

In 1866, the Kahuku Ranch was purchased from Hopkins by an Irish cattleman, Robert Moffitt. His pastures, used for cattle, sheep, and imported waterfowl, extended along 12 miles of the coast from the sea to the mountains. The foreign livestock quickly decimated the native *halia* forests and overran the gardens of the native tenants. By 1873, Judge H.A. Widemann had gained control and ownership of the entire Kahuku Ranch, which by then included the *ahupua'a* of Kaunala, Pahipahi'ātua, 'Ōpana 1 & 2, Kawela, Hanakaone, 'Ōio 1 & 2, Ulupelupelu,

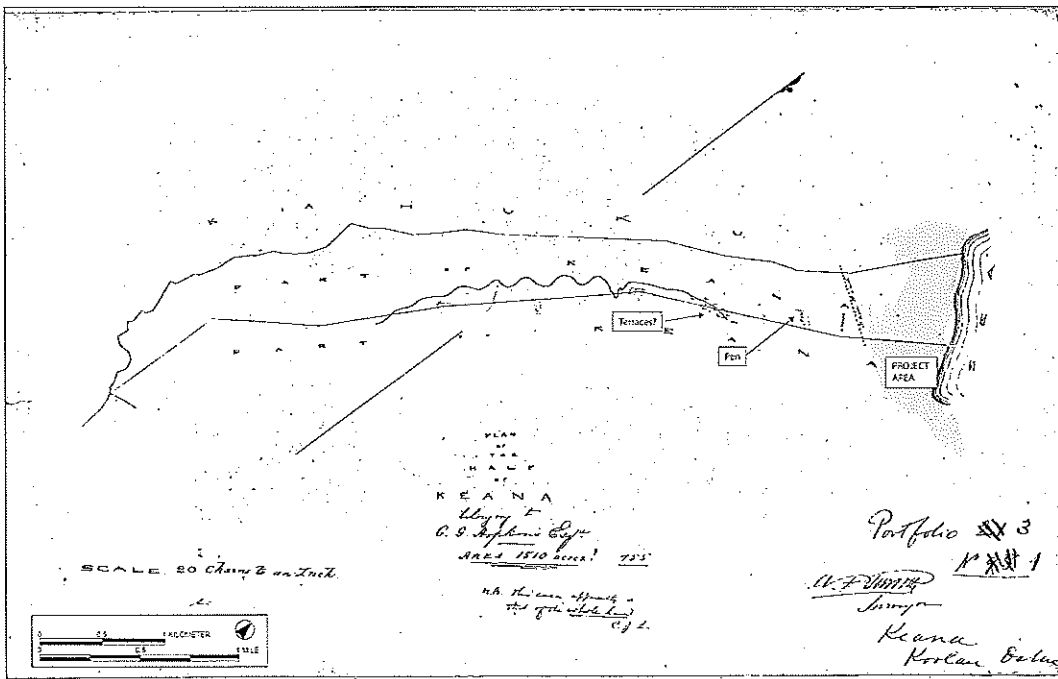


Figure 8. 1851 Map of "Half of KEANA belonging to C. G. Hopkins, Esq.," note area labeled "Pen," probably a cattle pen and a cluster of L-shaped icons along the stream, possibly old terraces

Punalau, Kahuku, Mālaekahana, Keana, and a part of Lā'ie, totaling about 15,000 acres (Kuykendall 1967:138). On January 19, 1874, Widemann sold the land, then known as the Kahuku and Mālaekahana Ranch to Julius L. Richardson, who in turn sold the entire 15,000-acre ranch to James Campbell in 1876 (Thayer 1934:138).

In 1889, George Bowser described the Kahuku Ranch as follows:

Kahuku Ranch. Main Road, Kahuku: Proprietor, James Campbell, Esq., of Honolulu; Manager, W.R. Buchanan: postoffice address, Kahuku, 38 miles from Honolulu, at the northern point of Oahu; 23,608 acres occupied as a cattle ranch; extends 14 miles along the coast, in close proximity to the sea. A valuable fishery is attached to this property [Bowser 1880:409].

Although sugar cultivation would subsequently become the major industry at Kahuku, the Kahuku Ranch continued operations until the mid-twentieth century.

2.2.4 Sugar and the Railroad at Kahuku: 1890-1971

On November 19, 1889, James Campbell leased much of his Kahuku and Honolulu lands to Benjamin Franklin Dillingham (Kuykendall 1967:69). This lease of 50 years was a part of Dillingham's development plan involving the sugar industry and a railroad on O'ahu (Kuykendall 1967:68).

In 1886, Dillingham's proposed plan, called the "Great Land Colonization Scheme," involved the development at Kahuku and Honolulu of sugar cane plantations that would be irrigated by artesian well water (Dillingham 1886:73-80).

Dillingham had commissioned a study of water supply at Kahuku by J.D. Schuyler and G.F. Allardt. This study noted:

The Kahuku Rancho. This well-known rancho occupies the extreme northerly point of the island, extending from the crest of the mountains to the sea, and from Waimea river on the west to Laie on the east. It is thirty-eight miles distant from Honolulu, either by the Waialua or the Pali road. Its position on the windward side, with high mountains rearing up rapidly from the level of the belt of valley land along the coast, gives it abundant moisture and clothes it in perpetual verdure. Cattle roaming over its hills and valleys are all fat and sleek, and water is bursting out in places all along the coast, generally near the foot of the hills, or about midway between the foot-hills and the ocean.

... The general level of the land is about twenty feet above tide. [Schuyler & Allardt 1889:3]

On December 10, 1889, Dillingham subleased a large portion of the Kahuku tract to James B. Castle who promoted the Kahuku Plantation Company, and chartered it on January 30, 1890 from the Hawaiian government to cultivate sugar cane (Kuykendall 1967:69). Kahuku Plantation planted 2,800 acres in sugar cane and harvested its first crop in 1892. James Campbell, Benjamin

F. Dillingham and James B. Castle, together with Lorrin A. Thurston, as a principal, and the M.S. Grinbaum & Company as plantation agents, were the key players in the development of the Kahuku Plantation. Dillingham's interest was prompted by his desire to promote and enhance his Oahu Railway & Land Company (O.R. & L.). The Kahuku Plantation first relied on pumped spring water, stream water, and rain to irrigate the sugar cane, but later resorted to artesian wells as its main source of water supply.

In the first nine years of the plantation, transportation to Honolulu from Kahuku was provided by coastal vessels, which picked up the sugar at Kahuku Landing and shipped it to Honolulu. In 1890, five miles of 36-inch gauge railway, with some portable portions, were laid to haul cane from the sugar cane fields to the mill.

The Baldwin Locomotive Works records note an order for the first Kahuku motive power, *Keana*, on February 2, 1890 and a second order for *Kahuka* in 1891. The first annual report for the Kahuku Plantation Co. from September 1, 1893 until August 31, 1894, recorded an expense of \$3,596.40 for railway materials and an expenditure of \$2,765.59 for labor costs for the same. In 1899, the Oahu Railway finally completed its track to the terminal at Kahuku, and the sugar could be transported directly to Honolulu by train around the west side of the island (Conde and Best 1972:300). The tracks around the sugar mill are shown on a 1919 War Department map (Figure 9).

In 1902, Alexander and Baldwin became the agent for Kahuku Plantation. Kahuku Plantation had remained relatively small, with less than 4,000 acres under cultivation until the early 1900s, when it expanded to the southeast as far as Hau'ula. A map of the Kahuku Plantation c. 1920s (Figure 10), shows the extent of plantation fields. Plantation fields appear to be confined to areas *manuka* of the O.R. & L., with the lands *makai* of the railroad, labeled as "Swamp," "Recreation Area" or "Camp." A note of interest on this map is the marking of a rectangle at the west end of the project area, labeled "Wireless Station." This is the same area that by 1919 (see Figure 9), is denoted by a cross, the symbol for a cemetery. By 1935, the plantation had 4,490 acres under cultivation with 1,137 workers. The cemetery was established for the Japanese and Chinese workers at the plantation. It was greatly damaged during the 1946 tsunami that swept the coast; the waves knocked over the headstones and eroded the beach *makai* of the cemetery (Char and Char 1988:118).

In 1916, the Kahuku Plantation leased some of its land for pineapple cultivation to one large grower (C. Okayama) and other individual growers and small pieces of land. The growers were obligated to sell their crop to the Hawaiian Pineapple Co., Libby, McNeill & Libby of Honolulu, and the California Packing Corporation (which later became the Del Monte Corp.). In Keana, these lands were generally above 200 ft (60) AMSL in elevation, or at least 1.5 kilometers *manuka* of the current project area. Pineapples seem to be the only other major crop for Keana in this period. Unlike other swampy areas of Ko'olaupua coast, the coastal areas of Keana and Kahuku were not suited for rice cultivation due to the brackish water (Char and Char 1988:118).

The Kahuku Plantation Co. expanded by buying or incorporating other sugar plantation lands. In 1925, it bought the fields of the Koolau Agricultural Co. as far south as Kahana Bay. In 1931, the Lā'ie Plantation corporation was dissolved and their sugar lands, totally 2,700 acres, were purchased and added to the Kahuku Plantation (Dorrance and Morgan 2000:46-47).

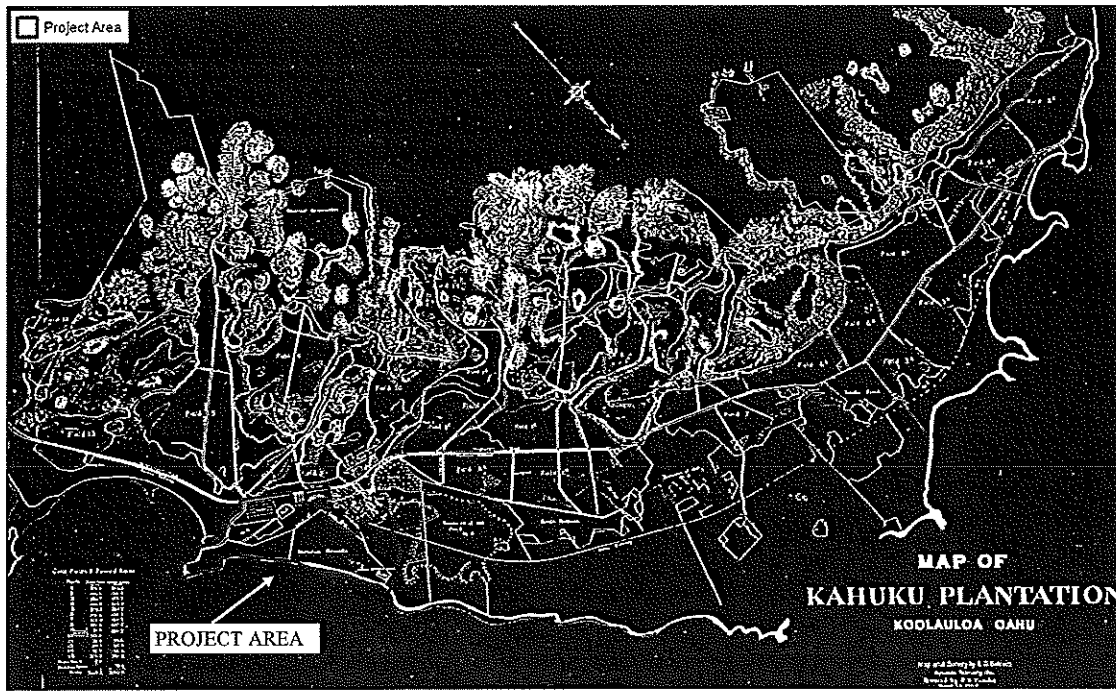


Figure 10. Kahuku Plantation, circa 1920s, showing topography and numbered fields; note that the project area is not planted in sugar cane; the major portion of the project area is labeled “Recreation Area”

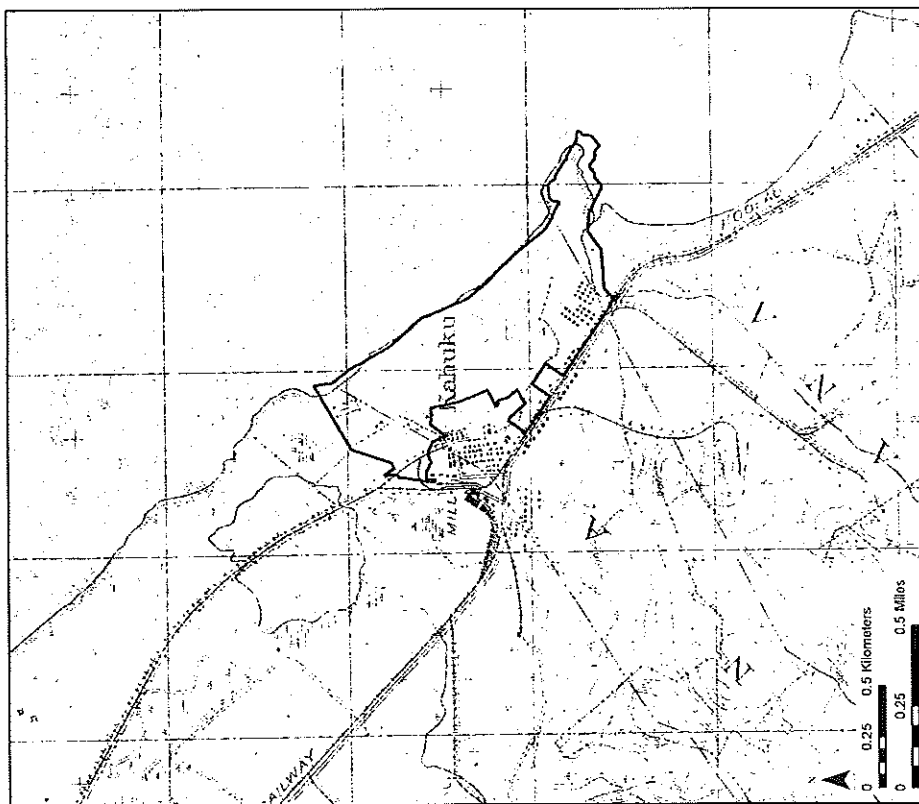


Figure 9. 1919 War Department map, showing project area; map shows the location of the Japanese Cemetery and the railroad track within the northwest corner

By the early 1930s, many Japanese and Filipinos, some Portuguese and a few Korean and Chinese were working the Kahuku cane fields, accepting the paternalistic plantation life where pay was low but supplemented by a system of bonuses plus housing, water, fuel, and medical care, even recreational facilities were provided at low cost or free. By 1935 the plantation had 4,490 acres under cultivation with 1,137 workers. In the mid 1930s, the workers lived in seven camps, known as Main Village (265 dwellings), New Camp (39 dwellings) Camp 2 (17 dwellings), Camp 3 (16 dwellings), Camp 5 (16 dwellings), Hau'ula Camp, and Lā'ie Camp (Dorrance 1998:121). By the 1930s, the village area had tennis courts, pool tables, libraries, churches and temples, banks, a movie theater, and equipment for various sports such as volleyball, boxing, baseball, football, and basketball (Gilmore 1931-32:98). From the 1930s on, Kahuku Plantation was known as a progressive company, which usually took good care of its workers. The manager during the depression was Tom Walker, who tried to keep on the entire workforce and provide recreational facilities for the workers, such as the tennis courts and a golf course.

In the 1960s, the company had been losing money on the plantation for the last few years. In 1968, A & B announced the closing of the plantation and the mill. The last crop was harvested in 1968, the last cane was ground at the mill on November 25, 1971, and the final paperwork was completed on February 1972, when the mill was locked to prevent vandalism (Wilcox 1975:37).

In 1936, a new lease agreement had been signed with the Campbell Estate; the new lease ran until 1983. This lease agreement became important when A & B decided to close the mill in 1971. It allowed the residents to remain in plantation housing until 1983. When the lease on these lands expired, residents were given the opportunity to buy their own homes (*Amperсанд* 1985:25).

The old residents commuted to work in Honolulu, worked for nearby hotels, or went into diversified agriculture, growing such crops as watermelon, papaya, bananas, eggplant, bell pepper and corn. Others worked with aquaculture, raising freshwater and saltwater shrimp.

2.2.5 World War II and the Military in Keana

It was during the attack on Pearl Harbor on December 7, 1941 that the Kahuku Golf Course was first used as an emergency landing field. On December 6, twelve B-17s had left California on route to the Philippines, with a stopover for refueling at O'ahu. They flew into O'ahu completely unaware of the Japanese attack and had to quickly dodge strafing by the Japanese Zeros. Amazingly, they all managed to make emergency landings, seven at Hickam Air Field, one at Wheeler Airfield, one at Bellows Airfield, one at the tiny Hale'iwa Airport, and one on the grass and sand surface of the Kahuku Golf Course (Kimmitt and Regis 1992:64; Slackman 1991:151-152). The Army Air Force on O'ahu had planned to build an emergency strip at the golf course, but it had not been completed by the time of Pearl Harbor attack (Arakaka and Kuborn 1991:75).

During World War II, the golf course may have been graded for an emergency airfield. On a 1943 U.S. Geological Survey map (Figure 11), three airfields are shown at the north tip of O'ahu, one at Kahuku Point, one labeled "Kahuku Golf Course" and one labeled "Kahuku Village." These seem to be misnamed, as the field labeled Kahuku Golf Course is near

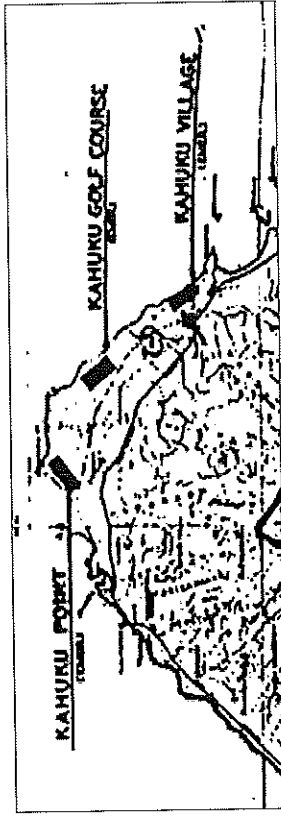


Figure 11. 1943 War Department Map, showing three airfields on the north coast of O'ahu

Punamānō Swamp, northwest of the project area. The field labeled "Kahuku Village" would be within the current golf course and the project area. All three of the Kahuku airfields were titled "Emergency Fields," with single runways parallel to the shore. The Kahuku Point Airfield and the Kahuku Golf Course Landing Strip eventually had long paved runways and adjacent structures. The Kahuku Village landing strip may have been a simple landing strip; portions of a WWII-era blacktop sections have been incorporated into a golf course utility road. On a 1945 map only the two northern fields are shown, and by the end of the war, only the Kahuku Point Airfield was still depicted on USGS maps. After World War II, the Kahuku Point airfield briefly became a civilian airport and a raceway. Eventually both northern airfields were covered with the Turtle Bay Resort Golf Course (Freeman 2006; Trojan 2008).

2.2.6 Modern Land Use

The Kahuku Municipal Golf Course was built in 1937 for the workers of the Kahuku Sugar Plantation. In 1952 the City and County of Hawai'i took over the operation of the course. A series of War Department and U.S. Geological Survey maps show the development of the project area over time. On the 1919 War Department map (see 9), a rudimentary road leading to a worker's camp is shown in the southeast corner of the project area. The Japanese cemetery in the northeast corner is marked by a cross within a rectangle. In the 1929-1930 USGS map (Figure 12), two cemeteries, the Japanese cemetery in the northeast corner and the Catholic cemetery in the central portion of the project area are shown. The worker's camp now has improved roads, other roads and trails are shown extending through the project area are shown on this map. The 1943 War Department map (Figure 13) has a mark labeled "Wireless Pole." Although the Kahuku Golf Course was built in 1937, it is not labeled on the 1943 map. On the USGS 1954 map (Figure 14), the golf course is clearly labeled, along with Adams Field. Both of these areas can be seen on a 1978 aerial photograph of the area (Figure 15).

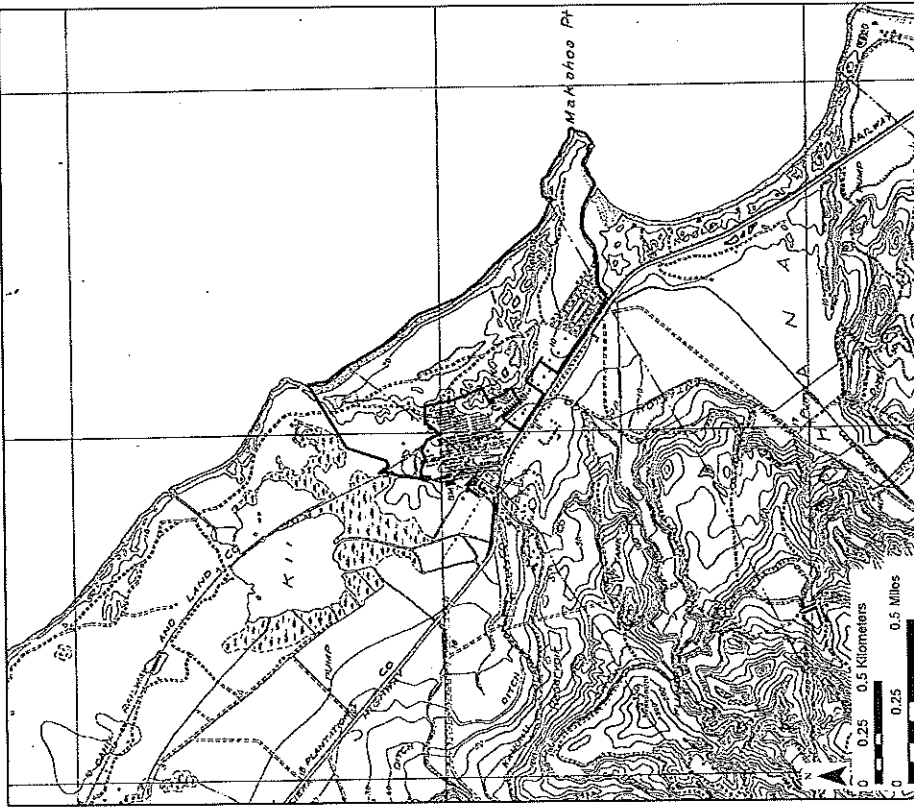


Figure 12. 1929-1930 U.S. Geological Survey map, Kahana Quad, showing project area, map shows the location of Japanese Cemetery and the Catholic Cemetery

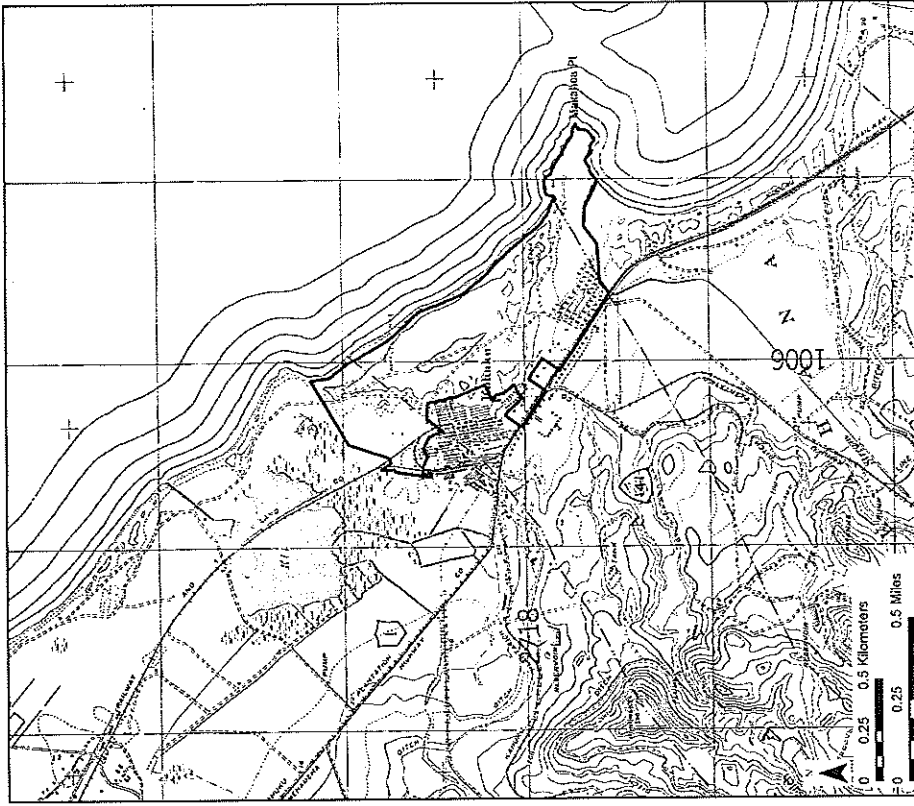


Figure 13. 1943 War Department map, showing project area, map shows two cemeteries and "Wireless Pole"

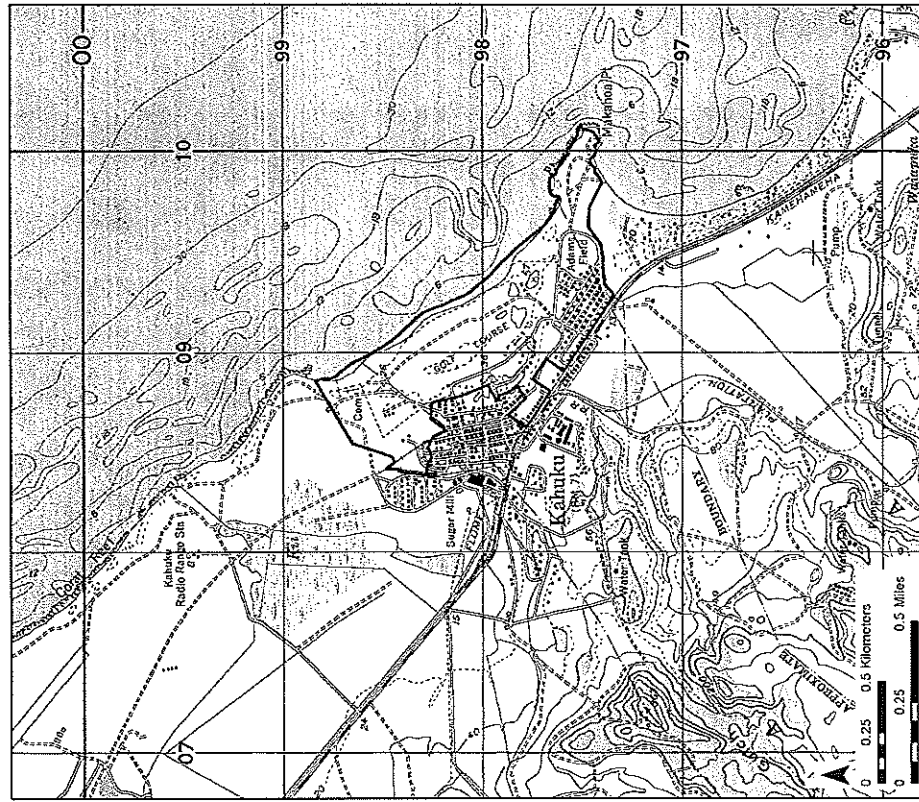


Figure 14. 1954 Army Map Service map

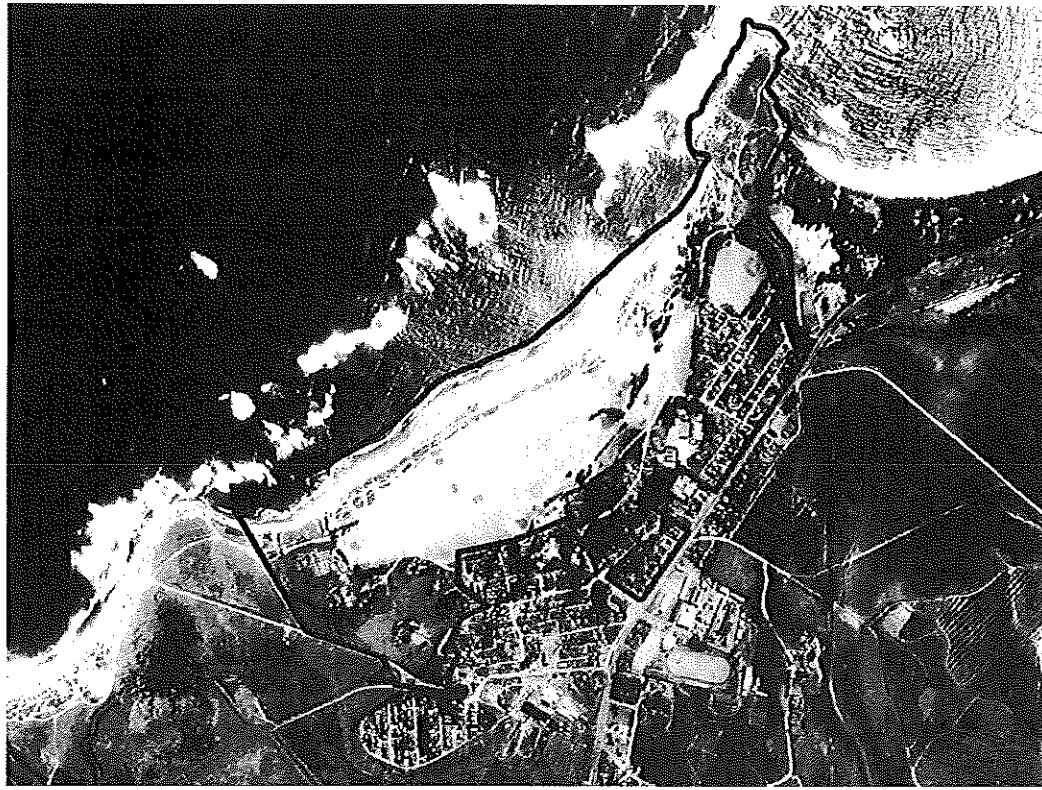


Figure 15. 1978 Aerial Photograph

Section 3 Previous Archaeological Research

Little archaeological work has been conducted in Keana Ahupua'a or along the eastern shores of Kahuku. This previous archaeological research section will focus on projects conducted on Makahoa Point in Mālaekahana, the entire *ahupua'a* of Keana, and the coastal sections of Kahuku and Keana from Kaleuila Point east to Makahoa Point. Table 2 summarizes the previous archaeological projects (in order of date of report) and their findings; project locations and site locations are shown on Figure 16.

Table 2. Previous Archaeological Work in Keana, eastern Kahuku, and Makahoa Point

Author/Date	Project Location	Findings (SIHP Site 50-80-06-)
McAllister 1933	In Kahuku near Keana boundary, <i>manika</i> of hwy.	Site -268. Ka'auhelemaoa Fishpond
McAllister 1933	<i>Manika</i> of hwy. near Kahuku Elementary, Keana	Site 269. Platform near Keana Cave-possible <i>heiau</i> (temple) Site 270. Keana Cave-possible burial cave Site 271. Pōlou Pool Site 272. Fishing shrine
McAllister 1933	Makahoa Point, Mālaekahana	Petroglyph on beach boulder; text states that the boulder is in Keana, but the site location map shows the boulder in Kahuku
Cox 1970	Kahuku or Keana coast	Relocated sites 269 and 270; "sacred way"; burial cave; 1945 grave
Clark 1978	Ko'olauloa Housing Project and Park Expansion, Keana and Kahuku	Sites 1425-1429 – walls, mounds, a cave, and a depression; probably all associated with sugar cane cultivation in the area
Barrera 1979	Ko'olauloa Housing Project Keana and Kahuku	Relocated sites 269 and 270; recorded Sites 2478 (overhang) and 2479 (modified outcrop)
Schilt 1979	Kahuku School Expansion, Keana	Three areas with surface artifacts/midden within Kahuku Ahupua'a
Barrera 1981	Kahuku Agricultural Park, Keana and Kahuku	No sites recorded
Sinoto 1981	Ki'i Wetland Refuge, Kahuku	No sites recorded during brief reconnaissance
Hammett & Pfeiffer 1982	Kahuku Agricultural Park, Kahuku and Keana	Flagging perimeters of Sites 269 and 270
Sinoto 1986	Kahuku School Expansion, Keana	Site 4111; inadvertent burial find on Kahuku coast
Bath 1989	Kahuku Coast	No sites recorded
Kennedy 1989	TMK 5-6-002:025 parcel, Kahuku	No sites recorded

Author/Date	Project Location	Findings (SIHP Site 50-80-06-)
Kennedy 1990	Kahuku Sand Mining Project (<i>makai</i> of hwy.), Keana	No sites recorded
Komori 1992	Kahuku Coast	Site 4518; inadvertent burial find on Kahuku coast; possible cultural layer
Sinde et al. 1993	Kahuku Agricultural Park Survey Areas 2 and 3 (Kahuku Ahupua'a)	Sites 4510 to 4516; five temporary habitation sites with overhang shelters, enclosures, and terraces and one permanent habitation complex (Site 4513); a burial was found during subsurface testing at an overhang at Site 4515
Dagher 1993; Jourdain 1994b	Makahoa Point, Mālaekahana coast	No SIHP number; inadvertent bone find on Makahoa Point
Jourdain 1994a	Kahuku Golf Course near Japanese Cemetery, Kahuku	No SIHP number; inadvertent find of human femur near Japanese cemetery
SHPD 1996	Kahuku Golf Course near Japanese Cemetery, Kahuku	No SIHP number; inadvertent bone find near Japanese Cemetery
Collins 1999	Kahuku Golf Course, Keana	Site 5773; inadvertent burial find near utility road
Perzinski/Hammatt 2001	Detour roads near Kamehameha Hwy., Kahuku	No sites recorded
Calis/Tome 2002	Force Main Sewer, <i>makai</i> of hwy., Kahuku	No sites recorded.
O'Hare et al. 2004	Kahuku Mill Complex, Kahuku	Documentation and photographs of remaining infrastructure

3.1 Early Archaeological Surveys

The first systematic archaeological study of the Kahuku area was conducted by J. Gilbert McAllister of the Bernice P. Bishop Museum (BPBM) in the 1930s. McAllister (1933) consulted with knowledgeable informants about both physical and legendary sites of each district during his island-wide survey of O'ahu in the 1930s. Four sites were recorded within or near the project area.

Site 268. Kaahelemaoa Fishpond. Old fishpond known by the name of its guardian (*mo'o*), Kaahelemaoa, one located on the Waimea site of Kahuku.

Kaahelemaoa was half man and half chicken, a being of supernatural power who could change himself at will into a man or a chicken. The pond is said to have

been fed by a spring. The area has now been turned into cane [McAllister 1933:152].

Sterling and Summers (1978, Ko'olaupua map) locate this fishpond within Kahuku Ahupua'a, *manuka* of Kamehameha Highway, less than a fourth of a mile from the Kahuku/Keana boundary.

Site 269 is a platform, *manuka* side of Kamehameha Highway in Keana on an elevation near Keana Cave (Site 270).

A rectangular platform measuring 16.5 by 10 feet with the long side facing due north. The sea side is from 3.5 to 4 feet high, and the mountain side averages around 3 feet. It is a solid mass of flat coral slabs. Around the base the stones are standing on end to a height of about 1.5 feet. Above this the stones are placed horizontally, one on top of the other. This platform has been there for many years. The exposed surfaces of the stones are weathered and old-looking. Mrs. Barker remembers that around 1900 it was considered an old Hawaiian altar. Jerry Fisher, who drew my attention to the site, says that it is known as a heiau among Europeans. None of the Hawaiians who drove about with me to point out places of interest mentioned this site. It is unlike any Hawaiian platform that I have seen, as it is exceptionally high and has a combination of stones placed vertically and horizontally. Stones are usually either placed vertically, joining what is called an *umu*, or horizontally, forming a fishing shrine (*ko'a*). If it were closer to the sea, there would be little hesitation in saying that it was probably a fisherman's altar. It is at least three-quarters of a mile from the shore in a direct line [McAllister 1933:154-155].

Site 270 is Keana Cave, which is associated with the two boys turned to two stones during a thunderstone (see Report Section 2.1). When McAllister (1933:155) visited the site, he noted that the cave was "near the mountain side of the public school, Kahuku" and that the two stones could be seen from the school grounds.

Site 271 is Poiou Pool. McAllister relates the legend associated with this pool (see Report Section 2.1) and says that it was "formerly a pool of water, sea side of the Kahuku mill." This makes it evident that McAllister did not locate the pool during his survey, but was only told about it.

Site 272 is a fishing shrine on Makahoa Point. McAllister (1933:155) described it as:

Site 272. A few rocks at Makahoa, all that remain of a fishing shrine (*ko'a*) which was on the point. The fish brought here were the *oio*. Formerly a fishpond was located near the point and was known as Waipunea. There are traditions about the mullet coming to this point from Pearl Harbor.

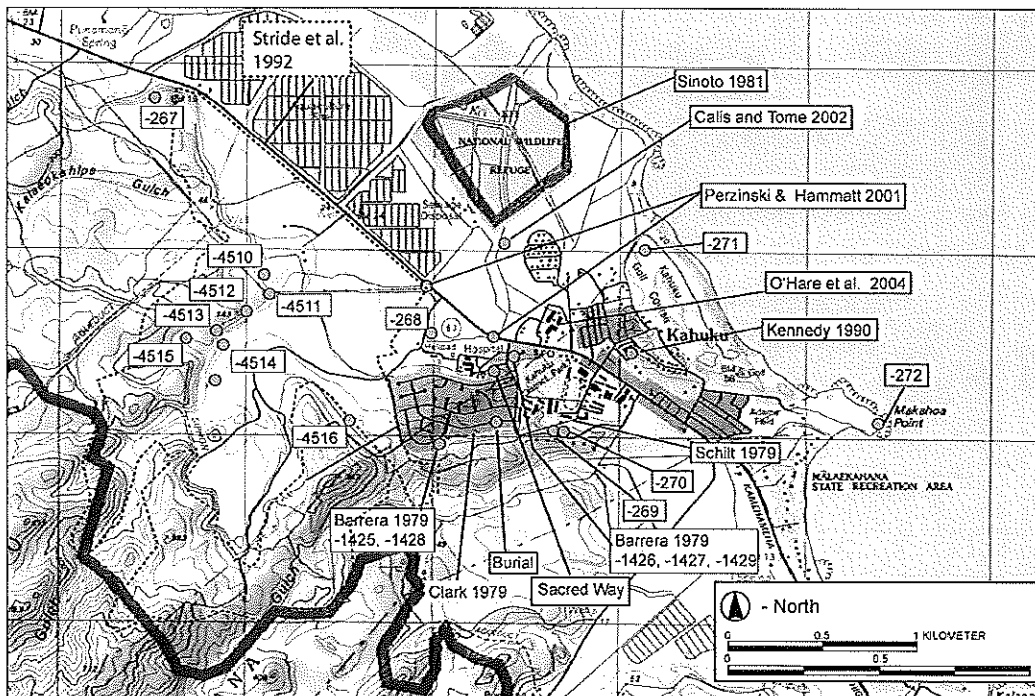


Figure 16. U.S. Geological Survey map, Kahuku Quadrangle, showing previous archaeological work in western Kahuku, Keana (shaded in pink), and Makahoa Point of Mālaekahana

3.2 Modern Archaeological Surveys

3.2.1 Ko'olaupua Housing Project, Kahuku Elementary School, Kahuku District Park

In 1978, archaeologists (Clark 1978) from the Kualoa Archaeological Research Project (City and County of Honolulu), made a preliminary reconnaissance survey of the Ko'olaupua Housing Project area (49.9 acres) and the Park Expansion area (7.4 acres). The Park Expansion Area is comprised of two parcels later developed into the Kahuku Elementary School and the Kahuku District Park. Only sites known to local residents were visited.

In the housing area, the informants took the archaeologists to a spot called a "sacred way." This spot is not marked by any rock alignments or other surface features and its exact use is unknown.

In the School expansion area was SHP (State Inventory of Historic Places) #50-80-02-269, a rock platform first recorded by McAllister (1933:154-155). A large coral slab was noted in the platform and interpreted as a possible *ku'iala*, or grinstone. Outside the boundary of the District Park area, the archaeologists were taken to Keana Cave (SHP #50-80-02-270), and noted human skeletal remains on the slope at the entrance, indicating that the cave could have been used for burial at some time. Although outside the project area, the archaeologists noted that the development of the park would lead to increased vandalism at this site. A second rockshelter along a coral outcrop also contained bones (probably human) and wood. Many other small devices in outcrops and rock shelters with crude walls were noted in the project area, but were not investigated. One historic grave with a 1945 date was also found.

The next year, William Barrera (1979) returned to the 49.9 acre Ko'olaupua Housing project area and conducted a more intensive archaeological survey with subsurface testing. The area had been used as a sugar cane field for many years. Only two limestone knolls and the base of a limestone ledge were considered to contain potential sites, and only these three areas were surveyed. Five sites were identified, SHP #50-80-02-1425, which consisted of two walls along the base of the limestone cliff, a rock-lined depression with a metal pipe (SHP #50-80-02-1426) at the eastern knoll, a site complex (SHP #50-80-02-1427) with three walls, three rock mounds, and one cave on the eastern knoll, a wall on top of the cliff (SHP #50-80-02-1428), and a earthen mound within an L-shaped wall (SHP #50-80-02-1429). Several of the features were tested, but there were no cultural remains. The archaeologists concluded that most, if not all, of the features were constructed in the historic period and associated with sugar cane cultivation.

During an archaeological reconnaissance survey for the 4-acre Kahuku School Expansion project, a crew from the Bishop Museum (Schilt 1979) recorded two sites and relocated two sites first recorded by McAllister (1933), SHP 350-80-02-269, a platform, and SHP #50-80-02-270, Keana Cave.

At Keana Cave (just outside the project area), the archaeologists noted that the two rocks by the entrance were natural formations. The floor of the cave is covered by fragmented limestone that has fallen from the side or roof of the cave. It is possible that there is midden below this layer of fallen rock.

The Bishop Museum archaeologists noted some collapse and disturbance to the platform, Site 50-80-02-269. They made sketches of the platform and took photographs of its present condition.

The archaeologists also noted that one component of the platform was a large coral block, perhaps indicating the ceremonial nature of the feature, as coral is often used in shrines and in *heiau*.

Bishop Museum also recorded a roughly rectangular stone mound (SIHP #50-80-02-2478) and a small overhang (SIHP #50-80-02-2479) within a large outcrop. There was no cultural material at either site. In 1986, Bishop Museum (Sinoto 1986) flagged the perimeter of Sites 279 and 280 so that they would not be destroyed during the construction of the new Kahuku School Extension.

3.2.2 Kahuku Agricultural Park

William Barrera (1981) of Chiniago, Inc. conducted a brief reconnaissance survey in three parcels (2,500 acres) and a more intensive survey in one 500-acre parcel for the Kahuku Agricultural Park. The easternmost parcel is partially within Keana Ahupua'a. Only three areas with some cultural material were found, doubtless because of the extensive modification of the area for sugar cane location. Location 1 had a marine shell, coral fragments and basalt flakes. Location 2 had one cowry shell, and Location 3 was a broken bottle concentration. These three locations were all within Kahuku Ahupua'a.

A one-day reconnaissance survey was conducted in the project area in 1992 by Cultural Surveys Hawaii's (Hammatt and Pfeffer 1992). The four parcels are labeled 1A, 1B, 2 and 3. Portions of Keana Ahupua'a are within Parcels 1A and 1B. The archaeologists surveyed only those portions of the 1,666-acre parcel that was not under current cultivation. As this was only a brief reconnaissance, no sites were recorded.

In 1993, CSF conducted an inventory survey (Stride et al. 1993) of a portion of the Kahuku Agricultural Park. Initially they had been instructed to survey the 1,666-acre park, consisting of Parcels 1A, 1B, 2 and 3. However, before completing the survey, the project area was reduced to the 785 acres of Parcels 2 and 3. Parcels 2 and 3 are not within the boundary of Keana Ahupua'a. Because of the reduction in the project area, only the seven sites found within Parcels 2 and 3 are described in detail in the report. The seven sites consisted of: six temporary habitation overhang shelters (SHP # 50-80-02-4510, 4511, and 4515), a temporary habitation enclosure (site 4512), a permanent habitation complex with walls, terraces, an enclosure, and an overhang (site 4513), a temporary habitation terrace (site 4514); and, a temporary habitation complex with an overhang and a wall (site 4516). Limited subsurface testing was conducted at three of the sites in Parcels 2 and 3. A burial was found in a test trench excavation of Feature A (overhang shelter) of site 4515. SHP #50-80-02-4516, Feature C, a low wall adjacent to a rock outcrop, was later chosen as an appropriate place for reinterment of burials found in the Keana and eastern Kahuku area. Several burials found eroding from the sand along the coast in these areas have been reinterred at this feature according to the SHPD Burial Files.

3.2.3 Kahuku Sand Mining Project

In advance of grading and sand mining operations, Archaeological Consultants of Hawaii, Inc. (ACHI) conducted a program of subsurface testing in 1990 at a parcel northeast of the Kahuku Sugar Mill (TMK 1-5-6-002:12) (Kennedy 1990). No burials or cultural layers were found. One mid-twentieth trash pit and some shallow irrigation channels were noted. The

irrigation channels were associated with nearby small garden areas. A total of 47 trenches were excavated. From the stratigraphy of the trenches, the archaeologists concluded that the layers

suggest a dune formation which has remained stable with gradual accretion over a considerable period of time. Any human burials could therefore be expected to remain fairly close to the surface, and in no case would they be deeper than the relatively impenetrable layer of lithified sand observed in most of the test units [Kennedy 1990:3].

3.2.4 Other Studies

In his book on *Hawaiian Petroglyphs*, J. Halley Cox (1970:97) lists "Site OA-F5-9, Boulder on Beach, 1 human figure, Kahuku, Keana, Koolauloa." However, on the site location map on the opposite page, the site is marked at Kalaeuila Point, a rocky outcrop on the Kahuku Coast, approximately 4 kilometers north of the Keana/Kahuku boundary. It is not known if the location on the map or in the text is the correct one.

Aki Sinoto of the Bishop Museum (Sinoto 1981) conducted a brief reconnaissance survey of the Ki'i and Punamano Wetland Refuge areas. For the Ki'i unit, he recorded that the land had been modified extensively. The only site in the area was the old track of the OR&L railroad. The Bishop Museum designated the entire wetland site 50-Oa-F4-10/11. Another name for this area is Kahuku Fishpond, but according to one of McAllister's (1933:154) informants, this was always a swamp; it was never utilized as a fishpond.

Joseph Kennedy (1989) found no archaeological sites during a reconnaissance survey of 1 14-acre parcel (TMK 1-5-6-002.025) west of the Kahuku Sugar Mill in Kahuku. Kennedy did note that the Ki'i Ditch ran throughout the project area, but he was unsure if this plantation-era ditch followed an earlier *anawai* (traditional Hawaiian irrigation ditch).

In 2001, an inventory survey was conducted by CSH (Perzinski and Hammat 2001) along two detour roads, one at each of the proposed drainage improvement parcels. The two drainageways, called Hospital Ditch, and Ki'i Drainage, are along both sides of Kamehameha Highway, 0.5 to 0.75 kilometers southwest of the current project area. No historic properties of any kind were observed within the proposed detour road corridors.

The installation of a force main sewer replacement was monitored by Scientific Consultant Services (SCS) in 2001 (Calis and Tome 2002). The corridor for the main was 670 meters long and was located approximately 0.4 km west of the current project area. In the 12 excavated trenches, few natural stratigraphic layers were found. The majority of the strata were imported construction fills related to sugar cane cultivation and irrigation.

Cultural Surveys Hawai'i (O'Hare et al. 2004) produced a documentation report on the existing Kahuku Mill structure. As part of this task, HAER format photographs were taken of the interior and exterior of the building. The report also contains a history of the mill, documentation of the type of mill equipment installed over the years, and the mill equipment in the building at its closure as a museum in 1981.

3.2.5 Coastal Burials

Inadvertent discoveries of human remains have occurred all along the Kahuku, Keana, and Malaekahana coasts, and have been discussed in several recent archaeological reports. A total of 19 burials (24+ individuals) have been found at the Turtle Bay Resort from Kawela Bay to Kahuku Point (O'Hare and Hammat 2007). A recent report on Marconi Point, east of the Kahuku Point, discusses coastal burials from Marconi Point to Kalaeuila Point (Tulchin et al. 2007). Numerous inadvertent burial finds have been documented along Malaekahana Bay; these are discussed in Carpenter 2006. This section presents a summary of information on coastal burials from Kalaeuila Point to Makahoa Point, including within the project area (Figure 17). The burial files at the SHPD office in Kapolei indicate that many of the burials found along the Kahuku/Keana coast have been reinterred at a burial site at SHHP #50-80-02-4516, Feature C, a low wall adjacent to a rock outcrop.

In 1989, SHPD was notified of human remains eroding from a sand dune on the Kahuku shoreline (Bath 1989), approximately 1.8 km northwest of the western boundary of the current project area. The site was designated SHHP # 50-80-02-4111 and the remains were subsequently disinterred by State Parks staff.

In 1992, SHPD was notified of human remains eroding from a sand dune on the Kahuku shoreline (Komori 1992), approximately 2.7 km northwest of the western boundary of the current project area. Probable human remains and three areas with exposed subsurface cultural deposits were observed. The human remains were reburied and the site was designated SHHP # 50-80-02-4518.

In 1994, it was reported to the SHPD that a human femur had been found on the beach near the Kahuku Golf Course (Jourdane 1994a). The SHPD staff was taken to the location, which was on a gravel road at the north end of the Golf Course. This location was only 50 yards (45 meters) south of the Japanese Cemetery, which appears on USGS maps as early as 1919. High waves have knocked down some of the stone markers and eroded this section of the beach, and the archaeologists concluded that the femur probably had eroded from the slope and been carried to the gravel road. This bone location was not given a SHHP designation.

Another bone found near the Japanese cemetery was reported to the SHPD in May of 1996 (Hibbard 1997). The record of this burial find is in the Burial Files at the SHPD office in Kapolei, Hawai'i. This bone location was not given a SHHP designation.

Human skeletal remains were found on the seaward side of the Kahuku Golf Course in September of 1999 (Collins 1999) near a utility road which incorporates a former WWII blacktop road section, probably associated with the "Kahuku Village Airfield" discussed in Section 2.2.5. Some of the remains on the ground surface were collected by the SHPD, but the remaining portion of the burial was left in place. The burial location was designated SHHP #50-80-02-5773.

In 1994, a burial was documented at Makahoa Point by the SHPD (Dagher 1993). The skeleton was of a child, tightly flexed. It was disinterred in 1994 by the SHPD (Jourdane 1994b).

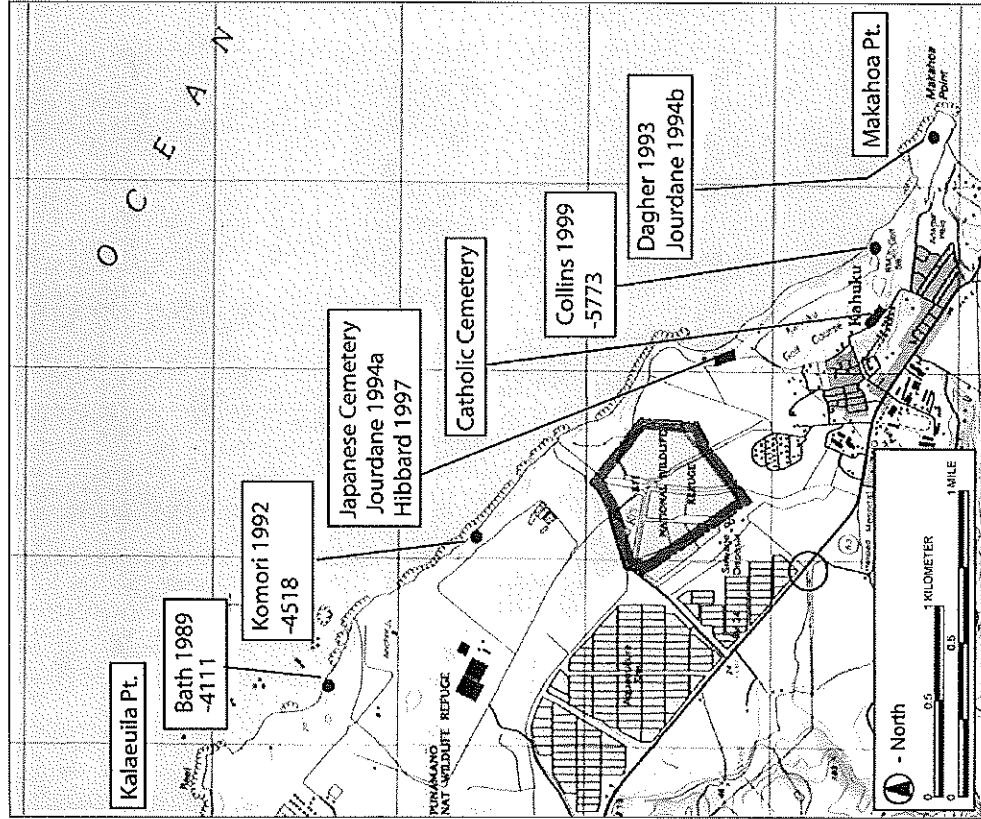


Figure 17. U.S. Geological Survey map, Kahuku Quadrangle, showing coastal burial sites in Kahuku, Keana, and Makahoa Point of Mālaekahana

3.3 Background Summary and Predictive Model for Keana

Early historic visitors to the northern O'ahu coast commented on the dense population and extensive agriculture of the area. Hawaiian traditions and place names indicate that fishing was an important part of Hawaiian life in Keana, as different sections of the coast were known as good spots to hook or net *āhole* (Hawaiian Flaggail; *Kaūlia sandwicensis*), *ō'io* (Bonetfish; *Albula vulpes*), and *'anae-holo* (Mullet; *Mugil cephalus*). Population decreased rapidly in the post-contact period and former agricultural fields were abandoned. By the time of the Māhele, only sweet potatoes were grown near a few houselots back from the coast and the lower forest zone was used to plant small patches of *'awa*, *wauke*, and breadfruit. Over the next century and a half, the land was extensively modified for cattle ranching, for sugar cultivation in the lowlands, and for pineapple cultivation in the uplands. Previous archaeological surveys have found few surface traditional Hawaiian sites. The majority of features are overhang shelters along cliffs and some temporary habitation features on top of limestone knolls or along/on top of cliffs. These are the only areas where features have survived the destruction of post-contact agricultural practices.

Along the coast, the project area was modified as part of the sugar mill complex of the Kahuku Sugar Plantation. Portions of the project area were used as worker's camps, as recreation areas, and as burial grounds for the workers. In 1937, a portion of the project area became the Kahuku Golf Course and in World War II, an emergency air strip was constructed on the golf course. Except for the fishing shrine recorded by McAllister (1933) at Makahoa Point, no surface traditional Hawaiian sites have been recorded during previous archaeological projects along the coast, but subsurface remains, including cultural deposits and burials in the sand dunes have been noted. Post-contact burials are also present in two cemeteries. Beach erosion and wind and wave action, especially the 1946 tsunami, have led to the exposure of both Hawaiian and plantation worker's burials in the sands of the golf course area and along the beach.

Anticipated surface finds in the project area include both pre-contact and post-contact remains. Subsurface pre-contact cultural layers may remain undisturbed. The cultural layers would be related to coastal habitation by Hawaiians who fished along the coast and had small gardens along the stream, and in the uplands along cliffs and at the forest's edge. Both surface and subsurface post-contact features and artifacts may be found that relate to sugar cane cultivation and milling, plantation life, military structures, and modern urban habitation.

Section 4 Research Design

This section details the methods to be used by CSH personnel during fieldwork, laboratory analysis, and the preparation of the archaeological inventory survey report.

4.1 Personnel

Fieldwork for the Archaeological Inventory Survey will be carried out under the supervision of principal investigator Hallett H. Hamman, Ph.D. It is anticipated that a field crew of four archaeologists will be utilized over 15 days. Although the exact composition of the field crew is uncertain at this time, likely field crew members include: David W. Shideler, M.A., Todd Tulchin, B.S., and Connie O'Hare, B.A.

4.2 Field Methods

A complete ground survey of the 18 beach front lots will be undertaken for the purpose of historic property identification and documentation. The pedestrian inspection of the study area will be accomplished through systematic sweeps. The interval between the archaeologists will generally be 5-10 m. All historic properties will be documented by way of a detailed written description, with evaluation of function, interrelationships, and significance; photographs; scale drawings, using standard tape-and-compass mapping procedures; location information will be acquired with Trimble ProXH GPS survey equipment (sub-foot accuracy).

Subsequently, the archaeological inventory will focus on a program of subsurface testing in the 18 beachfront lots to locate any buried cultural deposits. Subsurface testing will not be conducted within the area *makai* of the designated shoreline conservation boundary (50 foot shoreline setback). Exempting this shoreline conservation area from subsurface testing will eliminate unnecessary disturbance of possible cultural deposits, including human remains, which are likely to be located within the shoreline sand dunes.

For the current project area, the subsurface testing program is projected to consist of the excavation of a minimum of 90 test trenches, 20 feet (6 meters) long, for a total excavation of 432 m². Five trenches will be excavated for each lot, two in the proposed footprint of the new house, one in the proposed location of the septic tank, and two in the proposed location of the new leach field. Figure 18 shows a typical beach lot, with the house foundation and septic tank location blocked in. The leach field will go between 50 and 60 feet back (*mauka*) of the certified shoreline conservation boundary (marked by two parallel lines on Figure 18). The figure illustrates the possible location of the five trenches in one lot. Trench placement will vary for each lot based on topographic features (i.e. large trees, sand dunes, bedrock exposures, etc.).

A standard backhoe with a two-foot wide bucket will be used to excavate at least portions of each test trench. Generally, trenches excavated to assess subsurface stratigraphy and prospect for subsurface cultural deposits will be one backhoe bucket width wide (approximately 80 centimeters) by approximately six meters long. For trenches excavated to further expose, sample, and/or assess the boundaries of specific cultural deposits, for example burial deposits or a subsurface cultural layer, trenches may be between 1.5 and 4.0 meters wide. All trenches will be excavated down to the underlying coral shelf or below the water table.

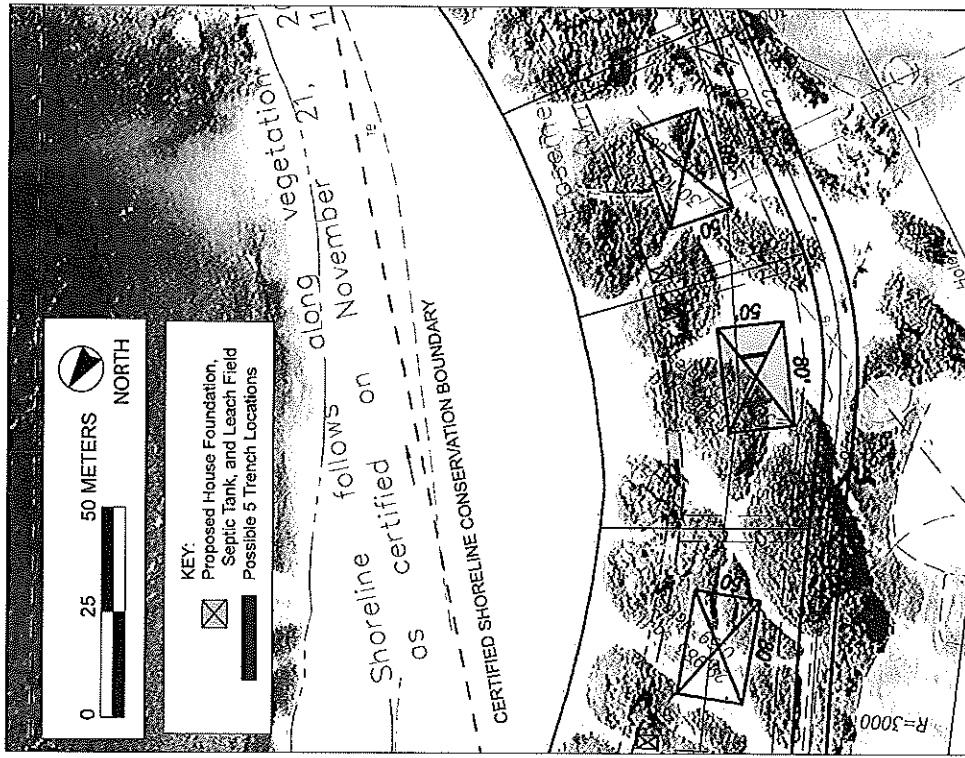


Figure 18. Example of possible placement of 5 trenches (20 foot or 6 meters long) in 1 of the 18 beach front lots; two trenches in the house foundation, two trenches in the leach field (marked by lines 50 to 60 feet *mauka* of the certified shoreline), and one trench in the septic tank location

The assisting backhoe will initially be used to remove overlying alluvial sediment or fill deposits within each test trench. The bucket's teeth will be used to facilitate excavation of these stiffer, more consolidated deposits. When excavation is to occur through Jaucas sand deposits, which are more likely to contain human skeletal remains or other significant cultural deposits, the backhoe bucket's teeth will be sheathed in a detachable steel blade. This blade makes it possible for the backhoe to carefully strip away thin layers of sand, approximately 5 cm thick, which is not possible with the standard toothed backhoe bucket.

The bladed backhoe bucket will only be used to remove Jaucas sand from trenches once at least one hand excavated shovel trench is first dug down the center of the trench, parallel to the trench's long axis. This hand excavation in sand deposits will be specifically undertaken to identify potential burial deposits prior to sand excavation with the backhoe. These shovel trenches will be one shovel width wide (approximately 25 cm) and dug from the upper Jaucas sand surface to the water table. The sand will be carefully scraped off in thin layers in order to minimize any possible burial disturbance. Smaller shovel test probes, 25 by 25 cm, will be excavated down from the base of the shovel trench, below the water table. This is an extra precaution to identify any particularly deep burial deposits. In wider trenches, such as those specifically excavated to delimit the boundaries of burial deposits, multiple shovel trenches will be excavated by hand across the backhoe trenches prior to any sand excavation with the backhoe. These shovel trenches will generally be 40 cm apart.

Only once the hand excavation through the sand deposit is completed will the backhoe's bladed bucket be used to further excavate Jaucas sand deposits. CSH personnel will closely monitor all backhoe excavation activity, particularly through sand deposits. In sand deposits, at least two archaeologists will observe the backhoe excavation, one positioned at either end of the trench to monitor both the removal of sediment from the trench and the emptying of the backhoe bucket on the adjacent back dirt pile.

The stratigraphy in each trench will be drawn and photographed. The sediments will be described for each of the trenches using standard USDA soil description observations/terminology. Sediment descriptions include Munsell color, texture, consistency, structure, plasticity, cementation, origin of sediments, descriptions of any inclusions such as cultural material and/or roots and rootlets, lower boundary distinctiveness and topography, and other general observations. Where burial pits or other cultural features may be exposed, these will be carefully represented on the trench profile. Feature documentation will include profiles and/or plan views within trenches, stratigraphic descriptions, and photographs. When exposed in plan view within trenches, pit features will be drawn and sampled.

If any significant archaeological or historical finds are discovered, SHPD will be informed immediately. If any significant historic properties are found they will be treated in accordance with a program approved by the SHPD. Unavoidably, trench excavation through sand, either by hand or with the backhoe may result in the partial disturbance of human remains. If human remains are discovered, the SHPD archaeology branch will be notified immediately. In the event that human remains are encountered, they shall be treated as previously identified under Hawai'i Administrative Rule (HAR) 13-300-31(b). Relocation or preservation in place will be determined by the State Historic Preservation Division in consideration of the recommendations of the O'ahu Island Burial Council. If human remains are identified, no further work will take place,

including no screening of back dirt, no cleaning and/or excavation of the burial area, and no exploratory work of any kind unless specifically requested by the SHPD.

Skeletal element inventory forms, plan view and profile drawings, and written descriptions will be prepared to document any burials, if so directed by the SHPD. This archaeological inventory survey plan does not propose any additional treatment of human remains, other than documentation of archaeological context. A burial treatment plan will be prepared as appropriate.

In consultation with the SHPD, in order to delineate burial areas, additional trenches may be excavated on four sides of the initial discovery to search for additional burials in the vicinity. Again, initially the backhoe will only be used to remove the overlying alluvial or fill sediments. Hand shovel trenching will be undertaken prior to using the backhoe within sand deposits. As appropriate, plan views will be prepared to record horizontal provenience of finds, such as burials or pit features associated with a cultural layer.

Activities of the undertaking in the vicinity of the discovery of human remains may resume if an accepted Burial Treatment Plan has been approved or in the event that SHPD has agreed to permit the undertaking to proceed with culturally appropriate interim protective measures for human remains which may include preservation in place or recordation.

The sampling of subsurface cultural layers and/or A horizons will be carried out to characterize the cultural content of these layers. Sampling may also help establish geographic boundaries to these layers and the general time frame of their deposition (prehistoric/traditional Hawaiian, and/or historic, and/or modern). The sampling will be undertaken on both pit features associated with the stratigraphic layer, and "sample areas" taken from the portion of the stratigraphic layer that was not part of a particular cultural feature. The distinction between samples from pit features and sample areas is hoped to reflect the difference in cultural material content between sediment from specific events, such as the excavation and use of a pit, and the more general accumulation of sediment as part of a culturally enriched stratigraphic layer.

Pit features will be identified and labeled as distinct protuberances of the culturally enriched layer down into the underlying culturally sterile layer. These pit features will be given Roman letter designations within each trench area. Pit features will be distinguished in trench profiles and plan views by their shape, content, distinctness and degree of protrusion below the lower boundary of the overall cultural layer.

Samples from pit features and sample areas will be excavated out of the sidewall, or from the base of the excavation if exposed in profile, into five gallon (20 liter) buckets. The sediment will then be screened through 1/8-inch (3.2 millimeter) mesh and all cultural materials collected, bagged by provenience, and returned to the laboratory. During the collection of cultural material from the screen, careful attention will be made to distinguish between water-rounded, bleached sedimentary shell, and the unbleached, unrounded, often relatively freshly broken shell derived from human activity. The volume of each screened sample, usually between two and ten gallons (7.5 to 38.0 liters) will be recorded so that comparisons can be made between samples.

The location of each of the trenches, and significant features will be recorded using a Trimble ProXH mapping grade GPS survey equipment. This unit provides sub-meter real-time horizontal accuracy and sub-foot post-processed accuracy.

4.3 Laboratory Methods

This phase of work will involve the following specific procedures:

- 1) Charcoal samples will be submitted for radiocarbon dating, if available. Those samples containing pieces suitable for wood identification, as available, will be submitted for species analysis first. Selection of charcoal samples for dating will be in part based on the wood species findings.
- 2) Invertebrate remains collected from specific subsurface features or cultural layers will be identified to genus and species, weighed, and analyzed. Data will be tabulated by depth and stratigraphic unit. Common marine shells will be identified and analyzed at the Cultural Surveys Hawaii'i laboratory in Waimanalo, O'ahu using an in-house comparative collection and reference texts (i.e. Abbott and Dance 1990; Eisenberg 1981; Kay 1979; Titcomb 1977). If any rare and/or extinct marine or freshwater shells are recovered, an outside expert will be consulted for identification of the material. The total weight of any midden will be tabulated by collection unit.
- 3) Non-human vertebrate faunal material collected from specific subsurface features or cultural layers will be identified to the lowest possible taxa at the CSH laboratory using an in-house comparative collection and reference texts (i.e. Olson 1964; Schmid 1972; Sisson 1914). If a large number of bird or fish bones, or any unusual bones are recovered, they will be submitted to an expert in faunal analysis for identification. The total weight of any midden will be tabulated by collection unit.
- 4) Identification and cataloguing of traditional Hawaiian artifactual material will be completed. Artifacts will be measured with representative samples drawn and/or photographed to scale. The forms and functions will be determined using reference material (i.e. Barrera and Kirch 1973; Brigham 1974; Buck 2003; Emory et al. 1968).
- 5) Identification and cataloguing of historic artifacts will be completed. This research will focus on the function and manufacturing dates of the items, using reference texts (i.e. Bureau of Land Management 2008; Elliott 1971; Elliott and Gould 1988; Fike 1987; Lebo 1997; Lister and Lister 1989; Millar 1988; Munsey 1970; Toulouse 1971; Zumwalt 1980).
- 6) A comprehensive catalogue of all collected cultural material will be prepared and included with the report.

4.4 Historic Property Evaluation for Hawaii'i Register Eligibility

Under state of Hawaii'i historic preservation legislation, historic property significance is evaluated and expressed as eligibility for listing on the Hawaii'i Register of Historic Places (Hawaii'i Register). To be considered eligible for listing on the Hawaii'i Register, a historic property must possess integrity of location, design, setting, materials, workmanship, feeling, and association, and meet one or more of the following broad cultural/historic significance criteria:

"A" reflects major trends or events in the history of the state or nation; "B" is associated with the lives of persons significant in our past; "C" is an excellent example of a site type/work of a master; "D" has yielded or may be likely to yield information important in prehistory or history; and, "E" has traditional cultural significance to an ethnic group, includes religious structures and/or burials. For this report, historic property integrity and significance were assessed based on the guidance provided in National Register Bulletin # 15, "How to Apply the National Register Criteria for Evaluation."

4.5 Community Consultation

A community consultation effort will be undertaken as a component of the planned Archaeological Inventory Survey investigation. The community consultation will be made in conjunction with an associated Cultural Impact Assessment for the proposed Kahuku Villages Subdivision Project, also being prepared by CSH. Per HAR Chapter 13-13-276, the community consultation effort for the archaeological inventory survey will involve "notifying interested organizations and individuals that a project could affect historic properties of interest to them, seeking their views on the identification, significance evaluations, and mitigation treatment of these properties; and considering their views in a good faith and appropriate manner during the review process." An effort will be made to contact and consult with Hawaiian cultural organizations, government agencies, knowledgeable community members, and recognized lineal and cultural descendants of Kahuku and Keana.

4.6 Report Preparation

An Archaeological Inventory Survey report will be prepared in conformance with HAR 13-276-5. This inventory survey report will include the following:

- a. A topographic map of the survey area showing the locations of all historic properties;
- b. Results of consultation with knowledgeable community members about the property and its historical and cultural issues;
- c. Description of all historic properties with selected photographs, scale drawings, and discussions of function;
- d. Historical and archaeological background sections summarizing prehistoric and historic land use as they relate to the project area's historic properties;
- e. A summary of historic property categories and their significance in an archaeological and historic context;
- f. Recommendations based on all information generated that will specify what steps should be taken to mitigate impact of development on the project area's significant historic properties - such as data recovery (excavation) and preservation of specific areas. These recommendations were developed in consultation with the client and the State agencies.

A draft of the archaeological inventory survey report shall be prepared and submitted in a timely manner, within three months following the end of fieldwork. Following the receipt of

review comments on the draft report from SHPD, the revised and corrected report shall be submitted within one month.

Section 5 References Cited

- Abbott, R. Tucker, and S. Peter Dance**
1990 *Compendium of Seashells*. Fourth Edition. American Malacologists, Inc., Melbourne, Florida.
- Ampersand**
1985 *Kahuku Ampersand*, Special Issue, Third Edition.
- Arakaki, Leatrice R., and John R. Kuborn**
1991 *7 December 1941: The Air Force Story*. Pacific Air Forces, Office of History, Hickam Air Force Base, Honolulu.
- Barrera, William**
1979 *Kahuku Archaeological Survey, Ko'olaupua Housing Project*. Chiniago, Inc., Honolulu.
- 1981 *Cultural Resources Reconnaissance of the Kahuku Agricultural Park Project Area*. Chiniago, Kamuela, Hawaii'i.
- Barrera, William M., Jr., and Patrick V. Kirch**
1973 Basaltic-Glass Artifacts from Hawaii, Their Dating and Prehistoric Uses. *Journal of the Polynesian Society* 82:2:176-187.
- Bath, Joyce**
1989 *Kahuku Dune Burial ME#89-0467 Site #80-02-4111 Kahuku, Ko'olaupua, O'ahu*. Department of Land and Natural Resources, State Historic Preservation Division, Kapolei, Hawaii'i.
- Beaglehole, John C.**
1967 *The Journals of Captain James Cook on His Voyages of Discovery, Volume 3: The Voyage of the Resolution and Discovery 1776-1780, Paris 1 & 2*. Cambridge University Press for the Hakluyt Society, Cambridge.
- Bowser, George**
1880 *The Hawaiian Kingdom Statistical and Commercial Directory, 1880-1881*. George Bowser, Honolulu and San Francisco.
- Brigham, William T.**
1974 Stone Implements and Stone Work of the Ancient Hawaiians. *Memoirs of the Bernice Pauahi Bishop Museum*, Vol. I, No. 4, Bishop Museum Press, Honolulu.
- Bryan, William A.**
1915 *Natural History of Hawaii*. Hawaiian Gazette Co., Honolulu.
- Buck Peter H.**
2003 *Arts and Crafts of Hawaii*. Bernice P. Bishop Special Publication 45, Bound Version. Bishop Museum Press, Honolulu.
- Bureau of Land Management/Society for Historical Archaeology**
2008 Historic Glass Bottle Identification & Information Website. <http://www.sha.org/bottle/index.htm>

- Calis, Irene, and Guerin Tome**
2002 *An Archaeological Monitoring Report for the Force Main Sewer Replacement Project Kahuku Ahupua'a, Ko'olaupua District, O'ahu Island, Hawaii*. Scientific Consultant Services, Inc., Honolulu.
- Chamberlain, Levi**
1828 Tour Around Oahu, 1828. In *65th Annual Report of the Hawaiian Historical Society for the Year 1956*, Honolulu.
- Char, Wai Jane, and Tin-Yuke Char (editors)**
1988 *Chinese Historic Sites and Pioneer Families of Rural Oahu*. University of Hawaii'i Press, Honolulu.
- Chinen, Jon J.**
1958 *The Great Māhele, Hawaii's Land Division of 1848*, University of Hawaii'i Press, Honolulu, HI.
- Clark, John R.K.**
1997 *The Beaches of O'ahu*. Kolowalu Book, Honolulu.
- Clark, Stephan**
1978 *Preliminary Archaeological Reconnaissance Report for Koolauloa Housing Project and Park Expansion, Kahuku, Island of Oahu*. Kualoa Archaeological Research Project, Department of Parks and Recreation, City and County of Honolulu.
- Collins, Sara**
1999 *Recovery Of Human Remains From Kahuku Golf Course*. Department of Land and Natural Resources, State Historic Preservation Division, Kapolei, Hawaii'i.
- Condé, Jesse C., and Gerald M. Best**
1973 *Sugar Trains, Narrow Gauge Rails of Hawaii*. Glenwood Publishers, Felton, California.
- Cox, J. Halley (with Edward Stasak)**
1970 *Hawaiian Petroglyphs*. Bishop Museum Press, Honolulu.
- Dagher, Cathleen**
1993 *Inadvertent Discovery of a Human Burial At Makahoa Point, Malaekahana, Ko'olanua, O'ahu*. Department of Land and Natural Resources, State Historic Preservation Division, Kapolei, Hawaii'i.
- Dillingham, Benjamin F.**
1886 Great Land Colonization Scheme, In Thos. G. Thrum, (ed.), *Hawaiian Almanac and Annual for 1886*, pp. 75-80. Press Publishing, Honolulu.
- Dorrance, William H.**
1998 *O'ahu's Hidden History: Tours into the Past*. Mutual Publishing, Honolulu.
- Dorrance, William H., and Francis S. Morgan**
2000 *Sugar Islands: The 165-Year Story of Sugar in Hawaii*. Mutual Publishing, Honolulu.

- Eisenberg, Jerome M.**
1981 *A Collector's Guide to Seashells of the World*. Crescent Books, New York City.
- Elliott, Rex R.**
1971 *Hawaiian Bottles of Long Ago*. Hawaiian Service, Honolulu
- Elliott, Rex R., and Stephen C. Gould**
1988 *Hawaiian Bottles of Long Ago. A Little of Hawaii's Past*. Hawaiian Service, Honolulu.
- Emerson, Nathaniel B.**
1978 *Pele and Hiiaka-A Myth from Hawaii*. Charles E. Tuttle, Rutland, Vermont.
1998 *Unwritten Literature of Hawaii: The Sacred Songs of the Hula*. Mutual Publishing, Honolulu.
- Emory, Kenneth P., William J. Bonk, and Yoshihiko H. Sinoto**
1968 *Fishhooks*. Bernice P. Bishop Museum Special Publication 47. Bishop Museum Press, Honolulu.
- Filke, Richard E.**
1987 *The Bottle Book. A Comprehensive Guide to Historic Embossed Medicine Bottles*. Peregrine Smith Books, Salt Lake City.
- Footo, Donald E., E.L. Hill, S. Nakamura and F. Stephens**
1972 *Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai and Lanai, State of Hawaii*, U.S. Dept. of Agriculture, U.S. Government Printing Office, Washington, D.C.
- Fornander, Abraham**
1919 *Fornander Collection of Hawaiian Antiquities and Folk-Lore*, Vol. V-Part II. Bishop Museum Press, Honolulu.
- Freeman, Paul**
2006 *Abandoned and Little Known Airfields: Hawaii, Northern Oahu Island* http://www.airfields-freeman.com/HI/Airfields_HI_Oahu_N.htm. Downloaded January 15, 2008.
- Gilmore, A.B.**
1931-2 *Hawaii Sugar Manual*. A. B. Gilmore, New Orleans, Louisiana.
- Hamnett, Hallett H.**
1996 *Archaeological Reconnaissance Survey For Proposed Malaekahana Exploratory Wells, Malaekahana, O'ahu*. Cultural Surveys Hawaii'i, Inc., Kailua, Hawaii'i.
- Hamnett, Hallett H., and Michael Pfeffer**
1992 *Archaeological Reconnaissance of Kahuka Agricultural Park*. Cultural Surveys Hawaii'i, Kailua, Inc., Hawaii'i.
- Handy, E. S. Craighill**
1940 *The Hawaiian Planter, Volume I*. Bishop Museum Bulletin No. 161, Bernice P. Bishop Museum, Honolulu.

- Handy, E. S. Craighill, and Elizabeth G. Handy**
1972 *Native Planters in Old Hawaii: Their Life, Lore, and Environment*. Bishop Museum Bulletin 233, Bernice P. Bishop Museum, Honolulu.
- Hibbard, Don**
1997 *Inadvertent Discovery of Human Remains, Japanese Cemetery, Kahuku Golf Course, TMK 5-6-002:010*. Memo in Burial Files, Department of Land and Natural Resources, State Historic Preservation Division, Kapolei, Hawai'i.
- Ho'oulumāhiehie**
2006a *The Epic Tale of Hi'ikaikapoliopele*. As Told by Ho'oulumāhiehie. Translated by M. Puakea Nogelmeier. Awaiaulu Press, Honolulu.
2006b *Ka Mo'olelo o Hi'ikaikapoliopele*. Original Hawaiian text taken from series of articles in *Ka Na'i Anupuni* 1905-1906. Awaiaulu Press, Honolulu.
- Jourdane, Elaine**
1994a *The Inadvertent Discovery of Human Remains near Kahuku Golf Course, Kahuku, Ko'olanāoa, O'ahu*. Department of Land and Natural Resources, State Historic Preservation Division, Kapolei, Hawai'i.
1994b *Disinterment of Eroding Burial at Makahoa Point, Late, Site 50-80-04-4521, SHPD #547A, Laie, Ko'olanāoa, O'ahu, TMK 5-6-02:010*. Memo in Burial Files, Department of Land and Natural Resources, State Historic Preservation Division, Kapolei, Hawai'i.
- Kamakau, Samuel**
1870 *Ka Moolelo Hawaii. Ke Au 'Oko'a*, October 6, 1870.
1991 *Ka Po'e Kahiko. The People of Old*. Bishop Museum Press, Honolulu.
- Kay, E. Alison**
1979 *Hawaiian Marine Shells*. Bernice P. Bishop Museum Press, Honolulu.
- Kennedy, Joseph**
1989 *Archaeological Reconnaissance Survey at TMK: 5-6-02:25, Located at Kahuku, O'ahu*. Archaeological Consultants of Hawai'i, Hale'iwa, Hawai'i.
1990 *Kahuku Sand Mining Project: Archaeological Subsurface Testing Results*. Archaeological Consultants of Hawai'i, Hale'iwa, Hawai'i.
- Kinnett, Larry, and Margaret Regis**
1992 *The Attack on Pearl Harbor. An Illustrated History*. Navigator Publishing, Seattle, Washington.
- Komori, Eric**
1992 *Inadvertent Burial Exposure of Burial at Kahuku Golf Course, Kahuku, O'ahu, TMK: 1-5-6-02:010/016*. Department of Land and Natural Resources, State Historic Preservation Division, Kapolei, Hawai'i.
- Korn, Alfons L.**
1958 *The Victorian Visitors*. University of Hawai'i Press, Honolulu.

- Kuykendall, Ralph**
1953 *The Hawaiian Kingdom: 1854-1874, Twenty Critical Years*. Vol. II. University of Hawai'i Press, Honolulu.
1967 *The Hawaiian Kingdom: 1874-1893, the Kalakama Dynasty*. Vol. III. University of Hawai'i Press, Honolulu.
- Lebo, Susan A. (editor)**
1997 *Native Hawaiian and Euro-American Culture Change in Early Honolulu*. Anthropology Department, Bernice P. Bishop Museum, Honolulu.
- Lister, Florence C. and Robert H. Lister**
1989 *The Chinese of Early Tucson, Historic Archaeology from the Tucson Urban Renewal Project*. The University of Arizona Press, Tucson, Arizona.
- McAllister, J. Gilbert**
1933 *Archaeology of Oahu*. Bishop Museum Bulletin 104, Bernice P. Bishop Museum, Honolulu.
- Millar, Jim**
1988 *The Handbook of Hawaiian Machine Made Soda Bottles*. Soda Mart, Goodlettsville, Tennessee.
- Munsey, Cecil**
1970 *The Illustrated Guide to Collecting Bottles*. Hawthorn Books, Inc., New York, New York.
- Nakuina, M. K.**
1998 *Fish Stories and Superstitions*. Translated by M. K. Nakuina. In *Hawaiian Folk Tales. A Collection of Native Legends*, compiled by Thos. G. Thrum, pp. 269-274. Mutual Publishing, Honolulu.
- O'Hare, Constance R., and Hallett H. Hammatt**
2007 *Archaeological Monitoring Plan for the Turtle Bay Resort Land Use Master Plan Project, Kahuku, Punalau, Ulupehuehu, 'O'i'o 1 & 2, Hanaka'oe, Kawela, and Opāna Ahupua'a, Ko'olanāoa District, O'ahu Island, TMK: [1] 5-6-003:041,044; 5-7-001:001, 013, 016, 020, 022, 031, 033; 5-7-006: 001, 002*. Cultural Surveys Hawai'i, Inc., Kailua, Hawai'i.
- O'Hare, Constance R., David W. Shideler, and Hallett H. Hammatt**
2006 *A Documentation of the Kahuku Sugar Mill Kahuku Ahupua'a, Ko'olanāoa District, Island of O'ahu, TMK: (1) 5-6-002:017*. Cultural Surveys Hawai'i, Inc., Kailua, Hawai'i.
- Olsen, Stanley J.**
1964 *Mammal Remains from Archaeological Sites. Papers of the Peabody Museum of Archaeology and Ethnology* 56(1).
- Perzinski, David, and Hallett H. Hammatt**
2001 *Archaeological Inventory Survey Report for Hospital Ditch and Kii Bridge in the Ahupua'a of Kahuku, District of Ko'olanāoa, Island of O'ahu (TMK: 5-6-02, 05 & 06)*. Cultural Surveys Hawai'i, Inc., Kailua, Hawai'i.

- Pukui, Mary Kawena**
1983 *'Ōlelo No'ea. Hawaiian Proverbs and Poetical Sayings*. Bishop Museum Press, Honolulu.
- Pukui, Mary K., Samuel H. Elbert, and Esther T. Mookini**
1974 *Place Names of Hawaii*. University of Hawai'i Press, Honolulu.
- Raphaelson, Rayna**
1925 *Kings, Gods and Wars Along Oahu's Roads, Legend Lore of Kamehameha Highway. Honolulu Star-Bulletin*, January 17, 1925.
- Sandler, Rob**
1990 *Hawaii Guide to Golf*. Pacific Publishing, Honolulu.
- Schilt, Rose**
1979 *Archaeological Reconnaissance Survey of Proposed Extension, Kahuku Elementary School, Kahuku, O'ahu*. Department of Anthropology., Bernice P. Bishop Museum, Honolulu.
- Schmid, Elisabeth**
1972 *Atlas of Animal Bones for Prehistorians, Archaeologists and Quaternary Geologists*. Elsevier Publishing Co., Amsterdam, London, and New York.
- Schmitt, Robert**
1977 *Historical Statistics of Hawaii*. University Press of Hawai'i, Honolulu.
- Schuyler, Jas. D., and G. F. Allardt**
1889 Report on Water Supply for Irrigation on the Island of Oahu, Hawaiian Islands. *Paradise of the Pacific III* (9:Sept.):1-3.
- Sinoto, Aki**
1986 *Perimeter Flagging for Proposed Fencing Around Two Archaeological Site Areas, Kahuku Elementary School, Kahuku, O'ahu*. Letter Report. Department of Anthropology, Bernice P. Bishop Museum, Honolulu.
- Sisson, Septimus**
1914 *The Anatomy of the Domestic Animals*. Second Edition. W.B. Saunders Co., Philadelphia and London.
- Stackman, Michael**
1991 *Target: Pearl Harbor*. University of Hawai'i Press, Honolulu.
- Sterling, Elspeth P., and Catherine C. Summers**
1978 *Sites of O'ahu*. Bernice P. Bishop Museum, Honolulu.
- Stearns, Harold T.**
1939 *Geologic Map and Guide to Oahu, Hawaii*. Territory of Hawaii, Division of Hydrography, Bulletin 2, Honolulu.
- Stride, Mark, Tamara Craddock, and Hallett H. Hammatt**
1993 *Archaeological Inventory Survey of the Proposed 785-Acre Kahuku Agricultural Park*. Cultural Surveys Hawai'i, Kailua, Inc., Hawai'i.
- Titcomb, Margaret**
1972 *Native Use of Fish in Hawaii*. University of Hawai'i Press, Honolulu.

- 1979 *Native Use of Marine Invertebrates in Old Hawaii*. University of Hawai'i Press, Honolulu.
- Trojan, David**
2006 *Kahuku Field*. <http://hiavps.com/kahuku.htm> Accessed October 15, 2007.
- Toulouse, Julian Harrison**
1971 *Bottle Makers and Their Marks*. Thomas Nelson Inc., Camden, New York.
- Tulchin, Todd, David W. Shideler, and Hallett H. Hammatt**
2007 *Archaeological Inventory Survey Plan for the Approximately 95-Acre Marconi Point Farm Lots Project, Kahuku Ahupua'a, Ko'olaupua District, O'ahu (TMK [1] 5-6-003: 010, 032)*. Cultural Surveys Hawai'i, Inc., Kailua, Hawai'i.
- Vanconver, George**
1798 *A Voyage of Discovery to the North Pacific Ocean and Round the World Performed in the Years 1790-95*, vol. 3. John Stockdale, London.
- Wilcox, Barbara S.**
1975 *The Kahuku Sugar Mill Story*. Island Heritage Ltd., Norfolk Island, Australia.
- Wilcox, Carol**
1996 *Sugar Water, Hawai'i's Plantation Ditches*. University of Hawai'i Press, Honolulu.
- Zumwalt, Betty**
1980 *Ketchup, Pickles and Sauces. 19th Century Food in Glass*. Mark West Publishers, Fulton, California.

Appendix A LCA Awards in Keana

No. 4329B Kuapuhi Keana, Oahu January 1, 1847

N.R. 277v4 [Listed as 4392]

To the Land Commissioners, Greetings: I, Kuapuhi, am a claimant at Konikaa, of three 'ili of sweet potatoes, bounded on the north and south by *pali*, on the east by Kahulihana; on the west by Māi;

My house and the *kala* are in my *mo'o*. My right of occupancy is from the time of Kamehameha I.

KUAPUHI X, his mark

F.T. 185v10

No. 4392, Kuapuhi [should be 4329B]

Kalawaiamanu, sworn says he knows the land of Kuapuhi in Keana. It consists of a piece of cultivated *kala* land, planted with potatoes. This piece may contain a quarter of an acre and is bounded:

On Hauula side by a *pali*
Mauka and Waialua side[s] by the *konohiki*
Makai by Kalawaiamanu's land.

Claimant's house lot is *makai* of his land and is enclosed with a stone wall. He has held the land for over 20 years. The *konohiki* consented to the claim for the piece of *kala* and house site.

[Award 4329B; R.P. 6247; Keana Koolauloa; 2 ap.; .71 Ac.; Award 4392 contains the documents for this award]

No. 4391 Kalawaiamanu Keana, Oahu January 3, 1848

To the Land Commissioners, Greetings: I, Kalawaiamanu, am a claimant in the 'ili in Louana. There are three 'ili *waiweu* [herbs?], one 'ili of sweet potato, one 'ili of *waike*, bounded on the north by the *kala*, on the east and west by sugarcane, on the south by the *pali*. Here are the jump lands: At Halulu is sugarcane, *waike*. At Kahalau is breadfruit and noni. At Keaau is a breadfruit, and noni. At Kapouu is noni. At Kealahaka is 'awa, sugar cane, and banana. At Paos is 'awa. At Uumhala is a *kala* planted in sweet potato and watermelon. My house is at Nonoula. My right of occupancy is from the time of Kamehameha II.
 KALAWAIMANU

No. 3712, Moku Keana, Oahu January 10, 1848

N.R. 153v4

To the Land Commissioners, Greetings and Peace: I, Moku, hereby state my claim for land at Keana. One *mala* is at Peelo. One *mala* is at Aahupalua. At Malekahana I have one *mala*. At Kawau is one *mala*. At Makanikeolo'i, an upland, is a *mala* of 'awa and *waike*. One *mala* is at Paaulani. One *mala* is at Aewai. At Late I have a portion of a *lo'i* adjoining Kahalelaau's. At Kahuku I have one *lo'i* at Mookini, adjoining Kihā's *lo'is*. A watercourse is at Luahine. My house claim is at Keana, surrounded by my *hula*. My right of occupancy was from Kamehameha III. MOKU

F.T. 175v10 Claim 3712, Moku

Kihā, sworn, says Moku left this part of the country some 5 months ago and went to live on Hawaii. Witness knows the *kalo* patch claimed by Moku in Kahuku. It is not planted.

(It was stated by several present that Moku had given up the pieces of land in this Claim, and no one appeared to represent him).

The Konohiki claims this land.

[No. 3712 not awarded]

Appendix B LCA Awards with Lele in Keana

No. 2704 Haui Kahuku, Oahu Jan. 4, 1848

To the Land Commissioners, respectful greeting: I, Haui, hereby state my claim for land at Kahuku. The name of the *mo'o* is Kuapuu; there are six *lo'i* and the watercourse, bounded on the north by a *kaila*, on the east by Kekipi's, on the south by Makilo'o, on the west by Kaeulu's. There is a *kaila* land, Ahamau, a fish pond named Kuhiwa, and a *lo'i* at Kii. **At Keana I have a *wilwili* tree.** My right of occupancy was from the time of Kamehameha I. HAUI X his mark

No. 2729 Polena Kahuku, Oahu Jan. 4, 1848

To the Land Commissioners, respectful greetings: I, Polena, hereby state my claim for land at Kahuku. The name of the *mo'o* is Luahine. There are seventeen *lo'i* bounded on the north by the *kaila*, on the east by Kaihikapu's land, on the south by Kalua's land, on the west by Maui's land. There are cultivated *kailas* named Uwalapahupu, Mamakaloa and Luahine. There is a sea shore land, named Puhiakaawe. **At Keana are two *'awa* gardens, and a garden of breadfruit and *'ohi'ohi*.** My house lot is at Kahuku and is bounded on the north east and west by a *kaila*, on the south by a salt bed. My right of occupancy is from the time of Kamehameha I. POLENA X his mark

No. 2732 Pukawale Kahuku, Oahu Jan. 4, 1848

To the Land Commissioners, respectful Greetings: I, Pukawale, hereby state my claim for land at Kahuku, a *mo'o* named Kuha. There are five *lo'i*, bounded on the north by those of Makakiekie, on the east by a *kaila*, on the south by Maui's [*lo'i*], on the west by Kupaikia's [*lo'i*]. There is a shore area—the name of the sea [fishery] is Keehee, [and] a mountain area. At Makapala are two *lo'i*, bounded on the north by Uimeume's, on the east by Kupau's, on the south by a *kaila*, on the west by a *ko'e* *lo'i*. There is a cultivated *kaila* named Makapala, another *kaila* is Mauiloa, and there is another valley or [gulch]. **At Keana are two *wauke* gardens and two *koa* canoe trees.** My house lot is at Kahuku and it is surrounded by *kaila*. I have had the right of occupancy since the time of Kamehameha I. PUKAWAKE X his mark.

No. 2785 Makakiekie Kahuku, Oahu Jan. 1, 1848

To the Land Commissioners, Respectful Greetings: I, Makakiekie, hereby state my claim for land at Kahuku. The name of the *mo'o* is Puulu. There are seven *lo'i*, bounded on the north by those of Keakaokawai, on the east by a *kaila*, on the south

by Pukawale's [land], on the west by Kupaihea's [land]. One *lo'i* and the watercourse adjoins those of Maui and Kuapuhi and *kaila*. There is *kaila* land at Kawelohale and Kii, two clusters of *kaila* trees. At Ahamau are some gardens of sweet potato and gourd. There is a shore area called Kaohana. In the upland are some gardens of *wauke*, *'awa* and *noni*, and seven *koa* canoe trees. In another place is a watercourse adjoining Maui's. **At Keana are one *'awa* gardens, and five *koa* canoe trees.** There is a mountain land, Kalapaweo. My house claim is at Kahuku, bounded on all sides by the *kaila*. There is a fish pond for me, close to my house. My right of occupancy is from the time of Kamehameha I. MAKAKIEKIE his mark

No. 2787 Makaokalai Kahuku, Oahu Jan. 4, 1848

To the Land Commissioners, Respectful Greetings: I, Makaokalai, hereby state my claim for land at Kahuku. At Luahine is one *lo'i* and two watercourses, bounded on the north by Kawaa's [land], on the east by a *lo'i ko'e*, on the south by Keino's [land], on the west by Kawaa's [land]. There is also another *lo'i*, adjoining that at Akaihiupilani. There is a fishpond named Kumuhakane. There is also another area, Hanumoha. There are two gardens of sweet potato and *wauke*. There are two *'awa* gardens. There are four *koa* canoe trees. **At Keana are two *'awa* gardens and three *koa* trees.** My house lot is a Kahuku, bounded on all sides by the *kaila*. My right of occupancy is from the time of Kamehameha. MAKAOKALAI X his mark

No. 2887 Keawe Kahuku, Oahu Jan. 5, 1848

To the Land Commissioners, Respectful Greetings: I, Keawe, hereby state my claim for land at Kahuku. The name of the *mo'o* is Luahine. There are three *lo'i*, bounded on the north by Kawaa's [land] on the east by Kalua's [land], on the south by *lo'i ko'e*, on the west by Paukoa's [land]. A *malu* of sweet potato is at Ahamau, and **at Keana I have a *malu* of *'awa*.** My house lot is Kahuku, and is surrounded by *kaila*. My right of occupancy is from the time of Kamehameha I. KEAWE X his mark

No. 2931 Keaweieikini Kahuku, Oahu Jan. 5, 1848

To the Land Commissioners, Respectful Greetings: I, Keaweieikini, hereby state my claim for land at Kahuku. The name of the *mo'o* is Ahamau. There are five *lo'i* bounded on the north by Kaaikaula's [land], on the east by Kupaihea's [land], on the south by Kekipo's [land], west by Kaumi's [land]. There is *kaila* planted in sweet potato, gourd and *wauke*. In the upland are two *koa* canoe trees. **At Keana is one *malu* of *'awa*.** My right of occupancy is from the reign of Kamehameha III. KEAWEIEIKINI X his mark

**Addendum to an Archaeological Inventory Survey Plan
For the Kahuku Village Subdivision Project,
Addressing Agricultural Lots and Cesspool Replacement
Kahuku, Keana, and Mālaekahana Ahupua‘a,
Ko‘olauloa District, O‘ahu Island
TMK: [1] 5-6-002:003, 010, 012, 016, and 027**

Prepared for
R.M. Towill Corporation

Prepared by
Constance R. O‘Hare, B. A.,
David W. Shideler, M.A.,
and
Hallett H. Hammatt, Ph.D.

Cultural Surveys Hawaii, Inc.
Kailua, Hawaii
(Job Code: KAHUKU 3)

April 2008

O‘ahu Office
P.O. Box 1114
Kailua, Hawaii 96734
Ph.: (808) 262-9972
Fax: (808) 262-4950

Mauji Office
16 S. Market Street, Suite 2N
Wailuku, Hawaii 96793
Ph: (808) 242-9882
Fax: (808) 244-1994

www.culturalsurveys.com

Management Summary

Reference	Addendum to an Archaeological Inventory Survey Plan for the Kahuku Village Subdivision Project, Addressing Agricultural Lots and Cesspool Replacement Kahuku, Keana, and Mālaekahana Ahupua‘a, Ko‘olauloa District, O‘ahu Island TMK: [1] 5-6-002:003, 010, 012, 016, and 027 (O‘Hare, Shideler, and Hammatt 2008)
Date	April 2008
Project Number (s)	Cultural Surveys Hawaii, Inc. (CSH) KAHUKU 3
Investigation Permit Number	The fieldwork for the planned archaeological inventory survey investigation will likely be carried out under archaeological permit number 08-14 issued by the Hawai‘i State Historic Preservation Division/Department of Land and Natural Resources (SHPD/DLNR), per Hawai‘i Administrative Rules (HAR) Chapter 13-282.
Project Location	The Kahuku Village Subdivision project area is located seaward of Kamehameha Highway in coastal Ko‘olauloa in portions of Kahuku, Keana, and Mālaekahana Ahupua‘a. The <i>makai</i> boundary is the coast, from Makahoa Point on the south end to the fishing area called Kāhuhole on the north end. The <i>mauka</i> side is bound by Kamehameha Highway. This addendum monitoring plan addresses testing at 12 “country” agricultural lots and cesspool replacement within the long-developed Kahuku Village of the larger Kahuku Subdivision project area. The project areas are depicted on the 1998 USGS 7.5-Minute Series Topographic Map, Kahuku Quadrangle.
Land Jurisdiction	Continental Pacific, LLC
Project Description	The first phases of the project involves the development of 18 proposed beach lots (subject of a previous plan), development of 12 agricultural lots and wastewater system improvements at the existing Kahuku village (subject of the present addendum plan). Subsequent phases of work are to be determined but present plans call for maintaining the Kahuku Golf Course and Kahuku Village areas.
Project Acreage	Approximately 200 acres for entire project; approximately 24 acres total for the 12 country lots and approximately 18 acres for wastewater system improvements within the larger project area

Section 1 Introduction

1.1 Project Background

At the request of R. M. Towill Corporation, Cultural Surveys Hawai'i, Inc. (CSH) previously prepared an *Archaeological Inventory Survey Plan for 18 Beach Lots (TMK: 1-5-6-002-010) of the Kahuku Village Subdivision Project, Kahuku, Keana, and Mālaekahana Ahupua'a, Ko'olaupoko District, O'ahu Island, TMK: [1] 5-6-002-003, 010, 012, 016, and 027 (O'Hare, Shideler, and Hammett 2008)* submitted to the State Historic Preservation Division (SHPD) for review on February 29, 2008 (Log No 2008.0788). The reader is referred to that study for a detailed cultural history and a summary of previous archaeological work in the vicinity. At the request of R. M. Towill Corporation, and in consultation with the SHPD, CSH prepared this addendum archaeological inventory survey plan to address proposed development of 12 agricultural lots and wastewater system improvements at long-developed lots of the Kahuku village portion (TMK 1-5-6-002-010) of the approximately 200-acre Kahuku Village Subdivision Project (TMK: [1] 5-6-002-003, 010, 012, 016, and 027). The project area is located in coastal Ko'olaupoko District in portions of Kahuku, Keana, and Mālaekahana Ahupua'a. The *mākaī* (seaward) boundary of the entire project area is the coast, from Makahoa Point on the south end to the fishing area called Kātuaōle on the north end. The *manika* (inland) side is bound by Kamehameha Highway. The entire Kahuku Village Subdivision project area, the 12 agricultural lots and the Kahuku Village area slated for wastewater improvements are depicted on the 1998 USGS 7.5-Minute Series Topographic Map, Kahuku Quadrangle (Figure 1), on Tax Map 1-5-6-002 (Figure 2), and on an aerial photograph (Figure 3).

Continental Pacific, LLC ("Continental") is the fee owner of various properties located *mākaī* of Kamehameha Highway, which includes residential land in Kahuku Village and the Kahuku Golf Course (Figures 1, to 3). Continental intends to develop the Kahuku properties in accordance with their desire to keep Kahuku, Kahuku. To this end, Continental has developed an integrated plan for the Kahuku Village Subdivision, comprised of the following elements:

1. The property surrounding the existing 72 houses, known as (a portion of) Kahuku Village, will be subdivided first into one or two large lots, which lots will be submitted to a new Condominium Property Regime. The house lots, and possibly the vacant lots, will be condominium units. Continental will also make reasonable road (including paving), septic and safety improvements (in accordance with county requirements) in the common areas defined by the condominium documents.
2. If Continental determines that the vacant lots can be built upon and are within the county and condominium laws and regulations, the lots will be modestly improved and sold to villagers. Continental would supply architectural standards that would complement the theme of the existing Kahuku Village.
3. Two private beach parks, one at either end of the Kahuku Golf Course, will be donated to the community through the Kahuku Village Association or the condominium owners association.

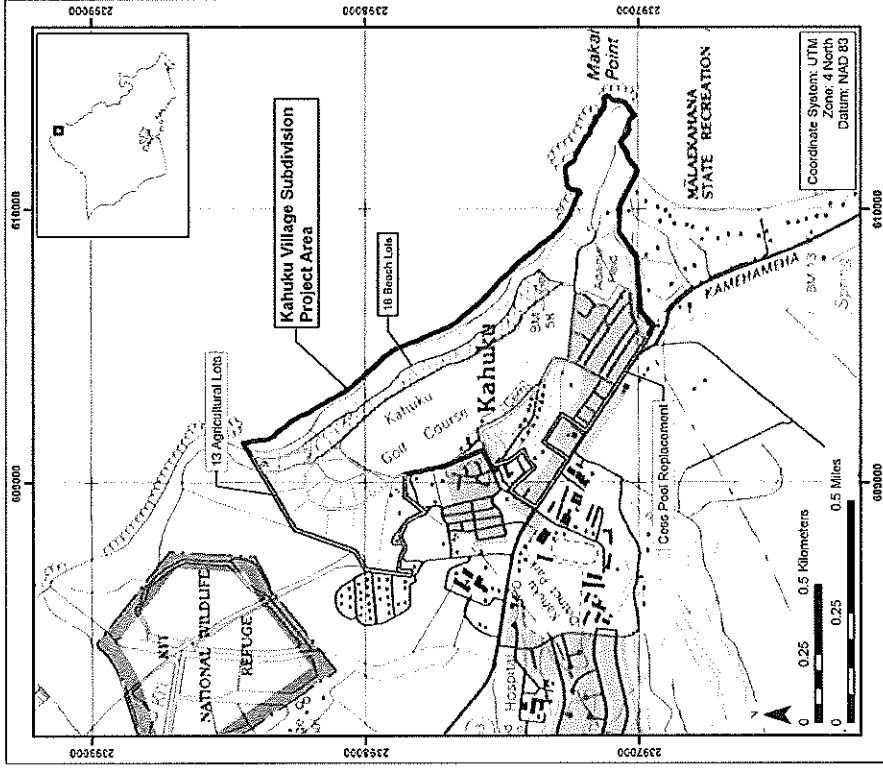


Figure 1. U.S. Geological Survey 7.5-Minute Series Topographic Map, Kahuku Quadrangle, showing the Kahuku Village Subdivision project area (outlined in red), the 12 agricultural lots at the north end, and the Kahuku Village area slated for cesspool replacement improvements (both shaded in yellow)

Addendum to an Archaeological Inventory Survey Plan for the Kahuku Village Subdivision Project, Addressing Agricultural Lots and Cesspool Replacement Kahuku, Ko'olaupoko, O'ahu Island

TMK: [1] 5-6-002-010

Addendum to an Archaeological Inventory Survey Plan for the Kahuku Village Subdivision Project, Addressing Agricultural Lots and Cesspool Replacement Kahuku, Ko'olaupoko, O'ahu Island

TMK: [1] 5-6-002-010

<p>Historic Preservation Regulatory Context</p>	<p>The proposed Kahuku Village Subdivision development project is subject to Hawaii's State environmental and historic preservation review legislation [Hawaii's Revised Statutes (HRS) Chapter 343 and HRS 6E-8/Hawaii's Administrative Rules (HAR) Chapter 13-13-275, respectively]. The current addendum archaeological inventory survey plan was prepared in advance of planned archaeological inventory survey testing at 12 "country" agricultural lots and 6 cesspool replacement locations within the long-developed Kahuku Village. To better define the scope of work for the archaeological inventory survey, this plan was prepared in accordance with the requirements for an archaeological inventory survey plan as stated in Hawaii's Administrative Rules (HAR) 13-284-5(c). The plan details the proposed methods of the inventory survey, per the requirements of Hawaii's Administrative Rules (HAR) Chapter 13-276</p>
<p>Summary of the Planned Inventory Survey Research Design</p>	<p>This addendum archaeological inventory survey plan addresses testing at 12 "country" agricultural lots and cesspool replacement within the long-developed Kahuku Village of the Kahuku Village Subdivision project area. Surface and subsurface testing will be focused on the vacant 12 "country" agricultural lots proposed for development and seven of the lots where new wastewater systems are planned. All lots will be surveyed with pedestrian sweeps to locate any surface finds. Subsequent work will focus on backhoe assisted hand excavation of trenches. In the case of the 12 agricultural lots five trenches will be excavated on each lot: two in the proposed house footprint, two in the proposed leach field, and one in the proposed septic tank location, for a minimum total of 60 trenches. A backhoe will be used to excavate any upper fill layers, if present. From the top surface of any Jaucus sand layers to below the water table or to the coral reef (whichever comes first), excavation will proceed with shovel test trenches (approximately 25 centimeters wide) to identify cultural layers, subsurface features, and burials. If no cultural deposits, artifacts or burials are found, the backhoe will be used to excavate a trench (80 centimeters wide) around the shovel test trench to below the water table, lithified sand, or the reef limestone substrate. If cultural deposits, subsurface features, or burials are found, larger units around their location may be excavated by hand (shovel and trowel) to further expose or explore the findings.</p> <p>A similar testing strategy of three trenches (two at the leach field and one at the septic tank location) will be excavated at a sample of 6 locations slated for wastewater improvements.</p>

Table of Contents

Management Summary i

Section 1 Introduction 1

 1.1 Project Background 1

 1.2 Environmental Setting 5

 1.2.1 Natural Environment 5

 1.2.2 Built Environment 6

Section 2 Inventory Survey Plan 8

 2.1 Personnel 8

 2.2 Field Methods 8

 2.3 Laboratory Methods 14

 2.4 Historic Property Evaluation for Hawaii's Register Eligibility 15

 2.5 Community Consultation 15

 2.6 Report Preparation 15

Section 3 References Cited 17

List of Figures

Figure 1. U.S. Geological Survey 7.5-Minute Series Topographic Map, Kahuku Quadrangle, showing the Kahuku Village Subdivision project area (outlined in red), the 12 agricultural lots at the north end, and the Kahuku Village area slated for cesspool replacement improvements (both shaded in yellow) 2

Figure 2. Tax Map Key (1) 5-6-002, showing the Kahuku Village Subdivision project area (outlined in red), the 12 agricultural lots at the north end, and the Kahuku Village area slated for cesspool replacement improvements (both shaded in yellow) 3

Figure 3. Aerial photograph, showing Kahuku Village Subdivision project area (outlined in red), the 12 agricultural lots at the north end, and the Kahuku village area slated for cesspool replacement improvements (shaded in orange) 4

Figure 4. Soils map of the Kahuku Village Subdivision project area (outlined in red) and 18 Beach Lots section (outlined in yellow) 7

Figure 5. Somewhat schematic depiction of layout of five trenches at one of the country lots 9

Figure 6. Overview map of location of cesspools at Kahuku village 10

Figure 7. Map showing six areas of larger proposed wastewater systems recommended as areas for inventory survey testing 11

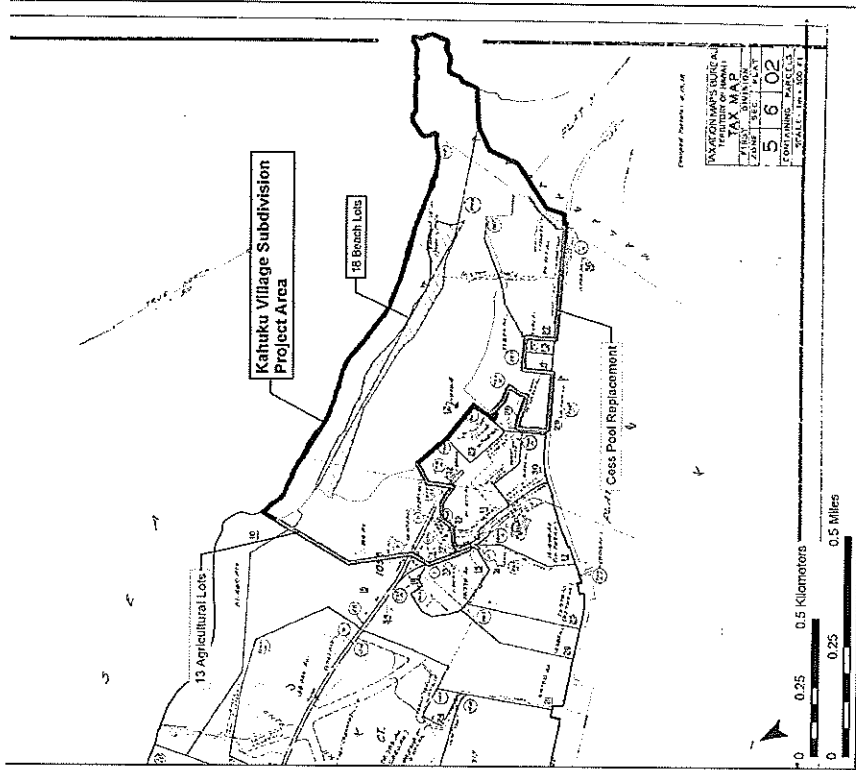


Figure 2. Tax Map Key (1) 5-6-002, showing the Kahuku Village Subdivision project area (outlined in red), the 12 agricultural lots at the north end, and the Kahuku Village area slated for cesspool replacement improvements (both shaded in yellow)

Addendum to an Archeological Inventory Survey Plan for the Kahuku Village Subdivision Project, Addressing Agricultural Lots and Cesspool Replacement Kahuku, Ko'olaheoa, O'ahu Island

TMK: (1) 5-6-002:010

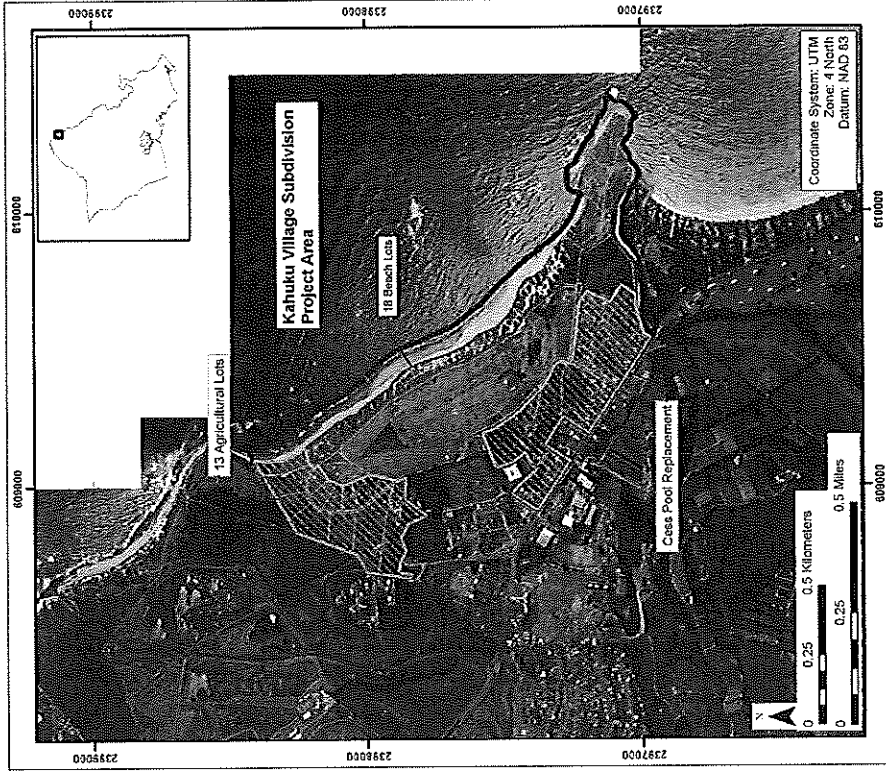


Figure 3. Aerial photograph showing Kahuku Village Subdivision project area (outlined in red), the 12 agricultural lots at the north end, and the Kahuku Village area slated for cesspool replacement improvements (shaded in orange)

Addendum to an Archeological Inventory Survey Plan for the Kahuku Village Subdivision Project, Addressing Agricultural Lots and Cesspool Replacement Kahuku, Ko'olaheoa, O'ahu Island

TMK: (1) 5-6-002:010

4. The 9-hole Kahuku Golf Course will be donated or leased (in perpetuity) to an entity acceptable to Continental and subject to a maintenance covenant.
5. The two cemeteries located in the area will be donated to an entity acceptable to Continental.
6. Continental will develop 18 lots on the *makai* side of the Kahuku Golf Course (the subject of an inventory survey plan previously submitted to the SHPD for review). These will be large lots developed in a country setting.
7. Makahoa Point will be subdivided and sold as a single ranch lot (25+ acres in size) to Jim Reynolds who has been a long time tenant of that property. He intends to keep it in its current use with no further subdivision.
8. Continental reserves the right to establish a camping area at the old Adams Field area, which is a permitted use under the existing P-2 zoning, and may be developed with recreational camping cabins, or sold outright.
9. The remaining area at the north end of the Kahuku Golf Course will be kept in agriculture and developed into 12 agricultural lots of approximately 2 acres in size (subject of the present addendum plan).
10. Improvements to the wastewater systems servicing approximately 72 existing residences presently served with cesspools to septic tanks and leach fields (subject of the present addendum plan).

The proposed Kahuku Village Subdivision project is subject to Hawaii'i State environmental and historic preservation review legislation [Hawaii'i Revised Statutes (HRS) Chapter 343 and HRS 6E-8/Hawaii'i Administrative Rules (HAR) Chapter 13-13-275, respectively]. The current addendum archaeological inventory survey plan was prepared in advance of a planned archaeological inventory survey including the 12 northern agricultural lots and 6 selected areas within the Kahuku Village area slated for wastewater improvements within the Kahuku Village project area. To better define the scope of work for the archaeological inventory survey, this plan was prepared in accordance with the requirements for an archaeological inventory survey plan as stated in Hawaii'i Administrative Rules (HAR) 13-284-5(c). The plan details the proposed methods of the inventory survey, per the requirements of Hawaii'i Administrative Rules (HAR) Chapter 13-276.

1.2 Environmental Setting

1.2.1 Natural Environment

The Kahuku Village Subdivision project area is located on the nearly-level and low-lying coastal plain of Kahuku, at the east of the northern tip of the island of O'ahu. Elevations within the project area range from approximately sea level to approximately 30 feet AMSL (above mean sea level). One small hill on the property, labeled Keana, is 58 feet high. The project area receives an average of approximately 1000 millimeters (39 inches) of annual rainfall (Giambelluca et al. 1986). Portions of the surrounding coastal plain are protected wetlands,

including the Ki'i portion of the James Campbell National Wildlife Refuge, 0.25 kilometers northwest of the Kahuku Village project area.

Three types of soils occur within the Kahuku Village project area: Beaches (BS) in a narrow strip along the coast; Keauu clay, saline, 0 to 2 percent slopes (KmbA), in a small section on the western side; and, Jaucus sand, 0 to 1.5 percent slope (JaC) in the remaining portion of the project area (Figure 4).

Beaches (BS) occur as sandy, gravelly, or cobbly areas, which are washed and reworked by ocean waves. The light-colored sands are derived from coral, coralline algae, and seashells.

The Jaucus series consists of excessively drained, calcareous soils. They occur as narrow strips on coastal plains, adjacent to the ocean. The soils developed from wind and water deposited sand derived from coral, coralline algae, and seashells. Areas with Jaucus sand, 0 to 1.5 percent slope (JaC) are used for pasture, sugarcane, truck crops, and urban development. The natural vegetation is *kiawe* (*Prosopis pallida*), *koa hale* (*Leucaena leucocephala*), bristly foxtail (*Pennisetum verticillatum*), bermudagrass (*Cynodon dactylon*), fingergrass (*Chloris* spp.), and Australian saltbush (*Atriplex semibaccata*).

The Keauu series consists of poorly drained soils, which developed in alluvium deposited over reef limestone or consolidated coral sand. They are nearly level and gently sloping. The natural vegetation consists of *kiawe*, bermudagrass, bristly foxtail, and fingergrass. Areas of Keauu clay, saline, 0 to 2 percent slopes (KmbA), are strongly affected by salts, and thus much of this land is barren or covered with pickleweed (*Batis maritima*). Many of these areas are being drained and filled for use for industrial sites, homes, and parks.

1.2.2 Built Environment

Much of the land within the Kahuku Village Subdivision project area is used as part of the Kahuku Municipal Golf Course, built in 1937. The golf course is landscaped with low grass and scattered monkeypod trees (*Samaranea saman*). There are no lakes or ponds and the sand bunkers are small (Sandler 1990:66). On the *makai* boundary, there is a narrow beach, but no beach park facilities. The proposed 12 agricultural lots are undeveloped and do not presently have any structures built on the grounds. On the *makua* portion of the subdivision project area, there are residential areas that are in need of wastewater management upgrading (cesspool conversion to septic tanks and leach fields) and community athletic parks such as the six-acre Adams Field, an area of baseball and softball fields. It is named for Andrew Adams, the manager of the Kahuku Plantation Company from 1904-1921 (Clark 1977:137).

Section 2 Inventory Survey Plan

This section details the methods to be used by CSFH personnel during fieldwork, laboratory analysis, and the preparation of the archaeological inventory survey report for the 12 Agricultural Lots and a sample of the areas for proposed wastewater system improvements (conversion from cesspools to septic tanks and leach fields).

2.1 Personnel

Fieldwork for the Archaeological Inventory Survey will be carried out under the supervision of principal investigator Hallett H. Hammett, Ph.D. It is anticipated that a field crew of four archaeologists will be utilized over 16 days. Although the exact composition of the field crew is uncertain at this time, likely field crew members include: David W. Shideler, M.A., Todd Tulchin, B.S., and Connie O'Hare, B.A.

2.2 Field Methods

A complete ground survey of the 12 agricultural lots and 7 lots for wastewater improvements will be undertaken for the purpose of historic property identification and documentation. The pedestrian inspection of the study area will be accomplished through systematic sweeps. The interval between the archaeological surveys will generally be 5-10 m. All historic properties will be documented by way of: a detailed written description, with evaluation of function, interrelationships, and significance; photographs; scale drawings, using standard tape-and-compass mapping procedures; location information will be acquired with Trimble ProXH GPS survey equipment (sub-foot accuracy).

Subsequently, the archaeological inventory survey will focus on a program of subsurface testing in the 12 agricultural lots and 7 lots for wastewater improvements to locate any buried cultural deposits.

For the current project area, the subsurface testing program is projected to consist of the excavation of a minimum of 78 test trenches, 20 ft (feet), or 6 m (meters) long, for a total excavation of approximately 374 m². Five trenches will be excavated for each agricultural lot, two in the proposed footprint of the new house, one in the proposed location of the septic tank, and two in the proposed location of the new leach field. Figure 5 shows a typical agricultural lot, with the house foundation and septic tank location blocked in. The figure illustrates the possible location of the five trenches in one lot. Trench placement will vary for each lot based on topographic features (i.e. large trees, sand dunes, bedrock exposures, etc.).

In consultation with the SHPD it has been agreed that the lots for proposed wastewater improvements will be subjected to archaeological inventory survey of a 10% sample. We are told there are a total of 60 cesspools in Kahuku Village (Figure 6) including a number of larger "gang cesspools" serving more than one household. We understand the gang cesspools will involve larger areas of ground disturbance for replacement so the proposed approach is to conduct archaeological inventory survey excavations at a sample of 6 of the 10 gang cesspools for

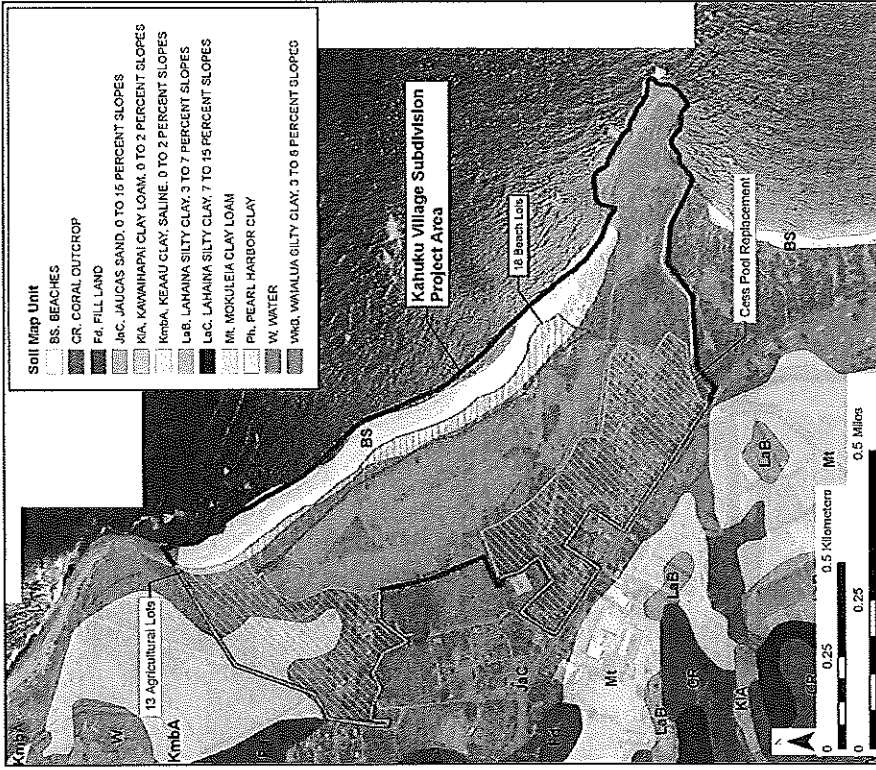


Figure 4. Soils map of the Kahuku Village Subdivision project area (outlined in red) and 18 Beach Lots section (outlined in yellow)

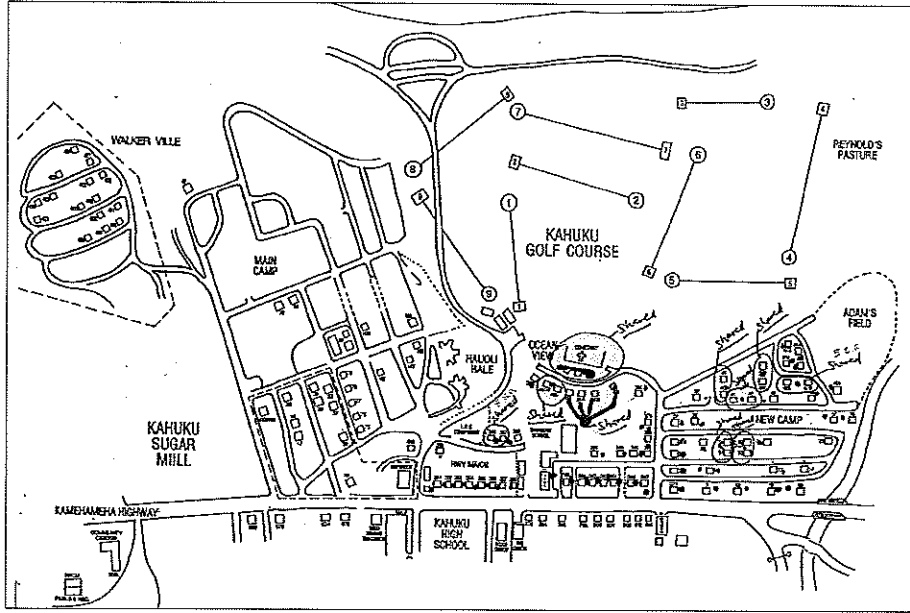


Figure 6. Overview map of location of cesspools at Kahuku village

Addendum to an Archaeological Inventory Survey Plan for the Kahuku Village Subdivision Project, Addressing Agricultural Lots and Cesspool Replacement Kahuku, , Ko'olaupua, O'ahu Island
TMK: [1] 5-6-002:010

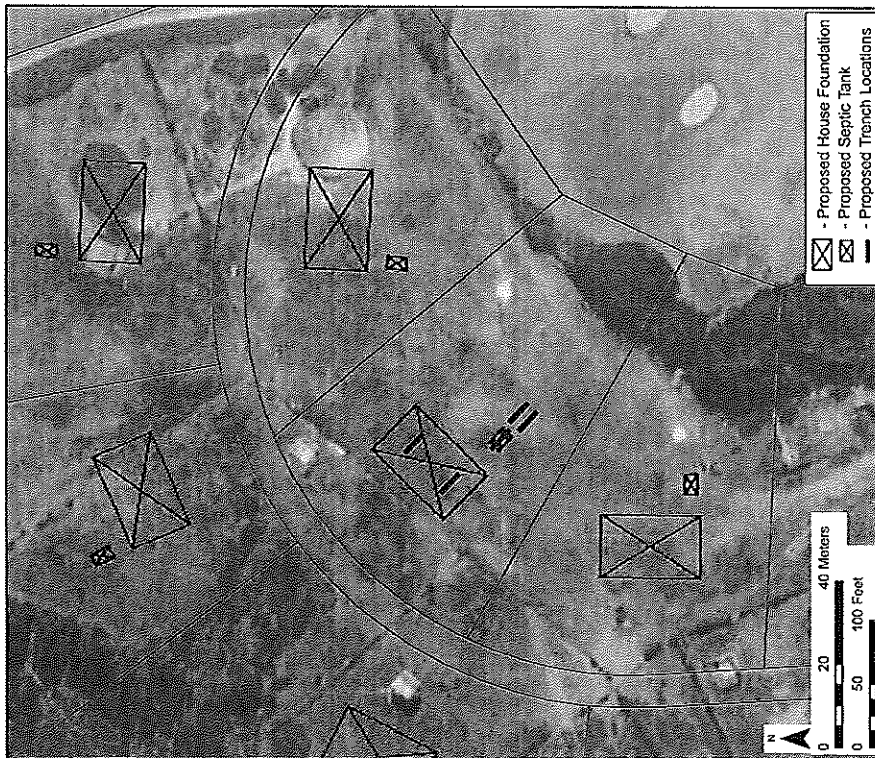


Figure 5. Somewhat schematic depiction of layout of five trenches at one of the country lots

Addendum to an Archaeological Inventory Survey Plan for the Kahuku Village Subdivision Project, Addressing Agricultural Lots and Cesspool Replacement Kahuku, , Ko'olaupua, O'ahu Island

TMK: [1] 5-6-002:010

The proposed testing areas for the wastewater system improvements sample are shown in Figure 7. We feel that this sample offers good geographic distribution.

A standard backhoe with a two-foot wide bucket will be used to excavate at least portions of each test trench. Generally, trenches excavated to assess subsurface stratigraphy and prospect for subsurface cultural deposits will be one backhoe bucket width wide (approximately 0.8 m) by approximately 6 m long. For trenches excavated to further expose, sample, and/or assess the boundaries of specific cultural deposits, for example burial deposits or a subsurface cultural layer. All trenches will be excavated down to the underlying coral shelf or below the water table.

The assisting backhoe will initially be used to remove overlying alluvial sediment or fill deposits within each test trench. The bucket's teeth will be used to facilitate excavation of these stiffer, more consolidated deposits. When excavation is to occur through Jaucas sand deposits, which are more likely to contain human skeletal remains or other significant cultural deposits, the backhoe bucket's teeth will be sheathed in a detachable steel blade. This blade makes it possible for the backhoe to carefully strip away thin layers of sand, approximately 5 cm (centimeters) thick, which is not possible with the standard toothed backhoe bucket.

The bladed backhoe bucket will only be used to remove Jaucas sand from trenches once at least one hand-excavated shovel trench is first dug down the center of the trench, parallel to the trench's long axis. This hand excavation in sand deposits will be specifically undertaken to identify potential burial deposits prior to sand excavation with the backhoe. These shovel trenches will be one shovel width wide (approximately 25 cm) and dug from the upper Jaucas sand surface to the water table. The sand will be carefully scraped off in thin layers in order to minimize any possible burial disturbance. Smaller shovel test probes, 25 by 25 cm, will be excavated down from the base of the shovel trench, below the water table. This is an extra precaution to identify any particularly deep burial deposits. In wider trenches, such as those specifically excavated to delimit the boundaries of burial deposits, multiple shovel trenches will be excavated by hand across the backhoe trenches prior to any sand excavation with the backhoe. These shovel trenches will generally be 40 cm apart.

Only once the hand excavation through the sand deposit is completed will the backhoe's bladed bucket be used to further excavate Jaucas sand deposits. CSH personnel will closely monitor all backhoe excavation activity, particularly through sand deposits. In sand deposits, at least two archaeologists will observe the backhoe excavation, one positioned at either end of the trench to monitor both the removal of sediment from the trench and the emptying of the backhoe bucket on the adjacent back-dirt pile.

The stratigraphy in each trench will be drawn and photographed. The sediments will be described for each of the trenches using standard USDA soil description observations/terminology. Sediment descriptions include Munsell color, texture, consistency, structure, plasticity, cementation, origin of sediments, descriptions of any inclusions such as cultural material and/or roots and rootlets, lower boundary distinctiveness and topography, and other general observations. Where burial pits or other cultural features may be exposed, these will be carefully represented on the trench profile. Feature documentation will include profiles and/or plan views, collected samples, stratigraphic descriptions, and photographs. When exposed in plan view within trenches, pit features will be drawn and sampled.

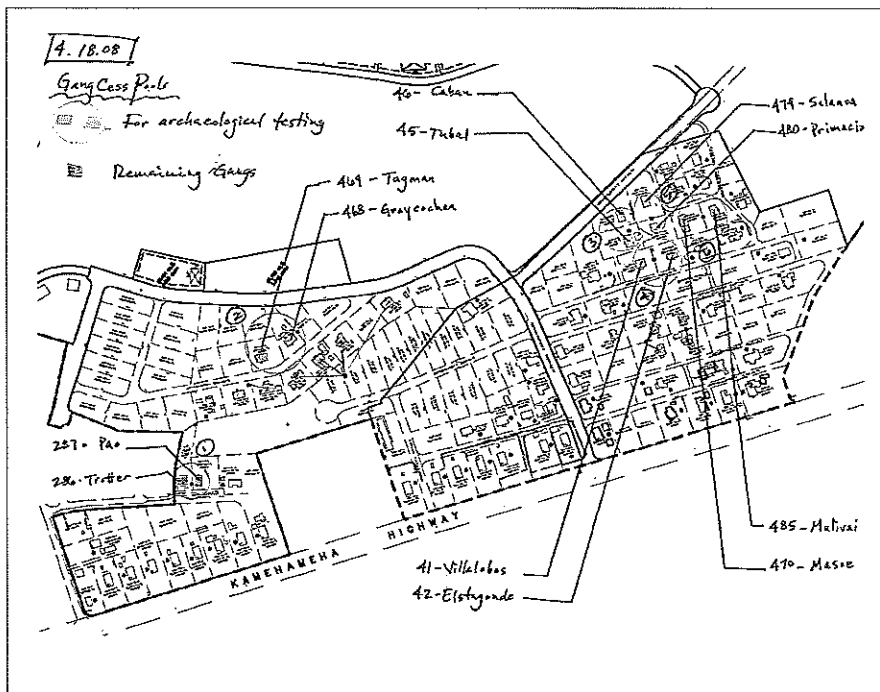


Figure 7. Map showing six areas of larger proposed wastewater systems recommended as areas for inventory survey testing

- 6) A comprehensive catalogue of all collected cultural material will be prepared and included with the report.

2.4 Historic Property Evaluation for Hawai'i Register Eligibility

Under state of Hawai'i historic preservation legislation, historic property significance is evaluated and expressed as eligibility for listing on the Hawai'i Register of Historic Places (Hawai'i Register). To be considered eligible for listing on the Hawai'i Register, a historic property must possess integrity of location, design, setting, materials, workmanship, feeling, and association, and meet one or more of the following broad cultural/historic significance criteria: "A" reflects major trends or events in the history of the state or nation; "B" is associated with the lives of persons significant in our past; "C" is an excellent example of a site type/work of a master; "D" has yielded or may be likely to yield information important in prehistory or history; and, "E" has traditional cultural significance to an ethnic group, includes religious structures and/or burials. For this report, historic property integrity and significance were assessed based on the guidance provided in National Register Bulletin # 15, "How to Apply the National Register Criteria for Evaluation."

2.5 Community Consultation

A community consultation effort will be undertaken as a component of the planned Archaeological Inventory Survey investigation. The community consultation will be made in conjunction with an associated Cultural Impact Assessment for the proposed Kahuku Villages Subdivision Project, also being prepared by CSH. Per HAR Chapter 13-13-276, the community consultation effort for the archaeological inventory survey will involve "notifying interested organizations and individuals that a project could affect historic properties of interest to them; seeking their views on the identification, significance evaluations, and mitigation treatment of these properties; and considering their views in a good faith and appropriate manner during the review process." An effort will be made to contact and consult with Hawaiian cultural organizations, government agencies, knowledgeable community members, and recognized lineal and cultural descendants of Kahuku and Keana.

2.6 Report Preparation

An Archaeological Inventory Survey report will be prepared in conformance with HAR 13-276-5. This inventory survey report will include the following:

- A topographic map of the survey area showing the locations of all historic properties;
- Results of consultation with knowledgeable community members about the property and its historical and cultural issues;
- Description of all historic properties with selected photographs, scale drawings, and discussions of function;
- Historical and archaeological background sections summarizing prehistoric and historic land use as they relate to the project area's historic properties;

15

- A summary of historic property categories and their significance in an archaeological and historic context; and,
- Recommendations based on all information generated that will specify what steps should be taken to mitigate impact of development on the project area's significant historic properties - such as data recovery (excavation) and preservation of specific areas. These recommendations will be developed in consultation with the client and the State agencies.

A draft of the archaeological inventory survey report shall be prepared and submitted in a timely manner, within three months following the end of fieldwork. Following the receipt of review comments on the draft report from SHPD, the revised and corrected report shall be submitted within one month.

16

Section 3 References Cited

- Abbott, R. Tucker, and S. Peter Dance**
1990 *Compendium of Seashells*. Fourth Edition. American Malacologists, Inc., Melbourne, Florida.
- Barrera, William M., Jr., and Patrick V. Kirch**
1973 Basaltic-Glass Artifacts from Hawaii. Their Dating and Prehistoric Uses. *Journal of the Polynesian Society* 82:2:176-187.
- Brigham, William T.**
1974 Stone Implements and Stone Work of the Ancient Hawaiians. *Memoirs of the Bernice Pauahi Bishop Museum*, Vol. 1, No. 4, Bishop Museum Press, Honolulu.
- Buck Peter H.**
2003 *Arts and Crafts of Hawaii*. Bernice P. Bishop Special Publication 45, Bound Version. Bishop Museum Press, Honolulu.
- Bureau of Land Management/Society for Historical Archaeology**
2008 Historic Glass Bottle Identification & Information Website. <http://www.sha.org/bottle/index.htm>.
- Eisenberg, Jerome M.**
1981 *A Collector's Guide to Seashells of the World*. Crescent Books, New York City.
- Elliott, Rex R.**
1971 *Hawaiian Bottles of Long Ago*. Hawaiian Service, Honolulu
- Elliott, Rex R., and Stephen C. Gould**
1988 *Hawaiian Bottles of Long Ago. A Little of Hawaii's Past*. Hawaiian Service, Honolulu.
- Emory, Kenneth P., William J. Bonk, and Yoshiniko H. Sinoto**
1968 *Fishhooks*. Bernice P. Bishop Museum Special Publication 47. Bishop Museum Press, Honolulu.
- Fike, Richard E.**
1987 *The Bottle Book. A Comprehensive Guide to Historic Embossed Medicine Bottles*. Peregrine Smith Books, Salt Lake City.
- Foots, Donald E., E. L. Hill, S. Nakamura and F. Stephens**
1972 *Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai and Lanai, State of Hawaii*. U.S. Dept. of Agriculture. U.S. Government Printing Office, Washington, D.C.
- Kay, E. Alison**
1979 *Hawaiian Marine Shells*. Bernice P. Bishop Museum Press, Honolulu.
- Lebo, Susan A. (editor)**
1997 *Native Hawaiian and Euro-American Culture Change in Early Honolulu*. Anthropology Department, Bernice P. Bishop Museum, Honolulu.

- Lister, Florence C. and Robert H. Lister**
1989 *The Chinese of Early Tucson, Historic Archaeology from the Tucson Urban Renewal Project*. The University of Arizona Press, Tucson, Arizona.
- Millar, Jim**
1988 *The Handbook of Hawaiian Machine Made Soda Bottles*. Soda Mart, Goodlettsville, Tennessee.
- Munsey, Cecil**
1970 *The Illustrated Guide to Collecting Bottles*. Hawthorn Books, Inc., New York, New York.
- O'Hare, Constance, David W. Shideeler, and Hallett h. Hammett**
2008 *Archaeological Inventory Survey Plan for 18 Beach Lots (TMK: 1-5-6-002:010) of the Kahuku Village Subdivision Project, Kahuku, Keana, and Mālaekahana Ahupua'a, Ko'olanāna District, O'ahu Island, TMK: [1] 5-6-002:003, 010, 012, 016, and 027 Cultural Surveys Hawai'i, Kāiua, Hawai'i*
- Titcomb, Margaret**
1972 *Native Use of Fish in Hawaii*. University of Hawai'i Press, Honolulu.
- Titcomb, Margaret**
1979 *Native Use of Marine Invertebrates in Old Hawaii*. University of Hawai'i Press, Honolulu.
- Toulouse, Julian Harrison**
1971 *Bottle Makers and Their Marks*. Thomas Nelson Inc., Camden, New York.
- Zumwalt, Betty**
1980 *Ketchup, Pickles and Sauces. 19th Century Food in Glass*. Mark West Publishers, Fulton, California.

If any significant archaeological or historical finds are discovered, SHPD will be informed immediately. If any significant historic properties are found they will be treated in accordance with a program approved by the SHPD. Unavoidably, trench excavation through sand, either by hand or with the backhoe may result in the partial disturbance of human remains. If human remains are discovered, the SHPD archaeology branch will be notified immediately. In the event that human remains are encountered, they shall be treated as previously identified under Hawaii'i Administrative Rule (HAR) 13-300-31(b). Relocation or preservation in place will be determined by the State Historic Preservation Division in consideration of the recommendations of the O'ahu Island Burial Council. If human remains are identified, no further work will take place, including no screening of back dirt, no cleaning and/or excavation of the burial area, and no exploratory work of any kind unless specifically requested by the SHPD.

Skeletal element inventory forms, plan view and profile drawings, and written descriptions will be prepared to document any burials, if so directed by the SHPD. This archaeological inventory survey plan does not propose any additional treatment of human remains, other than documentation of archaeological context. A burial treatment plan will be prepared, as appropriate.

In consultation with the SHPD, in order to delineate burial areas, additional trenches may be excavated on four sides of the initial discovery to search for additional burials in the vicinity. Again, initially the backhoe will only be used to remove the overlying alluvial or fill sediments. Hand-shovel trenching will be undertaken prior to using the backhoe within sand deposits. As appropriate, plan views will be prepared to record horizontal provenience of finds, such as burials or pit features associated with a cultural layer.

Activities of the undertaking in the vicinity of the discovery of human remains may resume if an accepted Burial Treatment Plan has been approved or in the event that SHPD has agreed to permit the undertaking to proceed with culturally appropriate interim protective measures for human remains, which may include preservation in place or recordation.

The sampling of subsurface cultural layers and/or A horizons will be carried out to characterize the cultural content of these layers. Sampling may also help establish geographic boundaries to these layers and the general time frame of their deposition (prehistoric/traditional Hawaiian, and/or historic, and/or modern). The sampling will be undertaken on both pit features associated with the stratigraphic layer, and "sample areas" taken from the portion of the stratigraphic layer that was not part of a particular cultural feature. The distinction between samples from pit features and sample areas is hoped to reflect the difference in cultural material content between sediment from specific events, such as the excavation and use of a pit, and the more general accumulation of sediment as part of a culturally enriched stratigraphic layer.

Pit features will be identified and labeled as distinct protuberances of the culturally enriched layer down into the underlying culturally sterile layer. These pit features will be given Roman letter designations within each trench area. Pit features will be distinguished in trench profiles and plan views by their shape, content, distinctness and degree of protrusion below the lower boundary of the overall cultural layer.

Samples from pit features and sample areas will be excavated out of the sidewall, or from the base of the excavation if exposed in profile, into five gallon (20 liter) buckets. The sediment will

then be screened through 1/8-inch (3.2 millimeter) mesh and all cultural materials collected, bagged by provenience, and returned to the laboratory. During the collection of cultural material from the screen, careful attention will be made to distinguish between water-rounded, bleached sedimentary shell, and the unbleached, unrounded, often relatively freshly broken shell derived from human activity. The volume of each screened sample, usually between two and ten gallons (7.5 to 38.0 liters) will be recorded so that comparisons can be made between samples.

The location of each of the trenches, and significant features will be recorded using a Trimble ProXH mapping grade GPS survey equipment. This unit provides sub-meter real-time horizontal accuracy and sub-foot post-processed accuracy.

2.3 Laboratory Methods

This phase of work will involve the following specific procedures:

- 1) Charcoal samples will be submitted for radiocarbon dating, if available. Those samples containing pieces suitable for wood identification, as available, will be submitted for species analysis first. Selection of charcoal samples for dating will be in part based on the wood species findings.
- 2) Invertebrate remains collected from specific subsurface features or cultural layers will be identified to genus and species, weighed, and analyzed. Data will be tabulated by depth and stratigraphic unit. Common marine shells will be identified and analyzed at the Cultural Surveys Hawai'i laboratory in Waimanalo, O'ahu using an in-house comparative collection and reference texts (i.e. Abbott and Dance 1990; Eisenberg 1981; Kay 1979; Titcomb 1977). If any rare and/or extinct marine or freshwater shells are recovered, an outside expert will be consulted for identification of the material. The total weight of any midden will be tabulated by collection unit.
- 3) Non-human vertebrate faunal material collected from specific subsurface features or cultural layers will be identified to the lowest possible taxa at the CSH laboratory using an in-house comparative collection and reference texts (i.e. Olson 1964; Schmid 1972; Sisson 1914). If a large number of bird or fish bones, or any unusual bones are recovered, they will be submitted to an expert in faunal analysis for identification. The total weight of any midden will be tabulated by collection unit.
- 4) Identification and cataloguing of traditional Hawaiian artifactual material will be completed. Artifacts will be measured with representative samples drawn and/or photographed to scale. The forms and functions will be determined using reference material (i.e. Barrera and Kirch 1973; Brigham 1974; Buck 2003; Emory et al. 1968).
- 5) Identification and cataloguing of historic artifacts will be completed. This research will focus on the function and manufacturing dates of the items, using reference texts (i.e. Bureau of Land Management 2008; Elliott 1971; Elliott and Gould 1988; Fike 1987; Lebo 1997; Lister and Lister 1989; Millar 1988; Munsey 1970; Toulouse 1971; Zumwalt 1980).

Appendix E

Cultural Impact Assessment

Interim Report
Cultural Impact Assessment for the
Kahuku Village Subdivision Project
Kahuku, Keana and Mālaekahana Ahupua'a
Ko'olauloa District, Island of O'ahu
TMK: (1) 5-6-002:012,027, portions 003,010 & 016

Prepared for
R.M. Towill Corporation

Prepared by
Hallett H. Hammatt, Ph.D.
Cultural Surveys Hawai'i, Inc.
Kailua, Hawai'i
(Job Code: KAHUKU 4)

April 2008

O'ahu Office
 P.O. Box 1114
 Kailua, Hawai'i 96734
 Ph.: (808) 262-9972
 Fax: (808) 262-4950

Maui Office
 1993 Main St.
 Wailuku, Hawai'i 96793
 Ph: (808) 242-9882
 Fax: (808) 244-1994

www.culturalsurveys.com

Management Summary

Reference	Cultural Impact Assessment for the Kahuku Village Subdivision Project, Kahuku, Keana and Mālaekahana Ahupua'a, Ko'olauloa District, Island of O'ahu, TMK: (1) 5-6-002:012,027, portions 003,010 & 016 (Hammatt 2008)
Date	April 2008
Project Number (s)	Cultural Surveys Hawai'i (CSH) Job Code: KAHUKU 4
Project Location	The Kahuku Village Subdivision project area is located seaward of Kamehameha Highway in coastal Ko'olauloa in portions of Kahuku, Keana, and Mālaekahana Ahupua'a. The <i>mahele</i> boundary is the coast, from Makahoa Point on the south end to the fishing area called Kaluhole on the north end. The <i>mahele</i> side is bound by Kamehameha Highway. This monitoring plan concerns only 18 beach lots, a portion of the larger Kahuku Subdivision project area. The project areas are depicted on the 1998 USGS 7.5-Minute Series Topographic Map, Kahuku Quadrangle.
Land Jurisdiction	Private (Continental Pacific, LLC)
Agencies	State of Hawai'i Department of Health / Office of Environmental Quality Control (DOH / OEQC)
Project Description	The first phase of the project involves the development of 18 proposed beach lots. Subsequent phases of work are to be determined but present plans call for maintaining the Kahuku Golf Course and Kahuku Village areas.
Project Acreage	Approximately 200 acres for entire project; approximately 15 acres for 18 beachfront lots within the larger project area
Area of Potential Effect (APE)	For the purposes of this Cultural Impact Assessment (CIA), the APE is defined by the approximately 200-acre project area footprint. While this investigation focused on the project APE, the study area included portions of the <i>ahupua'a</i> of Kahuku, Keana, and Mālaekahana
Document Purpose	The project requires compliance with the State of Hawai'i environmental review process [Hawai'i Revised Statutes (HRS) Chapter 343], which requires consideration of a proposed project's effect on cultural practices and resources. At the request of R.M. Towill Corporation, CSH is undertaking this CIA. Through document research and (ongoing) cultural consultation efforts this interim report document provides <i>preliminary</i> information pertinent to the assessment of the proposed project's impacts to cultural practices (per the OEQC's Guidelines for Assessing Cultural Impacts). The document is intended to support the project's environmental review and may also serve to support the project's historic preservation review under HRS Chapter 6E-42 and Hawai'i Administrative Rules Chapter 13-284.

<p>to honor their wishes concerning proper cultural protocol, re-interment and protection of <i>Iwi Kiipuna</i>.</p> <p>2. Given the critical concern expressed by study participants regarding protection of native Hawaiian traditional and customary gathering rights and beach access, it is recommended that the proposed subdivision is planned and developed in such a way as to allow access from the highway to the shoreline and that ongoing cultural fishing and gathering practices by native Hawaiian and other groups such as plantation descendants be recognized and safeguarded.</p> <p>3. It is recommended that Kahuku community members be further consulted and informed about the cultural and related concerns expressed in this initial assessment throughout the planning and development process.</p>	
--	--

<p>Hawaiian organizations, agencies and community members were contacted in order to identify potentially knowledgeable individuals with cultural expertise and/or knowledge of the project area and the vicinity. The organizations consulted included the State Historic Preservation Division (SHPD), the Office of Hawaiian Affairs (OHA), the O'ahu Island Burial Council (OIBC), and community and cultural organizations in Kahuku, Ko'olaupoko such as the Ko'olaupoko Hawaiian Civic Club, Ko'olaupoko Neighborhood Board, etc.</p>	<p>Results of Community Consultation</p>
<p>To date, three community agencies/organizations and three individuals have participated in this assessment. Preliminary findings for this interim report presents the following cultural practices, resources and associated concerns:</p> <ol style="list-style-type: none"> The project area and vicinity is likely to have surface and subsurface cultural and historic properties, including human burials. The project area and vicinity, particularly the shoreline, has a long history of cultural use by Kānaka Maoli (native born), as well as other <i>kama'āina</i> groups mainly, former plantation workers and their descendants and more recent immigrant groups (Japanese, Filipinos, Portuguese, Koreans, Chinese, Laotians) for a variety of cultural activities including fishing, salt and <i>limu</i> collection, and plant-gathering. In particular, there is concern that beach access will be restricted as a result of the proposed development and that access to cultural resources will be disrupted. 	<p>Recommendations</p>
<ol style="list-style-type: none"> In light of the archival evidence and community consultation presented in this initial assessment, it is likely that there are burial sites (<i>Iwi Kiipuna</i>, ancestral remains) as well as significant cultural and historic properties in the subject project area. It is recommended that: <ol style="list-style-type: none"> Cultural monitoring be conducted during all phases of development and, Personnel involved in development activities in the project area be informed of the possibility of inadvertent cultural finds, including human remains. Should cultural or burial sites be identified during ground disturbance, all work should immediately cease, and the appropriate agencies notified pursuant to applicable law. In the event of burial finds, the developer/owner work closely with cultural and lineal descendants of Kahuku 	

Table of Contents

Management Summary	i
Section 1 Introduction	1
1.1 Project Background	1
1.2 Archaeological Inventory Survey Plan	2
1.3 Document Purpose	2
1.4 Scope of Work	2
1.5 Environmental Setting	8
1.5.1 Natural Environment	8
1.5.2 Built Environment	8
Section 2 Methods	11
Section 3 Traditional Background.....	12
3.1 Place Name Meanings	12
3.2 The Floating Land of Kahuku	12
3.3 Keana Cave	17
3.4 The Mullet of Pearl Harbor and Makahou Point at Mālaekahana.....	17
Section 4 Historical Background	22
4.1 Early Historic Period	22
4.2 Mid- 1800s and the Māhele	23
4.3 Ranching in Kahuku: 1850-1880	26
4.4 Sugar and the Railroad at Kahuku: 1890-1971	28
4.5 World War II and the Military in Keana.....	33
4.6 Modern Land Use	34
Section 5 Archaeological Research	39
5.1 Early Archaeological Surveys	40
5.2 Modern Archaeological Surveys	43
5.2.1 Ko'olauna Housing Project, Kahuku Elementary School, Kahuku District Park.....	43
5.2.2 Kahuku Agricultural Park	44
5.2.3 Kahuku Sand Mining Project	44
5.2.4 Other Studies	45
5.2.5 Coastal Burials	46
5.3 Background Summary and Predictive Model for Keana	48
Section 6 Community Consultations	49
6.1 Community Consultation Effort	49
6.1.1 State Historic Preservation Division (SHPD)	54
6.1.2 Ko'olauna Hawaiian Civic Club	55
Section 7 Summaries of Kama'āina "Talk Story" Interviews	57
7.1 Talk Story Interviews.....	57
7.1.1 Dawn Wasson	57
7.1.2 Carole and Joy Anamazi	58
Section 8 Cultural Landscape of the Project Area.....	61
8.1 Overview	61
8.1.1 Growing and Gathering of Plant Resources	61
8.1.2 Marine and Freshwater Resources	61
8.1.3 Cultural and Historic Properties and Burials	62
8.1.4 Trails	63
8.1.5 <i>Wahi Pana</i> (Stories, Sacred Places)	63
Section 9 Summary and Recommendations	64
Section 10 References Cited	66
Appendix A LCA Awards in Keana.....	A-1
Appendix B LCA Awards with Lele in Keana	B-1
Section 5 Archaeological Research	39
5.1 Early Archaeological Surveys	40
5.2 Modern Archaeological Surveys	43
5.2.1 Ko'olauna Housing Project, Kahuku Elementary School, Kahuku District Park.....	43
5.2.2 Kahuku Agricultural Park	44
5.2.3 Kahuku Sand Mining Project	44
5.2.4 Other Studies	45
5.2.5 Coastal Burials	46
5.3 Background Summary and Predictive Model for Keana	48
Section 6 Community Consultations	49
6.1 Community Consultation Effort	49
6.1.1 State Historic Preservation Division (SHPD)	54
6.1.2 Ko'olauna Hawaiian Civic Club	55
Section 7 Summaries of Kama'āina "Talk Story" Interviews	57
7.1 Talk Story Interviews.....	57
7.1.1 Dawn Wasson	57
7.1.2 Carole and Joy Anamazi	58

List of Figures

- Figure 1. U.S. Geological Survey 7.5-Minute Series Topographic Map, Kahuku Quadrangle, showing the Kahuku Village Subdivision Project area (outlined in red) and the 18 Beach Lots section (shaded in yellow); figure shows the location of proposed houses, not the location of current houses4
- Figure 2. Tax Map Key (1) 5-6-002, showing Kahuku Village Subdivision project area (hatched area) and 18 Beach Lots section (shaded in gray)5
- Figure 3. Aerial photograph, showing Kahuku Village Subdivision project area (outlined in red) and 18 Beach Lots section (shaded in yellow)6
- Figure 4. Proposed subdivision of Kahuku Village Subdivision (outlined in red) owned by Continental Pacific, LLC; shows 18 Beach Lots section (shaded in yellow)7
- Figure 5. Soils map of the Kahuku Village Subdivision project area (outlined in red) and 18 Beach Lots section (outlined in yellow)10
- Figure 6. 1881 Hawaiian Government Survey map (portion) of O'ahu, by W. D. Alexander, showing the Kahuku Villages Subdivision project area within the *ahupua'a* of Kahuku, Keana, and Mālaekahana13
- Figure 7. 1890 map of Kahuku Sugar Plantation by A. B. Loebenstein (Sheet 2 of 2); LCA 4391-2 and 4329-2 are the only two *kūleana* houselots claimed in Keana Ahupua'a24
- Figure 8. 1851 Map of "Half of KEANA belonging to C. G. Hopkins, Esq."; note area labeled "Pen," probably a cattle pen and a cluster of L-shaped icons along the stream, possibly old terraces; Kahuku Village Subdivision project area shaded in gray27
- Figure 9. 1919 War Department map, showing Kahuku Village Subdivision project area (outlined in red) and 18 Beach Lots section (shaded in yellow); map shows the location of the Japanese Cemetery (shaded in gray) and the Kahuku Sugar Co. railroad track within the northwest corner30
- Figure 10. Kahuku Plantation, circa 1920s, showing topography and numbered fields; note that the Kahuku Village Subdivision project area (outlined in red) is not planted in sugar cane; the major portion of the project area, including the 18 Beach Lots section, is labeled "Recreation Area"31
- Figure 11. 1943 War Department Map, showing three airfields on the north coast of O'ahu33
- Figure 12. 1929-1930 U.S. Geological Survey map, Kahana Quad, showing the Kahuku Village Subdivision project area (outlined in red) and the 18 Beach Lots section (shaded in yellow); map also shows the location of Japanese Cemetery and the Catholic Cemetery (shaded in gray)35
- Figure 13. 1943 War Department map, showing the Kahuku Village Subdivision project area (outlined in red) and the 18 Beach Lots section (shaded in yellow); map also shows location of two cemeteries (shaded in gray) and "Wireless Pole"36
- Figure 14. 1954 Army Map Service map, showing the Kahuku Village Subdivision project area (outlined in red) and the 18 Beach Lots section (shaded in yellow); the Kahuku Golf Course and Adams Field are labeled37
- Figure 15. 1978 aerial photograph, showing Kahuku Village Subdivision project area (outlined in red) and 18 Beach Lots section (shaded in yellow); note lack of any development or structures in the area of the proposed 18 Beach Lots section38

- Figure 16. U.S. Geological Survey map, Kahuku Quadrangle, showing previous archaeological work in western Kahuku, Keana (shaded in pink), and Makahoa Point of Mālaekahana41
- Figure 17. U.S. Geological Survey map, Kahuku Quadrangle, showing coastal burial sites in Kahuku, Keana, and Makahoa Point of Mālaekahana47

List of Tables

- Table 1. Land Commission Awards in Keana Ahupua'a25
- Table 2. Previous archaeological work in Keana, eastern Kahuku, and Makahoa Point39
- Table 3. Community Consultation for Kahuku Village51

Section 1 Introduction

1.1 Project Background

At the request of R. M. Towill Corporation, Cultural Surveys Hawaii, Inc. (CSH) prepared this cultural impact assessment (CIA) interim report for an approximately 15-acre coastal strip portion (TMK 1-5-6-002:010) of the approximately 200-acre Kahuku Village Subdivision Project, Kahuku, Keena, and Mālaekahana Ahupua'a, Ko'olaupua District, O'ahu (TMK: [1] 5-6-002:012, 027, portions of 010, 016, and 027). The project area is located in coastal Ko'olaupua in portions of Kahuku, Keena, and Mālaekahana Ahupua'a. The *makai* (seaward) boundary of the entire project area is the coast, from Makahoa Point on the south end to the fishing area called Kalahole on the north end. The *mauika* (inland) side is bound by Kamehameha Highway. The entire Kahuku Village Subdivision project area and the beachfront lot section are depicted on the 1998 USGS 7.5-Minute Series Topographic Map, Kahuku Quadrangle (Figure 1), on Tax Map 1-5-6-002 (Figure 2), and on an aerial photograph (Figure 3).

Continental Pacific, LLC ("Continental") is the fee owner of various properties located *makai* of Kamehameha Highway, which includes residential land in Kahuku Village and the Kahuku Golf Course (Figure 4). Continental has developed an integrated plan for the Kahuku Village Subdivision, comprised of the following elements:

1. The property surrounding the existing 72 houses, known as (a portion of) Kahuku Village, will be subdivided first into one or two large lots, which lots will be submitted to a new Condominium Property Regime. The house lots, and possibly the vacant lots, will be condominium units. Continental will also make reasonable road (including paving), septic and safety improvements (in accordance with county requirements) in the common areas defined by the condominium documents.
2. If Continental determines that the vacant lots can be built upon and are within the county and condominium laws and regulations, the lots will be modestly improved and sold to villagers. Continental would supply architectural standards that would complement the theme of the existing Kahuku Village.
3. Two private beach parks, one at either end of the Kahuku Golf Course, will be donated to the community through the Kahuku Village Association or the condominium owners association.
4. The 9-hole Kahuku Golf Course will be donated or leased (in perpetuity) to an entity acceptable to Continental and subject to a maintenance covenant.
5. The two cemeteries located in the area will be donated to an entity acceptable to Continental.
6. Continental will develop 18 lots on the *makai* side of the Kahuku Golf Course (the subject of the present inventory survey plan). These will be large lots developed in a country setting.

7. Makahoa Point will be subdivided and sold as a single ranch lot (25+ acres in size) to Jim Reynolds who has been a long time tenant of that property. He intends to keep it in its current use with no further subdivision.
8. Continental reserves the right to establish a camping area at the old Adams Field area, which is a permitted use under the existing P-2 zoning, and may be developed with recreational camping cabins, or sold outright.
9. The remaining area at the north end of the Kahuku Golf Course will be kept in agriculture and developed into 9 to 12 agricultural lots (minimum 2 acres in size).

The proposed Kahuku Village Subdivision project is subject to Hawaii's State environmental and historic preservation review legislation [Hawaii's Revised Statutes (HRS) Chapter 343 and HRS 6E-8/Hawaii's Administrative Rules (HAR) Chapter 13-13-275, respectively].

1.2 Archaeological Inventory Survey Plan

An archaeological inventory survey (AIS) plan was prepared in advance of a planned archaeological inventory survey of a coastal strip of the Kahuku Village project area. The AIS plan is titled, "Archaeological Inventory Survey Plan for the Kahuku Village Subdivision Project, Kahuku, Keena, and Mālaekahana Ahupua'a, Ko'olaupua District, O'ahu Island, TMK: [1] 5-6-002:003, 010, 012, 016, and 027 (O'Hare et al. 2008) (Tulchin et al. 2008). Once this plan is finalized, if approved by the developer/owner, an AIS will be conducted, the results of which will be presented in a companion report.

1.3 Document Purpose

The project requires compliance with the State of Hawaii's environmental review process [Hawaii's Revised Statutes (HRS) Chapter 343], which requires consideration of a proposed project's effect on cultural practices. At the request of R.M. Towill Corporation, CSH undertook this CIA. Through document research and cultural consultation efforts this document provides information pertinent to the assessment of the proposed project's impacts to cultural practices (per the OEQC's Guidelines for Assessing Cultural Impacts). The document is intended to support the project's environmental review and may serve to support its historic preservation review under HRS Chapter 6E-42 and Hawaii's Administrative Rules Chapter 13-284.

1.4 Scope of Work

The scope of work for this CIA includes:

1. Examination of cultural and historical resources, including Land Commission documents, historic maps, and previous research reports, with the specific purpose of identifying traditional Hawaiian activities including gathering of plant, animal, and other resources or agricultural pursuits as may be indicated in the historic record.
2. A review of previous archaeological work at and near the subject parcel that may be relevant to reconstructions of traditional land use activities; and to the identification and description of cultural resources, practices, and beliefs associated with the parcel.

3. Consultation and interviews with knowledgeable parties regarding traditional cultural practices at or near the parcel, present uses of the parcel, and / or other (non-Hawaiian) practices, uses, or traditions associated with the parcel.
4. Preparation of a report summarizing the results of these research activities.

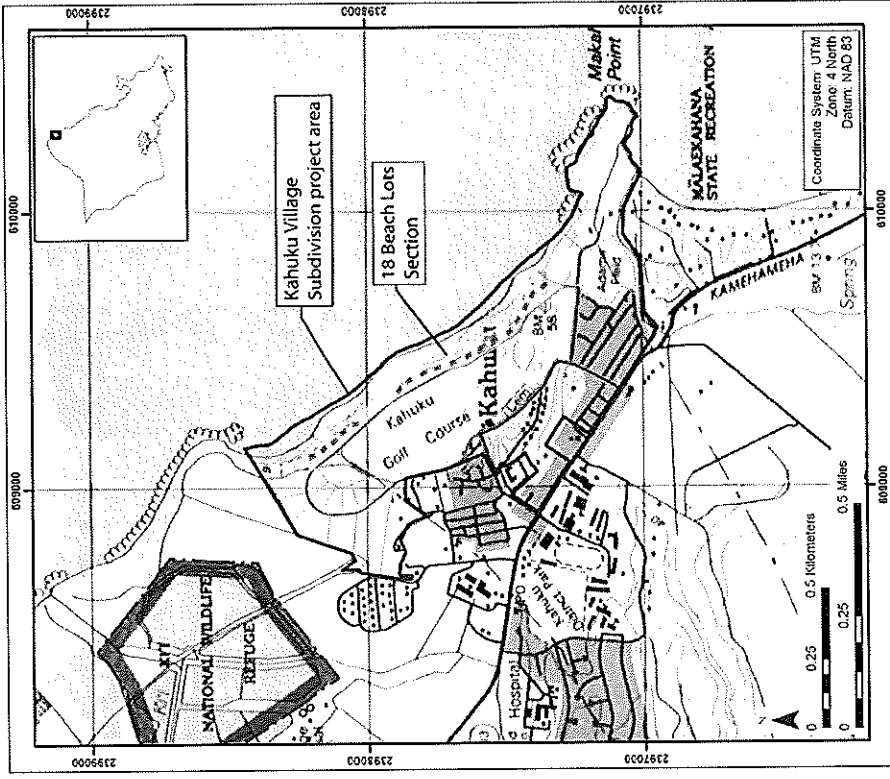


Figure 1. U.S. Geological Survey 7.5-Minute Series Topographic Map, Kahuku Quadrangle, showing the Kahuku Village Subdivision Project area (outlined in red) and the 18 Beach Lots section (shaded in yellow); figure shows the location of proposed houses, not the location of current houses

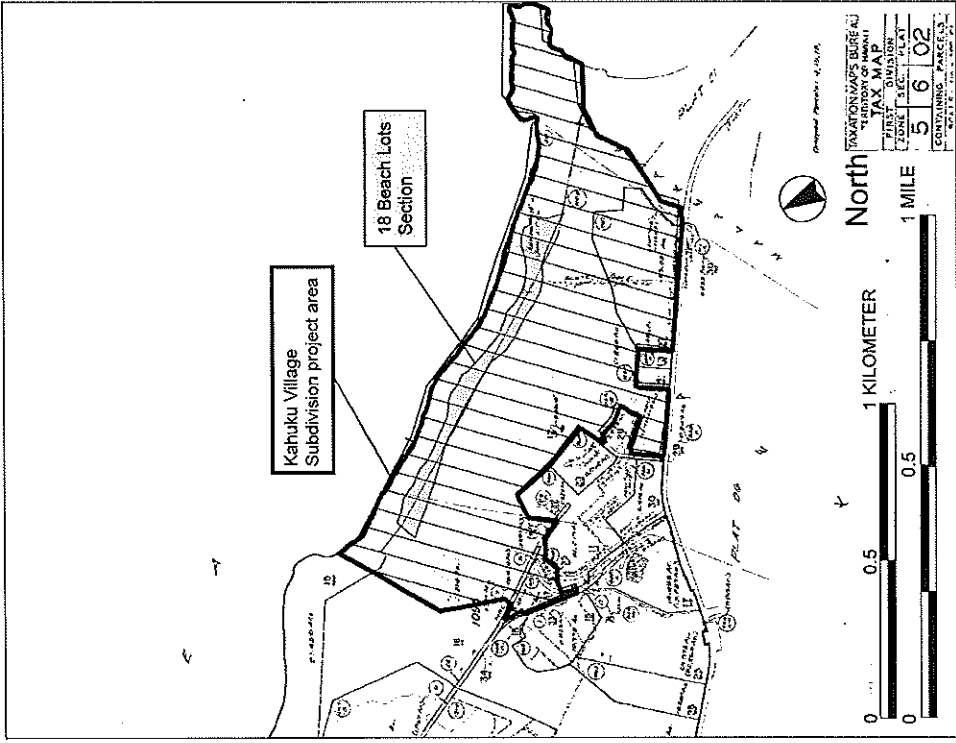


Figure 2. Tax Map Key (1) 5-6-002, showing Kahuku Village Subdivision project area (hatched area) and 18 Beach Lots section (shaded in gray)

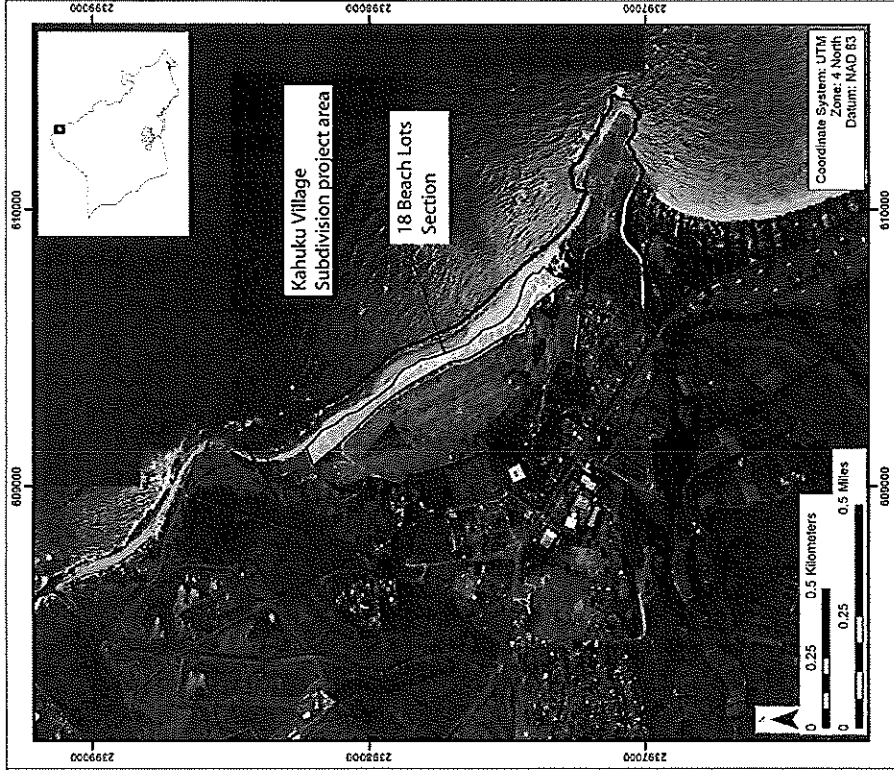


Figure 3. Aerial photograph, showing Kahuku Village Subdivision project area (outlined in red) and 18 Beach Lots section (shaded in yellow)

1.5 Environmental Setting

1.5.1 Natural Environment

The Kahuku Village Subdivision project area is located on the nearly-level and low-lying coastal plain of Kahuku, at the east of the northern tip of the island of O'ahu. Elevations within the project area range from approximately sea level to approximately 30 feet AMSL (above mean sea level). One small hill on the property, labeled Keana, is 58 feet high. The project area receives an average of approximately 1000 millimeters (39 inches) of annual rainfall (Giambelluca et al. 1986). Portions of the surrounding coastal plain are protected wetlands, including the Ki'i portion of the James Campbell National Wildlife Refuge, 0.25 kilometers northwest of the Kahuku Village project area.

Three types of soils occur within the Kahuku Village project area: Beaches (BS) in a narrow strip along the coast; Keau clay, saline, 0 to 2 percent slopes (KmbA), in a small section on the western side; and Jaucus sand, 0 to 15 percent slope (JaC) in the remaining portion of the project area (Figure 5). The 18 beach lots in the coastal strip, the subject of this inventory survey plan, are within the Beaches and Jaucus sand areas.

Beaches (BS) occur as sandy, gravelly, or cobbly areas, which are washed and reworked by ocean waves. The light-colored sands are derived from coral, coralline algae, and seashells.

The Jaucus series consists of excessively drained, calcareous soils. They occur as narrow strips on coastal plains, adjacent to the ocean. The soils developed from wind and water deposited sand derived from coral, coralline algae, and seashells. Areas with Jaucus sand, 0 to 15 percent slope (JaC) are used for pasture, sugarcane, truck crops, and urban development. The vegetation is primarily introduced alien species such as *kiawe* (*Prosopis pallida*), *koa haole* (*Leucaena leucocephala*), bristly foxtail (*Pennisetum verticillatum*), bermudagrass (*Cynodon dactylon*), fingergrass (*Chloris* spp.), and Australian saltbush (*Atriplex semibaccata*). CSH will be conducting a field inspection of the project area for this assessment, and will provide further discussion of vegetation in and around the proposed project area in the final draft of this CIA report.

The Keau series consists of poorly drained soils, which developed in alluvium deposited over reef limestone or consolidated coral sand. They are nearly level and gently sloping. The natural vegetation consists of *kiawe*, bermudagrass, bristly foxtail, and fingergrass. Areas of Keau clay, saline, 0 to 2 percent slopes (KmbA), are strongly affected by salts, and thus much of this land is barren or covered with pickleweed (*Batis maritima*). Many of these areas are being drained and filled for use for industrial sites, homesites, and parks.

1.5.2 Built Environment

Much of the land within the Kahuku Village Subdivision project area is used as part of the Kahuku Municipal Golf Course, built in 1937. The golf course is landscaped with low grass and scattered monkeypod trees (*Samania saman*). There are no lakes or ponds and the sand bunkers are small (Sandler 1990:66). On the *makai* boundary, there is a narrow beach, but no beach park facilities. The proposed 18 beach lots are undeveloped and do not presently have any structures built on the grounds. On the *maikai* boundary of the subdivision project area, there are residential

Cultural Impact Assessment for Kahuku Village Subdivision Project

8

TMK: (1) 5-6-002-003, 010, 012, 016, 027

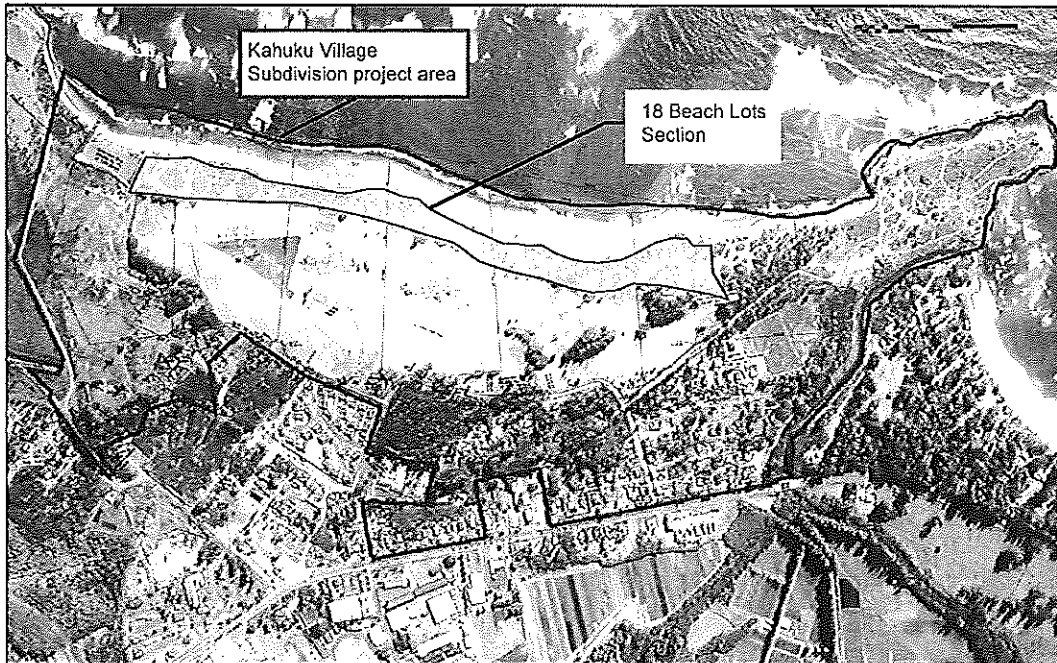


Figure 4. Proposed subdivision of Kahuku Village Subdivision (outlined in red) owned by Continental Pacific, LLC; shows 18 Beach Lots section (shaded in yellow)

areas and community athletic parks (see Figure 4), such as the six-acre Adams Field, an area of baseball and softball fields. It is named for Andrew Adams, the manager of the Kahuku Plantation Company from 1904-1921 (Clark 1977:137).

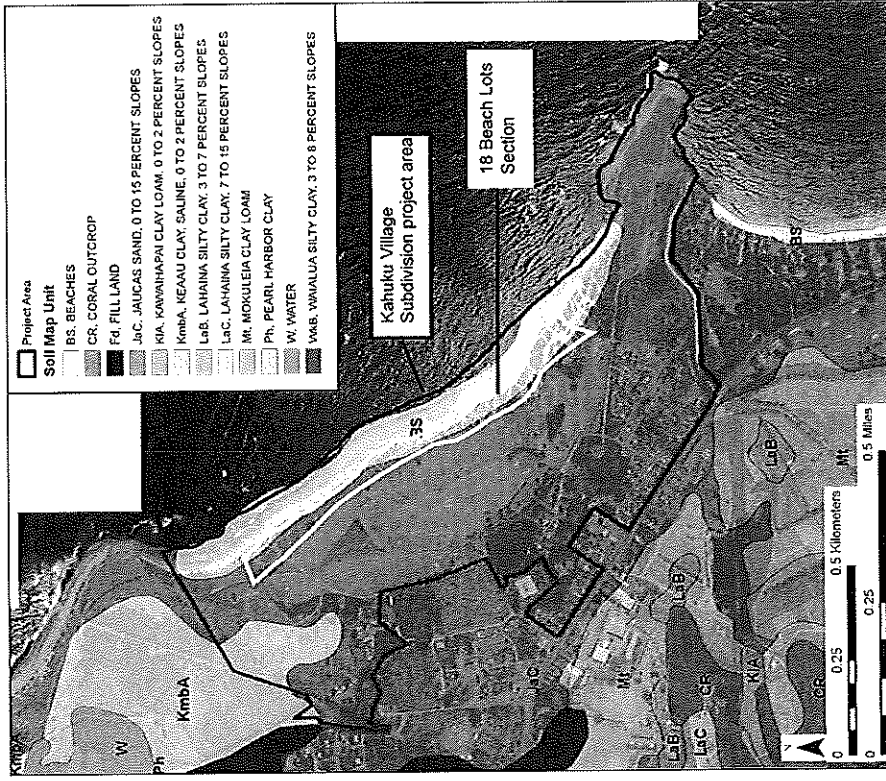


Figure 5. Soils map of the Kahuku Village Subdivision project area (outlined in red) and 18 Beach Lots section (outlined in yellow)

Section 2 Methods

Historical documents, maps and existing archaeological information pertaining to the sites in the vicinity of this project were researched at the Cultural Surveys Hawai'i library. Information on Land Commission Awards was accessed through Waiohona Aina Corporation's Māhele Data Base (www.waiohona.com). The State Historic Preservation Division, Office of Hawaiian Affairs, O'ahu Island Burial Council, and community and cultural organizations in Kahuku, Ko'olaupā, O'ahu such as the Ko'olaupā Hawaiian Civic Club, Ko'olaupā Neighborhood Board, etc. were contacted in order to identify potentially knowledgeable individuals with cultural expertise and/or knowledge of the project area and the surrounding vicinity. The names for potential community contacts were also provided by colleagues at CSH and from the authors' familiarity with people who live in or around the project area. The cultural specialist conducting research on this assessment employed snowball and judgment sampling methods, an informed consent process and semi-structured interviews according to standard ethnographic methods (as suggested by Bernard 2005). Some of the prospective community contacts were not available to be interviewed as part of this project. A discussion of the consultation process can be found in Section 6 on Community Consultations. Please refer to Table 3, Section 6 for a complete list of individuals and organizations contacted.

Section 3 Traditional Background

The main, central section of the Kahuku Village Subdivision project area is within Keana Ahupua'a. A small portion of the northeastern corner is within Kahuku Ahupua'a, and the southeastern area around Makahoa Point is within Mālaekahana Ahupua'a (Figure 6). The 18 beach lots are within Keana and Kahuku. As more than 90 percent of the project area is within Keana Ahupua'a, the background research for the project will focus on this *ahupua'a*.

3.1 Place Name Meanings

The Kahuku Village Subdivision project area is along the Kahuku and Keana coasts and Makahoa Point is in Mālaekahana. The project area extends on the northwest side to Kaluahole, a noted fishing ground. Kaluahole means the "pft, or cavern of the *āhole* fish" (Clark 2002:155; Pukui et al. 1974:78). The *āhole* is the Hawaiian flagtail (*Kuhlia samudrivanis*), which Titcomb (1972:59) describes as "a common shore fish . . . when mature their habitat is the coral or lava caverns of the reef."

The Keana beach coastline begins at the northern end of Ka'ohana, a calcareous sand beach near the Japanese Cemetery. Ka'ohana means "the family" (Clark 2002:161). The beach fronting the Kahuku Golf Course, once known as Keone'ō'io, is about 100 feet wide, with areas of exposed bedrock, sand over bedrock, and some high sand dunes. There is only one small beach area suitable for swimming, where a channel cuts through the reef. The traditional name for this channel was Keone'ō'io, which means "the *ō'io* [bone fish] sands" (Clark 1977:137). This was a known excellent fishing spot for the *ō'io* fish (Bonefish; *Albula vulpes*), which travel in schools and can be caught with nets or lines at their feeding grounds (Titcomb 1972:120).

The beach ends at the south end at Makahoa Point in Mālaekahana Ahupua'a. Makahoa means "friendly point" (Pukui et al. 1974:140), or "a companion" (Clark 2002:228). It is famous as the point where the *amae-holo* (large traveling mullet; *Mugil cephalus*) stop on their annual trip from Pearl Harbor towards Lā'ie (Clark 1977:138). At Makahoa Point, they stop and stay for a few weeks close to the shore, where they can be caught by nets (Titcomb 1972:65). The fish then turn around and swim back along the coast to their home in Pearl Harbor. The boundary between Keana and Mālaekahana is the mouth of Kea'alu Stream within Kea'alu Gulch. Kea'alu means "the growing root" (Pukui et al. 1974:100). This name suggests that traditional Hawaiian crops were grown along the stream and gulch.

3.2 The Floating Land of Kahuku

According to Hawaiian legend, the land of Kahuku from the shore to the middle of Waiale'a was once a floating island blown around by the trade winds. The floating island would bang against O'ahu creating a great disturbance, so the people living in the Ko'olaupā District secured the floating island to O'ahu with fishhooks. One end of the floating island was fastened to Kūki'o Pond, inland from Kahuku Point, and the other side fastened to a pool named Pōlou, on the seaward side of the old Kahuku sugar mill (Condé and Best 1973). The exact location of

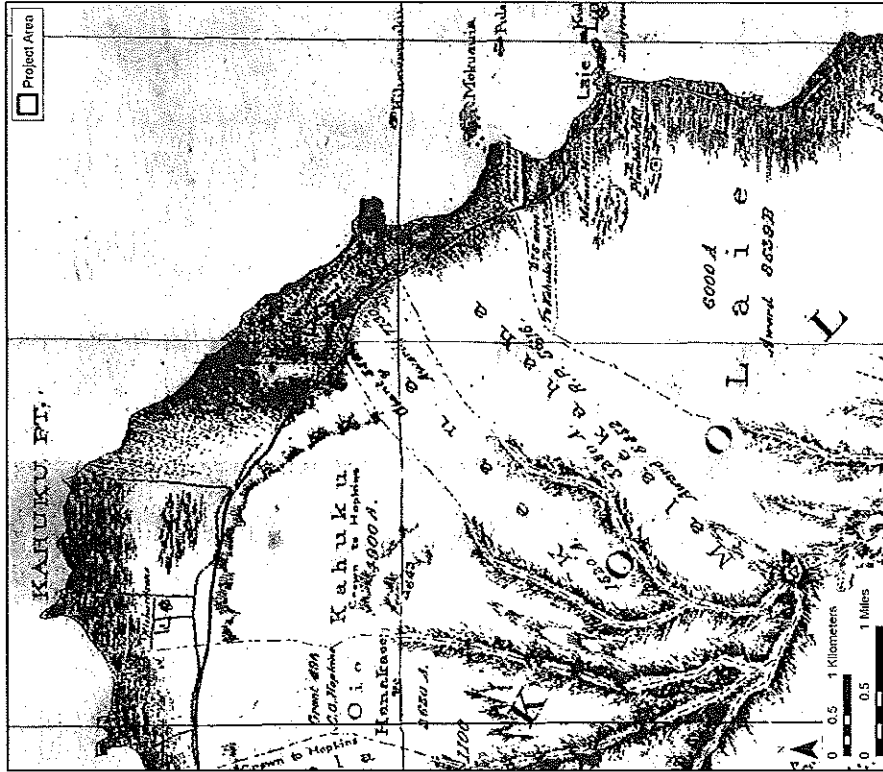


Figure 6. 1881 Hawaiian Government Survey map (portion) of O'ahu, by W. D. Alexander, showing the Kahuku Villages Subdivision project area within the *ahupua'a* of Kahuku, Keana, and Mālaekahana

Pōlou Pond is not known, since it does not appear on early maps. The sugar mill was on the Kahuku/Keana boundary, so the pool may have been in Keana rather than Kahuku. McAllister, in his manuscript on the sites of O'ahu, often records legendary sites, or features already destroyed before his 1930s archaeological survey of the island. Of Pōlou Pond, he states:

Site 271. Polou, formerly a pool of water, sea side of the Kahuku mill.

A story is told that Kahuku was once a land afloat, wafted about by the winds, drifting over the ocean. Just how it came to Oahu is not told, but old Hawaiians point out Polou, the place where Kahuku is fastened to Oahu. Formerly it was possible to dive into the pool and when a depth of 40 fathoms was reached, a shelf of rock was found upon which to rest. Forty fathoms deeper *pinikika* (white line from coral) was reached and on looking toward Mālaekahana, the hook by which Kahuku was made fast could be seen. . . . Seaward of the Waialea Industrial School, in another pool of water (known as Kalou) is the spot where Kahuku is attached to Waialea. In the immediate vicinity of Polou was a stone known as Kanaloa [McAllister 1933:155].

According to *Geologic Map and Guide of the Island of Oahu, Hawaii* (Stearns 1939), various stands of the sea, one given the name Kahuku and the other Kahipa are visible in the District of Kō'olaupoa. In the Kahuku area there exists:

beach limestone of the 55-foot stand of the sea which is overlain unconformably by stream-laid conglomerate which in turn is overlain by reef of the 95-foot stand of the sea and lithified dunes formed during the minus 60-foot stand of the sea [Stearns 1939:32].

It is possible to make a correlation between the Hawaiian legend of the floating island and the two depths found in the pool with the two stands of the sea, making the legend a descriptive explanation for the geology of the lands of Kahuku.

One Hawaiian has placed Pōlou pool in Keana, rather than Kahuku.

It [Kahuku] was a land that moved to and fro and it was Maui who pinned it down again. Polou (Site 271 Keana) and Kalou (Site 257 Waialea) are deep water holes. . . . All of the islands know the tale that Kahuku was an unstable land [Kahiona 1919, in Sterling and Summers 1978:153].

In the legend of Hi'iaka, beloved sister of the volcano goddess Pele, the floating shore of Kahuku is also referenced. As Hi'iaka toured the island of O'ahu with her companions, they left the coast at Mālaekahana and traveled inland through Keana, on a trail later covered by the government road (now Kamehameha Highway) that led to Kahuku.

Hō'ea lākou nei i nē wahi e kapa 'ia nei 'o Lā'iemalo 'o a me Lā'iewai. Hala ia mau kaola 'ūna iā lākou nei, hele akua lākou nei ma ia wahi aku, 'o ia ho'i kahe e kapa 'ia nei 'o Mālaekahana, a hō'ea i Kahuku. I ia wā ho'i, na hele ia 'āina lewa i ke kai a pa 'a pono i ka hala [Ho'oulimālie 2000a:166].

They arrived at the places called Lā'emalo'o and Lā'iewai. When they had passed the ridged boundaries of those lands, they went on through the next district, Māeakahana, and on to Kahuku. At that time, that land known to hover over the sea was held fast and secured in place by the hala [pandanus] trees [Ho'oulmāhiehie 2006b:155].

On the road, they met a *hipua* (supernatural creature that can change forms) named Lewa, an ancestress of Hi'i'aka. Lewa at first did not recognize her relative.

I ka 'ike 'ana mai ho'i o nei wahine iā lākou nei e hele aku ana, 'o ke kahui a 'ela nō ia o ka 'ana o kona mau maka, pi'i ka i'inaia a ho'āla ho'i ka hihii, 'a'ole o kana mai. 'Ike akila lākou nei i ka wili mai o ka makani i ka lau o ka hala, hele pi'ākāka i ō a i 'ane'i, a ke ne'e ma'ila ho'i ka ua i ka moana, i ia wē, . . .
[Ho'oulmāhiehie 2006a:167].

When this woman saw them passing, it kindled a burning rage in her eyes, inspired her wrath, and awakened her boundless anger. They noticed the wind twirling the leaves of the hala trees, making them scatter everywhere as the rain moved in off the sea. . . [Ho'oulmāhiehie 2006:157].

Hi'i'aka chanted to Lewa, informing her of her association with the goddess Pele. Lewa heard and recognized Hi'i'aka, but was at first too ashamed to answer. Hi'i'aka chanted once more, asking for a reply, and Lewa finally responded, apologizing to Hi'i'aka and stopping the blustery winds and rain. They met Lewa where she was sitting at Kahipa Point. She welcomed her guests and invited them to eat; Hi'i'aka assented. Lewa sent her daughters, who could take the form of *koloa* ducks, to fetch food for her guests, including bundles of taro leaves for Hi'i'aka. After they had eaten, Hi'i'aka proclaimed to Lewa:

"O kou wahi nō kūia e noho ai a ka'ulana 'oe i kūia wahi. 'O nā ū auane' i o kāua iā, e ka'ulana ana ia ma ka hua 'ia 'ana 'o Nā Ū o Lewa, a ka'ulana pi' ho'i ka 'āna 'o Kahuku nei, ka 'āna lewa i ke kai. . . .

He mea 'oia'i'o, ua ka'ulana maoli Nā Ū o Lewa me kēla kīpēpēli e kā lā ma lalo aku o ka hale wili o Kahuku, a ua ka'ulana nō ho'i 'o Kahuku he 'āna lewa i ke kai. Ua kō maoli kēia man 'ōlelo a Hi'i'aka i hō'ike aku ai iā Lewa
[Ho'oulmāhiehie 2006a:168].

"This is where you will stay, and become well-known here. Those breast-shaped hills of ours will be commemorated in the epithet 'The Breasts of Lewa,' and the land of Kahuku will also be remembered as 'the land that floats on the sea.' . . .

The Breasts of Lewa, near the small cliffs below the Kahuku mill, are actually quite well-known, and Kahuku itself is famed as a "land that floats on the sea" [Ho'oulmāhiehie 2006b:158].

In this *mo'olelo* (story, oral history), there seems to be some play of words, as "*lewa*" can mean "hovering" as in the floating land of Kahuku, and can also mean "pendulous," as in a woman's breasts, as shown in this *mele* (chant) recorded by Emerson (1998:205):

Ka-hipa', *na waii olewa*,

'Tis Kahipa, with pendulous breasts;

Lele ana, ka ka mahiki akua,

How they swing to and fro, see-saw!

^a Said to be the name of a mythological character, now applied to a place in Kahuku where the moaiians present the form of two female breasts.

This interpretation is reinforced by the Hawaiian poetical saying "*Kahuku 'āina lewa*," meaning "Kahuku, the unstable land" (Pukui 1983:144:#1319).

The legend also refers to a specific geographic feature, a cave on Kalaokahipa Ridge, in Kahuku, 2.5 kilometers west of the current project area. McAllister found the cave during his survey of O'ahu in the 1930s.

Site 267, Kalatohaha ridge.

The many caves in the porous formation were used as places of burial by the old Hawaiians. On the Waimea side is an overhanging ledge where formerly hung two stalactites from which water continually dripped. They very closely resembled the breasts of a woman, and this was said to be Nawaiuolewa [Lewa], a goddess of the region. Some years ago, a white man removed one of the stalactites, or breasts, according to the story, and the water immediately stopped dripping from the other. Kane and Kamaloa [Hawaiian gods] lived in the vicinity of the ridge; but that was at the time when the Kahuku plain was still under water, and waves lapped about Kalatohaha. The brothers are said to have obtained fish by dipping into two holes on opposite sides of a large rock which now lies in the cane field [McAllister 1933:154].

According to Samuel Kamakau, the legends of Lewa again ties into the pond Pōlou, which was probably located in Keana Ahupua'a.

Ua oleleia o Oahu ma ke moolalo a kekehi pon, he aina lewa o Oahu mamua, a hu puika hamama ka aoao o Kahuku, nolaila ua kapu ia ka puika o Kahipa a me Nawaiuolewa, a o ka apana i panu ia o Kahuku, a o na kilou i paa ai ka apana i kapii ia, o Kilon a me Pōlou . . . [Kamakau, Ke Au 'Ōko'a, Oct. 6, 1870].

According to the traditions of some people, Oahu was said to have once been a floating land, *he 'āina lewa o Oahu*. The Kahuku side was a wide open gap (*puika hamama*) and this was called *Ka puika o Kahipa a me Nawaiuolewa*, "The opening of Kahipa and Nawaiuolewa." The piece of land that closed it up was called Kahuku, and the hooks [*kilou*] that made fast the piece of land and joined it to the island were called Kilou and Pōlou [Kamakau 1991:38-39].

Kahipa, *Nāwaiū'olewa* (meaning "the breasts of Lewa"), and Pōlou are also connected in a story on the formation of the island of O'ahu. According to Mary Pukui:

The "Hole of Kahipa and Nawaiuolewa" is pointed out today but the story is lost. Kanui, a woman 105 years old, told Mary Pukui that the two were brother and sister. Formerly the island of Oahu was broken into two islands, one ruled by the brother and the other by the sister. In order to make it one, the two sat down and

hooked their fingers together and drew the islands together. The hole marks the place where they sat [Pukui, Note 4, Chap 12 of Kamakau, part II, *Moolole o Hawaii*, cited in Sterling and Summers 1978:151].

In a study of Hawaiian place names, Pukui places this pit or hole at Pōlou:

O'ahu was believed to have consisted of two islands ruled by a brother and sister who locked fingers to pull the islands together. They did this at a pool called Pōlou, perhaps a shortening of Pou-lou (hooked post) [Pukui et al. 1974:67].

3.3 Keana Cave

Keana Ahupua'a itself is named for a famous cave, which McAllister found "near the mountain side of the public school, Kahuku." In a chant to the goddess Pele, Nathaniel Emerson (1978:230-232) recorded the phrase *pāhi-kapu a ka leo*, or to "proclaim the edict of silence." This edict, or *kānāwai*, belonged to Kānehikili, the god of thunder. Hekili (meaning "thunder") was once a man who had many enemies. When people cursed him, they were killed by lightning. "His enemies therefore plotted in their hearts to kill him and whispered about it in secret. While they whispered, thunder struck. His enemies ceased to plot and to think evil thoughts" (Kamakau 1991:69). Hekili became a *kāhū* (guardian) to the thunder aspect of the god Kāne, or Kānehikili. The *kānāwai* of Kānehikili was *kānāwanawana* (meaning "to whisper"), that no one could make even a small sound during sacred rites or while in his presence, which was marked by the sound of thunder (Kamakau 1991:22; Pukui and Elbert 1986:127).

He says [the friend] that when he was a boy, his mother, when a thunder-storm arose, would often say to him, "keep silence! That's Kane-hekili." In Kahuku, island of Oahu, at a place not far from the sugar-mill, is a cave, known as Keana. In former times this cave was the home where lived a mother, and her two sons. One day, having occasion to journey to a distance, she left them with this injunction, "if during my absence you hear the sound of thunder, keep still, make no disturbance, don't utter a word. If you do it will be your death." During her absence, there sprang up a violent storm of thunder and lightning, and the young lads made an outcry of alarm. Thereupon a thunderbolt struck them dead, turning their bodies into stone. Two pillar-shaped stones standing at the mouth of the cave are to this day pointed out in confirmation of the truth of this legend [Emerson 1978:233].

McAllister (1933:155) relocated this cave, stating the "rocks stand out prominently, one is much larger than the other and can easily be seen from the school grounds."

3.4 The Mullet of Pearl Harbor and Makahoa Point at Malaekahana

McAllister (1933:155) recorded the remains of a fishing shrine at Makahoa Point at the west end of Mālaekahana Bay (eastern portion of the Kahuku Village project area). At Makahoa Point was a fishpond called Waipunaea, which according to legend was the place where mullet came that traveled all the way from Pearl Harbor. McAllister (1933:155) noted: "To this day schools of

mullet come around the island to this northern point of Mālaekahana. They go no farther, and their apparent disappearance still mystifies the Hawaiians."

One version (Formander 1919:270-273) of the migrating mullet concerns a man named Maikoha, who was excited by his father for breaking several *kapu* (tabus, prohibitions). Maikoha settled in Kaupō, Maui and changed into the first *wauke* (paper mulberry) plant. His four sisters, Kaihuopala'ai, Kaihuko'a, Ihuokoko, and Kaihuko'una, came in search of him, and found his *piko* (umbilical cord) beneath the *wauke* plant. They left their brother in Kaupō and returned to O'ahu, landing first in 'Ewa (near Pearl Harbor) and then traveled along the coast to Wai'anae, Watalua, and then to Lā'ie. At each of the three places, one sister marries a local man, and a certain type of fish that are accompanying them, also stays in that place. At the first and last stops, Pearl Harbor and Lā'ie, the associated fish are the mullet. At Lā'ie, the last sister marries a man named Laniloa, which is also the name of the south point of Mālaekahana Bay.

... hele mai la lahou a hiki ma Oahu.

Ike atu la o Kaihuopala'ai i ka malikai o Kapapaapuhi, he kane e noho ana ma Honouliuli, ma Ewa. Moe iho la laua, a noho iho la o Kaihuopala'ai i laila a hiki i keia la. Oia heia loko kat e hoopuni ia nei i ka anae, nona ma ia he mi loa, a hiki i heia kakan ana.

A noho o Kaihuopala'ai i laila, hele atu la kona mau hoahanani a hiki ma Wai'anae, moe o Kaihuko'a me Kaena, he kane ia e noho ana i laila. He kakanaka malikai loa o Kaena, a he 'i'i no hoi no Wai'anae. Nalaila, noho o Kaihuko'a malaila a hiki i heia la, oia heia kaa ma waho o ka lae o kaena. A o na ia i hele pu mai me i, oia ka ulua, ke kalikata, ke mahimahi.

A noho ia i Wai'anae, hele atu kona mau hoahanani a hiki ma Watalua, laua o Kawailoa ia Ihuokoko, he kane ia, a noho iho la me ia. O ka ia i hele pu mai me Ihuokoko, o ke aholehole.

A noho ia i laila, hele atu la o Kaihuko'una, a hiki i Lā'ie, laua o Laniloa, he kane ia, a noho iho la laua. O ka ia i hele mai me Kaihukunua, he anae, a hiki i keia la.

Translation:

Upon their arrival on O'ahu, Kaihuopala'ai saw a goodly man by the name of Kapapaapuhi [meaning "the eel flats"] who was living at Honouliuli, Ewa; she fell in love with him and they were united, so Kaihuopala'ai has remained in 'Ewa to this day. She was changed into that fish pond [Kapapa'apuhi] in which mullet [*wauke*] are kept and fattened, and this fish pond is used for that purpose to this day.

When Kaihuopala'ai decided to stay in Ewa, her sisters proceeded on to Wai'anae, where Kaihuko'a decided to make her home and she was married to Kaena, a man who was living at this place, a very handsome man and a chief of Wai'anae. So she remained in Wai'anae and she is there to this day. She changed into that fishing

ground directly out from the Kaena Point, and the fishes that came with her were the *hiha* [erevalle], the *kahala* [amberjack], and the *māhimahi* [dolphin fish].

When Kaihukoa decided to stay in Waianae, the remaining sisters continued on to Waialua, where Kawailoa met Ihukoko. Kawailoa was a single man and as he fell in love with Ihukoko the two were united and they became husband and wife. Ihukoko remained here, and the fish that accompanied her from their home was the *ahalehole* [flagtail].

When Ihukoko decided to remain in Waialua, the sister that was left, Kaihukuuna, continued on her way until she came to Laie where she met Laniloa, a goodly man, and they lived together as husband and wife. The fish that came with her was the mullet and it too remained there to this day [Fornander 1919 Vol. V, Part II:270-273].

The name of Maikoha's sister, Kaihu o paia'ai, which means "the nose of Pala'ai" (Pukui et al. 1974:68) is also the name the Hawaiians used for the west loch of Pearl Harbor. Beckwith (1919) says that Kaihuopala'ai changed into the fishpond near Kapapa apuhi, which means "the eel flats." Kapapa apuhi is identified on old maps as a point that juts into the loch; early Hawaiian settlement was focused on this area.

Maikoha and his sisters were the children of Hina'aimalama, a goddess of the undersea land of Kaihikihonaekele. "Hina'aimalama" means "Hina feeding on the moon," a name for the waning moon. Hina'aimalama was said to have "turned the moon into food and the stars into fish" (Fornander 1919, Vol. V, Part II:266). The children of Hina'aimalama and Konikonia, nature gods associated with fertility, were the sons Kaneaukai, Kanehulikoa, Kanemilohai Kaneapua, and Maikoha, and the daughters Kaihukoa, Ihuanu, Kaihukuuna, and Kaihuopala'ai (Fornander 1919, Vol. V, Part II:266-8).

Raphaelson (1925) gives another version of this tale, and explains why the mullet stop at Mālaekahana:

This is the story of Malaekahana, the place where the mullet stops. This is the story of the unpractical fisherman who would not heed the wise warning of his practical wife.

But he had spells of genius, that fisherman, in spite of the fact that he was a stubborn, willful man.

"It is ridiculous," his wife had said to him when he had planted great quantities of sweet potatoes. "What will you do with them? We cannot eat them; you cannot sell them; they will rot."

But he was stubborn. He gave no heed. And later his wife had a chance to say, "I told you so," which she said again and again, until finally, after a day of quarrelling, she made him promise to take the potatoes over to Pearl Harbor, where perhaps they could be sold. She went with him. But there to their dismay,

they found that everyone in Pearl Harbor had plenty of sweet potatoes of their own.

Night came, and the fisherman and his wife bickered and quarreled. She nagged and grumbled all the while cooking a mess of the hated potatoes so that they could have something for supper. But he was angry and refused to eat. So she picked up the potatoes [sic] and, in a fit of temper, threw them into the sea.

Immediately then great schools of fish came crowding toward the shore. The eyes of the fisherman grew big. But he had no net, no way to catch the fish. He had nothing but sweet potatoes.

At last there came the big idea. The fisherman took his sweet potatoes and started back toward Kahana bay. At each inlet, he had his wife cook some of the potatoes and threw them into the sea. It took a long time to get home, but when at last they reached Kahana bay they were followed by great swarms of hungry mullet, which he caught in this net.

This is the explanation that is given of a strange phenomenon that occurs on the island of Oahu. The mullet appear every year, first in Pearl Harbor, then in each successive inlet, around the island until it finally reaches Malaekana [Mālaekahana] bay. Beyond this inlet there is mullet, but it is not the kind that swims from bay to bay.

Why did the fish not stop at Kahana bay? It is not told. It may be that they went on a little way in hopes of more sweet potatoes. No one seems to know.

And after Malaekana? Where does the mullet go from here? That too, no one knows. Unless, as the Hawaiians tell you, there is an underground tunnel through which they swim. [Raphaelson 1925].

In a third version (Nakuina 1998:270-272), Ihuopala'ai is the brother of a woman living in La'ie. As the fish were scarce in La'ie, this woman sent her husband to Ihuopala'ai, who had the mullet follow her husband on his return trip, which was made along the shore around Makapu'u Point with the mullet following in the water. Makea tells me that Kaihuopala'ai's sister was named Mālaekahana.

The home of the anae-holo is at Honouliuli, Pearl Harbor, at a place called Ihuopala'ai. They make periodical journeys around to the opposite side of the island, starting from Pu'uloa and going to windward, passing successively Kuumanu, Kalihi, Kou, Kalia, Waikiki, Kaalawai and so on, around to the Koolau side, ending at La'ie, and then returned by the same course to their starting point. This fish is not caught at Waianae, Kaena, Waialua, Waimea or Kahuku because they do not run that way, though these places are well supplied with other kinds. The reason given for this is as follows:

Ihuopalaai had a Kū'ula, and this fish-god supplied anae. Ihuopalaai's sister took a husband and went and lived with him at Laie, Ko'olauloa. In course of time a day came when there were no fish to be had. In her distress and desire for some she be-thought herself of her brother, so she sent her husband to Honouliuli to ask Ihuopalaai for a supply, saying: "Go to Ihuopalaai, my brother, and ask him for fish. If he offers you dried fish refuse it by all means, do not take it, because it is such a long distance that you would not be able to carry enough to last us for any length of time."

When her husband arrived at Honouliuli he went to Ihuopalaai and asked him for fish. His brother-in-law gave him several large bundles of dried fish, one of which he could not very well lift, let alone carry a distance. This offer was refused and reply given according to instruction. Ihuopalaai sat thinking for some time and then told him to return home, saying: "You take the road on the Kona side of the island; do not sit, nor sleep on the way till you reach your own house."

The man started as directed and Ihuopalaai asked Kū'ula to send fish for his sister, and while journeying homeward as directed a school of fish was following in the sea, within the breakers. He did not obey fully the words of Ihuopalaai for he became so tired that he sat down on the way, but noticed whenever he did so that the fish rested too. The people seeing the school of fish went and caught them. Of course not knowing that this was his supply he did not realize that the people were taking his fish.

Reaching home he met his wife and told her he had brought no fish but had seen many all the way, and pointed out to her the school of anae-holo which was then resting abreast of their house. She told him it was their supply, sent by Ihuopalaai, his brother-in-law. They fished and got all they desired, whereupon the remainder returned by the same way till they reached Honouliuli where Ihuopalaai was living, and ever afterwards this variety of fish has come and gone the same way every year to this day, commencing sometime in October and ending in March or April.

Section 4 Historical Background

4.1 Early Historic Period

As a narrow *ahupua'a* adjacent to the larger Kahuku Ahupua'a, the Keana area was often referred to as "Kahuku." This became even more pronounced in the historic period, when Keana was one of several *ahupua'a* within the Kahuku Ranch and then the Kahuku Agricultural Company. Thus, in the following section, when reference is made to Kahuku, the information concerns not only Kahuku Ahupua'a, but adjoining *ahupua'a*, including Keana.

The first historical reference to the Kahuku area was recorded in 1779 when the H.M.S. *Resolution* sailed along the north side of O'ahu. Lieutenant James King wrote:

It [O'ahu] is by far the finest island of the whole group. Nothing can exceed the verdure of the hills, the variety of wood and lawn, and the rich cultivated valleys, which the whole face of the country displayed [McAllister 1933:153].

On February 28, 1779, in the journal of the *Resolution*, now captioned by Charles Clark due to the death of Captain James Cook at Kealahou Bay on February 14, the following entry was written:

Run round the Noem [Northern] Extreme of the Isle [O'ahu] which terminates in a low point rather projecting [Kahuku Point]; off it lay a ledge of rocks extending a full Mile into the Sea, many of them above the surface of the Water: the Country in this neighborhood is exceedingly fine and fertile: here is a large Village, in the midst of it is run up a high pyramid doubtlessly part of a Mori [Iheiau] [Beaglehole 1967:572].

In 1794, British Captain George Vancouver noted:

. . . In every other respect our examination confirmed the remarks of Captain King: excepting, that in point of cultivation or fertility, the country did not appear in so flourishing a state, nor to be so numerously inhabited, as he represented it to have been at that time, occasioned most probably by the constant hostilities that had existed since that period [Vancouver 1798: Vol. III, 71].

It is likely, based on these early descriptions, that in the thirteen years separating Captain King's voyage from Captain Vancouver's, the environment of northern O'ahu had undergone significant changes. The probable cause for the decrease in cultivation was the decline in population due not only to "the constant hostilities" of the inhabitants, but also to the spread of venereal and other diseases introduced by Cook's expedition in 1778/1779, as well as other visiting ships in the years that followed.

During a circuit (counter-clockwise) of the island of O'ahu to view new schools in 1828, the missionary Levi Chamberlain stopped at a village in Kahuku:

Tuesday Feb. 5th. After breakfast I examined two schools, belonging to Laie & Malaekahana, and was pleased with the appearance of the scholars. At a quarter

before 11 A.M., we set out for Kahuku, and after traveling about two hours over a level sandy country, arrived at the school house, where we found 83 scholars assembled, waiting to be examined. . . .

The natives tell a marvelous story respecting the origin of this district [sic], which they say floated in from the sea, and attached itself to the ancient shore of the island . . . [Chamberlain 1828].

The fact that Chamberlain did not mention a stop in Keana indicates that the population in this *ahupua'a* was not large enough to warrant the establishment of a schoolhouse. In 1833, E.O. Hall wrote of the Ko'olau District, "Much taro land lies waste, because the diminished population of the district does not require its cultivation" (in McAlister 1933:153).

4.2 Mid- 1800s and the Māhele

In 1845, the Board of Commissioners to Quiet Land Titles, also called the Land Commission, was established "for the investigation and final ascertainment or rejection of all claims of private individuals, whether natives or foreigners, to any landed property" (Chinen 1958:8). This led to the *Māhele*, the division of lands between the king of Hawaii, the *ali'i* (chiefs), and the common people, which introduced the concept of private property into the Hawaiian society. In 1848, Kamehameha III divided the land into four categories: certain lands to be reserved for himself and the royal house were known as Crown Lands; lands set aside to generate revenue for the government were known as Government Lands; lands claimed by *ali'i* and their *konohipi* (supervisors) were called *Konohipi* Lands; and, habitation and agricultural plots claimed by the common people were called *kūleana* (Chinen 1958:8-15).

The entire *ahupua'a* of Keana was awarded to Kinimaka, a *konohipi* (overseer) and a court favorite of Kamehameha III. He was a *makua hānau* (adopted parent) to David Kalākaua, sixth king of Hawai'i. Kinimaka retained one-half of the *ahupua'a*, giving back the other half to pay his commutation fees for the properties that he retained. This second half became part of the government lands. From old maps, it is evident that much of the coastal land of Keana was swamp or sand with exposed outcrop areas. The inland area of Keana is labeled as Kea'alu Gulch, but a year-round stream is not shown. E. Craighill Handy toured O'ahu in the 1940s with his informant, Kaleo, to record the remaining traditional agricultural fields of the island. In Keana, he states only that there "are said to have been no [taro] terraces up this stream, and Kaleo knows of none on the level land below."

In another study, Handy and Handy (1972:462) note of Malaekahana and Keana:

These two small *ahupua'a* intervening between La'ie and Kahuku (the northernmost tip of Oahu) show much the same pattern, in miniature, of dune coasts, elevated coral, and broken level land seaward from the hills. Each has a small stream. There were formerly some irrigated terraces in Malaekahana (Way-clear-for-work), but not in Keana (The-cave).

This may explain the paucity of Land Commission Awards in the *waihona 'āina* database (*waihona.com*). Only 9 lots in Keana were claimed, and only 8 lots were awarded, including the *konohipi* award to Kinimaka, LCA 7130 (shown in Figure 7 and listed in Table 1; text in full in

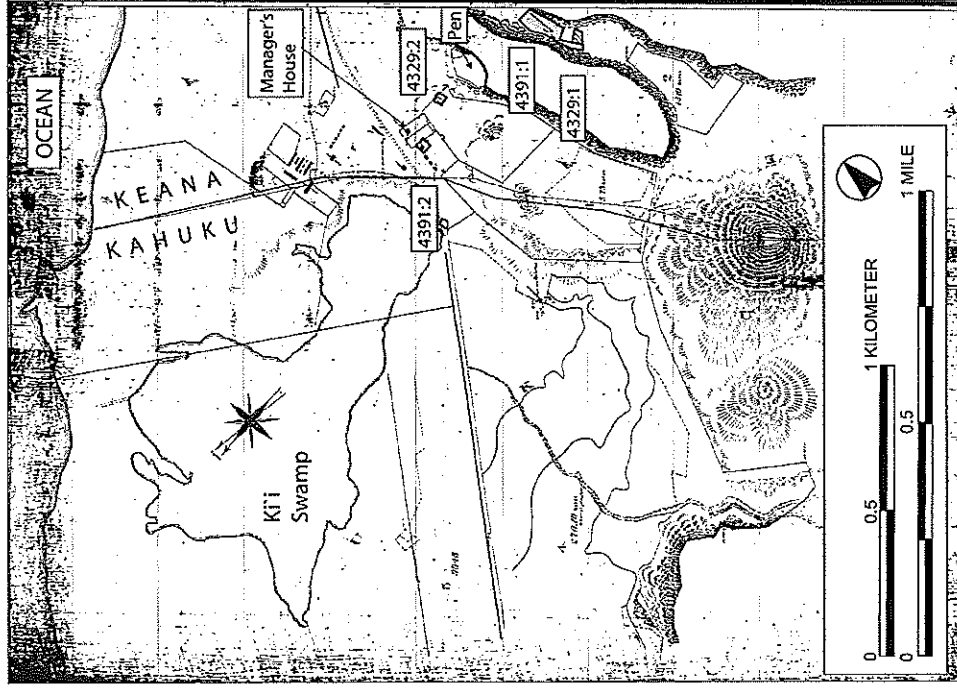


Figure 7. 1890 map of Kahuku Sugar Plantation by A. B. Loebenstein (Sheet 2 of 2); LCA 4391:2 and 4329:2 are the only two *kūleana* houselots claimed in Keana *ahupua'a*

Table 1. Land Commission Awards in Keana Ahupua'a

LCA	Claimant	Ahupua'a	Land Use for Keana lots
2704	Hau	Kahuku, Keana	1 wiliwili tree
2729	Polena	Kahuku, Keana	2 'awa gardens, 1 breadfruit garden, 1 'ohi'a garden
2732	Pukawale	Kahuku, Keana	2 waike gardens, 2 kaa canoe trees
2785	Makakiekie	Kahuku, Keana	1 'awa, 5 kaa canoe trees
2931	Keaweieki	Kahuku	1 mata [garden] of 'awa
3712	Moku	Keana, Māiaekahana, Lā'ie, Kahuku	1 house lot in Keana; this claim was not awarded to Moku, but was claimed by the <i>kōhohiki</i>
4329 B	Kuapuhi	Keana, Māiaekahana, Kahuku	3 'ili [land] of sweet potato, 1 house lot in the 'ili of Kanikaa, Keana
4391	Kala-waiamanu	Keana	3 'ili waiamanu [herbs?], 1 'ili of sweet potatoes, 1 'ili of waike; 1 house lot in 'ili of Louana, Keana
7130	Kimimaka	Keana	<i>Kōhohiki</i> award; land use not given

Appendices A and B). It is possible that there were more awards. In two instances, awards are listed as within Keana, an 'ili (smaller land division) of Kahuku. At this time, Keana had been generally subsumed into its larger neighbor to the west. It is possible that there were additional claims in Keana, but that they are listed as in the *ahupua'a* of Kahuku, with the 'ili name not stated. In two awards (4329B and 4391), one lot in Keana is a house lot, with additional small garden areas in Keana and nearby *ahupua'a* (www.waionona.com).

The most striking aspect of these awards is the number of small parcels with one or more crops or resources. The parcels are not adjacent but *lele* ("jump") to other 'ili and *ahupua'a*. This is probably an indication of the scarce resources; to collect all the necessities of life, the occupants of the coast had to collect the resources in a number of areas and *ahupua'a*. For LCA 4329 in Lā'ie, the claimant states: "Because these claims of mine are so very scattered it is not practical to tell you, the Commissioners, of their boundaries." Presented below are the testimony for some of these lands.

In three of the awards, the claim for land in Keana consists of one or two gardens (*māla* or 'ili) of 'awa. In five awards, the claim is for some type of tree - breadfruit, *kaa*, *waike*, *wiliwili*, or 'ohi'a. 'Awa grows best in wet areas with little direct sunlight. It was often planted or collected by Hawaiians just below the border of the lower forest zone, along streams, or at the base of wet escarpments (Handy and Handy 1972:192). In these six claims, the main house lots and taro lands are in Kahuku; the owners probably traveled to the uplands of Keana to gather forest resources, including 'awa planted under the shade of the trees. Only two of the awards claim gardens of sweet potatoes. These are the two coastal lots (LCA 4329B and 4391), which have one garden lot and one house lot within Keana Ahupua'a (see Figure 7).

In any case, the number of awards emphasizes that this area, part of the "Kahuku Plain" was not densely inhabited or used for irrigated fields by the mid-nineteenth century. None of these

awards are within the project area, although the two Keana house lots (and nearby garden lots) on the *mauka* side of Kamehameha Highway are within 0.1 to 0.5 kilometers of the southern boundary of the Kahuku Village Subdivision project area.

4.3 Ranching in Kahuku: 1850-1880

From 1850 to 1851, Charles Gordon Hopkins purchased from Kamehameha III the *ahupua'a* of Kahuku, and several other *ahupua'a*, including the government land of one-half of Keana, on the north shore of O'ahu, shown on an 1851 map of Hopkins's Keana land (Figure 8). Hopkins then established an 8,000-acre cattle and sheep ranch known as the Kahuku Ranch (Korn 1958:211-212). It is also to be noted that in 1851 Hopkins became the agent for the rental and sale of the Crown Lands of Kamehameha III.

Lacking walls and fences to contain the vast herds of cattle and flocks of sheep, the animals trampled the small scattered homesteads and stripped the land of native vegetation. The Hawaiians asked in vain for protection of their trees and vegetable patches. They wrote to the missionary, Emerson, who urged them to build fences and appealed to authorities on their behalf asking that government pounds be set up to enforce newly established trespass laws. As the *hala* [pandanus] forests began to disappear, the native Hawaiian population also began to disappear. Government censuses of the second half of the nineteenth century recorded the declining Hawaiian population in the Ko'olaupoa District. A total population of 1,345 was recorded in the district in 1853. By 1860, the total had dropped to 1,187 and reached a low of 1,082 in 1878 (Schmitt 1977:12). Once well-populated, Kahuku became a lonely sheep and cattle ranch, famous for its prized English breeds and imported water fowl (Wilcox 1996:16).

According to Mrs. John Kaleo, an informant of J.G. McAllister in the 1930s:

She [Mrs. John Kaleo] remembers the time when trees, now found only on the mountains, covered the Kahuku plain, now a rather desolate, windswept area [McAllister 1933:153].

One can surmise that Mrs. John Kaleo could remember the Kahuku plain before and during the depletion of its vegetation due to the over-grazing of the sheep and cattle of the Kahuku Ranch. The relationship between cattle and the natural environment of Hawai'i has been described by William A. Bryan:

Since the coming of the whites there have been many causes . . . that have been at work bringing about a change in the natural conditions. Chief among the disturbing elements, however, have been the cattle. As early as 1815 they were recognized as a serious menace to the native forests. Roaming at will through the forests they and other animals, as goats and pigs, have done untold damage, and brought about conditions that have been most serious in many places . . . [Bryan 1915:226-227].

During the mid-nineteenth century, road construction connected Kahuku with the city of Honolulu.

On Oahu, what came to be called the "round-the-island road" - ancestor of Kamehameha Highway - extended from Honolulu to Ewa, thence across the central plateau to Waialua: from that place it ran along the coast past Kahuku and Kualoa to Kaneohe, where it joined the road which came over the Niuanu pali [cliff] from Honolulu. In 1856, for the first time, a four-wheeled carriage drawn by a pair of horses was driven over the portion of this road between Honolulu and Kahuku. Three years later a Captain Coffin is reported to have driven with a carriage and span of horses from Honolulu to Kahuku one day in ten hours and to have returned the following day in eight hours [Kuykendall 1953:25].

In 1866, the Kahuku Ranch was purchased from Hopkins by an Irish cattleman, Robert Moffitt. His pastures, used for cattle, sheep, and imported waterfowl, extended along 12 miles of the coast from the sea to the mountains. The foreign livestock quickly decimated the native *hala* forests and overran the gardens of the native tenants. By 1873, Judge H.A. Widemann had gained control and ownership of the entire Kahuku Ranch, which by then included the *ahupua'a* of Kaunala, Pahipahi'ālua, 'Ōpana 1 & 2, Kawela, Hanakaone, 'Ō'io 1 & 2, Ulupehupehu, Punalau, Kahuku, Mālaekahana, Keana, and a part of Lā'ie, totaling about 15,000 acres (Kuykendall 1967:138). On January 19, 1874, Widemann sold the land, then known as the Kahuku and Mālaekahana Ranch to Julius L. Richardson, who in turn sold the entire 15,000-acre ranch to James Campbell in 1876 (Thayer 1944:138).

In 1889, George Bowser described the Kahuku Ranch as follows:

Kahuku Ranch. Main Road, Kahuku: Proprietor, James Campbell, Esq., of Honolulu; Manager, W.R. Buchanan: post-office address, Kahuku, 38 miles from Honolulu, at the northern point of Oahu: 23,608 acres occupied as a cattle ranch: extends 14 miles along the coast, in close proximity to the sea. A valuable fishery is attached to this property [Bowser 1880:409].

Although sugar cultivation would subsequently become the major industry at Kahuku, the Kahuku Ranch continued operations until the mid-twentieth century.

4.4 Sugar and the Railroad at Kahuku: 1890-1971

On November 19, 1889, James Campbell leased much of his Kahuku and Honolulu lands to Benjamin Franklin Dillingham (Kuykendall 1967:69). This lease of 50 years was a part of Dillingham's development plan involving the sugar industry and a railroad on O'ahu (Kuykendall 1967:68).

In 1886, Dillingham's proposed plan, called the "Great Land Colonization Scheme," involved the development at Kahuku and Honolulu of sugar cane plantations that would be irrigated by artesian well water [Dillingham 1886:73-80].

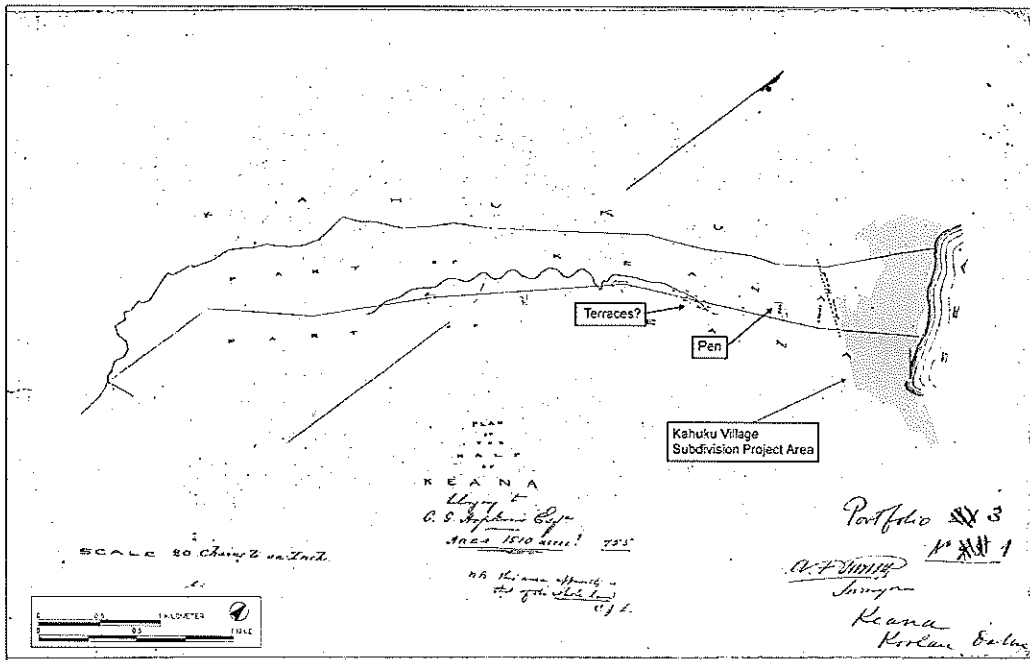


Figure 8. 1851 Map of "Half of KEANA belonging to C. G. Hopkins, Esq."; note area labeled "Pen," probably a cattle pen and a cluster of L-shaped icons along the stream, possibly old terraces; Kahuku Village Subdivision project area shaded in gray

Dillingham had commissioned a study of water supply at Kahuku by J. D. Schuyler and G. F. Allardt. This study noted:

The Kahuku Rancho. This well-known rancho occupies the extreme northerly point of the island, extending from the crest of the mountains to the sea, and from Waimea river on the west to Lāie on the east. It is thirty-eight miles distant from Honolulu, either by the Waialua or the Pali road. Its position on the windward side, with high mountains rearing up rapidly from the level of the belt of valley land along the coast, gives it abundant moisture and clothes it in perpetual verdure. Cattle roaming over its hills and valleys are all fat and sleek, and water is bursting out in places all along the coast, generally near the foot of the hills, or about midway between the foot-hills and the ocean.

... The general level of the land is about twenty feet above tide [Schuyler & Allardt 1889:3].

On December 10, 1889, Dillingham subleased a large portion of the Kahuku tract to James B. Castle, who promoted the Kahuku Plantation Company and chartered it on January 30, 1890 from the Hawaiian government to cultivate sugar cane (Kuykendall 1967:69). Kahuku Plantation planted 2,800 acres in sugar cane and harvested its first crop in 1892. James Campbell, Benjamin F. Dillingham and James B. Castle, together with Lorrin A. Thurston, as a principal, Benjamin M.S. Gribbaum & Company as plantation agents, were the key players in the development of the Kahuku Plantation. Dillingham's interest was prompted by his desire to promote and enhance his Oahu Railway & Land Company (O.R. & L.). The Kahuku Plantation first relied on pumped spring water, stream water, and rain to irrigate the sugar cane, but later resorted to artesian wells as its main source of water supply.

In the first nine years of the plantation, transportation to Honolulu from Kahuku was provided by coastal vessels, which picked up the sugar at Kahuku Landing and shipped it to Honolulu. In 1890, five miles of 36-inch gauge railway, with some portable portions, were laid to haul cane from the sugar cane fields to the mill.

The Baldwin Locomotive Works records note an order for the first Kahuku motive power, *Keania*, on February 2, 1890 and a second order for *Kahuku* in 1891. The first annual report for the Kahuku Plantation Co. from September 1, 1893 until August 31, 1894, recorded an expense of \$3,596.40 for railway materials and an expenditure of \$2,765.59 for labor costs for the same. In 1899, the Oahu Railway finally completed its track to the terminal at Kahuku, and the sugar could be transported directly to Honolulu by train around the west side of the island (Conde and Best 1972:300). The tracks around the sugar mill are shown on a 1919 War Department map (Figure 9).

In 1902, Alexander and Baldwin became the agent for Kahuku Plantation. Kahuku Plantation had remained relatively small, with less than 4,000 acres under cultivation until the early 1900s, when it expanded to the southeast as far as Hau'ula. A map of the Kahuku Plantation c. 1920s (Figure 10), shows the extent of plantation fields. Plantation fields appear to be confined to areas *mauka* of the O.R. & L., with the lands *makai* of the railroad, labeled as "Swamp." "Recreation Area" or "Camp." A note of interest on this map is the marking of a rectangle at the west end of the Kahuku Village Subdivision project area, labeled "Wireless Station." This is the same area

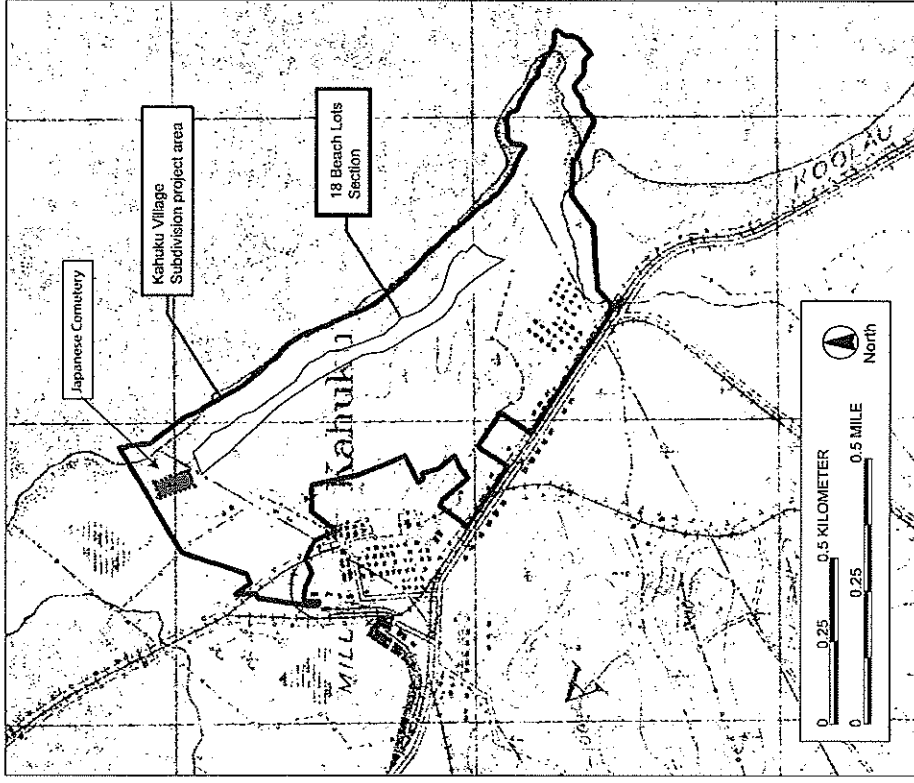


Figure 9. 1919 War Department map, showing Kahuku Village Subdivision project area (outlined in red) and 18 Beach Lots section (shaded in yellow); map shows the location of the Japanese Cemetery (shaded in gray) and the Kahuku Sugar Co. railroad track within the northwest corner

that by 1919 (see Figure 9), is denoted by a cross, the symbol for a cemetery. By 1935, the plantation had 4,490 acres under cultivation with 1,137 workers. The cemetery was established for the Japanese and Chinese workers at the plantation. It was greatly damaged during the 1946 tsunami that swept the coast, the waves knocked over the headstones and eroded the beach *maikai* of the cemetery (Char and Char 1988:118).

In 1916, the Kahuku Plantation leased some of its land for pineapple cultivation to one large grower (C. Okayama) and to other individual growers for small pieces of land. The growers were obligated to sell their crop to the Hawaiian Pineapple Co., Libby, McNeill & Libby of Honolulu, and the California Packing Corporation (which later became the Del Monte Corp.). In Keana, these lands were generally above 200 feet (60 meters) elevation, located at least 1.5 kilometers *mauka* of the current project area. Pineapples seem to be the only other major crop for Keana in this period. Unlike other swampy areas of Ko Olauoa coast, the coastal areas of Keana and Kahuku were not suited for rice cultivation due to the brackish water (Char and Char 1988:118).

The Kahuku Plantation Co. expanded by buying or incorporating other sugar plantation lands. In 1925, it bought the fields of the Koolau Agricultural Co. as far south as Kahana Bay. In 1931, the Lā'ie Plantation corporation was dissolved and their sugar lands, totally 2,700 acres, were purchased and added to the Kahuku Plantation (Dorrance and Morgan 2000:46-47).

By the early 1930s, many Japanese and Filipinos, some Portuguese and a few Koreans and Chinese were working the Kahuku cane fields, accepting the paternalistic plantation life where pay was low but supplemented by a system of bonuses plus housing, water, fuel, and medical care; even recreational facilities were provided at low cost or free. By 1935 the plantation had 4,490 acres under cultivation with 1,137 workers. In the mid 1930s, the workers lived in seven camps, known as Main Village (265 dwellings), New Camp (39 dwellings) Camp 2 (17 dwellings), Camp 3 (16 dwellings), Camp 5 (16 dwellings), Hau'ula Camp, and Lā'ie Camp (Dorrance 1998:121). By the 1930s, the village area had tennis courts, pool tables, libraries, churches and temples, banks, a movie theater, and equipment for various sports such as volleyball, boxing, baseball, football, and basketball (Gilmore 1931-32:98). From the 1930s on, Kahuku Plantation was known as a progressive company, which usually took good care of its workers. The manager during the depression was Tom Walker, who tried to keep on the entire workforce and who provided recreational facilities for the workers, such as the tennis courts and a golf course.

In the 1960s, the company had been losing money on the plantation for the last few years. In 1968, A & B announced the closing of the plantation and the mill. The last crop was harvested in 1968, the last cane was ground at the mill on November 25, 1971, and the final paperwork was completed on February 1972, when the mill was locked to prevent vandalism (Wilcox 1975:37).

A 1936 lease agreement with Campbell Estate ran out in 1983. This lease agreement became important when A & B decided to close the mill in 1971. It allowed the residents to remain in plantation housing until 1983. When the lease on these lands expired, residents were given the opportunity to buy their own homes (*Amperxand* 1985:25).

The old residents commuted to work in Honolulu, worked for nearby hotels, or went into diversified agriculture, growing such crops as watermelon, papaya, bananas, eggplant, bell pepper and corn. Others worked with aquaculture, raising freshwater and saltwater shrimp.

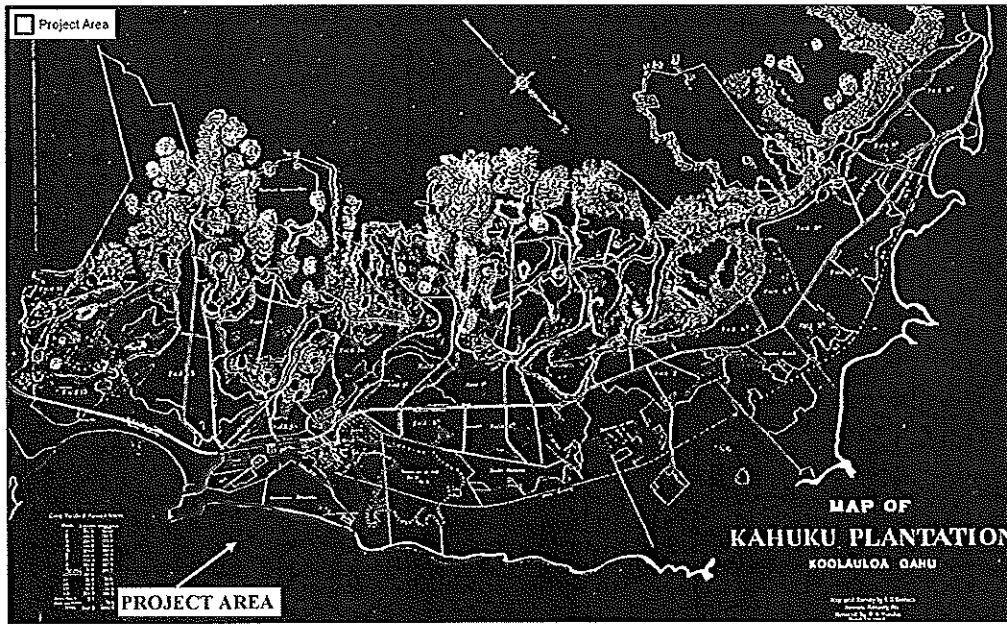


Figure 10. Kahuku Plantation, circa 1920s, showing topography and numbered fields; note that the Kahuku Village Subdivision project area (outlined in red) is not planted in sugar cane; the major portion of the project area, including the 18 Beach Lots section, is labeled "Recreation Area"

4.5 World War II and the Military in Keana

It was during the attack on Pearl Harbor on December 7, 1941 that the Kahuku Golf Course was first used as an emergency landing field. On December 6, twelve B-17s had left California on route to the Philippines, with a stopover for refueling at O'ahu. They flew into O'ahu completely unaware of the Japanese attack and had to quickly dodge strafing by the Japanese Zeros. Amazingly, they all managed to make emergency landings, seven at Hickam Air Field, one at Wheeler Airfield, one at Bellows Airfield, one at the tiny Hale'iwa Airport, and one on the grass and sand surface of the Kahuku Golf Course (Kimmitt and Regis 1992:64; Slackman 1991:151-152). The Army Air Force on O'ahu had planned to build an emergency strip at the golf course, but it had not been completed by the time of Pearl Harbor attack (Arakaka and Kuborn 1991:75).

During World War II, the golf course may have been graded for an emergency airfield. On a 1943 U.S. Geological Survey map (Figure 11), three airfields are shown at the north tip of O'ahu, one at Kahuku Point, one labeled "Kahuku Golf Course" and one labeled "Kahuku Village." These seem to be misnamed, as the field labeled Kahuku Golf Course is near Punamao Swamp, northwest of the project area. The field labeled "Kahuku Village" would be within the current municipal golf course and the project area. All three of the Kahuku airfields were titled "Emergency Fields," with single runways parallel to the shore. The Kahuku Point Airfield and the Kahuku Golf Course Landing Strip eventually had long paved runways and adjacent structures. The Kahuku Village landing strip may have been a simple landing strip; portions of a WWII-era blacktop sections have been incorporated into a golf course utility road. On a 1945 map only the two northern fields are shown, and by the end of the war, only the Kahuku Point Airfield was still depicted on USGS maps. After World War II, the Kahuku Point airfield briefly became a civilian airport and a raceway. Eventually both northern airfields were incorporated into the Turtle Bay Resort Golf Course (Freeman 2006; Trojan 2008).

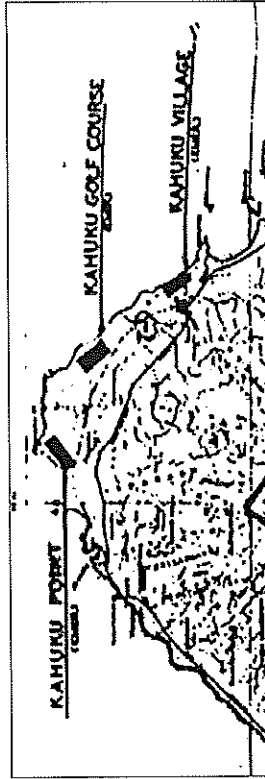


Figure 11. 1943 War Department Map, showing three airfields on the north coast of O'ahu

4.6 Modern Land Use

The Kahuku Municipal Golf Course was built in 1937 for the workers of the Kahuku Sugar Plantation. In 1952 the City and County of Hawai'i took over the operation of the course. A series of War Department and U.S. Geological Survey maps show the development of the project area over time. On the 1919 War Department map (see Figure 9), a rudimentary road leading to a workers' camp is shown in the southeast corner of the project area. The Japanese cemetery in the northwest corner is marked by a cross within a rectangle. In the 1929-1930 USGS map (Figure 12), two cemeteries, the Japanese cemetery in the northwest corner and the Catholic cemetery in the central portion of the project area are shown. The workers' camp now has improved roads; other roads and trails are shown extending through the project area. The 1943 War Department map (Figure 13) has a mark labeled "Wireless Pole." Although the Kahuku Golf Course was built in 1937, it is not labeled on the 1943 map. On the USGS 1954 map (Figure 14), the golf course is clearly labeled, along with Adams Field. Both of these areas can be seen on a 1978 aerial photograph of the area (Figure 15).

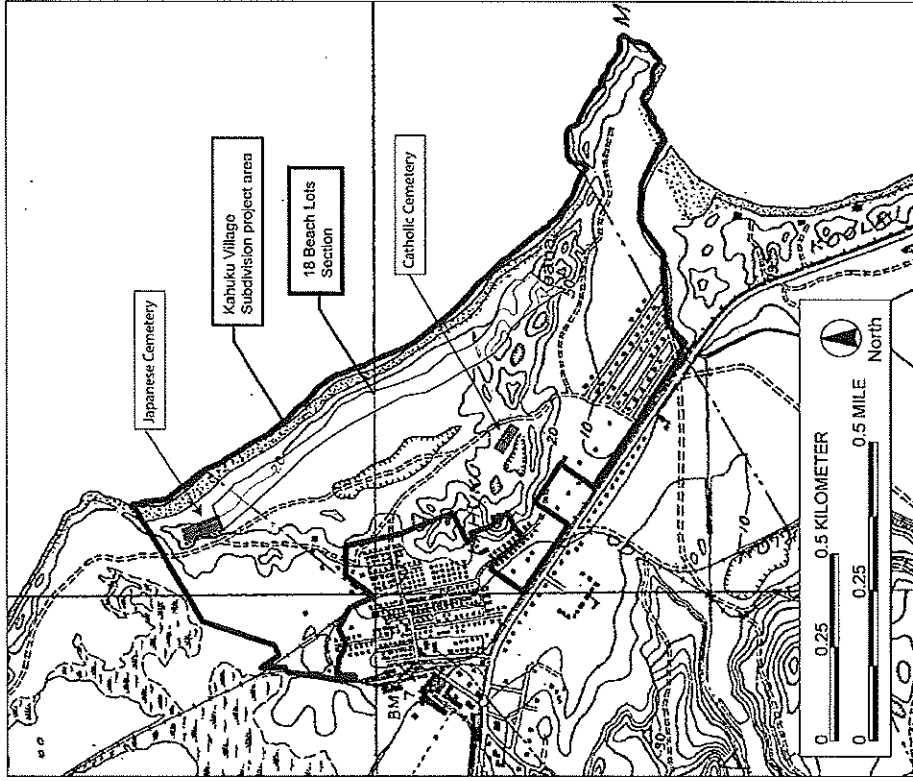


Figure 12. 1929-1930 U.S. Geological Survey map, Kahana Quad, showing the Kahuku Village Subdivision project area (outlined in red) and the 18 Beach Lots section (shaded in yellow); map also shows the location of Japanese Cemetery and the Catholic Cemetery (shaded in gray)

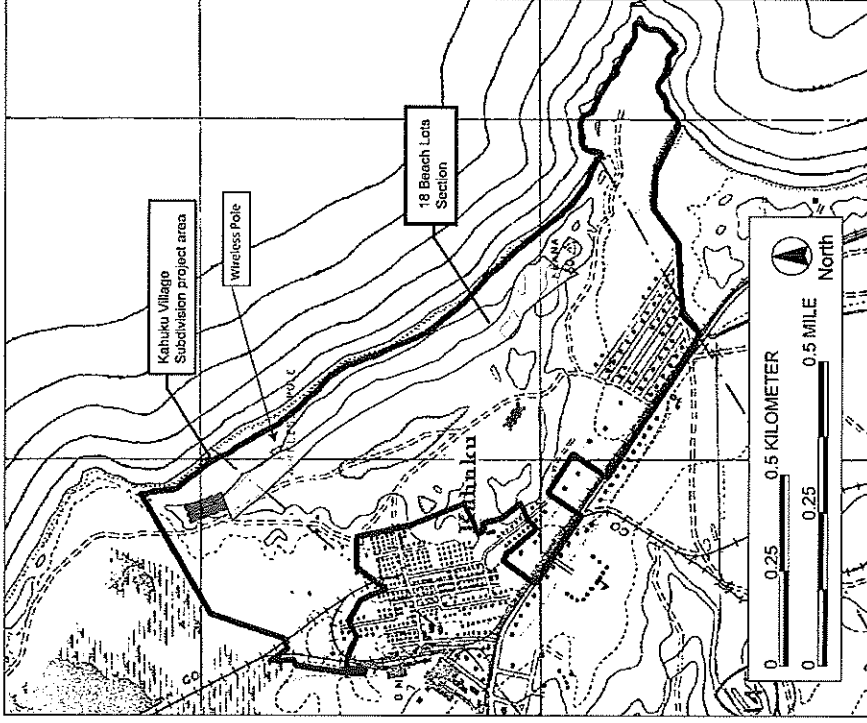


Figure 13. 1943 War Department map, showing the Kahuku Village Subdivision project area (outlined in red) and the 18 Beach Lots section (shaded in yellow); map also shows location of two cemeteries (shaded in gray) and "Wireless Pole"

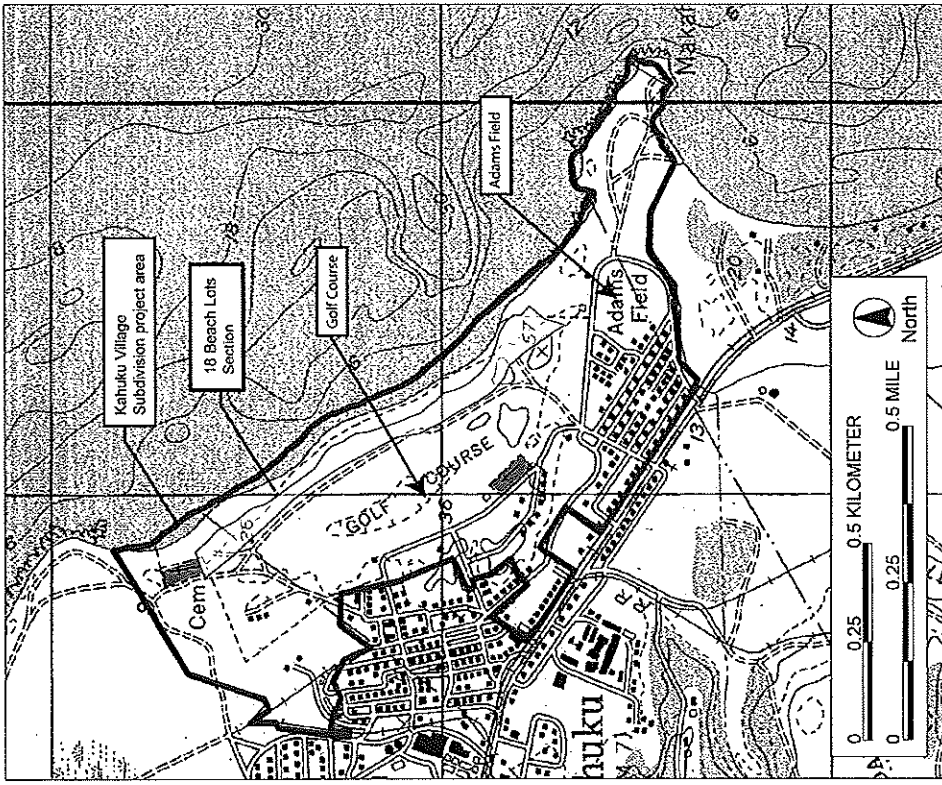


Figure 14. 1954 Army Map Service map, showing the Kahuku Village Subdivision project area (outlined in red) and the 18 Beach Lots section (shaded in yellow); the Kahuku Golf Course and Adams Field are labeled

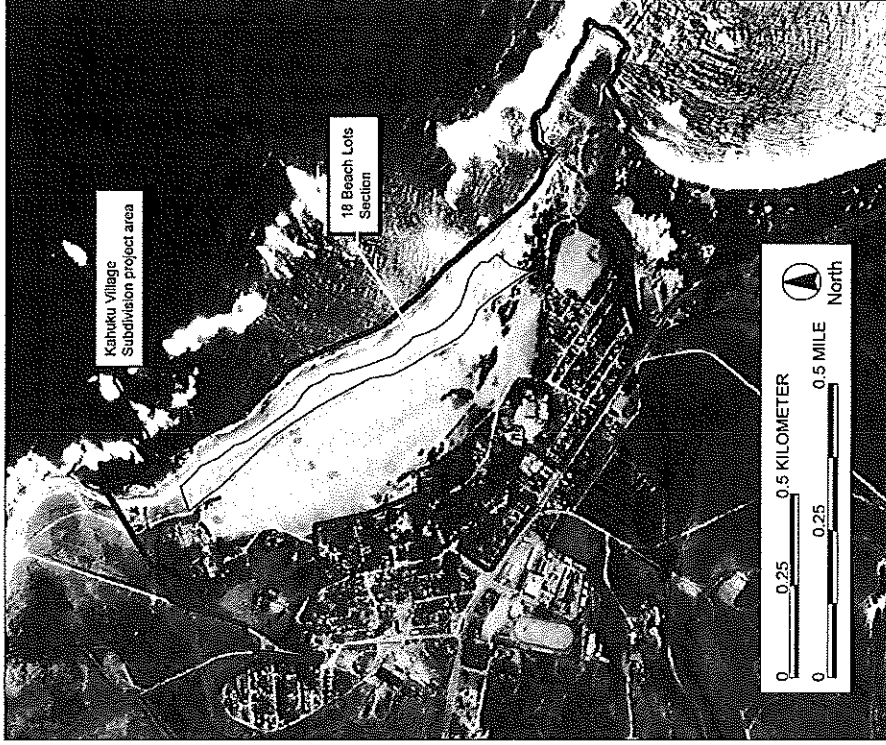


Figure 15. 1978 aerial photograph, showing Kahuku Village Subdivision project area (outlined in red) and 18 Beach Lots section (shaded in yellow); note lack of any development or structures in the area of the proposed 18 Beach Lots section

Section 5 Archaeological Research

Little archaeological work has been conducted in Keana Ahupua'a or along the eastern shores of Kahuku. This previous archaeological research section will focus on projects conducted on Makahoa Point in Mālaekahana, the entire *ahupua'a* of Keana, and the coastal sections of Kahuku and Keana from Kalaueia Point east to Makahoa Point. Table 2 summarizes the previous archaeological projects (in order of date of report) and their findings. Recorded State Inventory of Historic Places (SIHP) sites are also listed. Project locations and site locations are shown on Figure 16.

Table 2. Previous archaeological work in Keana, eastern Kahuku, and Makahoa Point

Author/ Date	Project Location	Findings (SIHP Site 50-80-06-)
McAllister 1933	In Kahuku near Keana boundary, <i>maka</i> of hwy.	Site -268. Ka'auhelemao Fishpond
McAllister 1933	<i>Mauka</i> of hwy. near Kahuku Elementary School, Keana	Site 269. Platform near Keana Cave - possible <i>heiau</i> (temple) Site 270. Keana Cave - possible burial cave Site 271. Palou Pool Site 272. Fishing shrine
McAllister 1933	Makahoa Point, Mālaekahana	
Cox 1970	Kahuku or Keana coast	Petroglyph on beach boulder; text states that the boulder is in Keana, but the site location map shows the boulder in Kahuku
Clark 1978	Ko'olauloa Housing Project and Park Expansion, Keana and Kahuku	Relocated sites 269 and 270; "sacred way"; burial cave; 1945 grave
Barrera 1979	Ko'olauloa Housing Project, Keana and Kahuku	Sites 1425-1429 - walls, mounds, a cave, and a depression; probably all associated with sugar cane cultivation
Schilt 1979	Kahuku School Expansion, Keana	Relocated sites 269 and 270; recorded Sites 2478 (overhang) and 2479 (modified outcrop)
Barrera 1981	Kahuku Agricultural Park, Keana and Kahuku	Three areas with surface artifacts/midden within Kahuku Ahupua'a
Sinoto 1981	Ki'i Wetland Refuge, Kahuku	No sites recorded
Hammatt & Pfeffer 1982	Kahuku Agricultural Park, Kahuku and Keana	No sites recorded during brief reconnaissance
Sinoto 1986	Kahuku School Expansion, Keana	Flagging perimeters of Sites 269 and 270
Bath 1989	Kahuku Coast	Site 4111; inadvertent burial find on Kahuku coast

Author/ Date	Project Location	Findings (SIHP Site 50-80-06-)
Kennedy 1989	TMK 5-6-002-025 parcel, Kahuku	No sites recorded
Kennedy 1990	Kahuku Sand Mining Project (<i>maka</i> of hwy.), Keana	No sites recorded
Komori 1992	Kahuku Coast	Site 4518; inadvertent burial find on Kahuku coast; possible cultural layer
Stride et al. 1993	Kahuku Agricultural Park Survey Areas 2 and 3, Kahuku	Sites 4510 to 4516; five temporary habitation sites with overhang shelters, enclosures, and terraces and one permanent habitation complex (Site 4513); a burial was found during subsurface testing at an overhang at Site 4515
Dagher 1993; Jourdane 1994b	Makahoa Point, Mālaekahana coast	No SIHP number; inadvertent bone find on Makahoa Point
Jourdane 1994a	Kahuku Golf Course near Japanese Cemetery, Kahuku	No SIHP number; inadvertent find of human femur near Japanese cemetery
SIHPD 1996	Kahuku Golf Course near Japanese Cemetery, Kahuku	No SIHP number; inadvertent bone find near Japanese Cemetery
Collins 1999	Kahuku Golf Course, Keana	Site 5773; inadvertent burial find near utility road
Perzinski/ Hammatt 2001	Detour roads near Kamēhameha Hwy., Kahuku	No sites recorded
Calis/Tome 2002	Force Main Sewer, <i>maka</i> of hwy., Kahuku	No sites recorded
O'Hare et al. 2004	Kahuku Mill Complex, Kahuku	Documentation and photographs of remaining infrastructure

5.1 Early Archaeological Surveys

The first systematic archaeological study of the Kahuku area was conducted by J. Gilbert McAllister of the Bernice P. Bishop Museum (BPBM) in the 1930s. McAllister (1933) consulted with knowledgeable informants about both physical and legendary sites of each district during his island-wide survey of O'ahu in the 1930s. Four sites were recorded within or near the project area.

Site 268, Kaauhelemao Fishpond. Old fishpond known by the name of its guardian (*moo*), Kaauhelemao, once located on the Waimea site of Kahuku.

Kaauhelemao was half man and half chicken, a being of supernatural power who could change himself at will into a man or a chicken. The pond is said to have

been fed by a spring. The area has now been turned into cane [McAllister 1933:152].

Sterling and Summers (1978; Ko'olauloa map) locate this fishpond within Kahuku Ahupua'a, *maka* of Kamehameha Highway, less than a fourth of a mile from the Kahuku/Keana boundary.

Site 269 is a platform, *maka* side of Kamehameha Highway in Keana on an elevation near Keana Cave (Site 270).

A rectangular platform measuring 16.5 by 10 feet with the long side facing due north. The sea side is from 3.5 to 4 feet high, and the mountain side averages around 3 feet. It is a solid mass of flat coral slabs. Around the base the stones are standing on end to a height of about 1.5 feet. Above this the stones are placed horizontally, one on top of the other. This platform has been there for many years. The exposed surfaces of the stones are weathered and old-looking. Mrs. Barker remembers that around 1900 it was considered an old Hawaiian altar. Jerry Fisher, who drew my attention to the site, says that it is known as a heiau among Europeans. None of the Hawaiians who drove about with me to point out places of interest mentioned this site. It is unlike any Hawaiian platform that I have seen, as it is exceptionally high and has a combination of stones placed vertically and horizontally. Stones are usually either placed vertically, joining what is called an *umu*, or horizontally, forming a fishing shrine (*ko'a*). If it were closer to the sea, there would be little hesitation in saying that it was probably a fisherman's altar. It is at least three-quarters of a mile from the shore in a direct line [McAllister 1933:154-155].

Site 270 is Keana Cave, which is associated with the two boys turned to two stones during a thunderstorm (see Report Section 2.1). When McAllister (1933:155) visited the site, he noted that the cave was "near the mountain side of the public school, Kahuku" and that the two stones could be seen from the school grounds.

Site 271 is Pōlou Pool. McAllister relates the legend associated with this pool (see Report Section 2.1) and says that it was "formerly a pool of water, sea side of the Kahuku mill." This makes it evident that McAllister did not locate the pool during his survey, but was only told about it.

Site 272 is a fishing shrine on Makahoa Point. McAllister (1933:155) described it as:

Site 272. A few rocks at Makahoa, all that remain of a fishing shrine (*ko'a*) which was on the point. The fish brought here were the *o'io*. Formerly a fishpond was located near the point and was known as Waipunea. There are traditions about the mullet coming to this point from Pearl Harbor.

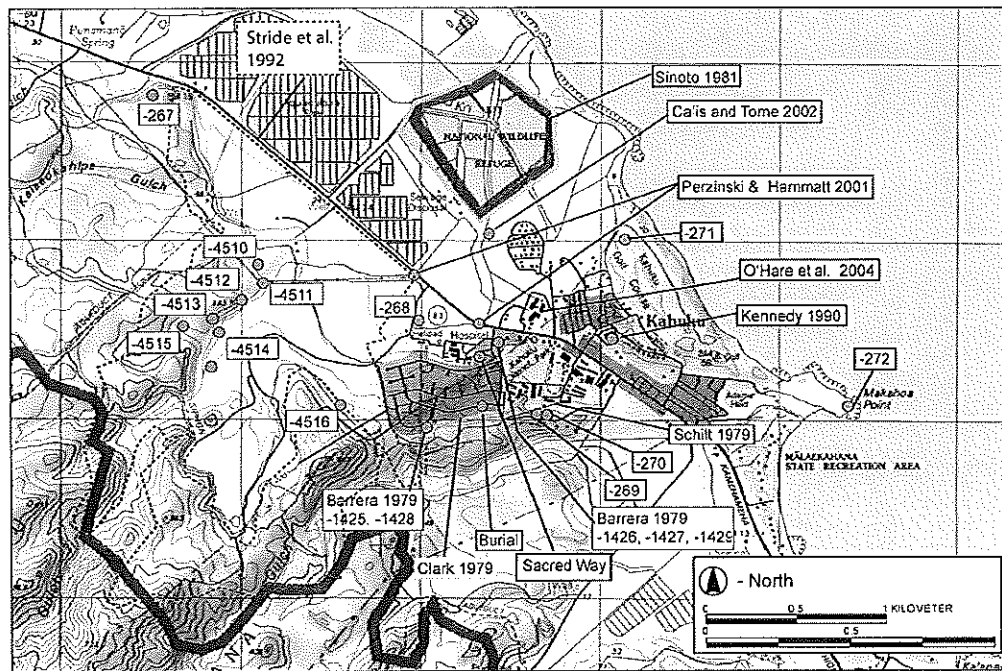


Figure 16. U.S. Geological Survey map, Kahuku Quadrangle, showing previous archaeological work in western Kahuku, Keana (shaded in pink), and Makahoa Point of Mālaekahana

5.2 Modern Archaeological Surveys

5.2.1 Ko'olauloa Housing Project, Kahuku Elementary School, Kahuku District Park

In 1978, archaeologists (Clark 1978) from the Kualoa Archaeological Research Project (City and County of Honolulu), made a preliminary reconnaissance survey of the Ko'olauloa Housing Project area (49.9 acres) and the Park Expansion area (7.4 acres). The Park Expansion Area is comprised of two parcels later developed into the Kahuku Elementary School and the Kahuku District Park. Only sites known to local residents were visited.

In the housing area, the informants took the archaeologists to a spot called a "sacred way." This spot is not marked by any rock alignments or other surface features and its exact use is unknown.

In the School expansion area was SIHP #50-80-02-269, a rock platform first recorded by McAllister (1933:154-155). A large coral slab was observed in the platform and interpreted as a possible *ku'i'ia*, or grindstone. Outside the boundary of the District Park area, the archaeologists were taken to Keana Cave (SIHP #50-80-02-270), and noticed human skeletal remains on the slope at the entrance, indicating that the cave could have been used for burial at some time. Although outside the project area, the archaeologists noted that the development of the park would lead to increased vandalism at this site. A second rockshelter along a coral outcrop also contained bones (probably human) and wood. Many other small crevices in outcrops and rock shelters with crude walls were noted in the project area, but were not investigated. One historic grave with a 1945 date was also found.

The next year, William Barrera (1979) returned to the 49.9 acre Ko'olauloa Housing project area and conducted a more intensive archaeological survey with subsurface testing. The area had been used as a sugar cane field for many years. Only two limestone knolls and the base of a limestone ledge were considered to contain potential sites, and only these three areas were surveyed. Five sites were identified, SIHP #50-80-02-1425, which consisted of two walls along the base of the limestone cliff, a rock-lined depression with a metal pipe (SIHP #50-80-02-1426) at the eastern knoll, a site complex (SIHP #50-80-02-1427) with three walls, three rock mounds, and one cave on the eastern knoll, a wall on top of the cliff (SIHP #50-80-02-1428), and a earthen mound within an L-shaped wall (SIHP #50-80-02-1429). Several of the features were tested, but there were no cultural remains. The archaeologists concluded that most, if not all, of the features were constructed in the historic period and associated with sugar cane cultivation.

During an archaeological reconnaissance survey for the 4-acre Kahuku School Expansion project, a crew from the Bishop Museum (Schilt 1979) recorded two sites and relocated two sites first recorded by McAllister (1933). SIHP 350-80-02-269, a platform, and SIHP #50-80-02-270, Keana Cave.

At Keana Cave (just outside the project area), the archaeologists noted that the two rocks by the entrance were natural formations. The floor of the cave was covered by fragmented limestone that had fallen from the side or roof of the cave. It is possible that there was midden below this layer of fallen rock.

The Bishop Museum archaeologists noted some collapse and disturbance to the platform, SIHP #50-80-02-269. They made sketches of the platform and took photographs of its present

condition. The archaeologists also noted that one component of the platform was a large coral block, perhaps indicating the ceremonial nature of the feature, as coral is often used in shrines and in *hizi*.

Bishop Museum also recorded a roughly rectangular stone mound (SIHP #50-80-02-2478) and a small overhang (SIHP #50-80-02-2479) within a large outcrop. There was no cultural material at either site. In 1986, Bishop Museum (Sinoto 1986) flagged the perimeter of Sites 279 and 280 so that they would not be destroyed during the construction of the new Kahuku School Extension.

5.2.2 Kahuku Agricultural Park

William Barrera (1981) of Chiniago, Inc. conducted a brief reconnaissance survey in three parcels (2,500 acres) and a more intensive survey in one 500-acre parcel for the Kahuku Agricultural Park. The easternmost parcel is partially within Keana Ahupua'a. Only three areas with some cultural material were found, doubtless because of the extensive modification of the area for sugar cane location. Location 1 had a marine shell, coral fragments and basalt flakes. Location 2 had one cowry shell, and Location 3 was a broken glass bottle concentration. These three locations were all within Kahuku Ahupua'a.

A one-day reconnaissance survey was conducted in the project area in 1992 by Cultural Surveys Hawaii's (Hammett and Pfeffer 1992). The four parcels are labeled 1A, 1B, 2 and 3. Portions of Keana Ahupua'a are within Parcels 1A and 1B. The archaeologists surveyed only those portions of the 1,666-acre parcel that was not under current cultivation. As this was only a brief reconnaissance, no sites were recorded.

In 1993, CSH conducted an inventory survey (Stride et al. 1993) of a portion of the Kahuku Agricultural Park. Initially they had been instructed to survey the 1666-acre park, consisting of Parcels 1A, 1B, 2 and 3. However, before completing the survey, the project area was reduced to the 785 acres of Parcels 2 and 3. Parcels 2 and 3 are not within the boundary of Keana Ahupua'a. Because of the reduction in the project area, only the seven sites found within Parcels 2 and 3 are described in detail in the 1993 CSH report. The seven sites consisted of: six temporary habitation overhang shelters (SIHP # 50-80-02-4510, 4511, and 4515), a temporary habitation enclosure (site 4512); a permanent habitation complex with walls, terraces, an enclosure, and an overhang (site 4513); a temporary habitation terrace (site 4514); and, a temporary habitation complex with an overhang and a wall (site 4516). Limited subsurface testing was conducted at three of the sites in Parcels 2 and 3. A burial was found in a test trench excavation of Feature A (overhang shelter) of site 4515. SIHP #50-80-02-4516, Feature C, a low wall adjacent to a rock outcrop, was later chosen as an appropriate place for reinterment of burials found in the Keana and eastern Kahuku area. Several burials found eroding from the sand along the coast in these areas have been reinterred at this feature, according to the SHPD Burial Files.

5.2.3 Kahuku Sand Mining Project

In advance of grading and sand mining operations, Archaeological Consultants of Hawaii's, Inc. (ACHI) conducted a program of subsurface testing in 1990 at a parcel northeast of the Kahuku Sugar Mill (TMK 1-5-6-002:12) (Kennedy 1990). No burials or cultural layers were found. One mid-twentieth trash pit and some shallow irrigation channels were noted. The

irrigation channels were associated with nearby small garden areas. A total of 47 trenches were excavated. From the stratigraphy of the trenches, the archaeologists concluded that the layers:

suggest a dune formation which has remained stable with gradual accretion over a considerable period of time. Any human burials could therefore be expected to remain fairly close to the surface, and in no case would they be deeper than the relatively impenetrable layer of lithified sand observed in most of the test units [Kennedy 1990:3].

5.2.4 Other Studies

In his book on *Hawaiian Petroglyphs*, J. Halley Cox (1970:97) lists "Site OA-F5-9, Boulder on Beach, 1 human figure, Kahuku, Keana, Koolauloa." However, on the site location map on the opposite page, the site is marked at Kalaueula Point, a rocky outcrop on the Kahuku Coast, approximately 4 kilometers north of the Keana/Kahuku boundary. It is not known if the location on the map or in the text is the correct one.

Aki Sinoto of the Bishop Museum (Sinoto 1981) conducted a brief reconnaissance survey of the Ki'i and Punamanō Wetland Refuge areas. For the Ki'i unit, he recorded that the land had been modified extensively. The only site in the area was the old track of the OR&L railroad. The Bishop Museum designated the entire wetland site 50-Oa-F4-10/11. Another name for this area is Kahuku Fishpond, but according to one of McAllister's (1933:154) informants, this was always a swamp, it was never utilized as a fishpond.

Joseph Kennedy (1989) found no archaeological sites during a reconnaissance survey of 114-acre parcel (TMK 1-5-6-002-025) west of the Kahuku Sugar Mill in Kahuku. Kennedy did note that the Ki'i Ditch ran throughout his project area, but he was unsure if this plantation-era ditch followed an earlier *ʻānuwai* (traditional Hawaiian irrigation ditch).

In 2001, an inventory survey was conducted by CSH (Perzinski and Hammatt 2001) along two detour roads, one at each of the proposed drainage improvement parcels. The two drainageways, called Hospital Ditch, and Ki'i Drainage, are along both sides of Kamelameka Highway, 0.5 to 0.75 kilometers southwest of the Kahuku Village Subdivision project area. No historic properties of any kind were observed within the proposed detour road corridors.

The installation of a force main sewer replacement was monitored by Scientific Consultant Services (SCS) in 2001 (Calis and Tome 2002). The corridor for the main was 670 meters long and was located approximately 0.4 km west of the Kahuku Village Subdivision project area. In the 12 excavated trenches, few natural stratigraphic layers were found. The majority of the strata were imported construction fills related to sugar cane cultivation and irrigation.

Cultural Surveys Hawai'i (O'Hare et al. 2004) produced a documentation report on the existing Kahuku Mill structure. As part of this task, HAER format photographs were taken of the interior and exterior of the building. The report also contains a history of the mill, documentation of the type of mill equipment installed over the years, and the mill equipment in the building at its closure as a museum in 1981.

5.2.5 Coastal Burials

Inadvertent discoveries of human remains have occurred all along the Kahuku, Keana, and Mālaekahana coasts, and have been discussed in several recent archaeological reports. A total of 19 burials (24+ individuals) have been found at the Turtle Bay Resort from Kawela Bay to Kahuku Point (O'Hare and Hammatt 2007). A recent report on Marconi Point, east of the Kahuku Point, discusses coastal burials from Marconi Point to Kalaueula Point (Tulchin et al. 2007). Numerous inadvertent burial finds have been documented along Mālaekahana Bay; these are discussed in Carpenter 2006. This section presents a summary of information on coastal burials from Kalaueula Point to Makahoa Point, including within the project area (Figure 17). The burial files at the SHPD office in Kapolei indicate that many of the burials found along the Kahuku/Keana coast have been reinterred at a burial site at SIHP #50-80-02-4516, Feature C, a low wall adjacent to a rock outcrop.

In 1989, SHPD was notified of human remains eroding from a sand dune on the Kahuku shoreline (Bath 1989), approximately 1.8 km northwest of the western boundary of the Kahuku Village Subdivision project area. The site was designated SIHP # 50-80-02-4111 and the remains were subsequently disinterred by State Parks staff.

In 1992, SHPD was notified of human remains eroding from a sand dune on the Kahuku shoreline (Komori 1992), approximately 2.7 km northwest of the western boundary of the Kahuku Village Subdivision project area. Probable human remains at three areas with exposed subsurface cultural deposits were observed. The human remains were reburied, and the site was designated SIHP # 50-80-02-4518.

In 1994, it was reported to the SHPD that a human femur had been found on the beach near the Kahuku Golf Course (Jourdan 1994a). The SHPD staff was taken to the location, which was on a gravel road at the north end of the Golf Course. This location was only 50 yards (45 meters) south of the Japanese Cemetery, which appears on USGS maps as early as 1919. High waves have knocked down some of the stone markers and eroded this section of the beach, and the archaeologists concluded that the femur probably had eroded from the slope and been carried to the gravel road. This bone location was not given a SIHP designation.

Another bone found near the Japanese cemetery was reported to the SHPD in May of 1996 (Hibbard 1997). The record of this burial find is in the Burial Files at the SHPD office in Kapolei, Hawai'i. This bone location was not given a SIHP designation.

Human skeletal remains were found on the seaward side of the Kahuku Golf Course in September of 1999 (Collins 1999) near a utility road which incorporates a former World War II blacktop road section, probably associated with the "Kahuku Village Airfield" discussed in Section 2.2.5. Some of the remains on the ground surface were collected by the SHPD, but the remaining portion of the burial was left in place. The burial location was designated SIHP #50-80-02-5773.

In 1994, a burial was documented at Makahoa Point by the SHPD (Dagher 1993). The skeleton was of a child, tightly flexed. It was disinterred in 1994 by the SHPD (Jourdan 1994b).

5.3 Background Summary and Predictive Model for Keana

Early historic visitors to the northern O'ahu coast commented on the dense population and extensive agriculture of the area. Hawaiian traditions and place names indicate that fishing was an important part of Hawaiian life in Keana, as different sections of the coast were known as good spots to hook or net *āhole* (Hawaiian Flagtail; *Kuhila sandivicensis*), *ō'io* (bonetfish; *Ahihaia viripes*), and *'ānue-holo* (mullet; *Mugil cephalus*). Population decreased rapidly in the post-Contact period and former agricultural fields were abandoned. By the time of the Māhele, only sweet potatoes were grown near a few houselots back from the coast and the lower forest zone was used to plant small patches of *'ānua*, *wanike*, and breadfruit. Over the next century and a half, the land was extensively modified for cattle ranching, for sugar cultivation in the lowlands, and for pineapple cultivation in the uplands. Previous archaeological surveys have found few surface traditional Hawaiian sites. The majority of features are overhang shelters along cliffs and some temporary habitation features on top of limestone knolls or along/on top of cliffs. These are the only areas where features have survived the destruction of post-Contact agricultural practices.

Along the coast, the portions of the Kahuku Village Subdivision project area were modified as part of the sugar mill complex of the Kahuku Sugar Plantation. In this project area, sections were used for workers' camps, as recreation areas, and as burial grounds for the workers. In 1937, a portion of the Kahuku Village Subdivision project area became the Kahuku Golf Course and in World War II, an emergency air strip was constructed on the golf course.

Except for the fishing shrine recorded by McAllister (1933) at Makahoa Point, no surface traditional Hawaiian sites have been recorded during previous archaeological projects along the coastal strip, but subsurface remains, including cultural deposits and burials in the sand dunes have been noted. Post-contact burials are also present in two cemeteries. Beach erosion and wind and wave action, especially the 1946 tsunami, have led to the exposure of both Hawaiian and plantation workers' burials in the sands of the golf course area and along the coastal strip slated for development into 18 beach lots.

Anticipated surface finds in the Beach Lot project area include both pre-Contact and post-Contact remains. Subsurface pre-Contact cultural layers may remain undisturbed. The cultural layers would be related to coastal habitation by Hawaiians who fished along the coast and had small gardens along the stream, and in the uplands along cliffs and at the forest's edge. Both surface and subsurface post-Contact features and artifacts may be found that relate to sugar cane cultivation and milling, plantation life, military structures, and modern urban habitation.

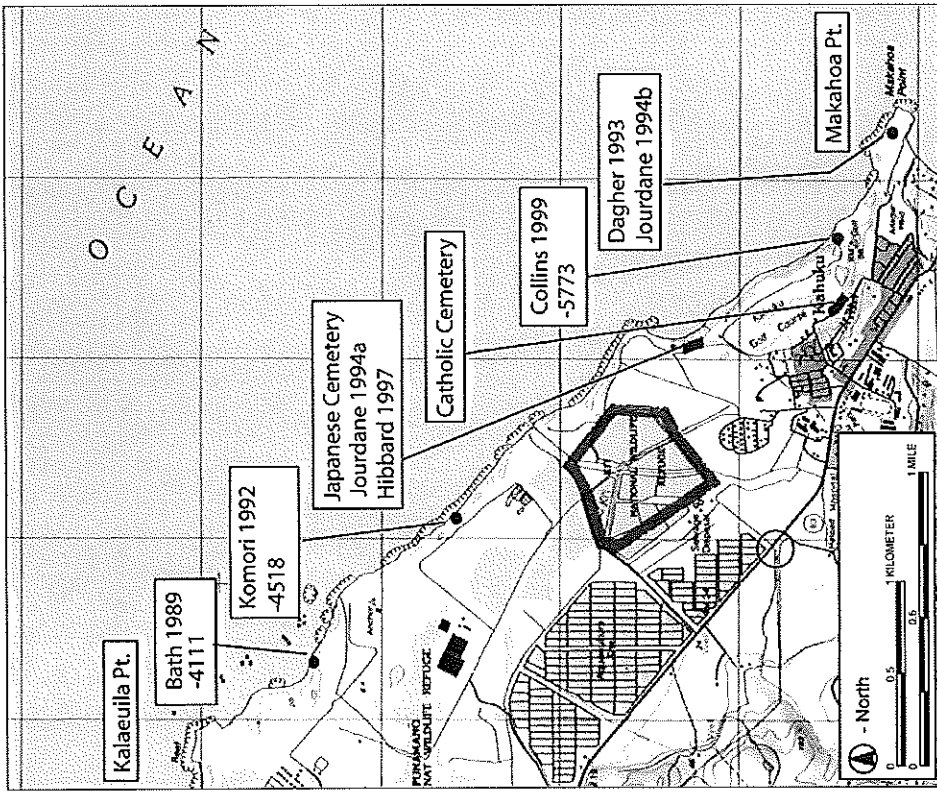


Figure 17. U.S. Geological Survey map, Kahuku Quadrangle, showing coastal burial sites in Kahuku, Keana, and Makahoa Point of Mālaekahana

Section 6 Community Consultations

6.1 Community Consultation Effort

Throughout the course of this assessment, an effort was made to contact and consult with Hawaiian cultural organizations, government agencies, and individuals who might have knowledge of and/or concerns about traditional cultural practices specifically related to the project area. This effort was made by letter, e-mail, telephone and in person contact. In the majority of cases, letters with a detailed description of the proposed action including project acreage and description provided by R.M. Towill Corporation along with a map and aerial photograph of the project area were mailed with the following text:

At the request of Continental Pacific, LLC ("Continental"), Cultural Surveys Hawaiki (CSH) is conducting a cultural impact assessment of the proposed Kahuku Village Subdivision project in Kahuku Ahupua'a, Ko'olaupua District, Island of O'ahu (TMKs [1] 5-6-02:12, 27 and portions of 3, 10 and 16). See enclosed maps of the project area.

Continental is the fee owner of various properties located makai of Kamehameha Highway which includes residential land in Kahuku Village and the Kahuku Golf Course. Continental intends to develop the Kahuku properties in accordance with Continental and the community's desire to keep Kahuku, Kahuku. To this end, Continental has developed an integrated plan, comprised of the following elements:

1. Affordable Housing
 - a. 73 Existing Houses, currently occupied, 73 lots will be created for individual ownership. 70 Houses Zoned Residential (R-5) 1 individual residential lot per house will be created. 3 Houses Zoned Commercial (B-1) 1 individual residential lot per house (on the same parcel as Kahuku Grill and the rubber plant)
 - b. Vacant Lots – 40 or more additional house lots will be created for new affordable housing units.
2. Two (2) private beach parks, one at either end of the Kahuku Golf Course, will be assigned to an entity acceptable to Continental and subject to a maintenance covenant as two (2) separate lots.
3. The 9-hole Kahuku Golf Course will be assigned to an entity acceptable to Continental and subject to a maintenance covenant as one (1) separate lot. The possibility of building a new clubhouse and restaurant will be explored.

4. The two cemeteries located in the area will be assigned to an entity acceptable to Continental and subject to a maintenance covenant as two (2) separate lots.
5. Continental will create 18 individual large fee simple Oceanfront Lots.
6. Makahoa Point was sold and is in the subdivision process as a single ranch lot (25.575 +/- acres in size). Jim Reynolds is a long time tenant of that property, and he will continue to use it for agricultural purposes (horses) and plans no further subdivision.
7. Continental reserves the legal right use the parcel known as the old Adams Field for recreational cabins permitted under the existing P-2 zoning, and/or sell the property outright.
8. The remaining area at the north end of the Kahuku Golf Course will be kept in agriculture and 12 agricultural lots will be created.

The purpose of this cultural impact assessment is to evaluate potential impacts to cultural practices and resources as a result of future development in Kahuku Ahupua'a. We are seeking your kōkua and guidance regarding the following aspects of our study:

- General history and present and past land use of the project area.
- Knowledge of cultural sites which may be impacted by future development of the project area - for example, historic sites, archaeological sites, and burials.
- Knowledge of traditional gathering practices in the project area, both past and ongoing.
- Cultural associations of the project area, such as legends and traditional uses.
- Referrals of kūpuna or elders and kama'āina who might be willing to share their cultural knowledge of the project area and the surrounding ahupua'a lands.
- Any other cultural concerns the community might have related to Hawaiian cultural practices within or in the vicinity of the project area.

Several (3-9) attempts are made to contact individuals, organizations, and agencies apposite to the cultural impact assessment for Kahuku. The preliminary results of the community consultation process for this interim report are presented in the Table 3.

Table 3. Community Consultation for Kahuku Village

Contact	Association / Affiliation	Comments
Anamizu, Carole	77 farmer, <i>kama āina</i> of Kahuku	Carole and Joy Anamizu were interviewed by CSH on February 28, 2008. See interview summary in Section 7. Mrs. Anamizu and Joy recommended a number of people to contact for this assessment in the area including Angie Ramos, and the Nazowa, Raboy, Connor and Pualoa Families.
Anamizu, Joy Augustin, Jessie Juliana	77 farmer, <i>kama āina</i> of Kahuku Kahuku kupuna	See above CSH phoned the Augustin home on March 14, 2008 and learned that the Augustin family no longer lives at this residence. CSH is in the process of finding current contact information for Ms. Augustin.
Chinen, Melanie	Administrator, State Historic Preservation Division (SHPD)	Sent letter on December 3, 2007. Ms. Chinen is no longer at SHPD. See comments of Linda Kaleo Paik.
Bridges, Cy	Kumu Hula, Kahu, Ko'olauloa lineal descendant, O'ahu Island Burial Council (OIBC), Ko'olauloa District	Sent letter on December 3, 2007
Chee, Sage	Representative <i>kama āina</i> of Kahuku and community volunteer	Sent letter on March 10, 2008
Cristobal, Noreen	President, Kahuku Village Assoc.	Sent letter on December 3, 2007

Contact	Association / Affiliation	Comments
Greenwood, Alice	Kupuna and OIBC member	At the October 10, 2007 meeting of the OIBC, Alice Greenwood spoke in response to agenda item V C Kahuku Villages informational update put on the agenda by Continental Pacific, Ms. Greenwood commented that her brother-in-law was a bulldozer operator at the time of the establishment of the golf course and knew about certain finds of human bones. CSH is in the process of following up on this information with Ms. Greenwood.
Leonardi, Jimmy	KVA V.P. Community resident	Email with letter and figures sent on March 11, 2008
Llanos, Leslie	KVA Secretary Community resident	Email with letter and figures sent on March 11, 2008. In an email response sent to CSH on March 14, 2008 Ms. Llanos wrote: Thank you for contacting me. I will formally send you a letter that confirms Kahuku Village Association's knowledge of the area. According to testimonies from several past and current residents the sand was mined after the war. We have also done some research using the public record called "Sites of Oahu". This shows the only actual hawaiian artifacts, in the proposed project area, as being a fishing shrine on the Makahoa Point and burial sites along the dunes on the Turtle Bay side of the old Japanese Graveyard (which is where a perpetual easement exists). If you have any questions you can contact the Kahuku Village Association office at 293-4488 Sent letter on March 10, 2008
Markeel, Kai	Office of Hawaiian Affairs (OHA)	

Contact	Association / Affiliation	Comments
Ramos, Angel	<i>kama'āina</i> of Kahuku, Plantation worker/resident	CSH spoke to Mr. Ramos's wife about project on March 14, 2008 and sent a letter the same day.
Santiago, Louis	<i>kama'āina</i> of Kahuku	Contact information is out dated. CSH is in the process of finding new contact information for Mr. Santiago.
Sarsona, Debbie	<i>kama'āina</i> of Kahuku	Email with letter and figures sent on March 11, 2008
Shiroma, Seiko	<i>kama'āina</i> of Kahuku, Plantation supervisor	Email with letter and figures sent on March 14, 2008. In a phone call to CSH in March, Mr. Shiroma expressed his interest in participating in this assessment. CSH is in the process of following-up and arranging an interview with Mr. Shiroma.
Waite, Paul	Kahuku Elementary School, History teacher (collected oral histories of Kahuku)	Sent letter on December 3, 2007
Wallace, William Kauaiwi'ulaokalani III	Director of Hawaiian Studies, Jonathan Nāpela Center for Hawaiian Language and Cultural Studies, Brigham Young University (BYU)	Sent letter on December 3, 2007
Wasson, Dawn	Story teller; oral/cultural historian of Lā'ie, and Kahuku; Kō'olauloa, Kō'olauloa Neighborhood Board, Cultural Committee Chair	Dawn Wasson was interviewed by CSH on February 27, 2008. See interview summary in Section 7. Ms. Wasson recommended CSH also interview the Colburn, Kenui and Martin families and offered to provide an introduction to <i>kūleana 'okama</i> she did not mention by name.

6.1.1 State Historic Preservation Division (SHPD)

A meeting was held at R.M. Towill on December 6, 2007 with SHPD staff (Linda Kalea Paik, Lauren Morawski, Teresa Davan, Astrid Liberman), Continental Pacific (Eric Morrison) and CSH (David Shideler) to discuss the proposed Kahuku Village project. Following are key points specifically related to cultural concerns and ancillary issues made in the meeting in notes provided by David Shideler:

- Although public access does not fall under the SHPD purview Ms. Paik stressed how important this issue will be.

Contact	Association / Affiliation	Comments
Matsuda, Kendall Pili'iani	<i>kama'āina</i> of Kahuku, Kahuku Plantation descendant	In a phone conversation with Mr. Matsuda's wife on March 13, 2008, Mrs. Matsuda explained that Kendall Matsuda is recently out of surgery and to send a letter about the project. CSH sent letter on March 13, 2008.
Mattoon, Cathleen Pili'iani	Kō'olauloa Hawaiian Civic Club, Pelekikena (President)	Email with letter and figures sent on December 3, 2007. See Ms. Mattoon's email response below this table.
Mattoon, Creighton Uialani	Kō'olauloa Neighborhood Board, Chair	Sent letter December 3, 2007. In an email sent to CSH on January 7, 2008 Mr. Mattoon wrote: I received your letter of December 3 re: Continental Pacific's Kahuku proposal. I am forwarding it to Dawn Wasson who is the Chair of the Cultural Committee of our Neighborhood Board. She is most knowledgeable about the project area. Sent letter on December 3, 2007
McQuivey, Jace	Vice President and General Legal Chair, OIBC	Sent letter on December 3, 2007
Nāmu'o, Clyde	Administrator, Office of Hawaiian Affairs (OHA)	In an email sent on December 18, 2007 Ms. Paik referred CSH to comments provided by herself and SHPD staff, Lauren Morawski, Teresa Davan, Astrid Liberman at a meeting on December 6, 2007 with Continental Pacific and CSH to discuss the Kahuku Village project. A summary of the meeting is provided below this table. In her 12/18 email Ms. Paik further stated that, "It is our hope that we as a Division will be working with you and the developer to make the best possible decision on this matter."
Panoke, Wayne	Kumu Hula, Executive Director of Houloukalanui Coalition	Email with letter and figures sent on December 3, 2007.
Primacio, Junior	<i>kama'āina</i> of Kahuku, Plantation union representative	CSH spoke to Mr. Primacio regarding CIA study and sent letter on March 14, 2008

- Astrid made inquiry into what provisions had been made regarding maintaining the historic integrity of the sugar plantation worker homes and indicated a willingness to help think about such provisions, advantages of a thematic grouping as an architectural site, and possible tax breaks.
- Ms. Morawski indicated archaeological monitoring would probably be necessary for all subsurface impacts.
- Ms. Morawski indicated a willingness to have archaeological inventory survey only focus on areas of specifically proposed subsurface impacts (building footprint, leach field etc.)
- Ms. Paik and Ms. Morawski were both very encouraging about anything that could be done to minimize subsurface disturbance – such as importing fill.
- Ms. Paik and Ms. Morawski were both encouraging regarding thinking about possible human remains re-location facilities
- Ms. Paik expressed concern re: swimming pools and there was some [discussion] about exploring options in the way of deed covenants to restrict such potentially large subsurface impacts.
- The SHPD staff wanted to know what the issues were behind the project protest signs visible from Kamehameha Highway.
- Ms. Paik recommended consultation with OHA specifically with Mr. Kai Markell on the subject of minimizing impacts to ancestral remains.

6.1.2. Ko'olaupua Hawaiian Civic Club

In an email response sent to CSH on January 7, 2008 Cathleen Pi'ilani Mattoon, Peleikena (President) of the KHCC, provided the following:

Comments: Cultural Impact Assessment of the

Proposed Kahuku Village Subdivision Plan

Primary Concerns

2. Na 'Iwi Kupuna – We believe that excavation will undoubtedly uncover Hawaiian burials. Therefore, be advised that we expect that these burials will remain in place, be recorded with State Historic Preservation Division and protected in perpetuity. Any “scatters” found will be gathered, properly prepared, reburied and protected in perpetuity.
3. The right to perform cultural practices including fishing and gathering will be recognized and understood by the developers and access for these purposes will be provided.
4. Historic Sites to be considered are:

- a. Polou (Sacred Sites of Oahu – Site 271) One point at which Kahuku was attached to Oahu
- b. Makahoa Point (Sacred Sites of Oahu – Site 272) Fishing Shrine. An important fishing area for Native Hawaiians.

The members of the Ko'olaupua Hawaiian Civic Club wish to be acknowledged as cultural descendants of na 'iwi kupuna o Kahuku and pledge to malama them.

Section 7 Summaries of Kama'āina "Talk Story" Interviews

7.1 Talk Story Interviews

Kama'āina and *kīpuna* with knowledge of Kahuku and Keana Alupua'a and the proposed project area participated in "talk-story" sessions for this assessment. The approach of Cultural Surveys Hawai'i Inc. to cultural impact studies affords those community contacts an opportunity to review transcriptions and/or interview notes and to make any corrections, deletions or additions to the substance of their testimony.

Cultural Surveys Hawai'i Inc. employs snowball and judgement sampling, an informed consent process and semi-structured interviews (Bernard 2005). To assist in discussion of natural and cultural resources and any cultural practices specific to the project area, CSH initiates the "talk-story" sessions with questions from the five broad categories. The categories include: Gathering Practices, Marine and Freshwater Resources, Burials, Trails and Historic Properties. Presented below are brief backgrounds of participants' "talk-story" sessions and their comments and concerns about the proposed project area.

7.1.1 Dawn Wasson

Dawn Wasson is an oral historian, genealogist and seventh generation resident of Lā'ie. She has been collecting oral histories (on tape) for over thirty years and inherited her great grandmother Moeikuahwi Kawaiupakaohakahaku's practices of *lā'au kaha* (bone healing) and *lā'au lapa'ai* (healing with plants) and is the Chair of the Cultural Committee for the Kō'olauloa Neighborhood Board. Ms. Wasson was interviewed by CSH on February 27, 2008 in Hā'u'ula. She shared her background in the area and her cultural concerns regarding gathering, fishing, water and access rights for native Hawaiians and *kūleana* landowners for the proposed Kahuku Village project.

Ms. Wasson was born in Lā'ie and moved to Kahuku at the age of 8 to live with her stepfather Benjamin Estrella. She moved back to Lā'ie in 1973. Her family has been in the Kō'olauloa area since 1804. Growing up in Kahuku, the family would spend their summer camping at Ka'ohana beach near the graveyard (by the golf course). They would collect *limu* (seaweed, algae) and fish; the girls would mostly collect shells such as cowry for making shell *lei* and the boys would fish for *'ō'io* (bonefish) by the channel. She has very fond memories of the four months her *'ohana* would spend each year living on the beach.

Ms. Wasson spoke about the project area as a *wahi pana* (sacred place), describing, for example, the migration of *'anae* (mullet) from Pearl Harbor around the North coast to Kahuku, referring to a *mo'olelo* (story) about a man named Maikolia, and a version of the story known as, (*Ka'i'imoepala'ai* about *'anae-holo*, or the traveling mullet who travel from their home in Honouliuli, Ewa, Pearl Harbor around to the windward side of the island passing through Makapu'u, Waimānalo, Kāliua, Kāne'ōhe, Kualoa...and ending up in Lā'ie. She mentioned a story about how *'ō'io* are attracted to the *limu* near Adams Field. "There are many stories about the fishermen, lobster, mullet, *'ō'io*..." She emphasized the importance of interviewing fishermen for this cultural assessment and made several referrals (below). She believes that

people may still make use of the salt ponds in the area and suggested inquiring about past and present salt collection activities.

As a practitioner of *lā'au kaha* and *lā'au lapa'ai*, Ms. Wasson takes a particular interest in plants and shared her knowledge of ethnobotanical uses of plants found in the area such as *ham* (*Hibiscus siliaceus*). She recounted how Hawaiians in the past, "used *ham* to make *kāma'a*, a sandal. The *ham* bark is moist inside and very pliable." She explained that the sandals served to protect the reef, because people would walk on them without damaging the coral. She also explained how people would strip the bark and braid the *ham* and insert *limu* between the braids. The *ham* braid would be immersed in seawater set on the reef and weighed down with *pōhaku* or rocks. This was a method used by native Hawaiians to reseed the coral with edible *limu* such as *manatea* (*Gracilaria corticopeltata*), *wāwae iole* (*Codium edule*), etc. The *kamohiki* or land agent who controlled land or fishing rights of an *āhupua'a* would employ *ham* to enforce fishing *kāpua* (prohibition). Long branches or trunks of *ham* would be set to float in the water to warn fishers of a *kāpua* against fishing in certain areas where there were specific fish that were under threat of depletion.

Ms. Wasson expressed her objections to the proposed changes and development in Kahuku Village. Her primary concern is regarding dwindling beach access. "Since 1971 beach access has been reduced...We can't engage in our cultural activities now. There is no way to get through the golf course. We used to be able to go throughout the beaches of Kahuku including Adams Field but now you have to get a key from KVA (Kahuku Village Association)." She recalled that not too long ago there was a funeral at the beach and "the kūpuna couldn't get to the beach to attend the funeral because it was too far to walk" and brought up the case of Kalaukoa v. Keawe (1893) and Henry v. Ahlo (1894) that mandates access by *kūleana* landowners, providing easement by foot or carriage. Ms. Wasson went on to comment, "accessibility should be determined by Native Tenant Rights" and explained that "HRS (Hawaii Revised Statute) 7-1 gave us native gathering rights by law. These grew out of the Māhele." Ms. Wasson added that she claims *kūleana* land in the *āhupua'a* of Kahuku.

Ms. Wasson recommended CSH contact *kūleana* (LCA) families and other cultural descendants in the project area. This is critical because "some families have burials in the area...they used to bury near the *lo'i*." She suggested talking to the Colburn, Kemui and Martin families and offered to provide an introduction to a number of other *kūleana 'ohana* she did not mention by name.

7.1.2 Carole and Joy Anamizu

As noted in Section 7.1 above, it is generally the policy of CSH to offer community contacts an opportunity to review interview summaries and to make any corrections, deletions or additions to the substance of their testimony as a pre-condition of publication. In the case of the following interview, Carole and Joy Anamizu were not able to go over the interview summary below in time to meet the deadline for this interim report. In a phone conversation with Carole Anamizu on April 3, 2008, Mrs. Anamizu gave permission to include the interview summary below pending their review. Out of respect to community contacts' time constraints and because of Mrs. Anamizu's stated interest in seeing the interview included in this interim report and the substantive contribution of the interview to this cultural impact study, CSH presents the

following testimony with the understanding that the statement has not undergone final review by the Anamizu's and, the proviso that the statement is subject to change.

CSH interviewed Mrs. Carole and Joy Anamizu in their Kahuku home and on a visit to Kahuku Village on February 27, 2008. The Anamizu family farm *ʻi* (*Corydalis fruticosa*) in Kahuku. Mrs. Anamizu practices *lāʻani lapaʻani* (healing with plants) and is a member of the Koʻolauloa Neighborhood Board as well as other community groups. Joy, her daughter, studied ethnobotany at the University of Hawaii, and helps on the farm. Mr. Anamizu (deceased) family was from Kahuku. Mrs. Anamizu's family is from Molokai.

Carole and Joy began by describing the plantation days, when Kahuku was still a thriving sugar community. Fishing, hunting and plant gathering (such as collecting *ʻimiri*) was an important supplement to plantation work and "kept food on the table". Carole and Joy pointed out that people are not engaging in these activities to the same extent as in plantation times. However fishing, in particular, is still a way for people to supplement their income in the area. Today, it is common to see small vendors of salted, smoked and fresh fish selling their catch along Kamehameha Highway and in Kahuku neighborhoods.

Joy further described fishing practices of Southeast Asian farmers in the area, "Filipino farmers like the salty fish from the ocean and collect *ʻimiri*... There are many migrant farmers *maikaʻi* of the Kamehameha highway. The Lao farmers prefer the freshwater fish like tilapia and catfish."

It used to be more common for families to spend recreation time at the beach. Carole commented that beach access has been greatly limited in recent years and fishers are not happy about reduced access to fishing grounds. When Joy was a child, they would spend their summers at the beach with her aunt, fishing for *ʻōʻio* (bonafish) for parties and extra income. Carole and Joy lamented the loss of certain cultural activities such as fishing and gathering, and, most significantly, that older generations are not passing down their knowledge to younger ones.

With the closing of the Kahuku sugar mill, plantation workers were asked to move out of their plantation homes to new neighborhoods in Kahuku. This took place in two phases in the 1980s and 1990s. Joy and Carole recommended interviewing KVA (Kahuku Village Association) families. The Phase II families, they emphasized, have more history of the area. Joy explained, "Phase II families are direct descendants of the original Hawaiian, Japanese and Filipino workers." Carole and Joy went to explain that "Turtle Bay Hilton became a way to employ people after the fall of sugar" and that it would be helpful to talk to the groundskeeper at Turtle Bay for more history of the area.

The Anamizu family is a "transplant"; Carole's family is from Molokai, Mr. Anamizu (deceased) family is from Kahuku. They moved to the current Kahuku home during Phase I, and do not have the deep ties to the plantation era as families who live in the Phase II communities. For this reason, Carole and Joy strongly recommended speaking with families in the Phase II neighborhoods.

Asked if they had or know of any cultural concerns regarding the proposed Kahuku Village project, Carole responded that there is great community concern regarding beach access. The Kahuku coast is well utilized for gathering salt, *ʻimiri* and fishing. Both mentioned that there are possibly burials in the area and to speak to cultural and lineal descendants about location or

knowledge of family burial sites. Mrs. Anamizu and Joy recommended several people to contact for this assessment including Angle Ramos, and the Nazowa, Raboy, Connor and Pualoa Families.

Section 8 Cultural Landscape of the Project Area

8.1 Overview

This section examines cultural beliefs, resources and practices identified within or in proximity to the project area in the broader context of the encompassing Kahuku and Keena Ahupua'a landscape. Excerpts from talk story sessions are incorporated throughout this section where applicable.

8.1.1 Growing and Gathering of Plant Resources

As indicated by the LCAs in Keena and Kahuku Ahupua'a, claims included garden plots with a variety of species such as sweet potatoes, 'awa (*Piper methysticum*) and trees, possibly breadfruit, *koa*, *wauke*, *wiluwili*, or 'āhi'a. 'Awa grows best in wet areas with little direct sunlight. It was often planted or collected by Hawaiians just below the border of the lower forest zone, along streams, or at the base of wet escarpments (Handy and Handy 1972:192). It is likely that the owners traveled to the uplands of Keena to gather forest resources such as 'awa. The main taro fields (*lo'i kalo*) are in Kahuku Ahupua'a.

Hawaiians utilized upland plant resources for a multitude of purposes. Forest resources were gathered, for not only the basic needs of food and clothing, but for tools, weapons, canoe building, house construction, dyes, adornments, hula, medicinal and religious purposes. Littoral tree species such as *milo* (*Thespesia populnea*), a Polynesian introduction, was used to make canoe hulls, *himeke lā'au* (literally, containers from wood), or calabashes, for healing and a number of other purposes (Abbott 1992). It is worth noting that the stream banks in the vicinity of the project area are abundant with *hau* (*Hibiscus tiliaceus*) used by Hawaiians for a variety of purposes including employing the wood for outrigger canoes, the fibers for making *kapa* cloth and cordage, and the sap and flowers for medicine. A wide variety of edible *limu* (both seaweed and freshwater or brackish water algae) were once commonly collected in the Ko'olauoa district such as *limu 'ele'ele* (*Enteromorpha prolifera*), *huluhuluwaena* (*Grateloupia filicina*), to name a few (see Abbott 1992:46).

CSH will be conducting a field inspection of the project area in the near future, and will add a brief discussion of vegetation, including further discussion of ethnobotanical species in and around the proposed project area, in the final draft of this CIA report. As suggested by the Anamizu's, there is a *hula hālanu* (hula group) that collects *hina-hina*, possibly native heliotrope (*Heliotropium anomalum* var. *argenteum*) to make headband *lei* in the vicinity of the project area. Ms. Wasson spoke of former uses of *hau* by native inhabitants such as for sandals that could be worn in the ocean on reefs, to re-seed coral banks with *limu* and to signify fishing *kapu*. Dawn Wasson, Carole and Joy Anamizu indicated that Kahuku community residents continue to gather *limu* and are gathering other land-based (native and/or introduced) ethnobotanical species in and near the project area.

8.1.2 Marine and Freshwater Resources

The sea is a rich resource and the Hawaiian people were traditionally expert fishermen. Fish of all types supplied the Hawaiian diet with a rich source of protein. The Ko'olauoa coast was an

abundant source of *akule* (*Trachurus crumenophthalmus*), *moi* (*Polydactylus sexfilis*), *male* (*Young parrotfish*), *āholehole* (the young/immature form of an endemic fish, *Kuhlia sandvicensis*), *weke* (certain species of the Mullidae, surmullet or goatfish), and 'ō'io (Albula vulpes) as well as seafood such as *lohi* (sea slug or cucumber, *Holothuria* spp.), and *hān'ike'ike* (an edible variety of sea urchin, *Colobocentrotus atratus*), 'ā'ama (*Cirapsius grapsus tenuicristatus*) and more.

As indicated by the *mo'olelo* of the area as well as initial interviews, the project area and vicinity was formerly and is still, to some extent, rich in marine and freshwater resources. Dawn Wasson, Carole and Joy Anamizu all recalled summertime camping, fishing for 'ō'io or bonefish (Albula vulpes) along the Kahuku coast. Ms. Wasson specified that the boys, who did most of the fishing while the girls collected *limu*, preferred fishing for 'ō'io by the channel, identifying what was traditionally known as Keone'ō'io, or bonefish sands. Joy Anamizu pointed out many Kahuku residents continue to supplement their diet and income through fishing. She also mentioned that, "Filipino farmers like the salty fish from the ocean and collect *limu*....Lao farmers prefer the freshwater fish like tilapia and catfish." Ms. Wasson spoke of *mo'olelo* of the region that involve fish and fishing beliefs (see 8.1.6 Wahi Pana below). Dawn Wasson, Carole and Joy Anamizu also mentioned past and present salt collecting activities along the Kahuku coastline.

8.1.3 Cultural and Historic Properties and Burials

Four sites were recorded by McAllister (1933) within or near the project area (Site 268 Kaauhelema Fishpond, Site 269 platform, Site 270 Keena Cave, Site 271 Pōlou Pool and, most notably, Site 272 the fishing shrine at Makahoa Point). It appears that few other surface traditional Hawaiian sites have been recorded during previous archaeological projects along the coastal strip (see Table 2). It is worth noting that little archaeological work has been conducted in Keena Ahupua'a or along the eastern shores of Kahuku. Anticipated surface finds in the Beach Lot project area include both pre-Contact and post-Contact remains.

Subsurface remains, including cultural deposits and burials in the sand dunes have been noted. Post-contact burials are present in two cemeteries. The subject project area is likely to contain substantial additional subsurface deposits including burials nearer to the sea shore. Inadvertent discoveries of human remains have occurred all along the Kahuku, Keena, and Mālaekahana coasts, and have been discussed in several recent archaeological reports (see Section 5.2.5). Beach erosion and wind and wave action, especially the 1946 tsunami, have led to the exposure of both Hawaiian and plantation workers' burials in the sands of the golf course area and along the coastal strip slated for development into 18 beach lots. Subsurface pre-contact cultural layers may remain undisturbed. The cultural layers would be related to coastal habitation by Hawaiians who fished along the coast and had small gardens along the stream, and in the uplands along cliffs and at the forest's edge. Both surface and subsurface post-Contact features and artifacts may be found that relate to sugar cane cultivation and milling, plantation life, military structures, and modern urban habitation. CSH is in the process of producing an AIS plan to assess archaeological findings in the project area (see Tulehin et al. 2008).

Dawn Wasson, Carole and Joy Anamizu cautioned that there are likely to be burials in or near the project area and recommended interviewing *ki'i'ezana* (LCA) families about location or

knowledge of family burial sites. The SHPD and KHCC also emphasized the possibility of *hivi kīpuna* (ancestral remains) within and near the project area. Cathy Maitoon, President of KHCC, noted two significant cultural features of the area, Pōlou Pool and Makahoa Point, the site of a fishing shrine and an important fishing spot for native Hawaiians.

8.1.4 Trails

Trails served to connect the various settlements. Based on nineteenth and twentieth century maps, the primary transportation routes correlated closely to existing major roadways. The main trail around the northern tip of O'ahu is likely to have closely followed the route of the modern Kamehameha Highway, which borders the current project area. The close proximity of a major pre-Contact trail/early post-Contact road may have increased use of the project area in pre-Contact and early post-Contact times. The modern Kamehameha Highway is currently the only major transportation corridor around the northern tip of O'ahu, but the railroad used to traverse this same general route.

8.1.5 *Wāhi Puna* (Storyed, Sacred Places)

The project area is associated with specific *mo'olelo* (oral history) about the famous "floating island of Kahuku," Hi'iaka and Pele, Lewa (a *hupua*, or supernatural creature, that can change forms), Keana Cave, with more general *mo'olelo* about fishing, fresh water, and *ko'a* (fishing shrines), and with the *ahupua'a* of Keana, Mālaekahana, and Lā'i'e, and other areas including Kawela Bay and Waiālua. Dawn Wasson made reference to a *mo'olelo* about Maikoha and the '*anae-holo*, or the traveling mullet, who travel from their home in Honouliuli, Pearl Harbor around to the windward side of the island ending up in Lā'i'e as well as other fishing stories.

Section 9 Summary and Recommendations

Cultural Surveys Hawai'i, Inc. (CSH) is conducting this cultural impact assessment (CIA) at the request of R.M. Towill Corporation on behalf of Continental Pacific. The cultural survey includes broadly the *ahupua'a* of Keana and Kahuku, and more specifically the approximately 15-acre coastal strip portion (TMK 1-5-6-002:010) of the approximately 200-acre Kahuku Village Subdivision Project, Kahuku, Keana, and Mālaekahana Ahupua'a, Ko'olaupua District, O'ahu (TMK: [1] 5-6-002:012, 027, portions of 010, 016, and 027). The proposed project involves subdivision of the Kahuku Village Subdivision. The first phase of the project involves the development of 18 proposed beach lots. Subsequent phases of work are to be determined but present plans call for maintaining the Kahuku Golf Course and Kahuku Village areas.

For this CIA, an effort is currently underway to contact and consult with Hawaiian cultural organizations, government agencies, and individuals who have knowledge of and/or concerns about the project area. As of the writing of this *interim report*, 3 agencies/organizations (Ko'olaupua Neighborhood Board, Ko'olaupua Hawaiian Civic Club, State Historic Preservation Division) have provided comments for the CIA, and 3 individuals (Dawn Wasson, Carole and Joy Anamizu) have participated in preliminary interviews. Thus far, there is considerable consensus from study participants regarding cultural resources and practices in the proposed project area and associated cultural concerns.

The findings of this initial community cultural consultation suggest that there are two primary cultural concerns regarding the proposed Kahuku Village Subdivision project:

1. The project area and vicinity is likely to have surface and subsurface cultural and historic properties, including human burials. It was suggested by all of the respondents in this preliminary study (Dawn Wasson, Carole and Joy Anamizu, representatives of the SHPD and KHCC) that ground disturbance will undoubtedly reveal Hawaiian burials. Three respondents recommended that *kūleana* (LCA) families in particular be consulted regarding identification and treatment of possible burial sites and other significant cultural properties in and near the project area. KHCC advised that "burials will remain in place, be recorded with State Historic Preservation Division and protected in perpetuity. Any 'scatters' found will be gathered, properly prepared, reburied and protected in perpetuity". SHPD representatives were particularly concerned about ways to minimize subsurface disturbance and suggested that the developer/owner consider importing fill and restricting swimming pool construction. SHPD also indicated the importance of an archaeological monitor for limiting subsurface impacts.
2. The area has a long history of cultural use by Kānaka Maoli (native born), as well as other *kama'āina* groups. The streams that empty into the ocean and shoreline are still well-utilized by native Hawaiians as well as former plantation workers and their descendants and more recent immigrant groups (Japanese, Filipinos, Portuguese, Koreans and Chinese, Laotians) for a variety of cultural activities including fishing, salt and *limu* collection, and plant-gathering. There is concern on the part of all of the study participants interviewed to date that, as has happened in the past, beach access will be restricted by further development of the Ko'olaupua coast and that access to cultural

resources will be disrupted. As pointed out by two of the study respondents (Cathy Mattoon, Dawn Wasson), the laws pertaining to traditional and customary native Hawaiian gathering rights (HRS 7-1) and beach access (Public Access Shoreline Hawaii or, PASH) must be considered.

Based on the *preliminary* results of this CIA, the following mitigation measures are offered as a way to address cultural concerns raised for the Kahuku Village Subdivision Project:

1. In light of the archival evidence and community consultation conducted for this assessment, it is likely that there are burial sites (*āwi kīpuna*, ancestral remains) as well as significant cultural and historic properties in the subject project area, it is recommended that,
 - a. Cultural monitoring be conducted during all phases of development and,
 - b. Personnel involved in development activities in the project area be informed of the possibility of inadvertent cultural finds, including human remains. Should cultural or burial sites be identified during ground disturbance, all work should immediately cease, and the appropriate agencies notified pursuant to applicable law,
 - c. In the event of burial finds, the developer/owner work closely with cultural and lineal descendants of Kahuku to honor their wishes concerning proper cultural protocol, re-interment and protection of *āwi kīpuna*.
2. In compliance with the laws pertaining to protection of traditional and customary native Hawaiian gathering rights and beach access, and in response to the critical concern expressed by study participants regarding beach access, it is recommended that the proposed subdivision is planned and developed in such a way as to allow access from the highway to the shoreline and that ongoing cultural fishing, gathering and other practices (e.g., ritual, ceremonial) be recognized and safeguarded;
3. It is recommended that Kahuku community members be further consulted and informed about cultural and related concerns expressed in this initial assessment throughout the planning and development process.

Section 10 References Cited

- Abbott, R. Tucker, and S. Peter Dance**
1990 *Compendium of Seashells*. Fourth Edition. American Malacologists, Inc., Melbourne, Florida.
- Ampersand**
1985 *Kahuku. Ampersand*, Special Issue, Third Edition.
- Arakaki, Leatrice R., and John R. Kuborn**
1991 *7 December 1941: The Air Force Story*. Pacific Air Forces, Office of History, Hickam Air Force Base, Honolulu.
- Barrera, William**
1979 *Kahuku Archaeological Survey, Ko'olanāoa Housing Project*. Chiniago, Inc., Honolulu.
- 1981 *Cultural Resources Reconnaissance of the Kahuku Agricultural Park Project Area*. Chiniago, Kama'ele, Hawai'i.
- Barrera, William M., Jr., and Patrick V. Kirch**
1973 Basaltic-Glass Artifacts from Hawaii. Their Dating and Prehistoric Uses. *Journal of the Polynesian Society* 82.2:176-187.
- Bath, Joyce**
1989 *Kahuku Dune Burial ME#89-0467 Site #80-02-4111 Kahuku, Ko'olanāoa, O'ahu*. Department of Land and Natural Resources, State Historic Preservation Division, Kapolei, Hawai'i.
- Bengehole, John C.**
1967 *The Journals of Captain James Cook on His Voyages of Discovery, Volume 3: The Voyage of the Resolution and Discovery 1776-1780, Parts 1 & 2*. Cambridge University Press for the Hakluyt Society, Cambridge.
- Beckwith, Martha W.**
1919 "The Hawaiian Romance of Lāieikawai" [by S.N. Haleole, 1863], with introduction and translation. Bureau of American Ethnology Annual Report 33 (for 1911-1912), pp. 285-677. Washington, D.C.
- Bernard, Russell H.**
2005 *Research Methods in Anthropology: Qualitative and Quantitative Approaches*. Fourth Addition. AltaMira Press, Walnut Creek, CA.
- Bowser, George**
1880 *The Hawaiian Kingdom Statistical and Commercial Directory, 1880-1881*. George Bowser, Honolulu and San Francisco.
- Brigham, William T.**
1974 Stone Implements and Stone Work of the Ancient Hawaiians. *Memoirs of the Bernice Pauahi Bishop Museum*, Vol. 1, No. 4, Bishop Museum Press, Honolulu.
- Bryan, William A.**
1915 *Natural History of Hawaii*. Hawaiian Gazette Co., Honolulu.

- Buck Peter H.**
2003 *Arts and Crafts of Hawaii*. Bernice P. Bishop Special Publication 45. Bound Version. Bishop Museum Press, Honolulu.
- Bureau of Land Management/Society for Historical Archaeology**
2008 Historic Glass Bottle Identification & Information Website. <http://www.sba.org/bottle/index.htm>.
- Calis, Irene, and Guerin Tone**
2002 *An Archaeological Monitoring Report for the Force Main Sewer Replacement Project, Kahuku Ahupua'a, Ko'olaupua District, O'ahu Island, Hawaii*. Scientific Consultant Services, Inc., Honolulu.
- Chamberlain, Levi**
1828 Tour Around Oahu, 1828. In *65th Annual Report of the Hawaiian Historical Society for the Year 1956*, Honolulu.
- Char, Wai Jane, and Tin-Yuke Char (editors)**
1988 *Chinese Historic Sites and Pioneer Families of Rural Oahu*. University of Hawai'i Press, Honolulu.
- Chinen, Jon J.**
1958 *The Great Māhele, Hawaii's Land Division of 1848*. University of Hawai'i Press, Honolulu.
- Clark, John R.K.**
1997 *The Beaches of O'ahu*. Kolowalu Book, Honolulu.
- Clark, Stephen**
1978 *Preliminary Archaeological Reconnaissance Report for Koalaniloa Housing Project and Park Expansion, Kahuku, Island of Oahu*. Kualoa Archaeological Research Project, Department of Parks and Recreation, City and County of Honolulu.
- Collins, Sara**
1999 *Recovery Of Human Remains From Kahuku Golf Course*. Department of Land and Natural Resources, State Historic Preservation Division, Kapolei, Hawai'i.
- Condé, Jesse C., and Gerald M. Best**
1973 *Sugar Trains, Narrow Gauge Rails of Hawaii*. Glenwood Publishers, Felton, California.
- Cox, J. Halley (with Edward Stasack)**
1970 *Hawaiian Petroglyphs*. Bishop Museum Press, Honolulu.
- Dagher, Cathleen**
1993 *Inadvertent Discovery of a Human Burial At Makahoa Point, Malaekahana, Ko'olaupua, O'ahu*. Department of Land and Natural Resources, State Historic Preservation Division, Kapolei, Hawai'i.
- Dillingham, Benjamin F.**
1886 Great Land Colonization Scheme. In Thos. G. Thrum, (ed.), *Hawaiian Almanac and Annual for 1886*, pp. 73-80. Press Publishing, Honolulu.

- Dorrance, William H.**
1998 *O'ahu's Hidden History: Tours into the Past*. Mutual Publishing, Honolulu.
- Dorrance, William H., and Francis S. Morgan**
2000 *Sugar Islands: The 165-Year Story of Sugar in Hawaii*. Mutual Publishing, Honolulu.
- Eisenberg, Jerome M.**
1981 *A Collector's Guide to Seashells of the World*. Crescent Books, New York City.
- Elliott, Rex R.**
1971 *Hawaiian Bottles of Long Ago*. Hawaiian Service, Honolulu
- Elliott, Rex R., and Stephen C. Gould**
1988 *Hawaiian Bottles of Long Ago. A Little of Hawaii's Past*. Hawaiian Service, Honolulu.
- Emerson, Nathaniel B.**
1978 *Pele and Hi'aka-A Myth from Hawaii*. Charles E. Tuttle, Rutland, Vermont.
- 1998 *Unwritten Literature of Hawai'i. The Sacred Songs of the Hula*. Mutual Publishing, Honolulu.
- Emory, Kenneth P., William J. Bonk, and Yoshihiko H. Sinoto**
1968 *Fishhooks*. Bernice P. Bishop Museum Special Publication 47. Bishop Museum Press, Honolulu.
- Fike, Richard E.**
1987 *The Bottle Book. A Comprehensive Guide to Historic Embossed Medicine Bottles*. Peregrine Smith Books, Salt Lake City.
- Foote, Donald E., E.L. Hill, S. Nakamura and F. Stephens**
1972 *Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai and Lanai, State of Hawaii*. U.S. Dept. of Agriculture. U.S. Government Printing Office, Washington, D.C.
- Forlander, Abraham**
1919 *Forlander Collection of Hawaiian Antiquities and Folk-Lore*, Vol. V-Part II. Bishop Museum Press, Honolulu.
- Freeman, Paul**
2006 *Abandoned and Little Known Airfields: Hawaii, Northern Oahu Island* http://www.airfields-freeman.com/HI/Airfields_HI_Oahu_N.htm. Downloaded January 15, 2008.
- Gilmore, A.B.**
1931-2 *Hawaii Sugar Manual*. A. B. Gilmore, New Orleans, Louisiana.
- Hammatt, Hallett H.**
1996 *Archaeological Reconnaissance Survey For Proposed Malaekahana Exploratory Wells, Malaekahana, O'ahu*. Cultural Surveys Hawai'i, Inc., Kailua, Hawai'i.
- Hammatt, Hallett H., and Michael Pfeiffer**
1992 *Archaeological Reconnaissance of Kahuku Agricultural Park*. Cultural Surveys Hawai'i, Inc., Kailua, Hawai'i.

- Handy, E. S. Craighill**
1940 *The Hawaiian Planter, Volume 1*. Bishop Museum Bulletin No. 161., Bernice P. Bishop Museum, Honolulu.
- Handy, E. S. Craighill, and Elizabeth G. Handy**
1972 *Native Planters in Old Hawaii: Their Life, Lore, and Environment*. Bishop Museum Bulletin 233, Bernice P. Bishop Museum, Honolulu.
- Hibbard, Don**
1997 *Inadvertent Discovery of Human Remains, Japanese Cemetery, Kahuku Golf Course, TMK 5-6-002:010*. Memo in Burial Files, Department of Land and Natural Resources, State Historic Preservation Division, Kapolei, Hawaii.
- Ho'oulu māhiēhīe**
2006a *The Epic Tale of Hi'ikaikaipolipele*. As Told by Ho'oulu māhiēhīe. Translated by M. Puakea Nogeimeier. Awaiaulu Press, Honolulu.
2006b *Ka Mo'olelo o Hi'ikaikaipolipele*. Original Hawaiian text taken from series of articles in *Ka Na'i Aupuni* 1905-1906. Awaiaulu Press, Honolulu.
- Jourdane, Elaine**
1994a *The Inadvertent Discovery of Human Remains near Kahuku Golf Course, Kahuku, Ko'olanui, O'ahu*. Department of Land and Natural Resources, State Historic Preservation Division, Kapolei, Hawaii.
1994b *Disinterment of Eroding Burial at Makahoa Point, Laie, Site 50-80-04-4521, SHPD #5474, Laie, Ko'olanui, O'ahu. TMK 5-6-02:010*. Memo in Burial Files, Department of Land and Natural Resources, State Historic Preservation Division, Kapolei, Hawaii.
- Kamakau, Samuel**
1870 *Ka Moolelo Hawaii. Ke Au 'Oko'u*, October 6, 1870.
1991 *Ka Po'e Kahiko. The People of Old*. Bishop Museum Press, Honolulu.
- Kay, E. Alison**
1979 *Hawaiian Marine Shells*. Bernice P. Bishop Museum Press, Honolulu.
- Kennedy, Joseph**
1989 *Archaeological Reconnaissance Survey at TMK: 5-6-02:25, Located at Kahuku, O'ahu*. Archaeological Consultants of Hawaii, Hale'iwa, Hawaii.
1990 *Kahuku Sand Mining Project: Archaeological Subsurface Testing Results*. Archaeological Consultants of Hawaii, Hale'iwa, Hawaii.
- Kimmett, Larry, and Margaret Regis**
1992 *The Attack on Pearl Harbor. An Illustrated History*. Navigator Publishing, Seattle, Washington.
- Komori, Eric**
1992 *Inadvertent Burial Exposure of Burial at Kahuku Golf Course, Kahuku, O'ahu, TMK: 1-5-6-02:010/016*. Department of Land and Natural Resources, State Historic Preservation Division, Kapolei, Hawaii.

- Korn, Alfons L.**
1958 *The Victorian Visitors*. University of Hawaii Press, Honolulu.
- Kuykendall, Ralph**
1953 *The Hawaiian Kingdom: 1854-1874, Twenty Critical Years*. Vol. II. University of Hawaii Press, Honolulu.
1967 *The Hawaiian Kingdom: 1874-1893, the Kalakaua Dynasty*. Vol. III. University of Hawaii Press, Honolulu.
- Lebo, Susan A. (editor)**
1997 *Native Hawaiian and Euro-American Culture Change in Early Honolulu*. Anthropology Department, Bernice P. Bishop Museum, Honolulu.
- Lister, Florence C. and Robert H. Lister**
1989 *The Chinese of Early Tucson, Historic Archaeology from the Tucson Urban Renewal Project*. The University of Arizona Press, Tucson, Arizona.
- McAllister, J. Gilbert**
1933 *Archaeology of Oahu*. Bishop Museum Bulletin 104, Bernice P. Bishop Museum, Honolulu.
- Millar, Jim**
1988 *The Handbook of Hawaiian Machine Made Soda Bottles*. Soda Mart, Goodlettsville, Tennessee.
- Munsey, Cecil**
1970 *The Illustrated Guide to Collecting Bottles*. Hawthorn Books, Inc., New York, New York.
- Nakuina, M. K.**
1998 *Fish Stories and Superstitions*. Translated by M. K. Nakuina. In *Hawaiian Folk Tales: A Collection of Native Legends*, compiled by Thos. G. Thrum, pp. 269-274. Mutual Publishing, Honolulu.
- O'Hare, Constance R., and Hallett H. Hammatt**
2007 *Archaeological Monitoring Plan for the Turtle Bay Resort Land Use Master Plan Project, Kahuku, Punalau, Ulupehnehu, 'O'o 1 & 2, Hanaka'oe, Kaneha, and Opapa Ahupua'a, Ko'olanui District, O'ahu Island, TMK: 111 5-6-003:041,0 44; 5-7-001:001, 013, 016, 020, 022, 031, 033; 5-7-006: 001, 002*. Cultural Surveys Hawaii, Inc., Kailua, Hawaii.
- O'Hare, Constance R., David W. Shideler, and Hallett H. Hammatt**
2006 *A Documentation of the Kahuku Sugar Mill Kahuku Ahupua'a, Ko'olanui District, Island of O'ahu, TMK: (1) 5-6-002:017*. Cultural Surveys Hawaii, Inc., Kailua, Hawaii.
- Olsen, Stanley J.**
1964 *Mammal Remains from Archaeological Sites. Papers of the Peabody Museum of Archaeology and Ethnology 56(1)*.

- Perzinski, David, and Hallett H. Hammatt**
2001 *Archaeological Inventory Survey Report for Hospital Ditch and Kii Bridge in the Ahupua'a of Kahuku, District of Ko'olanua, Island of O'ahu* (TMK: 5-6-02, 05 & 06). Cultural Surveys Hawaii, Inc., Kailua, Hawaii'i.
- Pukui, Mary Kawena**
1983 *'Olelo No'ea, Hawaiian Proverbs and Poetical Sayings*. Bishop Museum Press, Honolulu.
- Pukui, Mary K., Samuel H. Elbert, and Esther T. Mookini**
1974 *Place Names of Hawaii*. University of Hawaii'i Press, Honolulu.
- Raphelson, Rayna**
1925 *Kings, Gods and Wars Along Oahu's Roads, Legend Lore of Kamehameha Highway*. Honolulu Star-Bulletin, January 17, 1925.
- Sandler, Rob**
1990 *Hawaii Guide to Golf*. Pacific Publishing, Honolulu.
- Schilt, Rose**
1979 *Archaeological Reconnaissance Survey of Proposed Extension, Kahuku Elementary School, Kahuku, O'ahu*. Department of Anthropology., Bernice P. Bishop Museum, Honolulu.
- Schmid, Elisabeth**
1972 *Atlas of Animal Bones for Prehistorians, Archaeologists and Quaternary Geologists*. Elsevier Publishing Co., Amsterdam, London, and New York.
- Schmitt, Robert**
1977 *Historical Statistics of Hawaii*. University Press of Hawaii'i, Honolulu.
- Schuyler, Jas. D., and G. F. Allardt**
1889 Report on Water Supply for Irrigation on the Island of Oahu, Hawaiian Islands. *Paradise of the Pacific* III (9:Sept.):1-3.
- Sinoto, Aki**
1986 *Perimeter Flagging for Proposed Fencing Around Two Archaeological Site Areas, Kahuku Elementary School, Kahuku, O'ahu*. Letter Report. Department of Anthropology, Bernice P. Bishop Museum, Honolulu.
- Sisson, Septimus**
1914 *The Anatomy of the Domestic Animals*. Second Edition. W. B. Saunders Co., Philadelphia and London.
- Slackman, Michael**
1991 *Target: Pearl Harbor*. University of Hawaii'i Press, Honolulu.
- Stearns, Harold T.**
1939 *Geologic Map and Guide to Oahu, Hawaii*. Territory of Hawaii, Division of Hydrography, Bulletin 2, Honolulu.
- Sterling, Elspeth P., and Catherine C. Summers**
1978 *Sites of O'ahu*. Bernice P. Bishop Museum, Honolulu.

- Stride, Mark, Tamara Craddock, and Hallett H. Hammatt**
1993 *Archaeological Inventory Survey of the Proposed 785-Acre Kahuku Agricultural Park*. Cultural Surveys Hawaii'i, Kailua, Inc., Hawaii'i.
- Thayer, Wade W.**
1944 *Trade Wind Tales*. Tongg Publishing Company, Honolulu, HI.
- Titcomb, Margaret**
1972 *Native Use of Fish in Hawaii*. University of Hawaii'i Press, Honolulu.
- Titcomb, Margaret**
1979 *Native Use of Marine Invertebrates in Old Hawaii*. University of Hawaii'i Press, Honolulu.
- Trojan, David**
2006 *Kahuku Field*. <http://hiavps.com/Kahuku.htm>. Downloaded October 15, 2007.
- Toulouse, Julian Harrison**
1971 *Bottle Makers and Their Marks*. Thomas Nelson Inc., Camden, New York.
- Tulchin, Todd, David W. Shideler, and Hallett H. Hammatt**
2007 *Archaeological Inventory Survey Plan for the Approximately 95-Acre Marconi Point Farm Lots Project, Kahuku Ahupua'a, Ko'olanua District, O'ahu* (TMK [1] 5-6-003-010, 032). Cultural Surveys Hawaii'i, Inc., Kailua, Hawaii'i.
- Vancouver, George**
1798 *A Voyage of Discovery to the North Pacific Ocean and Round the World Performed in the Years 1790-95*, Vol. 3. John Stockdale, London.
- Waithona 'Aina**
2000 The Māhele Database. Electronic document. <http://waithona.com>, accessed February 2, 2006.
- Wilcox, Barbara S.**
1975 *The Kahuku Sugar Mill Story*. Island Heritage Ltd., Norfolk Island, Australia.
- Wilcox, Carol**
1996 *Sugar Water, Hawaii's Plantation Ditches*. University of Hawaii'i Press, Honolulu.
- Zumwalt, Betty**
1980 *Ketchup, Pickles and Sauces. 19th Century Food in Glass*. Mark West Publishers, Fulton, California.

Appendix A LCA Awards in Keana

No. 4329B Kuapuhi Keana, Oahu January 1, 1847

N.R. 277v4 [Listed as 4392]

To the Land Commissioners, Greetings: I, Kuapuhi, am a claimant at Konikaa, of three 'ili of sweet potatoes, bounded on the north and south by *pali*, on the east by Kahulihana, on the west by Ma'i;

My house and the *kūla* are in my *ma'ō*. My right of occupancy is from the time of Kamehameha I.

KUAPUHI X, his mark

F.T. 185v10

No. 4392, Kuapuhi [should be 4329B]

Kalawaiamanu, sworn, says he knows the land of Kuapuhi in Keana. It consists of a piece of cultivated *kūla* land, planted with potatoes. This piece may contain a quarter of an acre and is bounded:

On Hauula side by a *pali*

Manika and Waialua side[s] by the *konohiki*

Makai by Kalawaiamanu's land.

Claimant's house lot is *makai* of his land and is enclosed with a stone wall. He has held the land for over 20 years. The *konohiki* consented to the claim for the piece of *kūla* and house site.

[Award 4329B; R. P. 6247; Keana Koolauloa; 2 ap.; .71 Ac.; Award 4392 contains the documents for this award]

No. 4391 Kalawaiamanu Keana, Oahu January 3, 1848

To the Land Commissioners, Greetings: I, Kalawaiamanu, am a claimant in the 'ili in Louana. There are three 'ili *wenier* [herbs?], one 'ili of sweet potato, one 'ili of *wanika*, bounded on the north by the *kūla*, on the east and west by sugarcane, on the south by the *pali*. Here are the jump lands: At Halulu is sugarcane, *wanika*. At Kahaia is breadfruit and noni. At Keaalu is a breadfruit, and *noni*. At Kapou is *noni*. At Kealahaka is 'ava, sugar cane, and banana. At Paos is 'ava. At Uumhalu is a *kūla* planted in sweet potato and watermelon. My

house is at Nonoula. My right of occupancy is from the time of Kamehameha II. KALAWAIMANU

No. 3712, Moku Keana, Oahu January 10, 1848

N.R. 153v4

To the Land Commissioners, Greetings and Peace: I, Moku, hereby state my claim for land at Keana. One *mala* is at Pae'oa. One *mala* is at Aahupalua. At Malekahana I have one *mala*. At Kawaiu is one *mala*. At Makanikeoloi, an upland, is a *mala* of 'ava and *wanika*. One *mala* is at Paaulani. One *mala* is at Aewai. At Laie I have a portion of a *lo'i* adjoining Kahalelaau's. At Kahuku I have one *lo'i* at Mookini, adjoining Kiha's *lo'ix*. A watercourse is at Luahine. My house claim is at Keana, surrounded by my *kūla*. My right of occupancy was from Kamehameha III. MOKU

F.T. 175v10 Claim 3712, Moku

Kiha, sworn, says Moku left this part of the country some 5 months ago and went to live on Hawaii. Witness knows the *kūlo* patch claimed by Moku in Kahuku. It is not planted.

(It was stated by several present that Moku had given up the pieces of land in this claim, and no one appeared to represent him).

The Konohiki claims this land.

[No. 3712 not awarded]

Appendix B LCA Awards with Lele in Keana

No. 2704 Haui Kahuku, Oahu Jan. 4, 1848

To the Land Commissioners, respectful greeting: I, Haui, hereby state my claim for land at Kahuku. The name of the *mo'o* is Kuapuu; there are six *lo'i* and the watercourse, bounded on the north by a *kuila*, on the east by Kekipi's, on the south by Makio'o, on the west by Kueulul's. There is a *kuila* land, Ahamau, a fish pond named Kuhiwa, and a *lo'i* at Kii. **At Keana I have a *wifwifii* tree.** My right of occupancy was from the time of Kamehameha I. **HAUI X his mark**

No. 2729 Polena Kahuku, Oahu Jan. 4, 1848

To the Land Commissioners, respectful greetings: I, Polena, hereby state my claim for land at Kahuku. The name of the *mo'o* is Luahine. There are seventeen *lo'i*; bounded on the north by the *kuila*, on the east by Kaihikapu's land, on the south by Kaluu's land, on the west by Maui's land. Three are cultivated *kuilas* named Uwalapahupahu, Mamakaloa and Luahine. There is a sea shore land, named Puhiikaawe. **At Keana are two *'awa* gardens, and a garden of breadfruit and *'ulii'u*.** My house lot is at Kahuku and is bounded on the north east and west by a *kuila*, on the south by a salt bed. My right of occupancy is from the time of Kamehameha I. **POLENA X his mark**

No. 2732 Pukawale Kahuku, Oahu Jan. 4, 1848

To the Land Commissioners, respectful Greetings: I, Pukawale, hereby state my claim for land at Kahuku, a *mo'o* named Kula. There are five *lo'i*, bounded on the north by those of Makakiekie, on the east by a *kuila*, on the south by Maui's [*lo'i*], on the west by Kupaikia's [*lo'i*]. There is a shore area—the name of the sea [fishery] is Keekee, [and] a mountain area. At Makapala are two *lo'i*, bounded on the north by Umeume's, on the east by Kupau's, on the south by a *kuila*, on the west by a *ko'e/le lo'i*. There is a cultivated *kuila* named Makapala, another *kuila* is Mauitooa, and there is another valley or [gulch]. **At Keana are two *wauke* gardens and two *koa* canoe trees.** My house lot is at Kahuku and it is surrounded by *kuila*. I have had the right of occupancy since the time of Kamehameha I. **PUKAWAKE X his mark.**

No. 2785 Makakiekie Kahuku, Oahu Jan. 1, 1848

To the Land Commissioners, Respectful Greetings: I, Makakiekie, hereby state my claim for land at Kahuku. The name of the *mo'o* is Puulu. There are seven *lo'i*, bounded on the north by those of Keakaokawai, on the east by a *kuila*, on the south by Pukawale's [land], on the west by Kupaihea's [land]. **One *lo'i* and the**

watercourse adjoins those of Maui and Kuapuhi and *kuila*. There is *kuila* land at Kawelohale and Kii, two clusters of *kuila* trees. At Ahamau are some gardens of sweet potato and gourd. There is a shore area called Kaohana. In the upland are some gardens of *wauke*, *'awa* and *horii*, and seven *koa* canoe trees. In another place is a watercourse adjoining Maui's. **At Keana are one *'awa* gardens, and five *koa* canoe trees.** There is a mountain land, Kalapaweo. My house claim is at Kahuku, bounded on all sides by the *kuila*. There is a fish pond for me, close to my house. My right of occupancy is from the time of Kamehameha I. **MAKAKIEKIE his mark**

No. 2787 Makakalalai Kahuku, Oahu Jan. 4, 1848

To the Land Commissioners, Respectful Greetings: I, Makakalalai, hereby state my claim for land at Kahuku. At Luahine is one *lo'i* and two watercourses, bounded on the north by Kawaa's [land], on the east by a *lo'i ko'e/le*, on the south by Keino's [land], on the west by Kawaa's [land]. There is also another *lo'i*, adjoining that at Akaihipilani. There is a fishpond named Kumuhakane. There is also another area, Hanumoha. There are two gardens of sweet potato and *wauke*. There are two *'awa* gardens. There are four *koa* canoe trees. **At Keana are two *'awa* gardens and three *koa* trees.** My house lot is a Kahuku, bounded on all sides by the *kuila*. My right of occupancy is from the time of Kamehameha I. **MAKAKALALAI X his mark**

No. 2887 Keawe Kahuku, Oahu Jan. 5, 1848

To the Land Commissioners, Respectful Greetings: I, Keawe, hereby state my claim for land at Kahuku. The name of the *mo'o* is Luahime. There are three *lo'i*, bounded on the north by Kawaa's [land] on the east by Kaluu's [land], on the south by *lo'i ko'e/le*, on the west by Paukoa's [land]. A *kuila* of sweet potato is at Ahamau, and at Keana I have a *muila* of *'awa*. My house lot is Kahuku, and is surrounded by *kuila*. My right of occupancy is from the time of Kamehameha I. **KEAWE X his mark**

No. 2931 Keaweikikini Kahuku, Oahu Jan. 5, 1848

To the Land Commissioners, Respectful Greetings: I, Keaweikikini, hereby state my claim for land at Kahuku. The name of the *mo'o* is Ahamau. There are five *lo'i* bounded on the north by Kaaikaula's [land], on the east by Kupaihea's [land], on the south by Kekipo's [land], west, by Kaumi's [land]. There is *kuila* planted in sweet potato, gourd and *wauke*. In the upland are two *koa* canoe trees. **At Keana is one *muila* of *'awa*.** My right of occupancy is from the reign of Kamehameha III. **KEAWELEIKINI X his mark**

Appendix F

Terrestrial Flora and Fauna Inventory

FLORA & FAUNA RESOURCES ASSESSMENT FOR THE
 KAHUKU VILLAGE SUBDIVISION PROJECT
 KAHUKU, OAHU, HAWAII

TABLE OF CONTENTS

PAGE

INTRODUCTION	2
GENERAL SITE DESCRIPTION	2
DESCRIPTION OF WILDLIFE	2
Methods	2
Birds	2
Mammals	5
Reptiles	5
Discussion & Recommendations	6
DESCRIPTION OF VEGETATION	7
Methods	7
Vegetation	7
Discussion & Recommendations	12
LITERATURE CITED	13

Prepared by:

Maya LeGrande
 &
 Eric A. VanderWerf
 LeGrande Biological Surveys Inc
 68-310 Kikou Street
 Waialua HI 96791

Prepared for:

R.M. Towill Corporation
 2024 North King Street, Suite 200
 Honolulu, Hawaii 96819-3456

LIST OF TABLES	
Table 1. Bird Species List	14
Table 2. Plant Species List	16
LIST OF FIGURES	
Figure 1. Wedge-tailed Shearwater nesting site with dilapidated fencing.....	3
Figure 2. Bristle-thighed Curlew at the northern cemetery.	4
Figure 3. Pacific green sea turtle hauled out on beach fronting subject property.....	6
Figure 4. Naupaka and hinahina growing on coastal sand dunes.....	8
Figure 5. Wetland area covered with 'ae ae (<i>Bacopa monnieri</i>).....	9
Figure 6. Akoko growing in <i>Zoysia</i> grass at the northern Cemetery...	9
Figure 7. Yellow-flowered fireweed (<i>Senecio madagascariensis</i>) in southern cemetery.....	10
Figure 8. <i>Nama sandwicensis</i> in flower (<i>Plantago major</i> in foreground).....	10

INTRODUCTION

This report includes the findings of a plant and animal inventory study conducted at TMKs (1) 5-6-02:12, 27 & portions of 3, 10, and 16, Kahuku, Oahu. LeGrande Biological Surveys Inc. carried out a botanical and faunal field survey of the above location on the 12th of March 2008 for R.M. Towill Corporation. The primary objectives of the field studies were to:

- 1) provide a general description of the vegetation on the project site;
- 2) inventory the flora and fauna; and
- 3) search for threatened and endangered species as well as species of concern

Federal and State of Hawaii listed species status follows U.S. Fish and Wildlife (USFWS) (1999a and 1999b, 2004) and Federal Register (2002).

GENERAL SITE DESCRIPTION

The Kahuku Village Subdivision Project includes TMK (1) 5-6-02:12, 27 & portions of 3, 10, and 16, with an area of approximately 172 acres. The property is located on the north-east shore of Oahu in Kahuku to the south of the James Campbell National Wildlife Refuge. The parcel runs north-south between the coast and Kamehameha Highway. The property's highest elevations are the sand dunes at about 20 feet above sea level.

DESCRIPTION OF WILDLIFE

METHODS

Faunal surveys were conducted by walking over most of the proposed project area and noting all individuals of each bird, mammal, and reptile species observed, as well as signs of their presence, such as footprints, droppings, or burrows. Special attention and more time was spent in areas most likely to harbor native species, such as the coastal vegetation, beach, and fields near James Campbell National Wildlife Refuge and the water-filled ditch on the western edge of the property. Birds were identified by sight using the naked eye and 10x binoculars, and by calls. For native species, the actual number of individuals observed is reported, for alien species only a list of species is provided.

BIRDS

A total of 24 bird species were observed during the site visit on 12 March 2008 (Table 1). One of these species, the Hawaiian Common Moorhen or 'Alae 'Ula, is a subspecies that is endemic to the Hawaiian Islands and is listed as endangered under the U.S. Endangered Species Act. Six of the species observed are indigenous (native) to the Hawaiian Islands but also occur elsewhere in the world: Wedge-tailed Shearwater or 'Ua'u Kani, Pacific Golden Plover or Kolea, Bristle-thighed Curlew or Kioca, Wandering Tattler or 'Uili, Ruddy Turnstone or 'Akekeke, and Sanderling or Hunakai. These species are protected

by Federal law under the Migratory Bird Treaty Act and by State law under Hawaii Administrative Rules Title 13 Chapter 124. The remaining 17 species observed are alien birds that were introduced to the Hawaiian Islands by humans, some intentionally, other accidentally. Observations about each of the native bird species are described in more detail below.

The Puco or Hawaiian Short-eared Owl (*Asio flammeus sandwicensis*) is listed as endangered by the State of Hawaii on the island of Oahu, and is seen regularly at James Campbell National Wildlife Refuge just west of the property. No Puco were observed during the site visit, but this species is most active at dusk, after surveys were completed. Puco are known to range widely in search of prey, primarily rodents, small birds, and large insects, and it is possible that Puco occasionally visit the property.

Wedge-tailed Shearwater or 'Ua'u Kani (*Puffinus pacificus*). The Wedge-tailed Shearwater is a burrow-nesting seabird that is common throughout the tropical Pacific. A small nesting colony has been present for many years under a small grove of ironwood trees near the cemetery at the northwestern corner of the property. An orange plastic fence about 50 cm tall was erected around the colony several years ago to discourage people from walking over the colony and crushing burrows. Wedge-tailed Shearwaters return to land only to nest, and are present in Hawaii from mid-March through December. No shearwaters were observed during the site visit because it was a little too early in the season, but about 43 burrows were observed, 22 of which appeared to have been used last year, and fresh droppings were present outside two burrows, indicating birds had been present recently. More shearwaters will return later in the year. The entire dune area along the seaward boundary of the property is suitable nesting habitat for shearwaters, but they were observed only in the traditional location under the ironwoods at the western end. At nearby Malaekahana State Park, feral cats from a feeding colony have a devastating impact on shearwaters that attempt to nest in the area (Smith et al. 2002). Their absence elsewhere in the Kahuku Village property may be due to the abundance of mammalian predators, particularly feral cats.

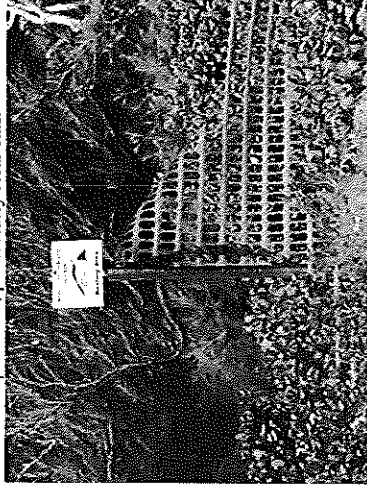


Figure 1. Wedge-tailed Shearwater nesting site with diapauidated fencing.

Wandering Tattler or `Uhihi (*Heteroscelus incanous*). This species nests on rocky outcrops high in the tundra in Alaska, and spends the winter in the Pacific islands and along the west coast of North America. They are fairly common but sparsely distributed along shorelines in Hawaii. Two individuals were observed during the site visit, on the beach and exposed rocky reef flat.

Ruddy Turnstone or `Akekeke (*Arenaria interpres*). This is the second most common migratory shorebird that visits the Hawaiian Islands. A total of 23 turnstones were seen during the site visit, including 13 in fields along the western boundary, eight in the horse paddock, and two on the rocky intertidal reef flats.

Sanderling or Hunakai (*Calidris alba*). A single Sanderling was observed during the site visit, on the sandy beach near the eastern end of the property.

MAMMALS

No mammals were observed during the site visit, other than domestic dogs and cats in residential areas, but numerous tracks of feral cats (*Felis catus*) and small Indian mongoose (*Herpestes auropunctatus*) were observed in the sand among the coastal dunes. It is also very likely that black rats (*Rattus rattus*), Polynesian rats (*R. exulans*), house mice (*Mus musculus*), and perhaps Norway rats (*R. norvegicus*) are present in the area, because they are widespread virtually throughout the Hawaiian Islands. In some areas, particularly the eastern end, the sand dunes contained hundreds of feral cat tracks, indicating there are many cats in the area and suggesting there is a feral cat "colony" nearby where people feed feral cats. The Hawaiian Hoary Bat (*Lasiurus cinereus semotis*) is very rare on O`ahu, but it has been observed in the hills above Pupukea. Hawaiian hoary bats are known to forage in coastal areas on other islands, and it is possible, though unlikely, that bats occasionally visit the site.

REPTILES

A single Pacific green sea turtle (*Chelonia mydas agassizii*) was observed on the beach below the cemetery at the northwestern corner of the property. It was a very large individual. This species is listed as threatened under the U.S. Endangered Species Act and under Hawaii Administrative Rules Title 13 Chapter 124. The beach in this area could provide suitable nesting habitat for sea turtles if vehicles were prevented from driving over the sand, which would crush any nests.

Hawaiian Common Moorhen or `Alae `Ula (*Gallinula chloropus sandvicensis*). The Common Moorhen is found over much of North America and is relatively common, but the Hawaiian subspecies is rare and listed as endangered under the U.S. Endangered Species Act. It inhabits freshwater marshes, ditches, ponds, and other wetlands, usually favoring areas with dense vegetation along the water margin (U.S. Fish and Wildlife Service 2005). Two moorhens were observed during the site visit outside the project area in the water-filled ditch just west of the southwestern corner of the property. A third moorhen was heard during the site visit inside the project area in an area of dense brush between the horse paddock and chicken coops to the south. The area from which the bird called did not appear to have any standing water, but moorhens sometimes forage away from water. It is likely that this bird spends most of its time in the water-filled ditch, but visits the property occasionally to forage.

Pacific Golden Plover or Kolea (*Pluvialis fulva*). Pacific Golden Plovers are migratory shorebirds that nest in Alaska and spend their non-breeding season, August-April, in Hawaii and other Pacific islands. This is the most numerous migratory shorebird that visits the Hawaiian Islands. At least 41 plovers were observed during the site visit, using a variety of habitats, including the golf course fairways, pastures, residential areas, and intertidal reef flats.

Bristle-thighed Curlew or Kioea (*Nycticorax tahitiensis*). The Bristle-thighed Curlew is another migratory shorebird that nests in Alaska and spends the winter months on Pacific Islands, including Hawaii. This species is not listed under the U.S. Endangered Species Act, but it is relatively rare and is considered a species of concern by the U.S. Fish and Wildlife Service. At least 13 curlews were seen during the site visit, including five on the golf course fairway along the entrance road, three in the cemetery near the northwestern corner of the property, three in the horse paddock, and two more on a fairway near the eastern end of the property. Four curlews were seen on the intertidal reef flats, but they flew in from the direction of the fairway and may have been the same birds observed previously. This species is usually quite shy, but it appears to have become more accustomed to people at this site.



Figure 2. Bristle-thighed Curlew at the northern cemetery.

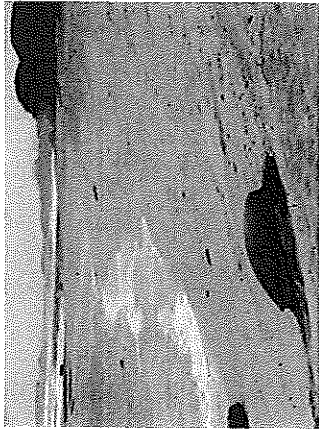


Figure 3. Pacific green sea turtle hauled out on beach fronting subject property.

DISCUSSION AND RECOMMENDATIONS

There are several actions that could be taken to benefit birds, sea turtles, and other natural resources in the Kahuku Village area.

- The small fence around the Wedge-tailed Shearwater nesting colony is in need of repair or replacement. It has become unattached from the supporting metal posts along much of its length, and appeared to be broken in several spots. Repairing the fence would help discourage people from unintentionally walking over the area and crushing the nest burrows.
- Construction of pole houses may facilitate the nesting of Wedge-tailed Shearwaters in sand dunes under the structures. Wedge-tailed Shearwaters are night callers and may disturb the residents with their loud calls.
- Feral cats appeared to be abundant in the area based on the number of tracks in the sand. Feral cats are serious predators on ground-nesting birds like shearwaters (Smith et al. 2002). If a feral cat-feeding colony exists at the site, that practice should be stopped and the feral cats should be removed to reduce predation on shearwater nests.
- Two derelict utility poles and a section of old utility lines are present in the northwestern corner of the property. This non-functional structure represents a collision hazard for nocturnal seabirds like shearwaters, and it should be removed.
- Off-road vehicles have damaged the coastal dune ecosystem and the beach. Preventing vehicles from driving across the dunes and onto the beach would enhance the beauty of the area, prevent erosion and stabilize the dunes and associated vegetation, which provide important protection from high waves and storm surge, and might encourage sea turtles to use the beach for nesting.

DESCRIPTION OF THE VEGETATION

METHODS

Prior to undertaking the field studies, a search was made of the pertinent literature to familiarize the principal investigator with other botanical studies conducted in the general area. Topographic maps were examined to determine terrain characteristics, access, boundaries, and reference points.

A walk-through survey method was used. Notes were made on plant associations and distribution, disturbances, topography, substrate types, exposure, drainage, etc. Plant identifications were made in the field; plants that could not be positively identified were collected for later determination in the herbarium, and for comparison with the recent taxonomic literature.

VEGETATION

The subject property is divided into several sections characterized by use and the vegetation varies within each section; the Kahuu Golf Course, residential properties, agricultural land (horses), two cemeteries (North and South), Adam's field, and coastal sand dunes. The field survey concentrated on all areas except the residential properties. Although all residential streets were walked and notes were taken on plant species growing in yards and along roadsides, no ornamental plants are listed in the species list (Table 2), unless they are listed as a noxious weed by the state of Hawaii. The coastal sand dunes are dominated by native littoral plant species from the shoreline continuing inland to the boundary of the golf course. The remainder of the property is dominated by the grassy lawn of the golf course, stands of ironwood (*Casuarina equisetifolia*) and various scrub vegetation in unkempt areas. There are a total of 87 plant species observed within the survey site. 68 are alien (introduced), 15 are indigenous (native to the Hawaiian Islands and elsewhere), and 4 are endemic (native ONLY to the Hawaiian Islands). Therefore, 78% of the plant species observed are alien and 22% are native (17% Indigenous and 5% endemic). An inventory of all the plants observed within the subject property is presented in the species list (Table 2) at the end of the report.

Coastal Sand Dunes

In general, the property has the highest density of native plants at the coast decreasing in density inland through the golf course. The coastal vegetation is dominated by naupaka (*Scaevola sericea*) shrubs and 'aki'aki (*Sporobolus virginicus*) grass; both indigenous species. The large sand dunes on the property are stabilized primarily by these two plant species, protecting them from wind and wave erosion as well as human disturbance to some extent. Growing among the naupaka are several other native strand plant species including, hinahina (*Heliotropium anomalum* var. *argenteum*), pauohiaka (*Jacquemontia ovalifolia* ssp. *sandwicensis*), 'akoko (*Chamaesyce degeneri*), nanea (*Vigna marina*), alena (*Boerhavia repens*), pohuehue (*Ipomoea pes-caprae*), akulikuli (*Sesuvium portulacastrum*), hala (*Pandanus tectorius*), and milo (*Thespesia populnea*). Although

none of these plant species are listed as Threatened or Endangered in Hawaii, the `akoko and hinahina are becoming increasingly rare due to habitat degradation and alteration.

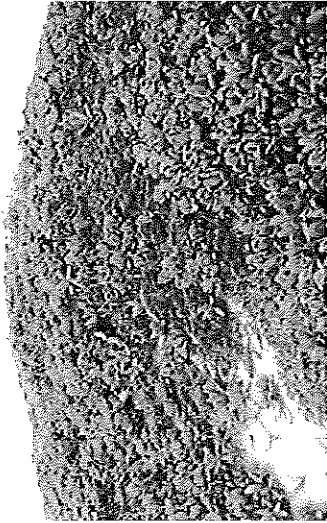


Figure 4. Naupaka and hinahina growing on coastal sand dunes.

The most prevalent non-native plant species along the coast includes scattered tree heliotrope (*Tournefortia argentea*), sea grape (*Coccoloba uvifera*), tropical almond (*Terminalia catappa*), heilotope (*Heliotropium procumbens* var. *depressum*), manienie grass (*Cynodon dactylon*), Christmas berry (*Schinus terebinthifolius*), sourbush (*Pluchea carolinensis*), and Indian fleabane (*P. indica*). Large ironwood (*Casuarina equisetifolia*) trees become more prevalent near the coast at the southern end of the strand.

Agricultural Land

Most of the agricultural land is found in the northern portion of the property. It appears to be utilized for horse paddocks and stables and some housing. The vegetation is dominated by grass pasture with golden-crown beard (*Verbena encelioides*) scattered throughout. Scrub vegetation is found along roadsides and between pastures and houses. Christmas berry (*Schinus terebinthifolius*) and octopus tree (*Schefflera actinophylla*) along with smaller shrub species such as slender mimosa (*Desmanthus permambucanus*), spiny amaranth (*Amaranthus spinosa*), hairy abutilon (*Abutilon grandifolia*), and apple of Sodom (*Solanum linnaeanum*) comprise the scrub. Some taller tree species are scattered throughout the area including ironwood, tropical almond, and coconut (*Cocos nucifera*).

A slight depression about 50 feet in diameter was observed between the northern road marking the property boundary and the horse stables. Along with this lower elevation and the hydrophytic plant species observed in the area, it is characteristic of a small intermittent wetland. The plant species observed growing in and on the edges of the area include, `ae ae (*Bacopa monnieri*), umbrella sedge (*Cyperus involucreatus*), `ahu `awa (*Cyperus javanicus*), `akulikuli, and saltmarsh sand spurry (*Spergularia marina*).

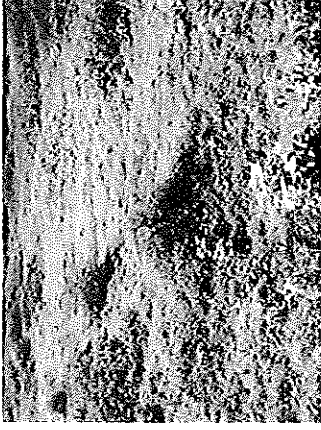


Figure 5. Wetland area covered with `ae ae (*Bacopa monnieri*)

Northern Cemetery

The northern cemetery is rectangular in shape approximately 320 feet long and 125 feet wide running along the sandy beach strand. The vegetation is dominated by *Zoysia* grass with `akoko (*Chamaesyce degeneri*), pohuehue, pa `o hi`iaka (*Jacquemontia ovalifolia* ssp. *sandwicensis*), and wedelia (*Sphagnetocola trilobata*) scattered throughout the grassy hummocks. The greatest number and density of the endemic spurge, `akoko were observed within this cemetery.

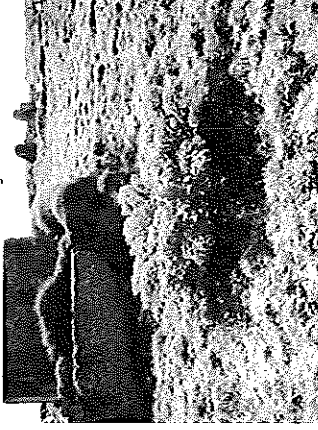


Figure 6. `Akoko growing in *Zoysia* grass at the Northern Cemetery.

Southern Cemetery

The southern cemetery is located at the western edge of the golf course near a large grove of ironwood trees. This graveyard is also dominated by *Zoysia* grass with several other weedy plant species scattered throughout including, beggar tick (*Bidens alba* var. *radiata*), garden spurge (*Chamaesyce hirta*), and common plantain (*Plantago major*). Another alien plant species noted in the graveyard is firweed (*Senecio madagascariensis*). Firweed is listed as a noxious weed on the State of Hawaii Noxious Plant species list. It can spread quickly and become a hazard to live stock as it is toxic if

consumed in large quantities. For more on the status and control of fireweed in Hawaii, see the following link for a Department of Agriculture report: <http://www2.ctahr.hawaii.edu/oc/freepubs/pdf/WC-2.pdf>

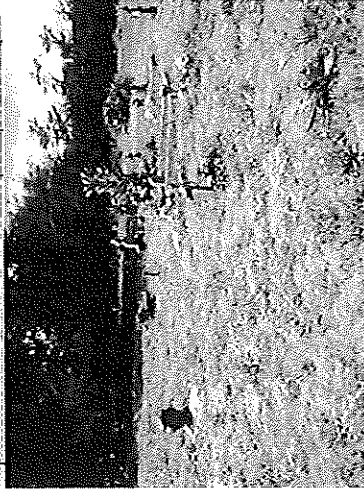


Figure 7. Yellow-flowered fireweed (*Senecio madagascariensis*) in southern cemetery.

Two native plant species were observed within the southern cemetery plot, Mau'u 'aki (*Fimbristylis cymosa* subsp. *umbellata-capitata*), an indigenous sedge and hinahina kahakai (*Nama sandwicensis*). *Nama sandwicensis* is listed as 'Vulnerable' in the 1999 assessment for use in the *Manual of Flowering Plants of Hawaii* (1990). It follows the *IUCN plant red data book* categories. "Vulnerable" is described as: "including taxa likely to become endangered in the near future unless the threats to their survival are removed or reduced. In the Hawaiian Islands, most species in this category are threatened by extensive habitat destruction or modification or by other environmental disturbances".



Figure 8. *Nama sandwicensis* in flower (*Plantago major* in foreground).

Kahuku Golf Course

The course runs North-South in a roughly oval shape, parallel with the coastal sand dunes. It is primarily mowed grassy lawn made up of manienie (*Cynodon dactylon*) and zoysia grass (*Zoysia matrella*). Species observed growing along the margins of the course include ironwood, 'aki aki grass, 'akulikali, Chinese violet (*Azystasia gangetica*), beggar tick (*Bidens alba*), *Pluchea* sp., and pohuehue (*Pomoea pes-caprae*). Several tree species appear to have been planted along the South-West portion of the course including Madagascar olive (*Noronhia emarginata*), Cook-pine (*Duracaria columnaris*), and hala (*Pandanus tectorius*).

Casuarina forest

There are several monotypic stands of ironwood on the property. The largest one is located to the south of the golf course buildings. The trees are about 30 feet tall and create a shady understory. Few plants grow under the trees in the thick mat of ironwood needles. Some of the species observed in the understory were sourbush (*Pluchea carolinensis*), coral berry (*Rivina humilis*), and Chinese violet. This area also appears to be an opportunistic trash dump especially along the roadway that leads to the golf course parking lot.

Another stand of ironwood located at the northern end of the golf course is an active nesting site for Wedge-tailed Shearwater (described in the Birds section of this report). The understory here includes natives such as 'akulikali, alena (*Boerhavia repens*), and popolo (*Solanum americanum*). Alien species observed were ivy gourd (*Coccoloba grandis*), golden crown beard, sourgrass (*Digitaria insularis*), and sweet clover (*Melilotus indica*).

Adam's field

The unkempt playing field is located at the southern end of the property near Malaekahana Stream. The field itself is dominated by low growing weedy plant species such as Chinese violet and beggar tick. There is a narrow mowed path that follows the outer boundary and circles the entire field. On the edges of the field taller bushes and trees are growing on three sides of the field, including Koa hoale (*Leucaena leucocephala*), ironwood, molasses grass (*Melinis minutiflora*), Guinea grass (*Panicum maximum*), and slender mimosa (*Desmanthus pernamibucans*). 'Uhaloa (*Waltheria indica*) was the only native plant species observed in this area. A grove of coconut (*Cocos nucifera*) trees is located between Adam's field and the Malaekahana Stream. Several makeshift tents are set up in the area and it appears that one or more people are living in the camp.

At the southernmost point of the subject property, a monotypic stand of hau (*Hibiscus tiliaceus*) is established in a sunken area adjacent to Malaekahana Stream. It appears that when the stream is at a high mark, the hau grove is inundated with water. The area appears to be an intermittent wetland.

DISCUSSION & RECOMMENDATIONS

Although, the majority of the plant species observed within the subject property are introduced (77%), the density of native vegetation near the coast is quite high. Several of the littoral plant species found during the survey are declining over their entire range in Hawaii due to habitat modification. The 'akoko (*C. degeneri*) plants found on the property are in great abundance, especially within the northern cemetery plot. The hinahina kahakai (*N. sandwicensis*) found within the southern cemetery is listed as a 'vulnerable' species. Keeping both cemeteries in their current condition should help to protect both of these native plant species from extinction on the property. The current plans for development of 18 beachfront lots would mainly impact the native coastal vegetation found on the sand dunes.

- The naupaka and native 'aki 'aki grass are essential for the retention and protection of the large sand dunes found on the property's coastline. Off-road vehicle damage was observed throughout the dunes. Establishing designated walking paths through the dunes for beach access is recommended so that the remaining sand dunes and vegetation are left intact.
- The two intermittent wetland areas should be avoided or managed as such. Several of the wetland plant species observed in the northern wetland area are indigenous species.
- Shading of the coastal dune plants by construction of pole houses may affect the growth and density of the species that are critical in stabilizing the sand dunes and minimizing erosion from wind and waves.
- Native plant species recommended for landscaping are hala (*Pandanus tectorius*). There were only a few individuals observed growing at the coast and in a few residential lots. Kahuku was once famous for its hala groves (Sterling & Summers, 1978), and reestablishment of this indigenous tree would be appropriate.

LITERATURE CITED

- American Ornithologists' Union. 2005. List of the 2,037 Bird Species (with scientific and English names) known from the A.O.U. checklist area. 55pp.
- Evenhuis, N.L. and L.G. Eldredge, editors. 1999-2002. Records of the Hawaii Biological Survey. Bishop Museum Occasional Papers Nos. 58-70.
- Federal Register. 2002. Department of the Interior, Fish and Wildlife Service, 50 CFR 17. Endangered and Threatened Wildlife and Plants. Review of Species That Are Candidate or Proposed for Listing as Endangered or Threatened; Annual Notice of Findings on Recycled Petition; Annual Description of Progress on Listing Actions. *Federal Register*, 67 No. 14 (Thursday, June 13, 2002): 40657-40679.
- Hawaii Audubon Society. 2005. Hawaii's Birds, 6th Edition, Honolulu, HI. 141 pp.
- Smith, D.G., J.T. Polhemus, and E.A. VanderWerf. 2002. Comparison of managed and unmanaged Wedge-tailed Shearwater colonies: effects of predation. *Pacific Science* 56:451-457.
- Staples G. W. and D. R. Herbst. 2005. A Tropical Garden Flora: Plants cultivated in the Hawaiian Islands and other tropical places. Bishop Museum Press.
- Sterling E.P. and C.C. Summers. 1978. Sites of Oahu. Bishop Museum Press, Honolulu.
- U.S. Fish and Wildlife Service. 1999a. U.S. Fish and Wildlife Service species list, plants. March 23, 1999. Pacific Islands Office, Honolulu, HI.
- U.S. Fish and Wildlife Service. 1999b. Endangered and threatened wildlife and plants. 50 CFR 17.11 and 17.12. December 31, 1999.
- U.S. Fish and Wildlife Service. 2004. Hawaiian Islands Plants: Updated June 15, 2004, Listed and Candidate Species, as Designated under the U.S. Endangered Species Act. 17pp.
- U.S. Fish and Wildlife Service. 2005. Draft Revised Recovery Plan for Hawaiian Water Birds. U.S. Fish and Wildlife Service, Region 1, Portland, OR.
- Wagner, W.L., D.R. Herbst, and S.H. Sohmer. 1990. Manual of the flowering plants of Hawaii. 2 vols. University of Hawaii Press and Bishop Museum Press, Honolulu. Bishop Museum Special Publication 83.
- Wagner, W.L. and D.R. Herbst. 1999. Supplement to the Manual of the flowering plants of Hawaii, pp. 1855-1918. In: Wagner, W.L., D.R. Herbst, and S.H. Sohmer. 1990. Manual of the flowering plants of Hawaii. Revised Edition. 2 vols. University of Hawaii Press and Bishop Museum Press, Honolulu.

TABLE 1. BIRD SPECIES LIST

The following checklist is an inventory of the bird species observed within the subject property of the Kahuku village development project during a site visit on 12 March 2008. The names are arranged in generally accepted phylogenetic order and named in accordance with the American Ornithologists Union Checklist (2005) and the Hawaii Audubon Society (2005).

Status codes:

A = Alien species introduced to the Hawaiian Islands by humans, intentionally or accidentally.

I = Indigenous species native to the Hawaiian Islands and also found elsewhere in the world.

E = Endemic species found only in the Hawaiian Islands.

* Indicates species listed under the U.S. Endangered Species Act

SCIENTIFIC NAME	COMMON NAME	STATUS
FAMILY PROCELLARIIDAE – SHEARWATERS AND PETRELS		
<i>Puffinus pacificus</i>	Wedge-tailed Shearwater or `Ua`u Kani	I
FAMILY ARDEIDAE - HERONS		
<i>Butorides ibis</i>	Cattle Egret	A
FAMILY PHASIANIDAE – PHEASANTS and GROUSE		
<i>Gallus gallus</i>	Feral Chicken or Red Junglefowl	A
<i>Phasianus colchicus</i>	Ring-necked Pheasant	A
FAMILY RALLIDAE – RAILS, COOTS, MOORHENS		
<i>Gallinula chloropus sandvicensis</i>	Hawaiian Common Moorhen or `Alae`u	E*
FAMILY CHARADRIIDAE - PLOVERS		
<i>Pluvialis fulva</i>	Pacific Golden Plover or Koia	I
FAMILY SCOLOPACIDAE - SANDPIPERS		
<i>Numenius tahitiensis</i>	Bristle-thighed Curlew or Kioea	I
<i>Heteroscelus incanus</i>	Wandering Tattler or `Uliji	I
<i>Arenaria interpres</i>	Ruddy Turnstone or `Akekeke	I
<i>Calidris alba</i>	Sanderling or Hunakai	I
FAMILY COLUMBIDAE – PIGEONS AND DOVES		
<i>Streptopelia chinensis</i>	Spotted Dove	A
<i>Geopelia striata</i>	Zebra Dove	A

TURDIDAE – THRUSHES		
<i>Copsychus malabaricus</i>	White-Rumped Shama	A
ZOSTEROPIDAE – WHITE-EYES		
<i>Zosterops japonicus</i>	Japanese White-eye	A
PYCNONOTIDAE - BULBULS		
<i>Pycnonotus cafer</i>	Red-vented Bulbul	A
<i>Pycnonotus jocosus</i>	Red-whiskered Bulbul	A
STURNIDAE – STARLINGS AND MYNAS		
<i>Acridotheres tristis</i>	Common Myna	A
EMBERIZIDAE – GROSBILLS, SPARROWS, BUNTINGS		
<i>Paroaria coronata</i>	Red-crested Cardinal	A
CARDINALIDAE – CARDINALS		
<i>Cardinalis cardinalis</i>	Northern Cardinal	A
FRINGILLIDAE – FINCHES		
<i>Carpodacus mexicanus</i>	House Finch	A
ESTRILIDAE – WAXBILLS AND MANNIKINS		
<i>Lonchura malacca</i>	Chestnut Mannikin	A
<i>Estrilda astrild</i>	Common Waxbill	A
<i>Padda oryzivora</i>	Java Sparrow	A
FAMILY PASSERIDAE – WEAVER FINCHES		
<i>Passer domesticus</i>	House Sparrow	A

TABLE 2. PLANT SPECIES LIST

The following checklist is an inventory of all the plant species observed within the subject property of the Kahuku village development project during a site visit on 12 March 2008. The plant names are arranged alphabetically by family and then by species into each of three groups: Gymnosperms, Monocots, and Dicots. The taxonomy and nomenclature of the flowering plants (Monocots and Dicots) are in accordance with Wagner *et al.* (1990), Wagner and Herbst (1999) and Staples and Herbst (2005). Recent name changes are those recorded in the Hawaii Biological Survey series (Evehuis and Eldredge, eds., 1999-2002).

For each species, the following name is provided:

1. Scientific name with author citation.
2. Common English and/or Hawaiian name(s), when known.
3. Biogeographic status. The following symbols are used:

A = Alien species introduced to the Hawaiian Islands by humans, intentionally or accidentally.

I = Indigenous species native to the Hawaiian Islands and also found elsewhere in the world.

--- E = Endemic species found only in the Hawaiian Islands.

PLANT SPECIES LIST
KAHUKU VILLAGE DEVELOPMENT PROJECT
MARCH 2008

SCIENTIFIC NAME	COMMON NAME	STATUS
GYMNOSPERMS		
ARAUUCARIACEAE		
<i>Araucaria columnaris</i> (G.Forster) J.D.Hooker	Cook-pine	A
MONOCOTS		
AGAVACEAE		
<i>Furcraea foetida</i> (L.) Haw.	Mauritius hemp	A
<i>Yucca sp. L.</i>	Spanish dagger	A
ARECACEAE		
<i>Cocos nucifera</i> L.	coconut	A
CYPERACEAE		
<i>Cyperus javanicus</i> Houtt.	Ahuawa	I
<i>Fimbristylis cymosa</i> subsp. <i>umbellato-capitata</i> (Hillebr.) T.Koyama	Mau'u 'aki'aki	I
LILIACEAE		
<i>Critium sp. L.</i>	Spider lily	A
PANDANACEAE		
<i>Pandanus tectorius</i> Parkinson ex Z	hala	I
POACEAE		
<i>Cenchrus echinatus</i> L.	Common sandbur	A
<i>Chloris barbata</i> (L.) Sw.	Swollen fingergrass	A
<i>Cynodon dactylon</i> (L.) Pers	manienie	A
<i>Digitaria insularis</i> (L.) Mez ex Ekman	sourgrass	A
<i>Melinis minutiflora</i> P.Beauv.	Molasses grass	A
<i>Panicum maximum</i> L.	Guinea grass	A
<i>Paspalum urvillei</i> Steud.	Vasey grass	A
<i>Paspalum vaginatum</i> Sw.	Seashore paspalum	A
<i>Sporobolus virginicus</i> (L.) Kunth	Aki aki	I
<i>Zoysia matrella</i> (L.) Merrill	Zoysia grass	A
DICOTS		
ACANTHACEAE		
<i>Asystasia gangetica</i> (L.) T. Anderson	Chinese violet	A

SCIENTIFIC NAME	COMMON NAME	STATUS
AIZOACEAE		
<i>Sesuvium portulacastrum</i> (L.) L.	akulikuli	I
<i>Tetragonia tetragonioides</i> (Pall.) Kuntze	New Zealand spinach	A
AMARANTHACEAE		
<i>Achyranthes aspera</i> var. <i>aspera</i> L.	Khaki weed	A
<i>Alternanthera pinnatis</i> Kunth	Spiny amaranth	A
<i>Amaranthus spinosus</i> L.		A
ANACARDIACEAE		
<i>Schinus terebinthifolius</i> Raddi	Christmas berry	A
ARALIACEAE		
<i>Schefflera actinophylla</i> (Endl.) Harms	Octopus tree	A
ASTERACEAE		
<i>Bidens alba</i> (L.) DC. var. <i>radiata</i> (Sch. Bip.) Ballard ex Melchert	Beggar tick	A
<i>Bidens pilosa</i> L.	Spanish needle	A
<i>Coryza bonariensis</i> (L.) Cronq.	Fairy horseweed	A
<i>Gaillardia pulchella</i> Foug.	Blanket flower	A
<i>Pluchea carolinensis</i> (Jacq.) G. Don	sourbush	A
<i>Pluchea indica</i> (L.) Less.	Indian fleabane	A
<i>Senecio madagascariensis</i> Poir.	fireweed	A
<i>Sonchus oleraceus</i> L.	pualale	A
<i>Sphagneticola trilobata</i> (L.) Pruski	Wedelia	A
<i>Synedrella nodiflora</i> (L.) Gaertn.	nodeweed	A
<i>Verbesina encelioides</i> (Cav.) Benth. & Hook.	Golden crown-beard	A
<i>Xanthium strumarium</i> L. var. <i>canadense</i> (Miller)	kikania	A
BORAGINACEAE		
<i>Heliotropium anomatum</i> Hook. & Arn. Var. <i>argenteum</i> A. Gray	himahina	E
<i>Heliotropium curassavicum</i> L.	kipukai	I
<i>Heliotropium procumbens</i> Mill. var. <i>depressum</i> (Cham.) Fosberg		A
<i>Tournefortia argentea</i> L.f.	Tree heliotrope	A
CARYOPHYLLACEAE		
<i>Spergularia marina</i> (L.) Griseb.	Saltmarsh sand spurry	A
CASUARINACEAE		
<i>Casuarina equisetifolia</i> L.	ironwood	A

SCIENTIFIC NAME	COMMON NAME	STATUS
CHENOPODIACEAE		
<i>Chenopodium murale</i> L.	shealhea	A
COMBRETACEAE		
<i>Terminalia catappa</i> L.	Tropical almond	A
CONVOLVULACEAE		
<i>Ipomoea obscura</i> (L.) Ker Gawl.		A
<i>Ipomoea pes-caprae</i> (L.) R.Br. ssp. <i>brasilienis</i> (L.) Oostir.	pohuhue	I
<i>Jacquemontia ovalifolia</i> (Choisy) Hallier f. ssp. <i>sandwicensis</i> (A. Gray) K.R.Robertson	Pau o hiiaka	E
CUCURBITACEAE		
<i>Coccinea grandis</i> (L.) Voigt	Ivy gourd	A
<i>Momordica charantia</i> L.	Balsam pear	A
EUPHORBIACEAE		
<i>Acalypha wilkesiana</i> Muill.	Beefsteak plant	A
<i>Chamaesyce degeneri</i> (Sherff) Croizat & O.Deg.	akoko	E
<i>Chamaesyce litris</i> (L.) Millisp.	hairy spurge, garden spurge	A
<i>Chamaesyce prostrata</i> (Aiton) Small		A
<i>Euphorbia heterophylla</i> L.	kaliko	A
<i>Macaranga</i> sp. <i>Thouars</i>	macaranga	A
<i>Ricinus communis</i> L.	Castor bean	A
FABACEAE		
<i>Canavalia sericea</i> A. Gray	Silky jackbean	A
<i>Desmanthus pernamibucanus</i> (L.) Thell.	Slender or virgate mimosa	A
<i>Indigofera hendecaphylla</i> Jacq.	Creeping indigo	A
<i>Leucaena leucocephala</i> (Lam.) de Wit	Koa haole	A
<i>Melilotus indica</i> (L.) All.	Sweet clover	A
<i>Samanea saman</i> (Jacq.) Merr.	monkeypod	A
<i>Vigna marina</i> (J.Burm.) Merr.	Beach pea, nanea	I
GOODENIACEAE		
<i>Scaevola sericea</i> Vahl	Naupaka	I
HYDROPHYLLACEAE		
<i>Nama sandwicensis</i> A. Gray	Hinahina kahakai	E

SCIENTIFIC NAME	COMMON NAME	STATUS
MALVACEAE		
<i>Abrition grandifolium</i> (Willd.) Sweet	Hairy abutilon	A
<i>Hibiscus tiliaceus</i> L.	hau	I?
<i>Thespesia populnea</i> (L.) Sol. ex Correa	mito	I?
NYCTAGINACEAE		
<i>Boerhavia coccinea</i> Mill.		A
<i>Boerhavia repens</i> L.	alena	I
OLEACEAE		
<i>Noronhia emarginata</i> (Lam.) Poir.	Madagascar olive	A
PASSIFLORACEAE		
<i>Passiflora foetida</i> L.	Love-in-a-mist	A
PHYTOLACCACEAE		
<i>Rivina humilis</i> L.	Coral berry	A
PLANTAGINACEAE		
<i>Plantago major</i> L.	Common plantain	A
POLYGONACEAE		
<i>Coccoloba uvifera</i> (L.) L.	Sea grape	A
PRIMULACEAE		
<i>Anagallis arvensis</i> L.	Scarlet pimpernel	A
RUBIACEAE		
<i>Morinda citrifolia</i> L.	noni	A
SCROPHULARIACEAE		
<i>Bacopa monnieri</i> (L.) Wettst.	'ac' ac	I
SOLANACEAE		
<i>Solanum americanum</i> Mill.	Glossy nightshade, popolo	I
<i>Solanum limaeanum</i> Hepper & P. Jaeger	Apple of sodom	A
<i>Solanum lycopersicum</i> L. var. <i>cerasiforme</i> (Dunal) Spooner, G.J. Anderson & R.K. Jansen	Cherry tomato	A
<i>Solanum torvum</i> Sw.	Turkeyberry, pea aubergine	A
STERCULIACEAE		
<i>Waltheria indica</i> L.	uhaloo	I

SCIENTIFIC NAME	COMMON NAME	STATUS
VERBENACEAE		
<i>Lantana camara</i> L.	lantana	A
<i>Verbena littoralis</i> Kunth	vervain	A

Appendix G

Biological and Water Quality Survey of Surface and Marine Waters

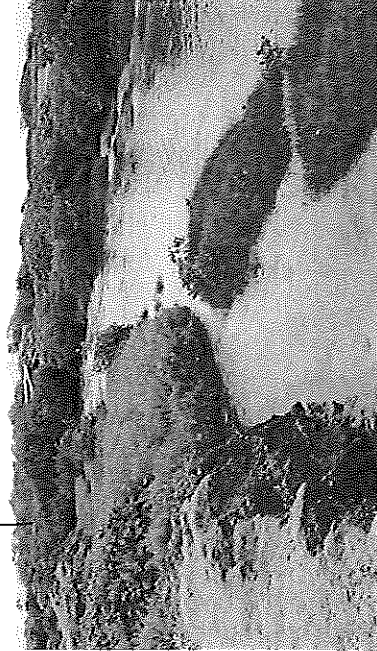
Biological and water quality surveys of Malaekahana Stream and the marine environment off the proposed Kahuku Village subdivision in Kahuku, O'ahu.

May 6, 2008

Draft

AECOS No. 1172

Chad Linebaugh
AECOS, Inc. 45-939 Kamehameha Hwy, Suite 104
Kāne'ohe, Hawaii 96744
Phone: (808) 234-7770 Fax: (808) 234-7775 Email: aecos@aecos.com



Prepared by:

AECOS Inc.
45-939 Kamehameha Hwy, Suite 104
Kāne'ohe, Hawaii 96744-3221

May 6, 2008

Biological and water quality surveys of Malaekahana Stream and the marine environment off the proposed Kahuku Village subdivision in Kahuku, Oahu.

Introduction

On March 21, 2008, AECOS, Inc. biologists conducted a reconnaissance survey of Malaekahana Stream and the nearshore marine environment at the proposed Kahuku Village 201(ft) Subdivision on the northeast coast of island of O'ahu (Figure 1). The property owners are planning to subdivide the 172-acre property in Kahuku that currently includes the Kahuku Golf Course, two cemeteries, two private beach parks, 73 residences, and some agricultural lands. Plans include creating 40 additional affordable housing lots, 18 large oceanfront lots, and 12 agricultural lots.

The property is situated between the James Campbell National Wildlife Refuge and Malaekahana State Recreation Area. AECOS, Inc. was contracted by R.M. Towill, Inc. to ascertain biological resources and assess water quality at the proposed project site as part of the process of obtaining various permits for the project. This report details water quality and aquatic resources at the proposed project site including both Malaekahana Stream and the nearshore marine environment fronting the property.

Stream Description

Malaekahana Stream originates on the windward slopes of the Ko'olau mountain at an elevation of 525 m (1720 ft) and flows generally north-northeast 7.2 km (4.5 miles) before emptying into the Pacific Ocean near Makahoa Point on O'ahu's northeast shore. The Hawaii Stream Assessment (Hawaii Cooperative Park Service Unit, 1990) classifies Malaekahana Stream as a continuously flowing, perennial stream and assigns it state identification number 3-1-06. It has six perennial tributaries all of which are unnamed. The first to join Malaekahana's flow originates at an elevation of 470 m (1540 ft) flowing parallel to the stream and

converging at an elevation of approximately 70 m (225 ft). The next originates at 425 m (1400 ft) in Hina gulch and converges at approximately 36 m (120 ft) elevation. Another tributary originates at 360 m (1180 ft) in Lamaloa gulch and joins Malaekahana's flow at approximately 25 m (80 ft) elevation. The stream and its first three tributaries originate within the boundaries of the Kakuuku Forest Reserve and Kakuuku Training Area Military Reservation. Exiting the reservation, the stream enters the developed coastal plain flowing northeast. Land use in this area is predominantly agriculture. At an elevation of approximately 6 m (20 ft) the stream is intersected by an aqueduct diverting water for irrigation use. Three more unnamed waterways (possibly man-made) converge with the stream before it flows beneath Kamehameha Highway entering the Pacific Ocean between the proposed project site and Malaekahana State Recreation Area.

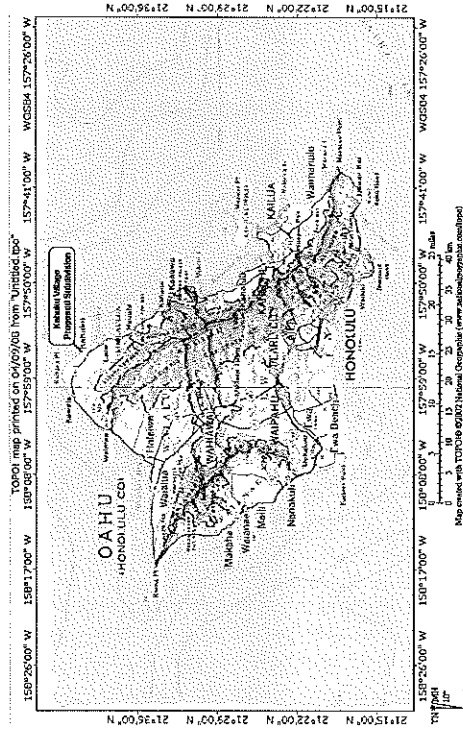


Figure 1. The proposed project's location on the island of Oahu, Hawaii.

Malaekahana Stream borders the proposed project's southeastern border for approximately 500 m (1640 ft). All or nearly all of this segment represents the estuarine reach of Malaekahana Stream and is subject to tidal influence. Stream banks bordering the proposed project site are overgrown with vegetation typically including koa haole (*Leucaena leucocephala*), elephant grass (*Pennisetum purpureum*), Indian fleabane (*Pucea indica*), American mangrove (*Rhizophora mangle*), and pickleweed (*Batis maritima*). The stream bottom near the proposed project site is a mix of sand and silt with very few boulders. The mouth of the stream (which is just outside of the project site) is a sparsely vegetated limestone bench with coarse sand and gravel present on the stream bottom.

Stream Water Quality

On March 21, 2008, AECOS biologists collected water samples and took field measurements at three locations in Malaekahana Stream (Fig. 2). Station "Mouth" is located 5 m (16 ft) upstream from the stream's entrance in the ocean; Station "Mid-Project" is located near the mid-point of the project's site's southeastern boundary; and Station "Bridge" is located 25 m (82 ft) downstream of Kamehameha Highway. All samples were taken from a depth of 0.3 m (1 ft) below the surface. Temperature, dissolved oxygen (DO), and pH were measured in the field. Water samples for laboratory analysis were collected in appropriate containers and taken to the AECOS Laboratory in Kaneohe, O'ahu (AECOS Laboratory Log No. 23969). Table 1 lists the field instruments and analytical methods used with these samples.



Figure 2. The water quality station locations shown with project property boundary.

The purpose of the water quality measurements is to characterize the existing aquatic environment at the time of the survey, not to set baseline values or determine compliance with Hawai'i water quality standards (HDOH, 2004). In fact, the state criteria for nutrient measurements, total suspended solids (TSS), and turbidity are based upon geometric mean values and a minimum of three separate samples per sampling location would be needed to compute a geometric mean for compliance purposes. Nonetheless, our results can be evaluated against the water quality criteria for estuaries (Table 2) as long as limitations regarding lack of representativeness of a one time sampling event are understood.

Table 1. Analytical methods and instruments used for March 21, 2008 water quality analyses of Malaekahana Stream, Oahu.

Analysis	Method	Reference	Instrument
Ammonia	EPA 350M	Koroleff in Grasshoff et al. (1986)	Technicon AutoAnalyzer II
Chlorophyll <i>a</i>	10200 H	Standard Methods, 20 th Edition (1998)	Turner Model 112 fluorometer
Conductivity	EPA 120.1	Standard Methods, 20 th Edition (1998); EPA (1979)	Hydach pH/conductivity meter
Dissolved Oxygen	EPA 360.1	EPA (1979)	YSI Model 550A DO meter
Nitrate + Nitrite	EPA 353.2	EPA (1993)	Technicon AutoAnalyzer II
pH	EPA 150.1	EPA (1979)	Hannah pocket pH meter
Temperature	thermister calibrated to NBS cert. thermometer (EPA 170.1)	EPA (1979)	YSI Model 550A DO meter
Total Nitrogen	persulfate digestion/EPA 353.2	D'Elia et al. (1977) / EPA (1993)	Technicon AutoAnalyzer II
Total Phosphorus	persulfate digestion/EPA 365.1	Koroleff in Grasshoff et al. (1986)/EPA (1993)	Technicon AutoAnalyzer II
Total Suspended Solids	Method 2540D (EPA 160.2)	Standard Methods 20 th Edition (1998); EPA (1979)	Mettler H31 balance
Turbidity	Method 2130B (EPA 180.1)	Standard Methods 20 th Edition (1998); EPA (1993)	Hach 2100N Turbidimeter

D'Elia, C.F., P.A. Stendler, & N. Corwin. 1977. *Limnol. Oceanogr.* 22(4): 760-764.

EPA. 1979. Methods for Chemical Analysis of Water and Wastes. U.S. Environmental Protection Agency, EPA 600/4-79-020.

EPA. 1993. Methods for the Determination of Inorganic Substances in Environmental Samples. EPA 600/R-93/103.

Grasshoff, K., M. Ehrhardt, & K. Kremling (eds). 1986. Methods of Seawater Analysis (2nd ed). Verlag Chemie GmbH, Weinheim.

Standard Methods. 1998. Standard Methods for the Examination of Water and Wastewater. 20th Edition. 1998. (Greenberg, Clesceri, and Eaton, eds.). APHA, AWWA, & WEF. 1220 p.

The chemical properties of the water in the estuary vary with the varying influences of seawater and freshwater (Table 3). The "Bridge" sample taken near Kamehameha Highway represents essentially stream water entering the estuarine reach of Malaekahana Stream as evidenced by low salinity/conductivity levels. Waters at this station are characterized by lower temperature, low dissolved oxygen (DO), and high nitrogenous nutrient levels. Total nitrogen concentrations are greater than 15 times the state criterion not to be exceeded more than two percent of the time, and nitrate-nitrite concentrations are nearly 200 times greater than the criterion not to be exceeded more than two percent of the time. Total phosphorus levels are on the high side of the state geometric mean criterion and are similar at all three stations sampled. The low turbidity and suspended solids concentrations reflect good visibility at this "stream" station.

Table 2. State of Hawaii's water quality criteria for estuaries from HAR 511-54-05.2(d).

Parameter	Total Nitrogen (µg N/l)	Nitrate + Nitrite (µg N/l)	Ammonia (µg N/l)	Total Phosphorus (µg P/l)	Turbidity (NTU)
Geometric mean not to exceed given value	200.0	8.0	6.0	25.0	1.5
Value not to be exceeded more than 10% of the time	350.0	25.0	10.0	50.0	3.0
Value not to be exceeded more than 2% of the time	500.0	35.0	20.0	75.0	5.0

- pH - shall not deviate more than 0.5 units from ambient and not be lower than 5.5 nor higher than 8.0.
- Dissolved oxygen - not less than 80% saturation.
- Temperature - shall not vary more than 1 °C from ambient.

Table 3. Water quality characteristics of the estuarine reach of Malaekahana Stream on March 21, 2008.

Station	Temp. (°C)	DO (mg/l)	DO (% Sat.)	pH (pH units)	Salinity (ppt)	Conductivity (µmhos/cm)
Mouth	25.4	9.89	129	8.17	12	13700
Mid-project	25.0	6.19	77	7.67	2	3770
Bridge	23.8	4.01	47	7.38	<1	1600

	Turbidity (ntu)	TSS (mg/l)	Ammonia (µg N/l)	Nitrate + nitrite (µg N/l)	Total N (µg N/l)	Total P (µg P/l)
Mouth	11.2	20.8	35	3670	4740	43
Mid-project	6.32	5.6	60	5600	6740	44
Bridge	1.64	1.3	32	6810	8170	40

The "Mouth" station sample taken near the estuary outlet to the ocean represents ocean waters entering and mixing with the stream water. This sample was taken near mid-tide (+1.1 ft) on a flooding tide. The relatively higher (compared with upstream stations) temperature, pH, and salinity are likely to be even more elevated during higher tide levels. The seawater entering the stream also contains lower nutrient concentrations than the stream water and dilutes nutrient levels to some extent as it mixes. Nutrient levels at this station are still elevated as total nitrogen and nitrate-nitrite concentrations are still nearly 10 times and 100 times, respectively, the respective state criteria not to be exceeded more than two percent of the time. The elevated turbidity and total suspended solids concentrations may be caused by the physical disturbance mixing of bed sediments as waves break up into the stream mouth.

The "Mid-project" station is located near the midpoint between the "Bridge" and "Mouth" stations. Water quality characteristics at this station generally reflect a mix of stream and ocean waters from stations "Bridge" and "Mouth". The only exception is ammonia, the concentration of which nearly doubles that measured at the other two stations. This result may be indicative of an accumulation of organic matter in the bed of the estuary due to sluggish water flow between the mouth and the upper end of the estuary.

Stream Biota

An aquatic biota survey was conducted by wading in the stream and surveying from the stream banks. On March 21, 2008 visibility in the stream and estuary was generally good throughout the survey area except in deeper parts near the midpoint of the survey area where turbid water obscured visibility of the stream bottom. Hand nets were used to collect fish and invertebrates for identification. Photographs of some aquatic biota were taken to aid in identifications. The aquatic biota survey area extended from the Kamehameha Highway bridge to the ocean. Table 4 lists all aquatic biota observed during the stream survey.

The survey revealed similar species throughout the survey area except within 50 meters of the ocean where marine species are additionally present. From near the Kamehameha Highway bridge to 50 m (164 ft) upstream from the ocean, blackchin tilapia (*Sarotherodon melanocheilus*) are abundant throughout. *Aholehole* (*Kuhlia sandwicensis* and *Kuhlia xenura*) and mullet (*Mugil cephalus*) are also abundant in schools. Two species of shrimp, *Opaeoeha* (*Macrobrachium grandimanus*) and grass shrimp (*Palaemon debilis*) are common in shallow water and on vegetation along the stream banks. A grapsid crab (*Metopograpsus thuhakar*) is uncommon, sighted retreating into sheltering burrows in the stream bank. The Samoan crab

(*Scylla serrata*) and barracuda (*Sphyraena barracuda*) are present but are rare here. One dead 'o'opu 'akupa (*Eleotris sandwicensis*) was observed as well.

The estuarine environment within 50 meters of the seashore is host to a more diverse array of aquatic biota. Small waves consistently surge into the stream mouth mimicking a more exposed ocean environment. The splash zone of the rock bottom estuary mouth is covered with periwinkles (*Littorina pinnata*) and smaller numbers of neritid snails (*Nerita picea*). Lower down, near the high water mark, a brown alga (*Ralfsia expansa*) and black purse shells (*Isognomon californicum*) blanket the stream bank, the purse shells forming dense clusters. The estuary bottom is host to several other mollusks, with zebra horns (*Cerithium zebra*), granular drupes (*Marula granulata*), and cowries (*Cypraea capusepentes*) present. *Manini* (*Acanthurus triostegus*) and other small surgeonfish (*Acanthurus* spp.) graze on algae both solitary and in small schools. Juvenile and adult *Aholehole* (*Kuhlia* spp.) and mullet (*Mugil cephalus*) are abundant in this part of the estuary. The same two shrimp species (*Palaemon debilis* and *Macrobrachium grandimanus*) are abundant here clinging to the prop roots of mangrove trees (*Rhizophora mangle*). Patches of a red alga, *Amanzia glomerata*, grow conspicuously on the bottom, where cloudy gobies (*Hazeus nephodes*) are uncommon. A ghost crab (*Ocypode* sp.) is likely responsible for numerous burrows in the sandy shore above the bank.

Table 4. Checklist of aquatic biota observed on March 21, 2008 in lower

Malaekahana Stream, O'ahu.

PHYLUM, CLASS, ORDER FAMILY	Genus/species name	Common name	Abundance	Status
		SEAWEEDS		
PHAEOPHYTA	<i>Ralfsia expansa</i>		U	Ind.
RHODOPHYTA	<i>Amanzia glomerata</i>		R	Ind.
		INVERTEBRATES		
MOLLUSCA, GASTROPODA				
NERITIDAE		black nerite, <i>pipipi</i>	R	Ind.
LITTORINIDAE		dotted periwinkle, <i>pipipi kolea</i>	C	Ind.
VERMETIDAE		variable worm snail <i>kauna 'oa</i>	R	End.

Table 4 (continued).

PHYLUM, CLASS, ORDER FAMILY	<i>Genus species name</i>	Common name	Abundance	Status
CERITHIIDAE	<i>Cerithium zebrum</i>	Zebra horn	U	Ind.
CYPRAEIDAE	<i>Cypraea caputserpentis</i>	snakehead cowry, <i>leho kupa</i>	U	Ind.
THAIDIDAE	<i>Morula granulata</i>	granular drupe <i>maka awa</i>	U	Ind.
ARTHROPODA, MALASTRACA, DECAPODA				
PALAEOMONIDAE	<i>Macrobrachium grandimanus</i>	Hawaiian prawn	A	Ind.
	<i>Palaeomon debilis</i>	'opae 'ohela'a	A	Ind.
ARTHROPODA, MALASTRACA, DECAPODA, BRACHYURA GRAPSIDAE	<i>Metopograpsus thukkar</i>	grass shrimp, 'opae huna	U	Ind.
OCYPODIDAE	<i>Ocyropsis</i> sp.	grapsid crab	U	Ind.
		ghost crab	R	Ind.
		FISHES (PISCES)		
MUGILIDAE	<i>Mugil cephalus</i>	mullet, 'ama'ama	C	Ind.
KUHLIIDAE	<i>Kuhlia sandvicensis</i>	zebra head flagtail, <i>āholehole</i>	U	Ind.
	<i>Kuhlia xenura</i>	Hawaiian flagtail, <i>āholehole</i>	U	End.
CICHLIDAE	<i>Sarotherodon melanotheron</i>	black chin tilapia	A	Nat.
ELEOTRIDAE	<i>Eleotris sandwicensis</i> (dead)	Hawaiian sleeper <i>'o'opu akupa</i>	R	End.
GOBIDAE	<i>Hazeus nephodes</i>	cloudy goby	U	Ind.
ACANTHURIDAE	<i>Acanthurus nigrofasciatus</i>	brown surgeonfish	R	Ind.
	<i>Acanthurus triostegus hawaiiensis</i>	convict surgeonfish <i>manini</i>	C	End.
	<i>Acanthurus</i> sp.	umid, surgeonfish	R	

Table 4 (continued).

KEY TO SYMBOLS USED:

Status:

nat. - naturalized. An introduced or exotic species.
ind. - indigenous. A native species also found elsewhere in the Pacific.
end. - endemic - A native species found only in the Hawaiian Islands.

Abundance in the estuarine reach:

P - present; not common, but unable to assess abundance.
R - rare; only one or two individuals seen.
U - uncommon; several individuals seen, in some habitat places visited.
C - common; numerous individuals seen, or seen in most habitat places visited.
A - abundant; numerous in most or all habitat places visited.

Marine Water Quality

On March 21, 2008, AECOS biologists collected water samples and measured field parameters from three locations approximately 2 m (6 ft) of the shoreline in coastal waters fronting the project property (Fig. 2). Station "North" was located near the northeastern edge of the coastline fronting the property; Station "Center" was located near the mid-point of the property's coastline; and Station "South" was near the southeastern end of the property. All samples were taken from a depth of 0.3 m (1 ft) below the surface. Temperature, dissolved oxygen (DO), and pH were measured in the field. Water samples for laboratory analysis were collected in appropriate containers and taken to the AECOS Laboratory in Kaneohe, O'ahu (AECOS Laboratory Log No. 23969). Table 1 lists the field instruments and analytical methods used in analysis of these samples.

Nearshore waters fronting the property are classified as "Class A - open coastal waters" by the State of Hawai'i. This class includes waters inside of the 183 m (600 ft) depth contour that are not listed as protected areas. State water quality criteria for these waters vary according to freshwater discharge. The property's nearshore waters qualify as "dry open coastal waters" receiving less than 3 million gallons of freshwater discharge per shoreline mile. Although state standards require a geometric mean to be calculated from at least three separate sampling events, our results from the March 21, 2008 sampling event are compared to state standards for reference purposes. The results characterize the marine environment near the property at a specific point in time and cannot establish compliance with state water quality standards. Table 5 lists State of Hawaii water quality criteria for (Class A) open coastal waters.

The water quality analysis of nearshore waters fronting the property show turbidity levels were elevated at the time with all three stations above the state criterion not-to-be-exceeded more than two percent of the time. These levels may be caused by

small waves surging through the sampling stations. Total nitrogen concentrations were greater than the state criterion not-to-be-exceeded ten percent of the time at stations "Center" and "South," and were above the criterion not-to-be-exceeded more than two percent of the time at station "North." Somewhat elevated ammonia concentrations were measured at station "North." Total phosphorus concentrations were slightly elevated relative to state criterion. Chlorophyll α levels varied somewhat, but all were on the high side of the geometric mean criterion.

Marine Biota

The beach fronting the proposed project site is called Kahuku Golf Course Beach and is approximately 1200 m (4000 ft) long and 30 m (100 ft) wide (AECOS, 1981). A limestone bench near sea level edges most of the shoreline except at the south end of the beach where a break in the bench creates a sand pocket. Seaward of the bench a limestone shelf gently slopes to approximately 25 m (80 ft) offshore in waters of 0.6 - 3.0 m (2-10 ft) depth before giving way to a narrow sand channel. Beyond the sand channel the reef flat extends offshore for approximately 200 m (650 ft). Approximately 250 m (820 ft) from the shoreline a shallow reef crest extending nearly the length of the project site is known for at least two named surf breaks: "Seventh Hole" and "Clubhouse Rights". The Keone'o'io Channel extends seaward off the south end of the property near Makahoa Point. Fishermen frequent the beach and reef for both pole and spear-fishing.

On March 21, 2008, a nearshore marine survey was undertaken by snorkeling the waters fronting the proposed project site, visually surveying over the nearshore reef flat, and dip netting for fishes and invertebrates along the shoreline. Visibility was fair with a 1.2 - 1.8 m (4-6 ft) east wind-swell (face height) during the survey. *Ulua* fisherman had several fishing poles with lines cast through the survey area. On April 10, 2008 the nearshore marine survey was completed by snorkeling the waters fronting the property extending approximately 250 m (820ft) offshore including nearshore portions of the Keone'o'io Channel. Survey conditions on April 10th included calm winds, 2-4 ft swell, and excellent underwater visibility.

The seaward portion of the limestone bench at the shoreline is covered in an algal turf. This turf is comprised of numerous species, with *Ptericiadiella capillacea* and *Coelothrix irregularis* dominant.

The limestone shelf sloping to approximately 25 m (80 ft) offshore has very little relief and is covered with sand patches and algae. Though not abundant at any one location, *Coelothrix irregularis* is a common species forming irregular clumps or growing in thin layers across the substrate. The phaeophytes, *Padina* sp. and *Turbinaria ornata*, are locally abundant, densely covering the substratum just below the waves in some areas. Lace coral (*Pocillopora damicornis*) occasionally

Table 5. State of Hawai'i water quality criteria for "dry" open coastal waters from HAR §11-54-6 (B).

Parameter	Total Nitrogen ($\mu\text{g N/l}$)	Nitrate + Nitrite ($\mu\text{g N/l}$)	Ammonia ($\mu\text{g N/l}$)	Total Phosphorus ($\mu\text{g P/l}$)	Turbidity (NTU)	Chlorophyll α ($\mu\text{g/l}$)
Value not to exceed more than 10% of the time	110.0	3.5	2.0	16.0	0.20	0.15
Value not to exceed more than 2% of the time	180.0	10.0	5.0	30.0	0.50	0.50
Value not to exceed more than 2% of the time	250.0	20.0	9.0	45.0	1.00	1.00

- pH - shall not deviate more than 0.5 units from 8.1(except locations with stream, storm drain or groundwater discharge where pH may depress as low as 7.0).
- Dissolved oxygen - not less than 75% saturation.
- Temperature - shall not vary more than 1 °C from ambient.
- Salinity - shall not vary more than 1.0 ‰.

Table 6. Water quality characteristics of nearshore marine waters at the proposed Kahuku Village subdivision measured for March 21, 2008.

Station	Temp. (°C)	DO (mg/l)	DO (% Sat.)	pH	Salinity (ppt)	TSS (mg/l)
North	25.0	7.38	109	8.38	35	6.4
Center	24.4	7.44	109	8.41	35	4.2
South	24.2	7.55	110	8.40	35	5.1

	Turbidity (ntu)	Ammonia ($\mu\text{g N/l}$)	Nitrate + nitrite ($\mu\text{g N/l}$)	Total N ($\mu\text{g N/l}$)	Total P ($\mu\text{g P/l}$)	Total Chlorophyll α (mg/l)
North	2.32	12	1	274	24	1.29
Center	1.98	2	2	196	21	0.39
South	2.18	<1	1	194	18	0.54

forms small colonies on the seaward edge of the shelf. The Hawaiian mussel (*Brachidontes crebristriatis*) is locally common in patches close to shore.

A narrow sand channel, variable in width, parallels the shore giving way to a reef flat of mixed substrata. The reef flat is home to a diverse assemblage of algal species. Both branching (*Hydroolithon gardineri*) and crustose (*Hydroolithon reinboldii*) forms from the genus *Hydroolithon* are colorfully represented. The upright chlorophyte, *Halimeda* sp., grows densely in several locations. In shallower water, *Liagora* spp. are common, forming round bushy clumps on substrata offering enhanced topographical relief.

Holes in the substratum are generally filled with rock boring urchins (*Echinozometra mathaei*), *wana* (*Echinothrix calamaris*), or cone snails (*Conus* spp.). Inspecting under loose cobbles reveals brittle stars (*Ophiocoma erinaceus*), drupes (*Morula granulata*), and zebra horns (*Cerithium zebrum*) to be uncommon. Some scleractinian corals are present, but estimated coral coverage is less than five percent of the substrate. Cauliflower coral (*Pocillopora meandrina*) and lobe coral (*Porites lobata*) account for most of the coral heads present in the area. Lace corals (*Pocillopora damicornis*) are also present but less common.

On the seaward edge of the flat approaching the reef crest, *limu lipoa* (*Dictyopteris australis*) is abundant. Coral heads are more common towards the reef crest with cauliflower coral (*P. meandrina*) accounting for most of the heads seen. The endemic, blue rice coral (*Montipora flabellata*) is rare. The green sea turtle (*Chelonia mydas*) is present but rare.

Fish assemblages over the shallow bench near the shoreline include juvenile mullet (*Mugil cephalus*) and *aholehole* (*Kuhlia* spp.). The cloudy goby (*Hazeus nephodes*) is rare, resting on the substrate. Further offshore, *manini* (*Acanthurus triostegus*) are common grazing on algae. Other acanthurids and butterflyfish (*Chaetodon* spp.) are less common. Bright eyed damselfish (*Plectoglyphidodon imparipennis*) are uncommon hiding behind boulders or beneath ledges. Reef triggerfish (*Rhinocanthus rectangulus*) are rare, picking at the algae-covered substrate. One large lizardfish (*Synodus nilae*) is observed on the sandy bottom.

The Keone'io Channel extends seaward from the southern end of the project area and is a mostly barren sand field. However, the channel's landward margin is an exception. The limestone shelf near shore drops off abruptly, giving way to the sand bottom and creating a vertical face that is habitat to a variety of fishes. Numerous goatfish (*Mulloidichthys flavolineatus*) school near the bottom while large acanthurids, such as *kala* (*Naso unicornis*) and *pilani* (*Acanthurus dissimulieri*), school higher up in the water column. Juvenile flame wrasse (*Coris gaimardae*) are common close to the cliff face or over rubble below the cliff. The *mamo* (*Abudefduf*

vagaensis) is common, swimming in and out of shelter beneath the overhanging ledge.

Table 7. Checklist of marine biota observed off the proposed Kahuku Village Subdivision.

PHYLUM, CLASS, ORDER, FAMILY Genus species	Common name	Abundance	Status
RHODOPHYTA			
<i>Asparagopsis taxiformis</i>	<i>limu koku</i>	C	Ind.
<i>Coelothrix irregularis</i>		C	Ind.
<i>Galaxaura rugosa</i>		U	Ind.
<i>Hydroolithon gardineri</i>		C	Ind.
<i>Hydroolithon reinboldii</i>		C	Ind.
<i>Liagora</i> sp.		C	Ind.
<i>Peysoniella rubra</i>		R	Ind.
<i>Porolithon onkodes</i>		R	Ind.
<i>Pterocladiaella capillacea</i>		R	Ind.
CHLOROPHYTA			
<i>Codium edule</i>		U	Ind.
<i>Dicyosphaera cavernosa</i>	bubble algae	U	Ind.
<i>Halimeda</i> sp.		C	Ind.
<i>Neomeris</i> sp.		U	Ind.
<i>Ulva fasciata</i>	<i>limu palahalaha</i>	R	Ind.
<i>Ventricaria ventricosa</i>	Sailor's eyeballs	R	Ind.
PHAEOPHYTA			
<i>Dictyopteris australis</i>	<i>limu lipoa</i>	A	Ind.
<i>Dicyota ceylanica</i>		R	Ind.
<i>Padina</i> sp.		C	Ind.
<i>Ralfsia expansa</i>		R	Ind.
<i>Turbinaria ornata</i>		U	Ind.
INVERTEBRATES			
PORIFERA, DEMOSPONGIAE			
CHONDRILLIDAE			
<i>Chondrosia chucalla</i>	meandering sponge	R	Ind.
ANCHINOIDAE			
<i>Hamigera</i> sp.	red boring sponge	R	Ind.
CNIDARIA, ANTHOZOA, ACTINARIA			
<i>indet.</i>	unid. anemone	R	-
SCLERACTINIA			
POCILLOPORIDAE			
<i>Pocillopora damicornis</i>	lace coral	U	Ind.
<i>Pocillopora meandrina</i>	cauliflower coral	U	Ind.

Table 7 (continued).

PHYLUM, CLASS, ORDER, FAMILY Genus species	Common name	Abundance	Status
ACROPORIDAE <i>Montipora capitata</i> <i>Montipora flabellata</i>	rice coral blue rice coral	R R	Ind. End.
PORITIDAE <i>Porites lobata</i>	lobe coral, <i>po'haku pu'ua</i>	R	Ind.
VERMETIDAE <i>Serpulorbis variabilis</i>	variable worm snail <i>kauna'oa</i>	R	End.
CERITHIIDAE <i>Cerithium zebrum</i>	Zebra horn	U	Ind.
CYPRAEIDAE <i>Cypraea caputserpentis</i>	snakehead cowry; <i>leho</i> <i>kupa</i>	R	Ind.
THAUIDAE <i>Morula granulata</i>	granular drupe <i>maka awa</i>	U	Ind.
CONIDAE <i>Conus abbreviatus</i> <i>Conus lividus</i> <i>Conus rattus</i> <i>Conus</i> sp.	abbreviated cone spiteful cone rat cone unid. cone	U U U U	Ind. Ind. Ind. Ind.
MOLLUSCA, BIVALVIA MYTILIDAE <i>Branchidontes crebistratus</i>	Hawaiian mussel <i>nahawe'le li'i li'i</i>	C	End.
ISOGNOMONIDAE <i>Isognomon californicum</i>	black purse shells <i>nahawe'le, papaua</i>	C	End.
MOLLUSCA, CEPHALAPODA OCTOPODIDAE <i>Octopus</i> sp.	timid octopus, <i>he'e</i>	R	-
ARTHROPODA, CRUSTACEA, DECAPODA			
PALINURIDAE <i>Paraliris marginatus</i>	banded spiny lobster, <i>ula</i>	R	End.
CRYPTOCHIRIDAE <i>Hapalocarcinus marsupialis</i>	coral guard crab	R	Ind.
OCYPODIDAE <i>Ocyrops</i> sp.	ghost crab	R	Ind.
ECHINODERMATA, OPHIUROIDEA			
OPHIOCOMIDAE <i>Ophiocoma erinaceus</i>	spiny brittle star	U	Ind.
ECHINODERMATA, ECHINOIDEA			
DIADEMATIDAE <i>Echinothrix calamaris</i>	banded urchin, <i>wana</i>	C	Ind.

Table 7 (continued).

PHYLUM, CLASS, ORDER, FAMILY Genus species	Common name	Abundance	Status
ECHINOMETRIDAE <i>Echinometra mathaei</i>	rock boring urchin, <i>'ina</i> <i>kea</i>	C	Ind.
TOXOPNEUSTIDAE <i>Tripaneustes gratilla</i>	collector urchin, <i>'ha'wa'e po'o hina</i>	R	Ind.
ECHINODERMATA, HOLOTHUROIDEA			
HOLOTHURIDAE <i>Holothuria atra</i>	black sea cucumber <i>loti okahi kahi</i>	U	Ind.
VERTEBRATA, PISCES			
MURAENIDAE <i>Echidna nebulosa</i>	snowflake moray <i>puihi kapi</i>	R	Ind.
<i>Gymnothorax flavimarginatus</i>	yellow margin moray <i>puihi puka</i>	R	Ind.
SYNODONTIDAE <i>Synodus ulae</i>	lizardfish, <i>'ulae</i>	R	Ind.
SCORPAENIDAE <i>Sebastapistes conioarta</i>	speckled scorpionfish	U	Ind.
KUHLIDAE <i>Kuhlia sandvicensis</i>	zebrahead flagtail, <i>aholehole</i>	C	Ind.
<i>Kuhlia xenura</i>	Hawaiian flagtail, <i>aholehole</i>	C	End.
CARANGIDAE <i>Gnathodon speciosus</i>	giant trevally <i>ulua pa'opa'o</i>	R	Ind.
MUGILIDAE <i>Mugil cephalus</i>	mullet, <i>'ama'ama</i>	U	Ind.
MULLIDAE <i>Mulloidichthys flavolineatus</i>	yellow stripe goatfish <i>weke fi</i>	C	Ind.
<i>Parupeneus multifasciatus</i>	many bar goatfish <i>moana</i>	U	Ind.
CHAETODONTIDAE <i>Chaetodon auriga</i>	threadfin butterflyfish <i>kikakapu</i>	U	Ind.
<i>Chaetodon fremblii</i>	bluestripe butterflyfish <i>kikakapu</i>	U	Ind.
<i>Chaetodon miliaris</i>	milletseed butterflyfish <i>lau wiliwili</i>	U	End.
<i>Chaetodon quadrimaculatus</i>	four spot butterflyfish <i>lau hau</i>	R	Ind.

Table 7 (continued).

PHYLUM, CLASS, ORDER, FAMILY <i>Genus species</i>	Common name	Abundance	Status
POMOCENTRIDAE			
<i>Abudefduf vaigensis</i>	Indo-pacific sergeant, <i>mamo</i>	C	Ind.
<i>Plectroplitodon imparipennis</i>	bright eye damselfish	U	Ind.
<i>Stegastes fasciatus</i>	Pacific gregory	R	Ind.
LABRIDAE			
<i>Anampes cuvier</i>	pearl wrasse, <i>opelu</i>	R	End.
<i>Bodianus bilineatus</i>	Hawaiian hogfish, <i>'a'awa</i>	R	End.
<i>Coris gaimard</i>	yellow tail coris	C	Ind.
<i>Thalassoma duperrey</i>	<i>hinalea</i> <i>'akitolo</i>	U	End.
<i>Thalassoma trilobatum</i>	saddle wrasse <i>hinalea lau'wili</i>	U	Ind.
GORIIDAE	Christmas wrasse, <i>'awela</i>	U	Ind.
<i>Hazeus nephodes</i>	cloudy goby	U	Ind.
ACANTHURIDAE	eyestripe surgeonfish,	U	Ind.
<i>Acanthurus dussumieri</i>	<i>palani</i>	R	Ind.
<i>Acanthurus leucopareius</i>	whitebar surgeonfish <i>maikoiko</i>	R	Ind.
<i>Acanthurus nigrofascus</i>	brown surgeonfish	C	End.
<i>Acanthurus triostegus</i>	convict surgeonfish <i>manini</i>	C	Ind.
<i>Naso unicornis</i>	bluespine unicornfish, <i>kala</i>	R	Ind.
BALISTIDAE			
<i>Melichthys sp.</i>	black durgon	R	Ind.
<i>Rhinocanthus rectangulus</i>	reef triggerfish, <i>hama'hamu</i> <i>nikumuku apua'a</i>	R	Ind.
MONOCANTHIDAE	scrawled filefish	R	Ind.
<i>Aluterus scripius</i>		U	Ind.
TETRADONTIDAE	Ambon toby	R	End.
<i>Canthigaster amboiensis</i>	white spotted toby	R	Ind.
DIODONTIDAE	porcupine fish	R	Ind.
<i>Diodon hystrix</i>			

KEY TO SYMBOLS USED:

Abundance categories:

- R - Rare - only one or two individuals observed.
 U - Uncommon - several to a dozen individuals observed.
 C - Common - observed everywhere, although generally not in large numbers.
 A - Abundant - observed in large numbers and widely distributed.

Status categories:

- End - Endemic - species found only in Hawaii
 Ind. - Indigenous - species found in Hawaii and elsewhere
 Nat. - Naturalized - species were introduced to Hawaii intentionally
 or accidentally.

DISCUSSION

Because the proposed project site is located along the estuary of Malaekahana Stream where fresh water and marine water mix, all of the water quality parameters measured can be expected to vary greatly over time as the tide rises and falls and as stream flow increases and decreases with upland precipitation amounts. Thus, conclusions regarding long term water quality should not be drawn based upon our single sampling event.

Malaekahana Stream is not included in the 2006 State of Hawaii Water Quality Monitoring and Assessment Report (HDOH, 2006). In previous listings of impaired waters completed in 2002 and 2004 the stream was not sampled enough to qualify for inclusion (HDOH, 2004b). Water quality results from the March 21, 2008 sampling event in the estuarine reach of Malaekahana Stream show slightly elevated turbidity levels and high nutrient levels. Low stream flow may be inhibiting flushing of particulate matter that cause increased turbidity, or nutrients may be contributing to phytoplankton growth in the estuary. Agricultural land uses upstream may be the source of high nitrogenous nutrient levels in the stream. Depressed dissolved oxygen levels at station "Bridge" may be limiting the diversity of fishes in the estuary as low dissolved oxygen concentrations favor tilapia (*Sarotherodon melanotheron* are abundant at this station) over native bottom fishes.

Previously, AECOS conducted basic water quality monitoring and analysis of Malaekahana Stream waters near the Kamehameha Highway bridge (AECOS, 1998). Seven water samples were collected during an eight day period from July 30 to August 6, 1998. Sample analysis included pH, turbidity, and total suspended solids, but not nutrients. "Station 3" from this earlier study is located where station "Bridge" sample was collected on March 21, 2008. Results from the study show pH results that ranged from 7.45 to 7.71 with an arithmetic mean of 7.59. All turbidity results (ranging from 12.5 ntu to 41.5 ntu) were more than double the criterion not-to-be-exceeded more than two percent of the time.

Water quality results for marine waters fronting the property show elevated turbidity possibly caused by wave action. Slightly elevated total phosphorus and total nitrogen levels were found at all stations.

AECOS previously surveyed marine biota in the nearshore waters fronting the property as part of the Hawai'i Coastal Zone Atlas/Oahu Coral Reef Inventory project (AECOS, 1981). Their description of these coastal waters is as follows:

The featureless limestone bottom supports an abundance of algae, with at least 15 species contributing to nearly 80% bottom cover. The dominant species are *Halimeda discoidea* (particularly near the margins of the

channel), *Dicypota acutiloba*, *Turbinaria ornata*, and *Liagora* sp. Few corals are present. At least 31 species of fishes inhabit the margins of Keone'o'io Channel, and of these 17 are common. *Naso unicornis* and *Acanthurus dussumieri* are particularly abundant.

Eight fish species, one lobster and one crab species encountered during the current survey are regulated by the State of Hawaii, Department of Land and Natural Resources. Hawaii's Administrative Rule (HAR) 13-95 regulates the taking of mullet (*Mugil cephalus*), *āholehole* (*Kuhlia xenura*), *K. sandvicensis*, *kala* (*Naso unicornis*), *manini* (*Acanthurus triostegus hawaiiensis*), *moana* (*Parupeneus multifasciatus*), *weke* (*Multidactylus flavolineatus*), *ula* (*Panulirus marginatus*) and Samoan crab (*Scylla serrata*). HAR 13-100 and 188-43 regulate taking of 'o'opu *akupa* (*Fleotyris sandwicensis*). Three scleratinian coral species (*Porites lobata*, *Pocillopora damicornis*, *Pocillopora meandrina*) present in the survey area are protected by HAR 13-95-70. The federally protected green sea turtle (*Chelonia mydas*) was observed foraging in nearshore waters fronting the property. No other federally endangered or threatened species (Federal Register, 2005; USFWS, 2005) were encountered during the survey, and none is anticipated to frequently utilize Malaekahana Stream or coastal marine waters fronting the property.

A Best Management Practices (BMP) plan should be designed and implemented to minimize environmental impacts to water quality and marine/estuarine biota in vicinity of the project during all significant construction activities.

References

- AECOS, Inc. 1981. Hawaii's Coastal Zone Atlas. Hawaii's Coral Reef Inventory, Island of Oahu (O.C.R.I.) Part B Sectional Map Descriptions. Prep. for U.S. Army Corps of Engineers, Pacific Ocean Division, Fort Shafter, Hawaii. AECOS No. 149B: 552 pp.
- 1998. Malaekahana Stream Bridge Replacement—Assessment of construction impacts on stream water quality during the first ten days of construction. Prep. for Okada Trucking, Inc. Honolulu, Hawaii. AECOS No. 905B: 8 pp.
- Federal Register. 2005. Department of the Interior, Fish and Wildlife Service, 50 CFR 17. Endangered and Threatened Wildlife and Plants. Review of Species That Are Candidates or Proposed for Listing as Endangered or Threatened; Annual Notice of Findings on Resubmitted Petition; Annual Description of Progress on Listing Actions. *Federal Register*, 70 No. 90 (Wednesday, May 11, 2005): 24870-24934.

Hawaii's Cooperative Park Service Unit. 1990. Hawaii's stream assessment. A preliminary appraisal of Hawaii's stream resources. Prep. for State of Hawaii, Commission on Water Resource Management. National Park Service, Hawaii's Cooperative Park Service Unit, Rept. No. R84: 294 pp.

Hawaii's Department of Health (HDOH). 2004a. Hawaii's Administrative Rules, Title 11. Department of Health, Chapter 54, Water Quality Standards. 62 pp.

----- 2004b. Final 2004 list of impaired waters in Hawaii; prepared under Clean Water Act §303(d). Environmental Planning Office. 67 pp.

Hawaii's Department of Land and Natural Resources (DLNR). 1998. Indigenous Wildlife, Endangered And Threatened Wildlife And Plants, And Introduced Wild Birds. Department of Land and Natural Resources. State of Hawaii. Administrative Rule §13-134-1 through §13-134-10, dated March 02, 1998.

U.S. Fish & Wildlife Service (USFWS). 2005. Endangered and Threatened Wildlife and Plants. 50CFR 17:11 and 17:12.

Appendix H

Socio-Economic Study

SOCIO-ECONOMIC IMPACT STUDY

*KAHUKU VILLAGE
201(H) SUBDIVISION PROJECT*

April 2008

For

CONTINENTAL PACIFIC, LLC

By

Ricky Cassidy
Data@Work

I. OVERVIEW

This report accesses the social and economic impact to the neighborhood and community of the proposed Kahuku Village Five affordable and market housing development and community infrastructure renovation program. At issue is the plan fashioned by the landowner in conjunction with the residents of Kahuku Village Five, the broader community and the public sector that looks to produce a number of benefits in return for the ability to pay for those improvements and earn a return on their investment of time and resources.

The major benefits include:

- Whole ownership affordable housing to former plantation workers and their families, current residents and, depending on housing supplied, others in the community;
- The necessary housing infrastructure (roads, water, sewer, etc.), currently substandard;
- Creation of direct and public beach access via two public beach parks.

The funding of this would come through the sale of this and other real property, specifically 18 golf course frontage and 12 ag-2 lots, which would be at market rates.

There are landowner risks that it will not be able to recoup its investment and make a profit, due to market realities or political conditions, and be forced into economizing by removing the affordable component of this plan (or sell out at a loss). There are neighborhood community risks that they will lose the opportunity to stabilize their financial wellbeing by owning their own home. There are general community risks that the infrastructure in this area will deteriorate and that access will be reduced or eliminated altogether.

On the other hand, there are general community risks that their enjoyment of the area and sense of place will suffer a net reduction, by dint of the appearance of market rate housing along the golf course side of the sand dunes (specifically, the lack of direct access and visual 'pollution', although currently there is neither access to the beach, nor is the vista in question a widely viewed one).

To date, the trade-off proposed here has been widely exposed and debated, with favor bestowed on it from the immediate beneficiaries and skepticism and criticism from the some interested parties and groups in the outside neighborhood community.

Background

Traditionally, Kahuku was home to a traditional Hawaiian community, one able to farm and fish the area, though not as successfully as the areas to the south – Hauula, Kahana Bay, Kaneohe – which had larger and more regular freshwater resources and bigger and better protected fishing grounds. Around the turn of the century, sugar cultivation was successfully introduced to the area, and brought with it a large influx of population, mainly workers, as well as widespread development of agriculture. This

activity predominated for many decades, and thus became the focal point of the community economically and socially.

After WWII, challenges to the sugar cultivation business model (differential labor costs between US and foreign producers, principally) eroded away the viability of that enterprise, causing the sugar mill to close in the early 1970s. With no easy replacement for sugar, a concerted effort was made by the landowners, businesses and community to shift the area's resources into other commercial activities, the most promising of which was tourism. This resulted in the Kuliima resort development at nearby Kawela Bay. Inasmuch as the resort did not flourish as intended, only a small percentage of the community's labor force able to earn their livelihood there.

Concurrently, an effort was made to sustain and to upgrade the community, primarily through improvements to the area's infrastructure, services and particularly its housing inventory. This was relatively much more successful, and a number of affordable housing projects were begun and completed. However, a few of the plantation housing neighborhoods could not be rehabilitated, as there were insurmountable infrastructure costs, relative to the public and private resources at hand (as well as a real estate market downturn).

This situation has potentially changed, insofar as the ownership of the land passed from a terminated Hawaiian land trust to an offshore agricultural land developer. They took up the challenge of funding the rehabilitation of the plantation neighborhood by marketing golf course frontage home sites and ag-lots.

Community Issues and Developer Intentions

There are many community issues at hand here, including the lack (and the provision) of affordable housing, the continuity of the neighborhood, the ability of current and past families to continue living in their homes, the current lack of (and the degree of the planned provision of) beach access, the potential presence of iwi in the area, the lack or the inadequacy of physical infrastructure, the cost of upgrading the housing and the infrastructure, the view planes to the sea from the golf course area, the sanctity of the area's wildlife and the safeguarding of the environment have been aired.

The current developer intends to house the current residents of Kahuku Village Five as affordably as possible (including selling house/lot packages around \$75,000, but also by helping out in securing affordable rentals to those who can't afford to buy their residence) and to provide the community with a number of benefits (principally beach access, parking and parks). In order to do so, they look to recoup these costs and make a profit by selling market rate home sites along and around the golf course area.

Tradeoffs and Projections

If approved, the Village community will get affordable housing, either their existing home or a newly built one. They will also get improvements to the current road, water and sewer infrastructure. In addition, there will be expanded beach access, via parks and rights of ways, as well as other contributions to the community concerning other areas within the neighborhood, i.e., the graveyards and the golf course. In return, the

developer will be allowed to develop and sell (the market willing) a small number of home sites in and around the golf course.

Given my experiences with interviewing members of the community and observing the community interaction at the neighborhood board and other forums (blogs, websites, etc.), I would expect (would project) that the members of Kahuku Village Five and their association would continue their approval and their support to the overall plan.

I expect and project that a number of activists will continue to oppose it, particularly those that believe this development obstructs their cultural practices (including disturbing the iwi), does not provide adequate beach access, produces an unacceptable obstruction to the view of the ocean, and harms the environment. At the present time, with the present parties, and in the present number of communication venue and forums, I expect and project that these positions and attitudes will only change slowly.

Finally, I expect and project that the costs of the development plan will come into sharper focus and, as importantly, the potential revenues from the sale of the affordable and market homes will become easier to predict. As and when this happens, there will more clarity as what will be the total package of benefits to the community and the total level of risk the developer will have to shoulder. While I don't project it, it may be the case that this could lead to a rebalancing of the costs and benefits

Opinion and Conclusion

It is my opinion that the package of benefits to the neighborhood well outweighs the negatives, which seems mainly to be the colonization of the neighborhood by high-end homes on the lee side of the shoreline sand dunes.

Relative to the larger DPA community and to the entire island, the benefits are less immediate and important – affordable housing, new-found social and economic stability in that community, shoreline access – may pale in comparison with the widely touted principle of no development on or near the shoreline, with all of the various reasons in support of that stipulation (cultural, aesthetic, environmental).

To be sure, the impact of these golf course homes would be significantly increased if its location were Sandy Beach – in which case the whole population of the island would be aware of, and suffer the intrusion of, the construction of homes that materially changed the area's vista. In this case, however, the general public is almost completely unaware of the area, largely because it is a relatively inhospitable climate (windy and cold) with dangerous ocean conditions.

That said, this is a matter of principle to those agitating against this plan. The obstruction to direct and immediate access to the shoreline is an affront to the native culture, and is an anathema to environmentalists and conservationists.

If it were not for the good that this development is doing for the many who are underprivileged and who are part of the community, then my conclusion would be mixed with doubts and mixed feelings. But, we believe the benefits to Kahuku Village Five (KV5) of home ownership and the benefits to the community at large of beach access

are sufficient for me to accept some 18 home sites between the golf course and the top of the sand dunes.

That, and the fact that if nothing happens, there is a strong possibility that conditions will worsen, either through continued negligence or the resale of these parcels to a profit-maximizing developer. As will be shown, Kahuku has experienced a decline in population over the last 8 years, and this would continue if this or any other affordable housing projects were not initiated. To be sure, there are alternative visions of the future to this one, but they all lack immediacy (they will take a long time) as well as capacity (their expected solutions are uncertain, like the affordable housing component of Turtle Bay).

II. INTRODUCTION

Purpose: To assess the social and economic impact of the proposed project.

Project Description: The overall project is a mix of affordable and market rate housing (and home site) development. The affordable housing will follow the guidelines under Chapter 201H, Hawaii Revised Statutes.

The project will create the following residential/market lots:

- Eighteen (18) lots along the shoreline developed according to R-20 zoning standards. The shoreline lots range in size from approximately 25,000 sf to 58,000 sf.
- Twelve (12) lots at the north end of the Kahuku Golf Course developed according to Country zoning standards. The country lots range in size from approximately 1 to 6 acres (avg. ~2.5 acres)
- Seventy-two (72) 10,000 sf lots around existing occupied residences.
- Sixty (60) 10,000 sf vacant lots for additional affordable housing.

The first two will be market rate, and the last two will be affordable rate housing.

Continental Pacific, LLC will offer to sell the families the homes and land at rates significantly below the recommended affordable housing pricing matrix, \$75,000, on average, for both home and lot. There may be a few exceptions based on age and fixed income who continue to rent.

The new lots will be sold as vacant residential with water and power connection. Sewer will be septic, cost to be borne by the purchaser. House construction will be by the owner according to R-5 zoning standards.

Additional to these lands, the following lands are part of the development plan:

- Two existing cemeteries (which shall become 2 lots): to be donated
- Two Beach Parks (which shall become 2 lots): to be donated
- A Nine Hole golf course - existing (which shall be considered 1 lot): to be donated
- One School lot: to be donated
- One Remainder lot (Adams Field) which is zoned P-2

Note: Period of Affordability – The homes and land designated as affordable will remain so until conveyed to the individual fee simple owners and/or the Phase V Association.

III. EXISTING AND ANTICIPATED FUTURE SOCIO-ECONOMIC CONDITIONS

Study Area

Our primary study area was Kahuku Village Five (KV5) and Kahuku Township. Thereafter, we then considered the surrounding area of the DPA of Koolauloa.

Overview of Economic History and Settlement Pattern

Early History

The specific area was not heavily populated by indigenous Hawaiians, relative to the bays and valleys to the south. The Kahuku Village Five microclimate can be characterized as very windy (per the sparse vegetation along the golf course and the shoreline ironwoods that are canted inland) and dry (cactus can be seen growing around some of the old houses). There was a good source of fresh water from Malaekahana stream (which was redirected into Malaekahana Bay by the plantation about 100 years ago) and there was good shelter from the constant wind and sun (to say nothing of the big surf) in nearby Malaekahana Bay. However, Kahuku Village Five was situated within a zone of sand, characterized by large and rolling sand dunes, and this is a terrain that is not easy to cultivate, nor easy even to walk around in without exertion (try walking up the sand dunes around hole number four of the golf course).

As such, most of the Hawaiians gravitated to live next to a major freshwater source and protection from the wind and waves (Kahana Bay and Waimea Bay).

Post-Missionary History

Inasmuch as the area was remote from the center of social and economic activity on Oahu (Honolulu Harbor), and not particularly important as a center of native population or agricultural or commercial activity, the area was largely ignored by the missionaries for most of the 1700-1800s. Indeed, the connection between Kahuku and Honolulu ran either through Waimanalo or Wahiawa.

In the late 1800s, the success of dry land water source development and distribution (drilling wells and irrigation networks) resulted in the success of agribusiness, specifically large scale plantation production of sugar and pineapple. The instigator of this water development was James Campbell, and the success he enjoyed led him to search out areas that were suitable for crop cultivation (particularly, flat land on the dry side of the island, i.e., Kaanapali, Ewa, Kahuku) and purchase land at reasonable prices. In this instance of Kahuku Village Five, he bought all of the land from Kawela Bay to Cooke's Point (border with Laie).

Having determined that there was adequate sun and water for plantation agriculture, he successfully encouraged the entry into the community of a plantation operator (Alexander and Baldwin, or A&B) in 1890. A&B upgraded the transportation linkages with the rest of the island, began cultivation and ultimately constructed a processor plant

(the sugar mill). Inasmuch as their cost of production was below the national (and world) wholesale price of sugar, this business model was very successful.

While the plantation model at the beginning succeeded thanks to abundant inputs of water, sun, land and capital, the major chokepoint was applying sufficient labor to the process – there were only so many able bodied men on the island. Thus, they actively imported field labor from Asia and elsewhere and then housing them onsite.

As the cultivation spread to the outlying areas (Lai'e, Hauula, Punaluu) and inland, more labor was needed, which resulted in successive waves of immigrants, always people of a particular culture, moving into Kahuku. In rough sequence, it was the Chinese, Japanese, Puerto Rican, Portuguese, Korean and Filipinos. And each group was housed within their own camp (including Caucasians), save for the field workers, who lived in smaller areas close to the crops.

This is how the town of Kahuku was initiated (the sugar mill being the center of economic and social activity) and populated.

On the social side, the plantation created its own social pyramid (or, within each particular culture, silo), with the field personnel at the broad base, their elders (akin to village leaders) atop them. These were generally silos, with little interaction between the various cultural and ethnic groups.

On top of them, and across the silos, were the field bosses (generally Portuguese). Above them were the middle management (trade or skill based) and then finally the white collar top management, lead by the plantation manager.

At the height of the plantation profitability, this enterprise supported 800 jobs directly, with a number – small at first, but growing overtime – of businesses in and around the area, either directly servicing the plantation model, or supporting the livelihood of that many people (some 600 families). Kahuku plantation itself had a store, a golf course and a hospital, but there was a gas station, local farmer outlets, theatre, eateries, etc. There were also places of worship that sprang up – the occidental churches, and the oriental temples. For much of this period, the plantation was the only economic success in the area. The only other significant one, which sprang up post WWII, was the educational model of the Mormon Church.

The plantation model was quite successful up to WWII, when it came under pressure from foreign competition – mainly from Cuba and Philippines, but also from other areas. Since those competitors had an advantage due to a lower wage structure – cheap labor – the Hawaiian plantations generally tried to nullify that by mechanizing: replacing mules and hand labor with trucks, tractors and cranes. This encouraged the Kahuku plantation people to develop skills and trades, thus diversifying the social ecology and narrowing the base of the pyramid while expanding the middle.

Transition to the Post-Plantation Era

There were several significant social and economic events (sand mining, tidal wave, economic boom) right after the end of the war that changed Kahuku's society and economic base, the most important of which was the labor strike in 1947. The plantation

worker's decision to stop work, and the ensuing hardship, encourage cross cultural communications and interrelations. It also furthered the sense of self-reliance that already characterized this rural, isolated community. It also began the process of social leveling, whereby the status of the workers and their families elevated, while that of the plantation management, descended, moving towards the current state of relative equality and community spirit.

The event also gave a good hard shake to the sense of paternalism existing between the two general groups of labor and management. Heretofore, labor gave management their obedience (or agreement) in return for management taking complete care of them. The strike pitted them on opposite sides, and contrary behavior contrary to this paternal relationship occurred (as well as, to be sure, some complimentary behavior, such as management leaving the hospital open during the strike to labor). As such, some of the workers experienced the freedom and the fright of having to do things unilaterally that benefited themselves. This contributed to a growing independence of labor relative to management, and probably paid dividends

The viability of the plantation model continued to erode, as foreign produced sugar continued to limit the amount of sugar that could be produced profitably in Kahuku to the sugar that was sold in the US at a subsidized, higher price, thanks to restrictive tariffs on sugar imports. Mechanization was not a solution, and labor increased its share of the benefits to a point where it was decided to close the plantation down.

Fortunately, this decision was well forecast, and phased in over several years, so the effects of the erosion of jobs and the reductions of income was somewhat mitigated by job transfers to other plantations, retirements, relocations and some public agency new hiring. In particular, there were new hires at the state division of transportation, department of education, plus the creation of the regional fire and police stations. However, none of this created jobs in the community on the scale that had existed during the plantation heydays.

There was some hope for a one-for-one job replacement in the form of resort development in the area, specifically the zoning of a resort at the old manager's beach houses at Kawela Bay by Campbell Estate. They found a buyer in Del Webb, as very successful builder of large communities out of the West Coast, who entered this market with some expectation that gambling would be legalized in Hawaii. However, that effort failed in the legislature, and the hotel operation had to proceed as a mid-range hotel operation. Ultimately, it did not flourish, partly because it was so far from the center of visitor activity, Waikiki, and partly because no other hotel was developed, severely limiting the potential growth of the resort.

Indeed, this resort did not provide many jobs for Kahuku residents (or many jobs for the surrounding areas of Lai'e or the North Shore). Firstly, the construction phase did not use the same skill set as the plantation, and subsequently, the English language facilities of the plantation workers were often too rudimentary for the service jobs at the resort, which call for interaction with their guests. There were field jobs, and infrastructure creation and maintenance jobs, but the total manpower needed to run the resort was a fraction of the plantation: 350 jobs vs. 700-800 jobs.

While the plantation ceased operation, the landowner (a different entity: the Campbell estate) continued to have a stake in keeping the community vital and in providing them with a future.

The estate went into the community and worked with them in terms of bringing replacement businesses to the area (and were instrumental in growing the public sector facilities there – the school, fire and police – as well as helping the farmers and laborers to transition from large to small scale farming).

Then, the estate decided when the plantation went out of business that they could buffer the negative impact on the community by allowing them to stay in their housing (substandard as it was) for almost zero rent. They did this by forming a for-profit management group, the Kahuku Housing Corporation.

The rise of the city's affordable housing program, fed by high real estate values and tax revenues during the 1988-1991 Japanese Bubble, coincided with the Kahuku community's push towards owning a home of their own. Community leaders worked with public officials and the landowner to overcome the infrastructure deficiencies in the area (flooding, water, sewage) as well as the other impediments to affordable housing (land cost, infrastructure cost, construction and take out financing, mortgage qualification of low-income households).

Ultimately, the Kahuku Housing Corporation community association formed a non-profit entity (KVA or Kahuku Village Association) that built four phases of housing for the residents that was affordable, plus a couple other affordable projects, including one for the elderly (as there was an aging population).

But they were unable to complete the process of building out for the last group of plantation workers (about 100) on Phase Five, due to a number of issues, including dissent in the community (which led to a change in the leadership of KVA), a drying up of financing, a flood and a change in market and economic conditions.

All of these conditions exist going into the current development plan, but in varying degrees:

- On the economic side, the economy is slipping into a recession, so the aforementioned concerns of lack of financing on both the public and the private sides are a concern.
- On the social side, the majority of specific community – those living in Village Five – are supporting the current development plan, but the minority opposing it has been very vocal, and those in the broader community of Koolauloa have joined with them to stop the market rate home site sales component of the plan.

IV. DEMOGRAPHICS OF THE AREA

Overview:

Here, we examine the demographics of the residents in the area, both within a 1 mile radius (encompassing all of Kahuku) and within a 15 mile radius (encompassing most of Koolauloa, as well as portions of the North Shore and Waiahua).

In comparing the smaller vs. the larger areas, we foresee there being a distinction between the North Shore community (from Sunset Beach through Haleiwa) and the Kahuku plus East Shore one. Historically, the North Shore was not a significant sized community, insofar as it had little productive capacity (no large flat areas of cultivatable land, as the case with Wailua and Kahuku) other than pasture.

It was only with the advent of modern day surfing that an economic activity grew up, capable of support more than the few families who grew flowers or herded cattle. That activity centered on surfboard manufacture (a cottage industry) and performance surfing (the advent of which began around 1968 with local surfers receiving sponsorship money from large Californian surfboard and clothing companies).

Socially, surfers were the primary constituency of the north shore, and their population was subject to annual migrations for the winter waves, with an intense focus the beauty and power of the ocean. Overtime, more and more of these predominantly Caucasian immigrants fleeing the urbanization of the coastal California settled on the North Shore, doing whatever it took to subsist. Today, those immigrants have largely gentrified the community, and see themselves as defenders of the country lifestyle.

Needless to say, this lifestyle of living for the waves was antithetical to the plantation workforce, to say nothing of the language, cultural, educational and affluence differences.

A similar distinction, with different elements, exists between Kahuku and Laie. Although they are much closer to one another, they are separated by religious, racial and lifestyle differences. The extent of this is interesting, with many living on the border between the two, the stream emptying into Laie Bay, but few crossing over. This has changed overtime, as there has been immigration from Laie into Kahuku, as the Laie community has outgrown their boundaries and the Kahuku community has created affordable housing.

Indeed, this proposed project could only help this migration and solve the affordable housing problem.

Data Tables and Trends

Turning now to the actual demographics, the Kahuku Village population is much more Hawaiian (16% difference) and much more mixed (10% difference) than the broader community. It has fewer Caucasians, Asians or Blacks. This then argues for paying close attention to the concerns of Hawaiians and Pacific Islanders.

2008 ESTIMATED POPULATION BY SINGLE RACE

	1 Mile	%	15 Miles	%
Two or More Races	578	34%	18,928	24%
Native Hawaiian and Other Pacific Islander Alone	434	26%	7,775	10%
Asian Alone	403	24%	23,452	29%
White Alone	260	15%	22,726	28%
Some Other Race Alone	13	1%	2,091	3%
Black or African American Alone	7	0%	4,457	6%

Of note is the preponderance of Filipinos and Japanese constituencies in the community. Indeed, many in the community have noted that the largest ethnic constituency in the Kahuku Village Five is Filipino.

2008 ESTIMATED POPULATION BY ASIANS ONLY

	1 Mile	%	15 Miles	%
Filipino	211	52%	10,368	44%
Japanese	86	21%	8,661	37%
Two or more Asian categories	38	9%	1,936	8%
Laotian	31	8%	177	1%
Chinese, except Taiwanese	28	7%	1,193	5%

Additionally, the presence of Laotians in the community is a recent feature, obviously due to the widespread availability of farmland.

Now, we examine the labor force, the population and the housing stock, in turn.

Labor Force

1. Employment by Occupation and Industry

Services are the number one employer in the immediate Kahuku Village area, followed by Sales and Office Jobs. This differs from the broader area, probably because Kahuku's proximity to hotels in Turtle Bay and Laie drives this occupation, while the North

2008 ESTIMATED CIVILIAN EMPLOYED 16 YEARS+

	1 Mile	%	15 Miles	%
Service	205	32%	6,045	19%
Sales and Office	147	23%	7,380	24%
Professional and Related Occupations	96	15%	6,874	22%
Construction, Extraction and Maintenance	74	12%	3,133	10%
Management, Business, and Financial Operations	58	9%	3,811	12%
Production, Transportation and Material Moving	48	7%	3,132	10%
Farming, Fishing, and Forestry	15	2%	632	2%
		100%		100%

Also, there are a smaller number of for-profit workers, and a larger one of the non-profit (church) and government workers. The government work force is larger than the outside community, because when the plantation went under, the state and city made an effort to hire these workers.

2008 ESTIMATED CIVILIAN EMPLOYED 16 YEARS+

Description	1 Mile	%	15 Miles	%
For-Profit Private Workers	360	56%	18,734	60%
Non-Profit Private Workers	100	16%	2,833	9%
State Government Workers	78	12%	3,368	11%
Self-Emp Workers	40	6%	1,779	6%
Local Government Workers	32	5%	1,240	4%
Federal Government Workers	32	5%	3,097	10%
Unpaid Family Workers	1	0%	58	0%

Finally, this table shows the obvious, that there are a lot more farmers in the area than elsewhere.

2008 ESTIMATED OCCUPATIONAL STATUS

	1 Mile	%	15 Miles	%
Blue Collar	121	19%	6,265	20%
White Collar	296	46%	17,863	57%
Service and Farm	226	35%	6,980	22%

Also, there are more blue than white collar workers in the Kahuku area than elsewhere (which also has something to do with the long commute to the centers of commercial activities).

2008 ESTIMATED COMMUTES TO WORK FOR KAHUKU RESIDENTS

	1 Mile	%	15 Miles	%
Less than 15 Minutes	279	47%	11,884	33%
15 - 29 Minutes	98	16%	8,058	22%
30 - 44 Minutes	37	6%	6,575	18%
45 - 59 Minutes	52	9%	4,365	12%
60 or more Minutes	135	23%	5,267	15%

2. Wages & Income

In general, the Kahuku area demographics show that their incomes are lower than those in the wider community.

Description	2008 ESTIMATED HOUSEHOLD INCOME DATA BY PRICE RANGES		%
	1 Mile	15 Miles	
Income Less than \$15,000	66	2,035	8.5%
Income \$15,000 - \$24,999	49	1,882	7.8%
Income \$25,000 - \$34,999	31	2,329	9.7%
Income \$35,000 - \$49,999	57	3,243	13.5%
Income \$50,000 - \$74,999	95	4,758	19.8%
Income \$75,000 - \$99,999	60	3,351	13.9%
Income \$100,000 - \$149,999	39	4,026	16.8%
Income \$150,000 - \$249,999	15	2,049	8.5%
Income \$250,000 - \$499,999	4	322	1.3%
Income \$500,000 and more	0	40	0.2%

This same trend is shown via different data.

2008 ESTIMATED HOUSEHOLD INCOME AVERAGES

Description	1 Mile		15 Miles	
	2008	2013	2008	2013
2008 Est. Average Household Income	\$60,209	\$77,818		
2008 Est. Median Household Income	\$51,432	\$63,285		
2008 Est. Per Capita Income	\$15,488	\$24,404		

This is a projection of income averages produced by Claritas, a leading census data compiler and forecaster.

ESTIMATED HOUSEHOLD AVERAGE INCOME TRENDS

Description	2000-2008		2008-2013	
	2000	2013	Change, pa	Change, pa
Average Household Income (\$)	\$49,541	\$71,572	3.0%	3.8%
Median Household Income (\$)	\$40,921	\$58,816	3.2%	2.9%
Per Capita Income	\$12,470	\$18,558	3.0%	4.0%

Interestingly, it shows a slowdown in the median income over the next five years (relative to the last 8 years) but an increase in the average income. This indicates that greater affluence is in store for a few people (and/or more affluent people will be moving into the area) (a good bet, given the quality of life on this side of the island).

3. Employment Forecasts

The following table describes the projected job growth over the 2000-2030 period, which was published by the City's Department of Planning as their guidelines for planning by the area.

JOB GROWTH TREND ON OAHU BY DPA 2000-2010

DPA	2000	2030	Change	2000 Share	2030 Share
Primary Urban Centr	386,053	420,523	54,470	75.4%	68.2%
Ewa	15,854	67,182	51,328	3.3%	10.9%
Central Oahu	44,841	67,373	22,532	9.2%	10.9%
East Honolulu	6,477	6,690	213	1.3%	1.1%
Koolauapoko	35,874	37,300	1,426	7.4%	6.0%
Ko'olau Loa	5,800	6,755	955	1.2%	1.1%
North Shore	4,008	4,201	193	0.8%	0.7%
Waianae	6,888	6,849	-39	1.4%	1.1%
Total	485,795	616,873	131,078	100%	100%

The Development Plan Area (DPA) of this project, Koolauloa, does not have much growth anticipated. A further breakdown is described in the table below:

JOB GROWTH TREND ON OAHU BY DPA 2000-2010

	2000	2030	Change, 30 Yr	Change, p.a.
Military	33	33	0	0
Government	134	147	13	0
Industrial	103	103	0	0
Service	3,777	4,472	695	23
Retail	1,005	1,147	142	5
Other	748	853	105	4
Koolauloa	5,800	6,755	955	32

In sum, the data is projecting little or no job growth in the future. This is reflective of the fact that farming is not viable, and that resort development is unlikely. To be sure, the recent activity over at Turtle Bay makes this forecast suspect, but the sentiment against the resort in the North Shore and wider community is consistent with this prediction. In any event, it looks like the only sources of growing employment in the area would be public ones, plus working for the non-profit church, plus some form of self-employment (distance workers, craftsmen, etc.).

Resident Population & Housing

- **Population Growth**

The following table describes the different Development Plan Areas on Oahu, and what the City Department of Planning believes the growth in their population will be from 2000-2010:

DPA	2000	2010	Change	2000 Share	2010 Share
PUC	419,333	440,979	21,646	47.9%	46.3%
Ewa	68,696	97,111	28,415	7.8%	10.2%
Central Oahu	148,208	163,152	14,944	16.9%	17.1%
East Honolulu	46,735	52,387	5,652	5.3%	5.5%
Koolauopoko	117,999	119,852	1,853	13.5%	12.6%
Ko'iaiu Loa	14,546	15,013	467	1.7%	1.6%
North Shore	18,360	18,987	607	2.1%	2.0%
Waianae	42,259	45,168	2,909	4.8%	4.7%
Total	876,156	952,649	76,493	100%	100%

It shows that the population of the island is moving out of the PUC (Primary Urban Core) and to Ewa, Central and East Honolulu. With regard to Koolauloa (the DPA of Kahuku), the population growth is extremely small, with more out migration than immigration. This trend remains in effect in their 2020 and 2030 projections. Indeed, they have 47 people moving into the area per annum 2000-2010, and 81 people 2010-2020. This 1.6% share of population is not overwhelming and will not cause a large number of homes to be planned for the area.

In the shorter term, a different demographic service, Claritas, used 2000 Census data to project population growth in Kahuku over the next five years.

	2000	2008	2000-2008	2013	2008-2013
Population	2,137	1,698	-21%	1,720	1%
Households	521	416	-20%	427	3%
Families	410	329	-20%	337	2%
Housing Units	539	431	-20%	443	3%

Interestingly, and importantly, the immediate community shrank significantly over the last 8 years. This coincides with the top of the last real estate cycle. While this doesn't seem to be relevant, it is the case that when the real estate market is strong, then housing projects, particularly affordable ones, are initiated. Therefore, it seems that in the absence over the last 8 years or so of affordable housing projects in Kahuku, the population shrank (and wasn't replaced by Laie or other immigrants, say from the North Shore).

- **Immigration**

While we found no published data concerning immigration to the specific community, we found evidence earlier of Laotians in the community coming to farm. We also have anecdotal evidence that a number of Laie families moved into Kahuku to take advantage of the affordable housing stock there.

- **Housing Levels and Costs**

OVERALL HOUSING STOCK: The following table lays out the housing stock on the island by DPAs, and it shows that 54.4% was situated within the PUC in 2000, but by 2010 that became 52.8%. For Koolauloa, that percentage was very low, 1.4%, the lowest on the island. This is because there are so few jobs slated for growth in this area. As a result, most of these residents are going to continue to be commuting long distances for employment.

	2000	2010	2020	2000	2010
PUC	171,773	184,310	199,696	54.4%	52.8%
Ewa	20,797	29,989	43,639	6.6%	8.6%
Central Oahu	45,878	51,627	58,780	14.5%	14.8%
East Honolulu	17,099	19,523	20,191	5.4%	5.6%
Koolauopoko	36,964	38,258	39,278	11.7%	11.0%
Ko'iaiu Loa	4,473	4,709	5,122	1.4%	1.3%
North Shore	6,648	6,998	7,608	2.1%	2.0%
Waianae	12,356	13,456	15,003	3.9%	3.9%
Totals	315,988	348,870	389,317	100%	100%

Kahuku has more owner occupants, and a longer residency on average (13 years vs. 8 years).

	1 Mile	%	15 Miles	%
Owner Occupied	232	56%	12,729	53%
Renter Occupied	184	44%	11,304	47%
Avg Length of Residence	13		8	

This might be due to the fact that some residents, the current village five owners particularly, do not relocate easily.

As seen below, the value of the housing stock in the area is lower than the surrounding one. Part of this is due to the area being further from town.

ACCESSED VALUE OF HOUSING

	1 Mile	%	15 Miles	%
Value Less than \$20,000	5	2%	20	0%
Value \$100,000 - \$149,999	0	0%	160	1%
Value \$150,000 - \$199,999	9	4%	415	3%
Value \$200,000 - \$299,999	30	13%	1,490	12%
Value \$300,000 - \$399,999	47	20%	2,055	16%
Value \$400,000 - \$499,999	52	22%	2,156	17%
Value \$500,000 - \$749,999	67	29%	4,208	33%
Value \$750,000 - \$999,999	16	7%	1,438	11%
Value \$1,000,000 or more	4	2%	630	5%
2008 Est. Median Housing Value	\$445,283		\$495,851	

Finally, the description of the age of area's housing shows that there was a lot of activity right after the plantation closed, as well as the ten years following, but noting much since then.

HOUSING AGE SEGMENTS

	1 Mile	%	15 Miles	%
Housing Units Built 1999 to 2008	3	1%	4,638	17%
Housing Unit Built 1995 to 1998	0	0%	2,119	8%
Housing Unit Built 1990 to 1994	21	5%	3,124	12%
Housing Unit Built 1980 to 1989	221	51%	2,844	11%
Housing Unit Built 1970 to 1979	71	16%	3,861	14%
Housing Unit Built 1960 to 1969	10	2%	3,486	13%
Housing Unit Built 1950 to 1959	17	4%	3,360	13%
Housing Unit Built 1940 to 1949	31	7%	2,106	8%
Housing Unit Built 1939 or Earlier	56	13%	1,265	5%
Median Year Structure Built **	1981		1978	

In contrast, it shows that there has been a lot of activity (much more) recently in the surrounding community. This underscores the difficulty of building homes in this, a rural area, and Kahuku's dependency on affordable housing development.

- Generally speaking, most of Oahu's single-family housing stock is old:
- 15% of the total single family housing stock was built before 1970
 - 44% of it was built between 1970-1979,
 - 16% was built between 1980-1989, and,
 - 15% was built between 1990-1999.
- Particular to the northeast corner of the island (TMK Zone 5):
- Only 19% of the housing was built in the last 17 years;
 - Only 29% have a lot that's over 10,000 sf
 - Only 39% have a house over 1,250 sf
 - Less than 50% of single-family dwellers are owner-occupants.

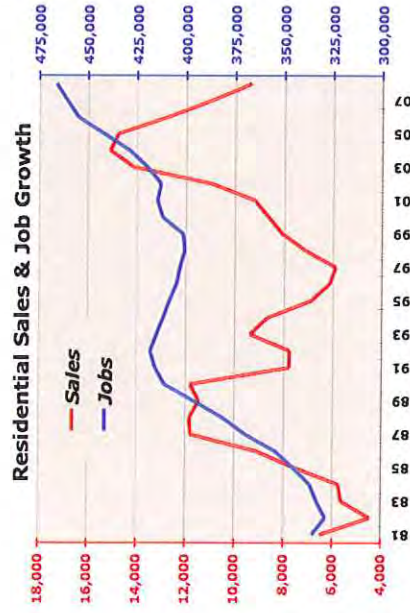
What this says is that the project is entering a market characterized by older units, units that are small in size, and units that are not very highly valued.

Affordable Housing Demand

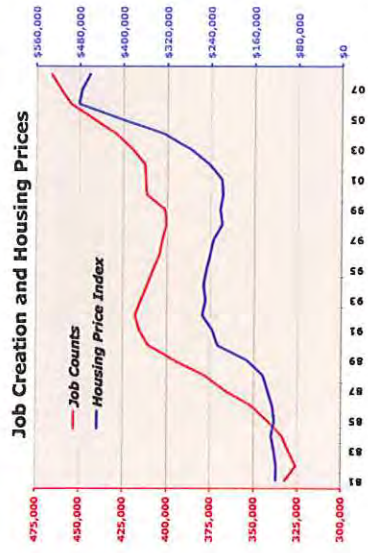
Simply put, an economic expansion fuels the lack of affordably housing. All the new job creation and income stimulation gets funneled into a residential boom, pushing the prices of homes out of many households' ability to purchase. What is then needed is additional supply to meet the additional demand, so most local public agencies then try to act to increase the supply of housing.

Unfortunately, since costs rise in an economic expansion, it is very hard to build a house for less than they can sell it for 'affordably,' so the housing industry has to be forcefully encouraged into subsidizing these politically mandated 'affordable' homes.

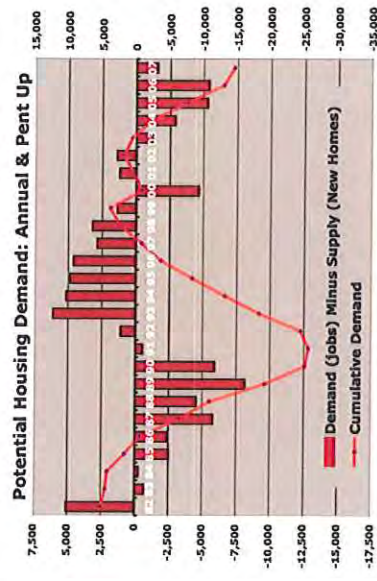
On the supply side, given the extremely long time it takes to entitle residential development, is This can be seen in the RESIDENTIAL SALES & JOB GROWTH Chart, where an abundance of jobs gives support for a strong housing market.



Another way to see this is in the JOB CREATION AND HOUSING PRICES Chart: a decline in prices has been caused by a decrease in job growth, and vice versa. It hasn't happened yet at this point in the cycle, but with the Aloha and ATA going out of business, job growth will turn negative to go with the downturn in prices.



Finally, when there are not enough homes available (either because of strong job creation or low supply) in any one year, then the residual of that keeps looking for a home the following year. We see that as a pent-up demand, and it rolls over year after year, until supply (sales) balances demand (jobs). This is demonstrated in the HOUSING DEMAND: ANNUAL & PENT UP chart (with the annual demand shown as purple bars, and the cumulative of that, shown as the red line).



V. COMMUNITY ISSUES AND PERCEIVED IMPACTS

Purpose and Methods

This section examines the opportunities and challenges that the proposed project presents to the community, both the specific Kahuku one, and the larger Koolauloa one.

Background issues and concerns

Housing is the most immediate as well as the core issue and concern here for those living in Kahuku Village Five (KV5): living in their own house at a cost that they can afford.

The other ones are the community infrastructure, cost of living, continuity of the community, the stability of their lifestyle, access to the beach and (in varying degrees) little or no housing on the beach.

For the rest of Kahuku, housing is also important, but since they already are housed, their concerns here are not vital, and more peripheral (save for those who qualify and who intend to apply for these homes).

Generally speaking, they would like to see their former neighbors housed, but more importantly, they would like to have things that benefit them directly, like beach access. Additionally, they would like to see more community-wide amenities (a restoration of Adams Field, upgrading the golf course, parks on the beach, etc.). They are also sensitive to having houses on the beach, inasmuch as it retards their access, impedes their views and gives them a sense of separation (outsiders in the neighborhood, rich vs. poor, etc.).

For the rest of the area, they would like to enjoy all of the benefits mentioned above, but what is most important to them is beach access and little or no houses on the beach. They are much less willing to compromise the beach front houses in order to obtain affordable housing for their neighbors (unless they, too, qualify and intend to apply).

Another concern of the wider community is what happens to the golf course. For those who use it regularly, they hope this continues. For those who don't, many like the idea of open space, and would support what ever keeps it 'natural' and not support uses that involve 'landscapes' or 'activities' that contravene the natural (private housing, private golf, etc.).

A more underground concern is whether the qualifying families of Village Five will receive a financial windfall, under this plan. To those receiving this potential, this is a positive. But to those not receiving this benefit, this can be less a positive and (potentially) a negative, inasmuch as they could be envious.

They also see it as due to them, as bona fide residents of the Village (which is the current criteria) and as the other families in the Kahuku community received the same benefit (affordable housing) in an earlier time. Finally, some have said that these families were the most in need of affordable housing, inasmuch as they did not have the financial

wherewithal to take advantage of the earlier offerings of affordable housing made to them in Phases 1-4.

Another underground, and less universal, concern would be that this development would bring outsiders into the community, both affluent ones and low-income ones. In both cases, there is the discomfort of having to accept someone new and unfamiliar as a neighbor, but also the envy of those who could afford a big house on the beach, as well as envy for those who got a house in the village at below cost (and thus could sell it at a large profit). A similar kind of envy has been observed on the part of locals who are not part of the Kahuku Village Five community – they acknowledge that they wish they could be able to enjoy the windfall they see ahead for that community.

Another concern is that the current villagers are being used by outsiders as pawns to make money and being taken for a ride and/or will be left in the lurch in the future. This concern underplays the expense of upgrading the community's infrastructure and overplays the amount of the surplus money left over after the sale of the beachfront and the contribution to infrastructure.

A similar concern is that these actions preclude other ones that could redound to the benefit of the specific community, as well as the general community, such as flood mitigation and golf course development

Note: these are concerns, some of which are relevant, accurate, significant, universal and high-minded. Equally, some of these concerns are irrelevant, inaccurate, insignificant, selfish and/or mean-spirited. Similarly, some of these concerns are realistic – in particular, the cost of providing urban standard infrastructure will be extremely high – while others are idealistic – that there will be a class war between the haves (living on the golf course) and the have-nots.

Project-specific issues related to homeownership and affordable housing

Since the purpose of this development is the provision of homeownership at an affordable price to the current KV5 tenants and those who qualify from the other villages (and then, once satisfied, the rest of the world), there are no issues with that. The issues there are relate to the continuing cost of homeownership, and the trades required (giving permission to the developer to sell beachfront and agricultural lots at a market price).

Thus, the community is being asked to let the developer create a subsidy that would fund an number of improvements which will go far in providing affordable homeownership to a group of people who have waited over 15 years.

One of the issues for the specific and the broader community is that this development will result in higher taxes to homeowners in the area.

This is based on the unpleasant experience amongst the residents of Kahuku Village (and other home owners, island wide) of seeing their taxes go dramatically higher in a short period of time (2001+). According to one resident, his taxes were at a rate of \$100/year for at least the first 14 years that he owned the house. Right now, he said he has to pay \$944 a year, which is very significant relative to earlier times and to his

current financial capacity. It should be noted that he is retired, and on a pension from the City & County. (Note: As analyzed in a subsequent section, 'Comments and Conclusions,' this is an issue not of the developer's making, nor will it materialize at the inception of the development).

Project-specific issues related to community infrastructure and amenities (linkages) (common areas)

Part and parcel to free and clear homeownership to the residents of KV5, there are issues of infrastructure and amenities that have a direct bearing on the feasibility of the ownership model, as presented in this development plan (or, for that matter, any residential, commercial or industrial development plan).

These are:

- Area flood mitigation.
- Non-conforming community streets,
- Non-conforming community sewage,
- Non-conforming community water and
- Potential DOT requirements for street linkage with Kamehameha highway.

To be specific, the community concern with the flood mitigation is the fear of flooding in the event of another major rainfall event, that water will jump the stream bed and come across Adams Field. A further concern is that a cost will be mandated to bring the homes up to standard, i.e., putting them up on a post and pier foundation, or moving them to another lot. All of this will cost money, and that is another concern, in light of the fact that many of the current residents are not particularly affluent and/or they are on a fixed (read low) income.

The community concern with the streets is that they are just dirt roads, with no curbs or drains. The community sewage infrastructure is cesspool based. And the community water is delivered via a system of antiquated pipes made of substandard (read leaky) materials. Furthermore, the system is non-standard, inasmuch as the network accesses the houses through their backyards and are often not buried very deeply. Finally, there is a concern that there will be a community requirement to pay for street and other transit-oriented improvements where their subdivision street enters and exits Kamehameha Highway.

Again, the overall concern is that the sum of these costs will so outweigh the sum (potential) of the revenues through the sale of the market rate lots that the developer will make the rational decision that this is an uneconomical project (not unlike what happened over at Late, with the Mormon Church's decision not to proceed with their housing development).

There are a number of community amenities included in the current development plan that are NOT an issue, for the simple reason that they will be providing the community with substantial benefits. These amenities include:

- The creation of two public beach parks, on either side of the golf course;
- The donation of the land in and around the graveyard at Seaview.

Project-specific issues related to shoreline and marine activities

The issues here are the perceived loss of a sense of the 'natural state' of the beach through the construction of houses along the shoreline of the golf course. This impact is almost exclusively a visual one, and would be most intensely experienced by those on the beach or on the adjacent holes on Kahuku golf course (given the strong prevailing wind, this condition of beach houses would not readily affect the other senses: hearing, taste, smell or touch).

Additional to this would be the sense of being cut off from the beach, or having a reduced access (which would not be the case, given the provision of two beach parks, the right-of-ways created every so many houses) (and needs to be seen in light of the fact that there is absolutely no beach access now, save for the inhabitants of KV5).

Additional to this would be material changes to the landscape and the marine ecology caused by this construction and habitation, such as changing of the direction of the flow of sand or the stockpiling of beach related artifacts and debris such as shells and driftwood (these issues are cast in the negative, but there is potential positives, such as responsible shoreline behavior by the beach community, such as encouraging the flora and fauna in the area).

As for marine activities, these primarily involve a fear of the elimination or reduction of those activities. Given this specific shoreline, the most common activities are shoreline fishing and beach combing, with aquatic based ones taking a distant second given the adversity of the prevailing weather – the strong waves and currents (particularly in the winter, but also during trade wind conditions and full and new moon tides). These concerns appear to be groundless, as the presence or absence of beach houses doesn't directly have an impact (except in an emergency, when outside assistance is required – then beach inhabitants are a positive).

Project-specific Issues to the Broader Community

Issues specific to the broader community center firstly upon the allowance of homes on this shoreline, which is widely frowned upon.

Conceptually, their belief is that the shoreline is a public good, and that this public good (i.e., a good shoreline) is one that is best left in it's natural state, specifically that it be unencumbered by man-made structures (particularly private ones).

This sentiment holds strong amongst both indigenous and non-indigenous people (although the indigenous people seem to be more concerned with the practice of getting to the beach and doing things on it, while the non-indigenous people are concerned more with the appearance of the beach, and the principle of openness). Both are concerned with the ecology and the environment (though, mostly passive).

The broader community widely favors the village improvement component of the development plan, particularly since it improves housing affordability, upgrades the

access to the beach and neighborhood amenities, and preserves a 'country' lifestyle. This last one is most likely to be a primary concern, as it is the centerpiece of many anti-development campaigns on the North Shore. A word here about the

In a smaller, specific context, what happens to the golf course is important to villagers and outsiders alike. The current plan is to improve it with a club house, and then turn it over to a responsible organization that would run it cost effectively for the benefit of the community.

Reaction to Project Benefits and Intention

The to-date reaction on the part of those directly affected by the development plan has been overwhelmingly positive, given that it's stated intention is to move directly towards enabling the residents to obtain ownership of their lot at a very affordable price. As many residents are elderly and somewhat quiet (as rural country folk are, particularly towards people from outside their neighborhood), the source of this perception comes from the tally of the number of those who signed (or said they intended to sign) their letter of intent to enter an agreement to purchase their lot: over 75% signed their letters, with another 10% giving their support verbally.

The reaction of the remainder of the current residents ranges from neutral (or 'wait-and-see') to primarily negative. The intention of the wait-and-see constituency might be to postpone their decision in order to get more information or to avoid hurting the feelings of those in their community with a contrary opinion.

The constituency that is decidedly negative towards this package of benefits intends to fight either for a higher level of benefits, or to scuttle the plans of this developer in hopes that a more acceptable (read, generous) one will appear once the current development plan (and/or developer) withdraws from this fight.

The reaction on the part of the broader community (comprising mainly of the more active members, the community activists, neighborhood board) is generally unfavorable, as evidenced by the discussions of the development by the members of the neighborhood board. Indeed, late last year they voted 6-0-2 (2 abstained) on a general motion to support the communities need for affordable housing but also to preserve and protect Ko'olauloa shoreline from further development. In other words, they support the benefits to the community but deny them the wherewithal to achieve them (particularly in light of the fact that the City, the State, the nation or the current or past landowner were unable to fund that benefit)

Another reaction is that the perception that the landowner is manipulating the political process to generate a windfall.

There was a plan that could have generated hundreds of units by putting them in the golf course. Further, if you go through an entitlement process, with time, energy, money and shame (maybe not relevant), the area could be rezoned to allow for many more units, or more expensive, high-density golf course frontage development. But as it stands, they are encumbering the land in a way that prevents further development.

It bears remembering the cost not only of the infrastructure, but also the development costs of planning, of carrying costs,

Effects on Adjacent Parcels

The overall effect of this development plan would be to stabilize the area, inasmuch as it stops the decay of the neighborhood, it grows the size of the community by putting more families in homes and into the area. Furthermore, most of the adjacent parcels are either empty, in public (state park and golf course) or religious/institutional hands (Catholic and Mormon, mainly), mitigating the potential effect to a very large degree.

The state parcel across the Malaekahana Stream is parkland, so it's hard to imagine any significant or negative effect on those lands. The parcel makai of that, Malaekahana Point, is now in private hands and their intent is to maintain the old family home and horse facilities. It is hard to imagine that it would suffer by having a more populous neighborhood next door to it, unless it became a source of vandalism or vagrancy. The parcels across Kamehameha Highway are primarily in public or institutional hands (the largest is owned by the Catholic Church, plus the other two church sites on the same side of Kamehameha Highway, abutting the development. Again, this development could conceivably increase the numbers of their congregations, at the least.

Finally, the golf course is located on the ocean side of this development, and it might suffer some vandalism if the additions to the community have children or adolescents of this kind. On the other hand, like the churches, the development might grow the number of golf course clients.

Per the other adjacent, but not abutting parcels, the small commercial area right beyond the Mormon Church site on Puuluana Road would definitely see some strong and continuing benefits in terms of more clients and more revenues.

The hospital, as well as the sugar mill retail area, also stand to gain, if and when more families move into the area.

VI. ADDITIONAL ANALYSIS, CONCLUSIONS AND POTENTIAL MITIGATIONS

Comparable Developments and Related Social Impacts

Comparable Developments:

First of all, there are no comparable developments that involve upgrading the housing of a decommissioned plantation coupled with the developing beachfront housing. Indeed, this is the first time the two have been mixed.

That said, there are several similar instances where affordable housing initiatives were enabled via the profits gained in the sale of market rate housing: to wit, affordable projects in Mililani, Kapolei, Ewa-By-Gentry and Waikale (which were subsidized by the landowner – in this case, Castle and Cooke, Campbell Estate, Gentry Homes and Amfac). Indeed, the overwhelming preponderance of the affordable housing production during the last real estate cycle was predicated on the implicit trade-off of residential zoning being granted to the landowner in return for the provision of subsidized affordable housing (that ran with the land).

At that time, there was some public outcry against the high price of homes (which then supported the affordable housing policy initiatives) and it was directed in good measure towards builders, who were believed to be making excessive profits (which was a belief that had but a short life, as it dissipated quickly during the subsequent economic downturn, the hardship of which caused very widespread layoffs in the construction and development sectors).

Secondly, there have been affordable housing developments that specifically targeted plantation workers on old sugar plantation land, and they were only successful when the landowner donated the land (in this case, Campbell Estate, but in other cases, it was Amfac, Gentry, Castle & Cooke, etc. who gave land for affordable housing), and the public agencies (in this case, primarily the City of Honolulu) provided vital support in terms of clearing the physical and regulatory impediments, pooling resources (or bringing them to bear, such as twisting arms of developers). The most comparable development here is the one in Ewa, where the same landowner as Kahuku did a number of similar things to help the community.

The pattern of that endeavor is similar to this, inasmuch as there initially was a lot of homes built under the affordable guidelines, but that they were unable to convert all of the old homes (all of the old villages) when the market turned down, when public money ran out, when lawsuits and community dissension impeded the process or neutralized support groups or mechanisms.

Finally, there are very few affordable projects in a rural area (where the density is less intense, and thus more costly to do development on. Most recently, there was one that the Mormon Church (Hawaii Reserves Inc., or HR) decided not to do, after spending 5 years in planning and spending a lot of money on (they purchased the Malaekahana 663 acres, for just over \$10 million and another 227 acres in Malaekahana from Kuilima

Resort Corp. for \$3.95 million). As this decision and the underlying issues relate to those of this development, we examine them here.

In the first place, the sponsor was well motivated to proceed on creating new housing (and indeed) for the following reasons:

- There is a housing shortage in the Laie neighborhood, as the supply is overwhelmed by the demand coming from the large number of people who work, study and pray in the area. There is ample evidence of overcrowding in the current housing stock, with several generations and/or several different families living under one roof. This is the same with KV5 and the other village areas in Kahuku, except that the constituency in Laie was not retiree or plantation housing, but worker housing.
- On top of that, a substantial number of houses in and around the college are at risk of being flooded in the event of a major downpour. This is because most of these houses are at a level that is lower than what is along the beach and Kamehameha Highway, thus trapping the water from going out into the ocean (or, as one old timer put it, they are at the bottom of the saucer). While there has been substantial flood mitigation efforts on the streams on either side of the community, the geography is such that there is no direct access into the ocean from of the college community. The problem is that Laie Point, the beach buildup and the commercial development stop the water from spilling into the sea (the blockage of the 'bottomless pit' area is the case in point).

Given that, plus the closeness in the community with the church, the decision not to proceed was due to primarily due to the high cost vs. the low return, plus the length of time necessary to entitle, the moderate community support, and current market and political conditions. In particular, HRI said zoning had to be changed, a three-step process that could take 5-10 years.

The cost of the land and infrastructure was estimated at \$200 million, or more than \$363,000 per house for the 550 homes. Additional to that, the house construction would add another \$150,000+ (1,000 sf at \$125/sf for attached housing, or \$200/sf for detached housing). As the group HRI was targeting were families earning 140% of Area Median Income, or about \$72,000 annually, it became clear they would have to struggle in order to afford it (plus, it bears remembering that there is a cost to administer this, since affordable housing isn't market housing).

They said they tried circumventing the high cost by proposing cheaper, "greener" ways to build (no gutters or sidewalks, commonplace in rural areas), but the city balked, saying they would have to wait for an ordinance change, a very long process. HFD&C, the state agency tasked with spurring affordable housing, noted that

Other negatives:

- HRI said there was insufficient community support ("somewhat moderate," meaning not enough of them lobbied the public agencies for changes to help the project);
- Developing in a rural community where density is low and construction costs are higher;
- HRI's target market of 140% AMI was problematic because of a lack of state and

federal financial incentives.

By this, we conclude that developing affordable housing is prohibitively difficult, even when the developer has, as HRI does, a viable business model with which they can subsidize the costs in order to obtain the benefits for the community. In this case, the Polynesian Cultural Center is highly profitable (particularly in terms of low labor costs, since students exchange their work there in return for an education).

Related Social Impacts:

There would be a beneficial social impact to the immediate tenants of knowing that they would be able to purchase their lot, thereby securing their future. This would lessen tensions and frustrations amongst this group. There would be an offsetting concern with funding their future.

The development plan would reduce the number of empty lots and houses, thereby reducing the potential for vagrancy and crime in the area.

The development would bring families into the community, with the likelihood that those children would attend the local schools. This could increase school attendance, although it is more likely that these new residents would be from the area, and therefore already in attendance. And since the school would be well within walking distance, there would be no additional burden on the traffic into and out of school (in fact, it will probably decline, if these new residents are area residents, moving closer in to Kahuku).

Affordable Housing Requirement

Primarily, this is an affordable housing project, with only 30 dwelling sites being proposed for sale at market rates, against over 100 dwelling sites and units being proposed for sale at affordable (or subsidized) rates. This ratio of the affordable units relative to the market units is overwhelmingly and uncharacteristically, in favor of the community. Thus, we see no need to examine this here, as it is covered exhaustively in both earlier and later sections.

VII. CONSULTANT COMMENTS AND CONCLUSIONS

ECONOMIC COMMENTS:

My thoughts about the development plan are that it addresses the economic and physical problems of the KV5 (leasehold, substandard infrastructure) forthrightly, and attempts to remedy this by selling a few home sites on the beach. Given the substantial magnitude of the costs, both upfront and continuing, they could do no less than tap a source of money that was substantial, available and immediate (better yet, was internally generated, as opposed to raising it from lenders, which is both expensive and, currently, impossible to obtain). Under current circumstances, the sale of home sites on the beach best fits this criteria.

ALTERNATIVE FUNDING SOURCES: There are numerous public sources of funding, but they are available to other developers and the specifics of this project would not compete successfully against those competing calls for public money for affordable housing. (72 existing units, tremendous infrastructure costs, substandard housing, very low income capacity of tenants).

In addition, even if successful, this is a very long process, taking more than a couple years, time in which more families may move away or houses fall down (flood, fire, etc.). Moreover, these specific funds dry up and disappear when the general finances of the public sector run down, as happens in a recession (which happened in the mid-90s, and is starting to happen now).

There are also numerous sources of private money, but most of them demand a high return, as well as a quick return. Indeed, there is a relationship between reward and risk, whereby the cost of money is tied to the level of risk. And this project would be costly, if a developer were to go to the capital market for funding, as it has a high risk profile, thanks to the difficulty of developing in Hawaii (slow bureaucracy, virulent anti-developer sentiments, omnipresence in the specific community of the NIMBY attitude, highly restrictive land use ordinances, and so on) and to the floodplain and infrastructure situation.

The only way around this high risk is to produce a high reward, which is something that is conceivable under certain circumstances. For instance, if one was to increase the density in and around the golf course, i.e., increase the total number of market units from the 30 home sites and Ag lots to 200+ units. The mechanism here could be putting a large number of ocean view condominiums on the mountain side of the golf course, particularly across the Seaview section and the golf course parking lot. With some 150 units, selling at around \$700,000, one would gross about \$105 million before costs and expenses. Additionally, the golf course itself could be divided into single family homes without a view but within walking distance of the beach. This back of the envelope calculation would yield over \$110 million in gross revenue, 10% of which could be profit (using our own experience, an average of market booms and busts).

However, this would be a very lengthy process, and it potentially would 'wound, but not kill' the developer (per the words of another developer), meaning that the development

plan should ultimately prevail and development would occur, but it would be costly (note: it might not even be developed if specific legislation was prepared negating the current laws regulating said development).

Further, most local developers do not commit to such a proposition of maximizing their density, mainly due to the ill-will it engenders amongst the community (which would happen when bulldozing plantation homes to put up multistory structures). The presence of ill-will is another example of something that would 'wound but not kill.' There are many examples of developers and landowners who reversed themselves in the face of public and political pressure, most recently the state agency responsible for Kakaako in the Kakaako Makai offering, as well as the winner of that competition, A&B (note, there was specific legislation created negating this development).

On the other hand, there are developers that proceed regardless of the ill-will engendered, deeming that of a lesser consequence than obtaining the profit. A possible example of this could be the recent experience at Turtle Bay with Oaktree Capital. The announcement of their intention to pursue the maximum density allowable under the conditions agreed to by the original developer and landowner, Del Webb, engendered a community firestorm, but had little effect on them (the City deemed that agreement operable) until the governor posited condemning the site for public use (which, by the way, doesn't relieve the necessity that the state pay the owner market rates for the land they condemn). In any event, it has been our experience that such development in the face of apparent and overt public opinion is the exception, rather than the norm, and that is usually happens with a mainland developer (the historic monkey pod trees around the commercial area in Koloa on Kauai are another example).

There is another avenue a private developer could pursue to raise a lot of money efficiently, and that would be to lower the number of units for sale while raising their prices. If this can be done, this development model has the virtue of lowering the developer's profile in the public eye (and thusly reducing the potential ill-will and delays). At the same time, it would act in reducing their overall costs and expense (conceptually speaking, 10 units need less infrastructure, less overhead, less marketing, etc., than 100 units do).

However, the difficulty here in terms of KV5 comes in planning and pricing the replacement lots such that the process results in sufficient carryover (costs plus profit) to subsidize the affordable housing. For this to happen, the revenue generated by the 18 lots on the beach and the 12 ag lots on the west side would have to be replaced.

For the sake of argument, let's say these 30 market units bring in \$1 million apiece. Then, let's say there were just two big parcels, one near the tee on the 7th Hole, the other overlooking the Japanese cemetery. Finally, let's say that each of them could generate \$15 million.

This is not only a big supposition, it is a dubious one, given the price of the land. While beachfront land is among the most valuable in the state, this particular stretch of sand would have a hard time being ranked at the top of the best beaches in Hawaii. We say this since the ocean is rough and the swimming is poor, since the winds are on-shore, strong and salt-laden, and since the site does not look westward over the water and into the sunset, etc. (simply put, this is not Kawela Bay).

As there is no matching of revenues between the plan for two lots and the one for thirty, there can be no subsidy passed over to the affordable housing component of the current plan and, thus, this avenue is not available to the current developer.

Finally, there is one other development plan available to this project (but not appropriate) and that is the one successfully employed in Milliani: to build and sell market rate houses at a price high enough to cover the expense of building affordable housing. This was possible because there was a high demand for living in a master planned community that either had or was near to all the necessities: employment centers, retail and commercial outlets, recreational facilities, good schools, etc.

With no other housing model available to this developer, the only other possibility for generating a capital surplus from this land is would be in the case of natural resource exploitation, such as wind farms or solar panel arrays for generating energy, bottling salt water or mining the sand, or finding oil on the property. While the first two suggestions have some merit, they are unproven and time consuming. The second two suggestions are difficult to gain permission to do, and the last one is silly, put there only to provide context and comic relief.

In all seriousness, and in conclusion, we are of the opinion that the front end of this development plan is reasonably sound and offers the simplest and most direct path towards generating the sizeable surplus necessary for the backend component, the affordable housing development.

COSTS OF INFRASTRUCTURE: Turning now to the back end of the development plan, we note that there was a fair amount of uncertainty in the community as to the final costs of this development plan, when all is finished and done. The uncertainty specifically centers on the final costs of the infrastructure, the water, the sewer, the roads, and everything else that must be done to allow for affordable housing development to occur.

On top of that, most of the people within the KV5 neighborhood are hoping that infrastructure be done in a cost effective way (i.e., low cost, one that allows this community not only to become fee-simple homeowners, but also to continue that ownership at a reasonable cost and not be burdened by high association fees or community dues). As noted earlier, there is some concern that the infrastructure standards being applied relate more to an urban community rather than a rural one, and thus be more costly than necessary.

To be sure, these costs and conditions are serious and significant, and supercede those usually imposed on an affordable housing development. Also, to be sure, this brings with it a large measure of uncertainty... which itself calls forth a serious measure of work on the part of the developer and consultants.

If one was to describe and examine each of the components of the infrastructure challenge (and/or the components of the legal aspects of the subdivision), then this would not be a short study, nor would it be solely a socio-economic one. For that reason, we will restrict our remarks to the economics and the social impact on the community of the issue of uncertainty.

In housing development - a large-scale, expensive, multi-disciplinary, goal oriented activity - there is complexity and uncertainty. Contributing to this is the political

component, which begins with statutory regulation, but is open insofar as interpretation. On top of that, there is ongoing legislation. And then there is the political fact of taking credit.

This last statement has some relevance to the provision of affordable housing in Kahuku inasmuch as political lore has it that the level of support at the City waned at a point in time many years ago when the councilman for the area felt threatened politically by one of the point men in the community for advocating affordable housing. This situation was significantly exacerbated by the candidacy of that point man for that councilman's seat.

But the point of this bit of history is that, given the complexity and nature of the business (to say nothing of politics, with it's give-and-take), there will always be a measure of uncertainty over the costs (preliminary, final and on-going). As such, everyone touching this project and this issue of costs - the developer, his consultants, the immediate community, the various stakeholders - must perforce be willing to accept imperfect knowledge and act according to industry and other guidelines, including personal experience. And while this can be discomfoting, it is usually preferable to not moving at all.

HIGHER TAXES: Another issue, alluded to earlier, was the sense that this development will result in higher taxes to homeowners in the area (based on the unpleasant experience amongst the residents of Kahuku Village and all home owners island wide of seeing their taxes go up sharply in a short period of time).

A reasonable analysis of the recent rise in taxes would attribute this to the rise in the price of homes across the state. Indeed, the market research study showed that prices for housing has doubled over the last 3-4 years, thanks to a good economy. Thus, taxes everywhere increased, and not because of development (or specifically in this case, the redevelopment of an area where the land parcel prices are going to be offered at below market rates). In fact, the economic conditions that drove taxes higher over the last 6+ years - low interest rates, rising employment and increased income - are changing, and changing for the worst. As such, the trend in rising taxes will reverse itself, and island residents will be enjoying a lower expense.

Furthermore, there is some basis to believe that this development will lower taxes in the area - and that is because these houses will appraise at a level that is below the current area average of \$430,000+ (\$75,000 for the land, and another \$150,000, which is extremely generous, adds up to \$225,000, well under the average of \$430,000). Thus, these sales could conceivably exert pressure that pulls average home prices, and therefore taxes, downwards in the short run.

In the long run, there could be an effect that reverses this one: as people get their land, and as the area is cleaned up, then there should be individual houses being built by these new owners, and the value of those new houses should be higher than \$225,000. For example, say the new lot owners decide to spend \$300/sf for a 1,000 sf home, or \$300,000 for the house, then the whole value upon which you taxed upon would be \$375,000. While this number is some \$60,000 below the average price in Kahuku for 2007 (and thus have the effect of lowering taxes in the surrounding area, say the Hospital), it is higher than the \$225,000 mentioned earlier as the average. In this way, the taxes in Kahuku Village 5 will be pressured to go higher, as people replace their current homes with new ones.

(For more detail on the Kahuku market, see page 27 of the market research study)

This concern extends outward from the village housing a similar issue with the beachfront housing, and that is that is the expectation that the creation of ocean front home sites (and subsequent housing) will cause taxes in the area to rise.

This assumption is not a true one for the area and Village Five housing, and that is because the tax assessors take into consideration the obvious difference in the value of oceanfront and non-oceanfront property. In setting the tax assessed value for Kahuku Village 5, the city appraisers will not select the beachfront property as their comparable property, but instead look for where there are single family homes off-beach (but in the area) that are classified as 'affordable' (by virtue of the affordable housing covenants placed on these homes in the 201-H process).

Note: the assumption is true (that the sale of these home sites will raise taxes) for those homes in the area that are similar to these ones – so the beachfront homes along Laie and Malaekahana Bays will see higher taxes IF these future homes sell for prices that are higher than those on the water in Laie and Malaekahana (in fact, this is assumption that these homes will have a higher value is questionable, since the Laie and Malaekahana homes have arguably better beach conditions than this one – the water is calmer, the surf is safer, it's a wider beach, etc.).

CORRUPTION AND INSIDER DEALINGS: One particular aspect of this uncertainty that has appeared in the public discussion of this development bears mentioning here, as it can, if unchecked, become corrosive enough to scuttle an initiative or direction, to say nothing of stop a development. This is the perception that the process is unduly favoring a specific party or special interest over the group or public. The specific here was the accusations of payoffs, as well as that of favoritism in the awarding of service or other contracts.

The comment here is that one should not act on accusations, but on proof. One should look into the details, particularly with regard to the overall magnitude of the special benefit (the larger the financial or political windfall, the more believable it becomes). In doing so, one should accord the accuser and the accusee allowances for getting upset about this, and not let the personalities impede the process (perhaps difficult, as - in our opinion - the community is well stocked with color and colorful characters). This area has a large number of people well-versed in politics and economics, and aware of the intricacies, so this is a very critical audience.

Having commented on the economic model of this development, we turn to the social ones.

SOCIAL COMMENTS:

The primary social benefit is to vest these and other former plantation workers in the area with home ownership that is affordable. Second to that is providing affordable housing to others in the community (recognizing that this is a substantial benefit of a scarce commodity).

Notwithstanding these benefits, there are a number of negatives, examined here below.

SHORELINE ACCESS AND PRESERVATION: One of the most contentious issues regards the sale of beachfront property, resulting in a row of houses between the water and the golf course. As such, there are a number of aspects to the negative side of this, including beach access, cultural (indigenous Hawaiian – the presence of Iwi), shoreline preservation (aesthetics), outsiders coming into the area and ecology. On the positive side, there are issues of beach safety, environmental stewardship, beach access and community.

Looking into each of these, in turn:

- Beach access is most mentioned by all concerned. The issue is that these homes will form an impenetrable wall, through which no hikers, swimmers, fishers, surfers, beach combbers, paddlers, families, etc., can pass to the water. This seems strongest amongst Hawaiians and men, who mention having to carry their nets down the beach. They seem very territorial in the sense of wanting their 'own' access, and not liking the idea of rights of way every 2-3 houses, claiming that's 'too small.'
- Almost as universal is the sense (Hawaiians and non-Hawaiians) that if there are bones in this area, nothing should be built there that would disturb them.
- The third most mentioned, but probably the strongest, is shoreline preservation. It is cast in any number of ways, but it mainly has to do with aesthetics (being able to enjoy an open and wild seascape) and good planning (also a desire not to have houses blocking the beach, which is well in evidence on the coastline between Laie and Kualoa).
- Finally, there is the social sensitivity, not so much expressed as felt. There is the side of it dealing with class (envy) and the side of it dealing with outsiders (sense of separation).
- Then, there's a sense that beach homes will upset the balance of nature in the coastal zone.

Turning now to the positive aspects:

- Beach and water safety would be greatly enhanced by having many different sets of eyes watching over the area from the comfort of their home. By any measure, this is one of the more dangerous areas of Oahu's coastline, with a large and swift rip current running parallel to the shoreline, fed by huge waves during the winter, and strong sea breezes during the rest of the year.
- Environmental stewardship usually starts at home, meaning that very few people 'foul their own nest.' Usually, people care for where they live, and this goes furthest when the caregiver has the resources to do a thorough job. It is likely that these affluent homeowners will do right by their land and neighborhood by maintaining the plants, caring for the animal wildlife and keeping the beach clean. Indeed, the current disruption of the environment by off-road vehicles would be drastically reduced, if these home owners would but alert the authorities.

- Beach access would be improved within and without the immediate community, by dint of the restoration of the roads in and around the beach. At present, one must park far from the beach, either at the golf course or near Adams Field, and then hike. The current plan offers two public areas fronting the beach plus a road running into the area from either side of the golf course, which means substantially more people, and different people (no need to be as hardy to walk as far, or as cavalier to leave your car unprotected from vandals far from the beach).
- A bigger beach community would grow up around the area, given better beach access, plus people living in nearby homes. People naturally congregate, particularly around activities, and this will happen at all age groups and across all activities. Even surfers, the most individual of sportsmen, prefer company when far from shore and near deep water.

The hierarchy of needs vs. wants, in my opinion here, is the widest beach access (and enjoyment), period. This beach is not the easiest beach for swimming or even sunbathing (the constant wind saturates the air with mist, which can be chilling). But it is the major beach of the plantation village, and as such, must be preserved via public roads into public parking, plus adequate right of ways. This, we note, has been accommodated by the current plan.

The idea of shoreline preservation is not necessarily antithetical to having beach houses, so long as there are setbacks from the beach, spacing from one another and scale, so that the built in structures compliment (as opposed to overwhelm) the natural landscape – Malaekahana in the 1960s to 1980s achieved this (and isn't so bad even today). As such, given adequate CC&Rs and land planning, this can be worked out, particularly for a beach of this width and length.

In all of this, there is one objection that is hard to counter, both because it is subjective and because it is widely felt, and that is the sense that the beachfront homes will seal off the community from their beach. This is a subjective sense, and is mixed in with a resistance against changes and a nostalgia for the past. This is particular strong since this is a rural community that has seen little change for 25-30 years.

To mitigate this, the developer should open up access as soon as possible to the two proposed beach parts. This will go far in providing the community with proof that not all change is bad, and let them enjoy their beach, ASAP. There may be further accommodations made in the plan, contingent on community acceptance and costs, and that would be to put a community club house in the amongst the home sites (better, tie it to the golf club house, making it a natural zone where all the neighborhoods can intermix. The other would be to relocate some the number of beach units to comparable sites inland (and since, there's nothing else quite as good as the beachfront, allow the number of these units to grow, so that there's no loss in overall revenue) (indeed, this might lessen the overall risk of the development by mixing in different units at different price points, e.g., some duplexes or four-plex town homes around the golf course but away from the beach).

THE INFUX OF OUTSIDERS: Another concern is that this development will bring an influx of new people to the community, people who do not appreciate the village's

history, or share the community's values and attitudes, and are materially different (in such areas as culture, race, religion, wealth, practices, etc.) than those already living there. This then leads to the challenges of integrating the old-timers with the newcomers, a process oft characterized as emotional.

Indeed, that there will be a measure of emotional adjustment is a foregone conclusion, with only the matter of degree in question (will it be an upheaval or a pleasurable encounter).

To be sure, most of the adjustments will likely be of a minor nature, and deal with things like parking cars in the street, having noisy animal(s), etc.

For instance, some of the more common emotional upsets could arise because of the rural nature of the existing community – on one hand, Kahuku is particularly far from the urban areas of the island, thus the community is used to chickens crowing and dogs barking. On the other hand, most residents on the island grew up in or near Honolulu, and may have only lived in an attached housing unit (condos and town homes), where noise is carefully regulated.

The more serious emotional upsets would come from conflicts that touch a person's identity or core beliefs, and those arise in places where conditions allow for a mixture of extreme differences, such as religious. In fact, there was something of a religious divide in Kahuku's history, and that was between the Catholics and the Mormons. Historically speaking, there was a boundary at Malaekahana Stream, and rarely did the Mormons cross it (indeed, they rarely even walked past Cooke's Point, in something as simple as beachcombing or surfing).

With the demise of the plantation and the rise of the Church college and Polynesian Cultural Center, one would think they would have more cause to mix, but that hasn't proven out to a large degree. Rather instead, one of the major points of community interchange is high school sports, where the spirit of the community blossoms in support of young athletes. To be sure, the largest success is due to the fierce play in football by the Pacific Islander community, but the town and the area come together over sports.

Note, it should be noted that there were other religious divides in the plantation community (Buddhist for the Japanese, Catholic for the Filipinos and Latinos, Protestant for the Anglo-Saxons, and so on), but they were muted by the fact that all the constituencies participated on the major economic activity of the area, sugar production, and have largely disappeared over time.

More profound would be the emotional adjustments for the current residents in having to accommodate people not from the area. There is a long history to this: what defined plantation living, and especially one as remote as Kahuku, is the reliance on oneself and one's community, and a significant distinction was made between insiders and outsiders. Further, back then, few outsiders would venture out to these hinterlands so the habit of making exception for different behavior never was widely practiced. There were very few families that migrated into the society by themselves (meaning that most immigrations were the wholesale import of an Asian village or a worker class, as opposed to a household coming by itself – in which case, it was mainly a vital, skilled worker, or very upper management).

As such, newcomers were (and will be) closely scrutinized for abhorrent (or beneficial) behavior or intent. This process occasionally resulted in partial or complete disengagement from the community, such as what is happening to some extent with Oaktree Capital at Turtle Bay, where they have reached out selectively, and now are finding themselves with only narrow community support. To be sure, each of the two sides of every controversy contributes, but most versions of this can be bridged by good will. For instance, the owner of Turtle Bay prior to Oaktree was Japanese, and although the language and culture were far different, they had an open door and would work to keep a good relationship with the community.

One of the more frequently cited concerns, which is a manifestation of the insider/outsider polarity, is that the beachfront home site component of the project will result in the introduction into the community of a number of neighbors who are significantly different in terms of household wealth than the current residents. The import of this is that affluence and the lack thereof will segregate the groups, at the cost of community harmony.

RICH VS. POOR POLARIZATION: A similar situation arose in the late 1950s/early 1960s, when a very affluent (relative to the plantation) community grew up next door to Kahuku in Malaekahana Bay (as the result of the Campbell Estate deciding to sell leasehold lots on the beach). In short order, the bay was populated with housing, and those residents began to frequent Kahuku's major commercial (gas station), retail (IGA store) and recreational (movie house, tennis courts) establishments. There was some friction: oft-remembered is when a particularly unpleasant resident of the Bay once cordoned off the local baseball field (Adams) for the exclusive use of his horses; another time, a lean-too shack on the beach was bulldozed by the father of boy who had been injured when a group of plantation boys purposely spooked his horse.

There was also cohabitation: the boys from plantation and the bay would play together – they swap and share their toys, including sand sliding boards and surfboards. The parents would interact more formally, with the bay families engaging the plantation families for household and other services (haircuts, cooking, etc.). Overtime, a web of relationships formed, most of which were very beneficial to all, not just in the economic sense (an exchange of services and goods) but a social sense (worshipping in the same church, supporting the same charities, enjoying the same amenities of the community, etc.).

This process of coming into an expanded economic activity and wider social interaction (mainly harmonious) parallels what happened to other areas where two different socio-economic classes mixed in rural Hawaii, but it happened to a much greater extent in Kahuku, because the influx from Honolulu was a much larger scale and sustained for a longer period of time. The other contributing factor was the sense of subservience on the part of the majority of the plantation (growing out of the hierarchical and patriarchal model of plantation economy and society) and, when the plantation shut down, their willingness and availability (heretofore truncated by plantation responsibilities) to work.

Generally speaking, most residents of the area agree that there are benefits in creating affordable housing overall, but few in any welcome the creation of high-end beachfront housing. While understandable on an emotional level, the logic of it argues the other way – in other words, beachfront housing generates a pretty nice package of community benefits: property taxes, purchasing locally, hiring locally, contributing to local charities

and causes, etc. On top of that, this kind of development doesn't burden the community as heavily as other forms, including affordable housing: the traffic is less, they don't flush the toilets as much, they don't send their kids to the local schools, etc.

Finally, on the social level, living in the country and/or living on the beach usually is a leveler in terms of bridging differences between individuals or groups. The simple life, and the simple pleasures of swimming, playing in the surf, etc., usually brings people together (as opposed to pushing them apart). This was what happened in most of the beaches in Hawaii, from Hapuna to Hanalei.

Major Social Unknowns

The major questions we have are:

How the community will react to the added responsibility of home ownership, given how their cost of housing traditionally has been much lower than marketplace housing;

How the community will deal with outsiders coming into the neighborhood and making their way, both within the plantation neighborhood and between the plantation neighborhood and the beach neighborhood (and an attendant question of how of how this will work out with the greater community coming in).

How the communities will react to the disappointment when the benefits and goals they sought or fought against in this development plan do not materialize:

- For those who fought the beachfront plan, it would be losing on that because the plan was successful in proceeding due to the affordable housing plan component; or
- For those who fought for their housing, it would be losing on that because the developer was not able to proceed on the beachfront component, thus losing the ability to subsidize the plantation neighborhood's improvements.

Social Implications and Mitigations of Expected Outcome

In the event the development plan is rejected or is retracted and the property goes back out on the market, then the plantation village residents will return to complete uncertainty over their long-term housing prospects in that neighborhood. Undoubtedly, the property will go back on the market, with the hope that the next buyer would have deeper pockets or a better plan. However, the recent event of HRI at Laie, the arrival of the recession and the drying up of public money dampen these hopes.

The way to mitigate this eventuality would be to empower those in the community who are both capable and trusted to fashion a plan, with the understanding that this could take more than a few years. Those who are elderly would have to look at this realistically, and probably determine that they should look for a better alternative.

In the event that the beachfront is developed, quid pro quo, then those in the community who were actively opposed to this will suffer emotionally for the while. Then, they will either come to appreciate what they will have (beach parks, etc.), or resign themselves (and see the silver lining). In any event, there is no doubt that this issue will arise again

in another community, and that their help will be needed (with the likelihood of greater success, as it's likely that that development plan won't be as well balanced in terms of community benefits).

Compatibility of 'Fit' With Existing and Future Community

The current development plan has a pretty tight fit with the before and after community: all of the 70 or so current residents have a good opportunity to stay on in their homes, plus the additional 60+ affordable lots will be offered to those in the other villages, with the remainder, if any, going to those willing and able (qualifying) to purchase. The scale of this then is roughly 140 affordable homes against 30 market rate ones – an unusually favorable ratio both for continuity in the community and affordability in the residential marketplace.

Likely Drivers of Success

In terms of the current development plan taking hold, the biggest driver would be moderation of the costs on the economic side, and moderation of the community emotions on the social side.

Indeed, this proposed project could only help this Laie to Kahuku migration and solve the affordable housing problem.

The additional housing will boost the income profile of the area, and give a big boost to the fortunes of area merchants and service providers.

It would be nice to get an additional affordable elderly housing facility, to take care of those who are ready or will soon be ready to leave the house to their kids.

This plan would have an easier time if cost moderation could be achieved in a number of areas, including infrastructure (water and sewer), standards (street, sewer and water), public service provision and contributions and street linkages and highway improvement. Akin to that, any contribution towards flood mitigation would help.

The flip side of this would be additional revenues coming in to the area from any source, but including higher prices for beachfront property, photovoltaic and wind farming, etc.

It would be nice if there were little or no restrictions put on these lots, either a buy-back or a shared appreciation. Part of this is to help give these families a leg up (in the form of home equity). Part of this is due to the difficulty of policing those restrictions. And part of it is due to the perception that the neighborhood would be more stable if the values were unregulated by affordable housing restrictions (and the residents could sell and buy homes under an open market regime).

To be sure, the shared appreciation regime and it's offspring are warranted by dint of the fact that public resources were used in the creation of an individual benefit, affordable housing. In this situation, however, a substantially lower amount of public resources are being expended, the main ones being the actual planning and processing time of the agencies (which could be substantial, if some of the rural standards are relaxed or

readopted), and whatever financing money available for lower rate construction and take out financing.

However, since the financing will be repaid, this is not a substantial amount of public resources being expended. Second, the current plan contemplates using septic tanks, so the sewage system is not being taxed. The water capacity is already in place, so unless the new piping is being done by BWS, there is no extra cost to the general public. Third, there is a question of flood mitigation, which would most likely be done using public money. If and when it should occur, then the argument would arise that the unique beneficiaries of that mitigation could be held accountable, in the sense that they should return some of their benefit back to their benefactor – the most likely form of which would be part of the profits when they sell the home (shared appreciation) (it could also come in other forms, including an annual association fee specific to that cost).

VIII. STUDY RECAP

This report described past, present and projected social and economic conditions in the Kahuku area. It used data, description and opinion from both public (US census, newspaper archives, neighborhood board minutes, city and state files) and private sources (interviews and experiences via family, friends, acquaintances and neighbors).

In the course of doing this report, we came to the following conclusions:

- The physical infrastructure around the area is substandard, and thus poses a significant threat to the long-term future of the existing housing stock in Kahuku Village 5 and their residents (in the event of a flood, fire or tidal wave, any affected structures – which currently cannot be insured - will not be rebuilt in the aftermath of calamity).
- The social, economic and personal well-being of the current residents is negatively impacted by this threat, as well as the general equilibrium of the larger community.
- Due to a change in land ownership, a potential remedy to these conditions has been presented to the community in the form of developing affordable housing on the site (creating fee-simple whole ownership lots in a CPR under an existing use permit and selling those at vastly under-market prices using the 201H affordable housing regime). The monies to underwrite this would come from developing market rate home sites and agricultural parcel in and around the golf course.
- This concept has been presented, discussed and – with modifications made via community interaction since 2006 – met with approval by the Village Five (KV5) community association (and the mayor) and some their neighbors in the area.
- There is also a minority opposition to the plan within Kahuku Village Five that appears to harken back to an older split in the community over prior affordable housing projects and mistakes:
- Given the magnitude and immediacy of the potential benefit to the old plantation families, the majority of the residents are overwhelmingly in favor of the current plan;
- Notwithstanding this, there are several unique cultural and social factors preventing this majority from openly and vigorously supporting this plan (including not hurting the feelings of friends and family in opposition, a fatalistic sense from having seen promises made and not kept in the past, a wistful desire to be completely taken care of by a paternalistic landlord, and the lack of social affinity and familiar congress with the personnel of the current developer (anxiety over 'outsiders').

In sum, it is our opinion that the goals of this plan are on balance commendable, and the means on balance logical and within reason. While this puts us at odds with some and in line with others, we believe reasonable people can agree to disagree reasonably. However, there is a danger that the process will be dramatized and the issues personalized, such that the various constituencies will turn into factions and thus impede this plan. While the frontline issues are fairly straight-forward (either you want to trade off the beach sales for community improvements and affordable housing or you don't), there is an undercurrent to the pro and con views that has to do with the idea that someone

might make money on this development plan, or with one traditional community faction fighting (yet again) with another, or with the fact that an outsider group, particularly one so foreign and strange, is operating in 'our backyard' (and making a buck, to boot), might have little to do with shoreline preservation and community revitalization.

CONSULTANT BACKGROUND, CONTEXT AND DISCLAIMER:

Prior to commenting on this development plan, the consultant has a particular background to this community, which is described here.

His immediate family moved into the area in the late 1950's when his father negotiated a lease on a beachfront parcel in the middle of Malaekahana Bay from Campbell Estate on behalf of his mother and her sister. The two sisters then subdivided that parcel and each built a home on it. My father bought an Army surplus barracks from Frank Fasi and placed it on the property, and proceeded to spend weekends and summers (he commuted to Honolulu, where he worked for Amfac). I was 7 years old at the time, and would spend time or live there over the next 14 years, until I left to go to college in Washington DC.

My father's second cousin, Lila Larsen, moved into the area when her husband, Bud Morgan, became plantation manager in the early 1960s. I got to know my cousins, who all attended public school in the area, and I also got to know the plantation operation, thanks first to my uncle Bud. This education was continued thanks to Fred Trotter, who succeeded Bud Morgan, and who was a family friend (and who also had children my age, for me to play with).

I thus became familiar with the area and the people, more so once I graduated from high school. By that time, my grandmother had relocated from the mainland to her house on the beach with her husband, who retired as a colonel in the US Army. As they became infirm, I moved into the house to take care of them and commuted to school (UH Manoa). I lived with them for 3 years until I transferred to George Washington University to complete my college education.

Around this time, my father and Fred Trotter both became trustees of the James Campbell Estate, and I was generally familiar with their work there, particularly as it related to Kahuku and the surrounding areas. As I have come now to understand, the two men worked to ensure that the community was provided for, in terms of infrastructure and job opportunities (indeed, the signatures of both are on the Unilateral Agreement for Turtle Bay, then known as Kuliima).

However, I did not fully become engaged with the subject of landownership and housing development until I returned in 1990 and began to work in market research for a developer in Ewa, Gentry Homes. At that time, I became intimately familiar the housing market, but also with construction and development costs. Finally, I got a good look at the provision of affordable housing, as well as the transition from plantation to private housing in the community immediately to our north, Ewa Plantation.

That said, I have not been engaged with the Kahuku area since I left in the mid-70s: my grandparents continued living in Malaekahana, with a full-time nurse, as well as with part-time household services from the community. This went on until the city condemned their land in 1980s for the creation of the large public park (our house is where the outhouse now sits). It was only due to my professional work in producing market research and project feasibility studies that I became engaged again.

In February of this year, I was contracted to do the market research report on the affordable housing component of this development for their submission in the Environmental Impact Statement. Subsequently, they invited me to produce the Socio-Economic study for the same submission. Accepting this, I then went out to the community and solicited their response to this development plan. In doing so, I contacted both family and friends from this time period, and found many of them helpful both in terms of sharing their experiences, their beliefs, their advice and their hopes, as well as names of people to contact in order to further my understanding of the context in which this plan sits.

I would thank Paul Morgan in particular for his help in putting together a list of friends and classmates from his childhood years in Kahuku. I could mention another 20+ people I contacted, but would prefer not to, as they all shared their thoughts with me for the purpose of me writing this study (and as such, the deficiencies and errors rest solely with me). I only mention Paul, because he is the only one who did not offer his opinion. Furthermore, I should mention my father, who I also did not ask an opinion on this of, but who's name was good enough with a number of people that they gave me an inordinate amount of time to explain things to me.

The Kahuku that I knew growing up has undergone tremendous changes, particularly in appearance. I grew up with continuous plantation activity: the siren signaling the shift changes: the trucks rumbling up and down Kamehameha Highway; the multiyear growing cycle of the cane in the fields right across the street from the house; the plume on the horizon of a cane burn; the dirty water seeping down the shoreline from Malaekahana Stream's rain runoff over an open field; the vitality of the IGA store and the surrounding commercial outlets; and the constant activity at the movie house, the golf course, Adams Field and the beach at Malaekahana. All of this is gone, along with the 700-800 employees that toiled long hours, but also enjoyed their bon dances, going to church, fishing, etc., with us.

But the single strongest impression was the change in the well kept homes in the village nearest to us, KV5: no longer were the yards big and tended, no longer were there houses in a row, no longer were the roads open and level, no longer was there access to Adams Field or the beach beyond. Indeed, everything had shrunk, and most of the homes had disappeared.

Appendix I

Market Study

KAHUKU AFFORDABLE HOUSING MARKET



For
CONTINENTAL PACIFIC, LLC
Data@Work

A RESIDENTIAL REAL ESTATE MARKET RESEARCH CONSULTANCY

1029 Iiwi Street, Honolulu, Hawaii

(808) 291-4407

- rcassiday@maci.com
- <http://www.rcassiday.com>

I. INTRODUCTION & IDENTIFICATION OF STUDY AND RESEARCHER

The Data@Work, a market research firm that specializes in analyzing residential real estate markets for developers, has been asked to perform a study analyzing the market for affordable housing rentals in Honolulu. This study focuses on the historical, current, and projected for-sale market conditions and trends to help forecast the absorption for the proposed single family affordable market project in Kahuku Villages.

The study entailed collecting, comparing, and analyzing information that has a bearing on the numerous aspects of market demand for the proposed project, including but not limited to publicly available real property, economic and commercial data. Rental information was collected from rental agencies, condominium resident managers, and the classified ads in the *Sunday Honolulu Advertiser*. Income and demographic information was obtained from the State of Hawaii, City and County of Honolulu, Bureau of the Census, Applied Geographic Systems and National Decision Systems.

The data and statements herein are based on independent research by Data@Work and are in no way contingent upon outside findings or recommendations. By way of background, Data@Work focuses exclusively on residential market research in the state of Hawaii. It services the developer, lending and landowning community with regular reports on the housing markets. In addition, it conducts numerous feasibility studies, including Hokuia Tower, The Windsor and Ko'olani, three of the largest condominium high-rise projects on the market today. It also has done fourteen studies on the affordable housing market, rental and for-sale – ten on Oahu, and one on Maui, one on the Big Island and two on Kauai – since 1989 for five different developers.

II. PROJECT DESCRIPTION, TARGET MARKET AND STUDY

The proposed project is located in the town of Kahuku, on the island of Oahu, in the state of Hawaii. The site contains 73 Existing Houses, currently occupied. These 73 lots will be created for individual ownership. Of those, 70 Houses Zoned Residential (R-5) 1 individual residential lot per house will be created and sold under the affordable housing program at \$75,000 per. Further, there are a number of Vacant Lots, where 40 or more additional house lots will be created for new affordable housing units.

Unique Selling Features

The project's strongest selling points:

- Strong asset value, affordable to most households who are currently priced out of the market;
- Providing new construction in an area where most of the housing stock is aged;
- Located in the middle of old town, within walking distance to schools, services and shopping, as well as easy transit to bus stop on Kam highway;
- Views of the mountains and walking distance to the beach.

Target Market: In order to qualify, the home purchaser candidates will have to demonstrate that their annual incomes fall within the limits established by the affordable housing policy guidelines, which for this program has at it's limits 140% of Area Median Income (AMI). The overall guideline is described in the table below:

HONOLULU AFFORDABLE INCOME GUIDELINES, 2008

Family Size	1	2	3	4	5	6	7	8
80%	\$53,200	\$60,800	\$68,400	\$76,000	\$82,100	\$88,150	\$94,250	\$100,300
100%	\$54,110	\$61,840	\$69,570	\$77,300	\$83,480	\$89,670	\$95,850	\$102,040
110%	\$56,520	\$66,020	\$76,530	\$85,030	\$91,830	\$98,630	\$105,440	\$112,240
120%	\$64,830	\$74,210	\$83,480	\$92,760	\$100,180	\$107,600	\$115,020	\$122,440
130%	\$70,340	\$80,380	\$90,440	\$100,490	\$108,530	\$116,570	\$124,610	\$132,650
140%	\$75,750	\$86,580	\$97,400	\$108,220	\$116,880	\$125,540	\$134,190	\$142,850

At that limit, the maximum the average household (of four people) would pay for a residential unit at sale would be \$108,000.

The stated sales price of \$75,000 equates more to buyer in the 80% AMI bracket. As such, the developer is targeting a much more affordable market than the guidelines suggest.

Project: Additional to building these residences, there will be a significant expense in upgrading the neighborhood infrastructure, in bringing the sewage up to code.

GEOGRAPHIC DEFINITION AND ANALYSIS OF THE MARKET AREA

The target market could easily be said to be all of Oahu, given that the average price in the for-sale housing market this year is above \$600,000. Such prices have made finding affordable housing very challenging for most households earning a basic income.

At \$75,000/unit, these prices are at a substantial discount to the market, over 85% under, in fact. As such, we think the market is island-wide (although, the proclivity for living in rural Kahuku is not quite as universally desired).

ANALYSIS OF HOUSEHOLD SIZES AND TYPES IN THE MARKET

The study guidelines call for an analysis of household sizes and types in the market.

Oahu Single Family Housing Stock

As noted earlier, most of Oahu's single-family housing stock is also old:

- 15% of the total single family housing stock was built before 1970
- 44% of it was built between 1970-1979,
- 16% was built between 1980-1989, and,
- 15% was built between 1990-1999.

Furthermore, most of Oahu's SF housing stock is not large:

- 31% of all SF units on Oahu are between 1,250 and 1,500 sq. ft.,
- 18% of all units are between 1,500 and 1,750 sq. ft.,
- 7% of all units are between 1,750 and 2,000 sq. ft., and
- 4% of all units are over 2,000 sq. ft.

The rest of the SF housing stock, 40%, averages less than 1,250 sq. ft. in size.

Particular to the northeast corner of the island (TMK Zone 5):

- Only 19% of the housing was built in the last 17 years;

- Only 29% have a lot that's over 10,000 sf
- Only 39% have a house over 1,250 sf
- Less than 50% of single-family dwellers are owner-occupants.

What this says is that the project is entering a market characterized by older units, units that are small in size, and units that are not very highly valued.

III THE ECONOMIC BACKGROUND

OVERVIEW

Simply put, real estate values move closely in synch with an area's economic growth, and economic growth is determined in the short run by economic trends in the area, plus those trends in the area's major trading partners. In the longer run, economic growth is also determined by population changes (both migration and demographic) and lifestyle preferences.

SHORT TERM:

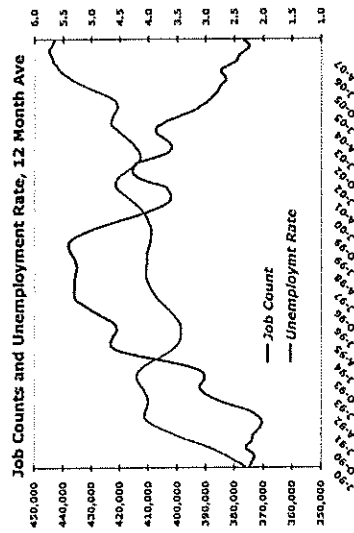
The Economist poll of forecasters, February averages (previous month's, if changed)

	Real GDP, % change		Consumer prices % increase		Current account % of GDP	
	2008	2009	2008	2009	2008	2009
Australia	3.0 (4.5)	2.8 (6.1)	3.5 (3.6)	3.3 (3.4)	3.1 (3.2)	2.7 (-5.4)
Belgium	1.7 (2.5)	1.8 (2.4)	2.9 (2.9)	2.6 (2.6)	2.3 (2.5)	2.9 (1.8)
Britain	1.5 (2.0)	1.7 (2.5)	2.7 (1.9)	2.1 (2.2)	2.3 (2.1)	2.0 (-3.7 (-3.4) -3.5 (-3.1))
Canada	0.5 (2.5)	1.5 (2.4)	1.7 (1.9)	2.4 (2.5)	1.8 (1.9)	2.4 (0.3) -0.1 (0.1)
France	1.2 (2.3)	1.2 (2.2)	1.7 (1.8)	2.8 (2.9)	2.2 (2.0)	1.8 (-1.6 (-1.3) -1.5 (-1.2))
Germany	1.5 (2.5)	1.7 (2.3)	2.8 (1.9)	2.0 (2.1)	2.1 (2.1)	1.7 (-2.4 (-2.4) -2.4 (-2.5))
Italy	0.8 (1.8)	1.7 (2.1)	1.2 (1.3)	1.5 (1.5)	2.4 (2.3)	2.8 (-2.4 (-2.4) -2.3 (-2.3))
Japan	0.9 (1.6)	1.2 (2.4)	1.3 (1.4)	1.8 (1.9)	0.6 (0.3)	0.6 (0.5)
Netherlands	1.2 (2.1)	1.8 (2.9)	0.6 (0.1)	2.1 (2.3)	2.2 (2.0)	2.1 (1.3)
Spain	1.9 (3.0)	1.7 (3.0)	2.4 (2.4)	2.4 (2.3)	3.2 (3.1)	2.7 (-0.0 (-8.0) -8.2 (-8.1))
Sweden	2.2 (3.1)	1.8 (2.1)	2.6 (2.7)	2.6 (2.6)	2.2 (2.0)	2.2 (0.0 (6.4) 6.1 (6.7))
Switzerland	1.5 (2.4)	1.9 (2.3)	2.0 (2.0)	2.0 (2.0)	1.6 (1.6)	1.2 (0.7 (0.7) 0.7 (0.7))
United States	0.8 (2.2)	1.5 (3.1)	1.6 (1.8)	2.5 (2.5)	2.9 (2.8)	2.2 (-2.8 (-2.8) -2.5 (-2.5))
Euro area	1.3 (2.4)	1.3 (2.3)	1.8 (1.8)	1.9 (2.0)	2.4 (2.3)	2.0 (1.9) (0.2) (0.2) 0.1 (0.7)

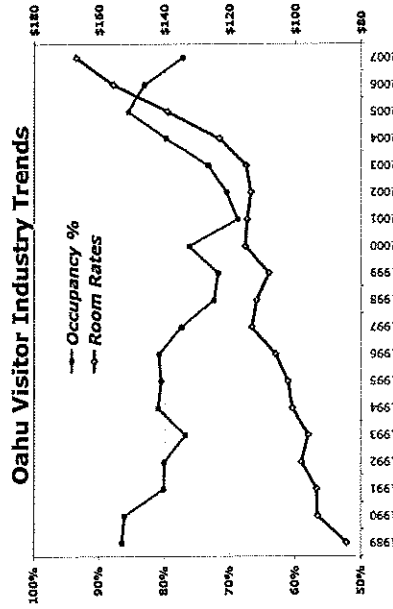
Source: ABN AMRO, BNP Paribas, Citigroup, Fortis, HSBC, ING, JPMorgan Chase, Morgan Stanley, Scotiabank, UBS, WestLB, XFL Bank, JPMorgan Chase, Morgan Stanley, Scotiabank, UBS.

SUMMARY: Through the 1st quarter of 2008, the Hawaiian economy is growing slowly but steadily, thanks to federal spending that is consistent and present for the long-term, and visitor spending that is steady but uncertain. To be sure, the US economy is entering a recession, one that looks to be sharper than the last two, thanks to falling home prices and falling consumer spending. But the global economy continues to grow and will probably not fall into recession (soft landing).

Per the island's economic activity - real personal income statewide is in its eleventh consecutive year of growth. The state also had the lowest unemployment nationally for 2007, 2.6%. It also was the lowest in 2006, at 2.4%.



Per DBEDT, total visitor arrivals should decline 1.4 percent in 2008, and visitor expenditures growth will be at 1.5 percent. For 2009, both visitor arrivals and visitor days are predicted to grow 1.2 percent, while the visitor expenditures are forecast to increase 4.2 percent.

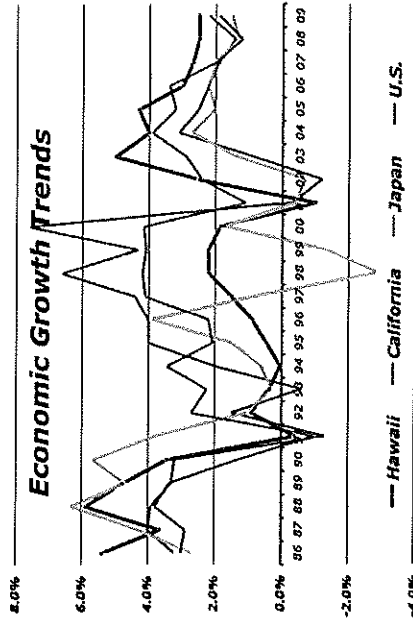


Building permit levels still remain high, suggesting a solid construction activity in 2008. Government construction keeps on rising, with the ongoing multi-billion military housing privatization initiative lasting several more years. All in all, construction continued to show robust though slower, job growth. Overall, total wage and salary jobs are now expected to grow 1.4 percent in 2008, and 1.3 percent in 2009.

While the economy has continued to grow, costs have grown faster over the last couple years. This is now cooling down, with real personal income slated to grow at 1.6 percent this year, up from 1.3 last year and behind the 1.9 percent forecast for each of the next two years.

Looking ahead, the eastbound Asian market is feeling the stimulus of strong economic growth. World GNP also is looking good. Further, the rise in energy prices should fuel visitor (and second home) demand from Canada, Alaska and the Rocky Mountain states. Then, the revival of Waikiki will play out well with the devalued dollar, spurring higher occupancies and room rates. The growth in visitor industry should support the second home and retirement housing market here.

However, all told, there is a slowdown going on in the major markets relative to our visitor industry, per the Economist Poll of Forecasters (as illustrated in the ECONOMIC GROWTH Chart). As such, US visitor demand for Oahu's recreational goods and services looks to fall over the next 1-2 years.



Beyond tourism, the federal government is pouring billions into Oahu's economy, due to the military activity post 9/11. On Oahu, there are several major funded programs: the addition of several new military platforms (the Stryker brigade), the upgrading the communications and logistics infrastructure and the privatization of military housing (Hawaii would gain 3,700 troops by 2011 as 50,000 service members are brought home to the United States from Germany and South Korea).

In sum, Hawaii is slowing down significantly relative to 2003-2004, with the silver lining that this is some chance of escaping the US downturn, thanks to steady federal spending (mainly on military housing, but also on other upgrades), relatively stable housing values (prices falling by 3-5% this

year and possibly next), replacement Asian visitors (especially with the strong Yen) and falling interest rates.

LONGER TERM:

Looking ahead, we think Oahu's visitor industry is in fundamentally good shape. In the first place, its major renovations and additions will attract new timers and repeat visitors – Waikiki has gotten a major facelift, and Ko Olina has a Disney 800 unit vacation club slash hotel coming in. Further out, Turtle Bay will be sold at low enough price so that there will be an addition of at least 1,000 units combining both short-term and long-term housing on the property.

Longer term, our major visitor markets will return to economic growth in 2-3 years, then grow steadily for several after that. Added to that, we expect it will be boosted by two trends:

- The movement away visiting 'foreign' resorts, due to terrorism in Bali and other places, and
- The low value of the dollar, which makes vacations in Hawaii cheaper for foreigners and foreign vacations more expensive for Americans.

Oahu will grow also by diversifying recreational goods and services into different short-term visitor segments (time share, vacation rentals, bed-and-breakfasts and partial ownership products) and long-term immigration in order to upgrade one's quality of life (second home ownership, retirement communities).

Potentially equal to the visitor trade is federal spending, mainly for national security. The outlook here is just as optimistic, if not more, given the present nuclear threat of Korea and the future threat of China becoming expansionist. The net of this increased funding due as the military upgrades, extends and populates their facilities on the island, from home porting another aircraft carrier to upgrading the missile defense network. Finally, as the war in Iraq winds down, there will be a large-scale repatriation of military personnel to their home base, here on Oahu.

Finally, the state and county have some major infrastructure projects ahead, with the wherewithal to indulge in some countercyclical spending. This is above and beyond the light rail transport system, which will contribute more than the stated cost of \$3.8 billion, given the housing, office and retail development surrounding these transit stations.

Given these trends, our expectation over the next 3-5 years is good job growth and rising income levels on Oahu, more than enough to accelerate a relatively high level of migration into the island from domestic and international sources. Over the ensuing 3-5 years, we see an economic consolidation, but no letdown in income growth and job stability: the term of federal spending is for 10 years, and the spending levels have been set.

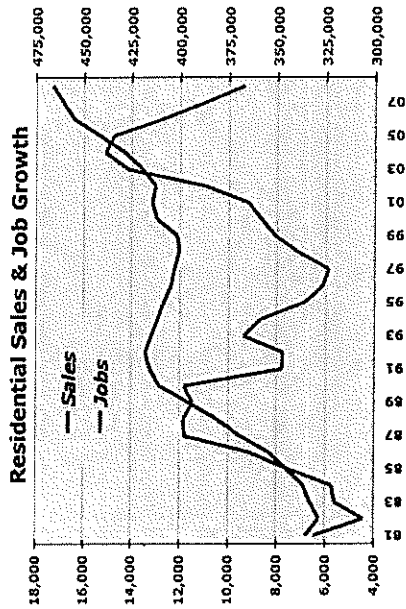
IV. ECONOMIC GROWTH AND HOUSING

Looking at the relationship between the economy and residential development, the major link is that the economy's performance drives the demand side of the real estate market. Looking at the market from the grassroots, the commonly accepted truth of purchasing a home is: "When I have a job, I can't afford a house. And when I can afford a house, I don't have a job."

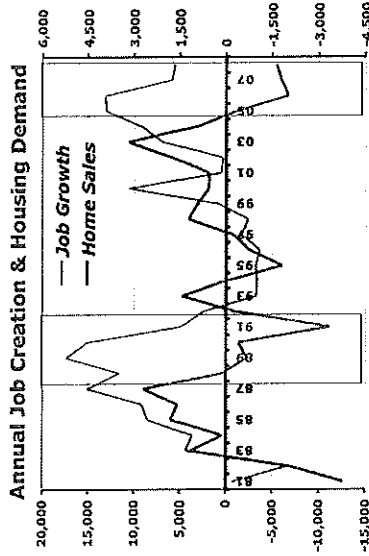
In short, economic expansion fuels a residential boom, pushing the prices of homes out of many households' ability to purchase. Indeed, this is often so exaggerated that there is a political backlash, wherein local public agencies act to increase the supply of housing. Unfortunately, they look to the housing industry to provide them with most of this subsidy, which often counterproductive, as it hurts the goose that lays the golden egg.

On the supply side, given the extremely long time it takes to entitle residential development, is less affected both in the short and the long term. In particular, the lack of land on this island, combined with a NIMBY sentiment and high costs of production, has kept long-term supply of residential land low and in decline. We turn now to look at the various linkages in between the economy and the property market, starting with job growth and housing sales.

Interestingly, there has not been the same high degree of job growth (adding 80,000 plus jobs in 7 years, as opposed to 60,000 in 6 years) in this economic cycle, as there was in the last one. This can be seen in the blue line in the RESIDENTIAL SALES & JOB GROWTH Chart. Either there is a lot of informal job growth, hidden from the statisticians, or there is a lot more job growth coming in the pipeline (such as non-payroll jobs i.e. self-employed, contract labor). Whatever the explanation, this abundance of jobs gives support for a strong housing market.

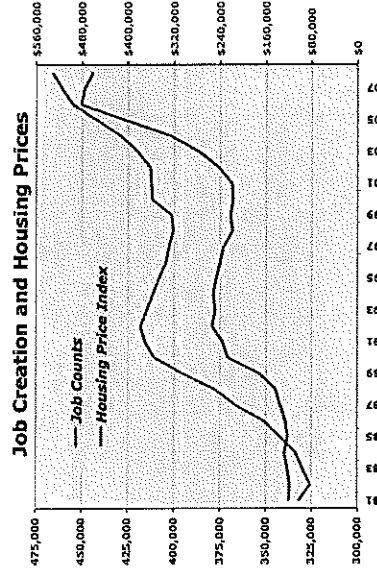


Another way of looking at this is the annual change in job counts and residential sales. The ANNUAL JOB GROWTH AND HOUSING DEMAND Chart isolates the annual changes in job growth and home sales, and shows even more clearly the periods of price growth. This is when



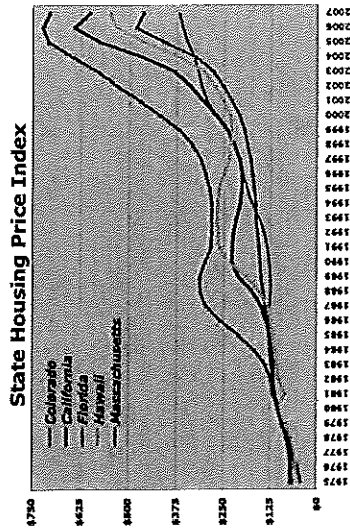
there are more jobs than houses to buy (demand greater than supply), shown in the chart by a yellow shaded area. It remains to be seen whether job growth will continue to support current price levels, given recent dramatic price appreciation and negative buyer psychology.

Another way to visualize this is to examine relationship between job count growth and housing prices (as an index of resale and new, condo and single family) in the JOB CREATION AND HOUSING PRICES Chart. Historically, a decline in prices has been caused by a decrease in job growth, but this is not the case at this point in the cycle. Instead, it looks like price increases went much higher than was sustainable, and the two lines converged, when there normally would be some separation. As such, it looks like price declines have now brought the relationship back near its historic norm.

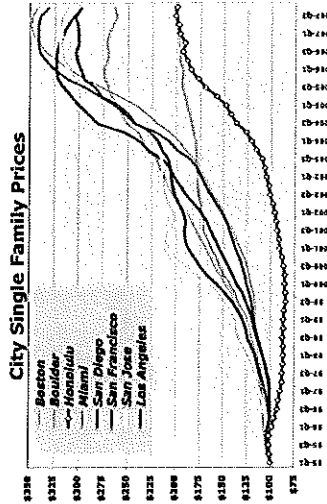


Interestingly, in the last cycle, it took a lot of job growth before there was an impact on home prices (and not very much of an impact, relative to this cycle. Somewhat the opposite, home prices in this cycle really took off, relative to job growth in this cycle.

Some or much of this could be attributable to offshore demand, both in terms of second home purchases and price arbitrage between regions. But with prices across the nation falling, this demand will ease up, allowing our prices to decline (plus lower demand due reduced tourism). Note: On the other hand, since Hawaii's and Honolulu's prices didn't rise as dramatically vis-à-vis national ones, there's less of a reason for them to go down much, going forward.



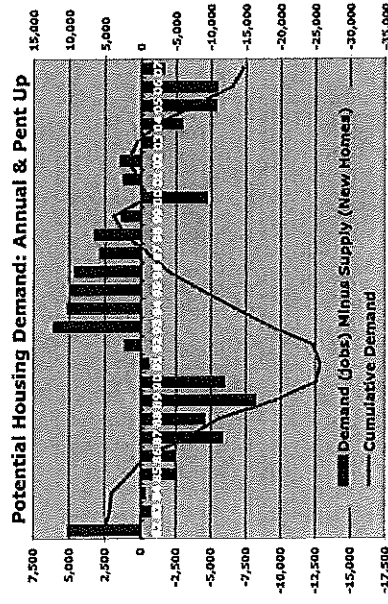
The STATE HOUSING PRICES (Log) Chart, showing OFHEO's same sale single family home price index, illustrates this 'arbitrage' effect.



A similar chart is done for the reduced wealth effect, showing the CITY SINGLE FAMILY PRICES, of the metropolitan areas that are Hawaii's major tourism markets.

When there's not enough homes available (either because of strong job creation or second home demand) in any one year, then the residual of that is set aside as pent-up demand for next year. We tried to quantify this pent-up demand by taking a factor of housing demand via job creation, and matching that up with new housing supply.

What we found is a potential undersupply, and this is demonstrated in the HOUSING DEMAND: ANNUAL & PENT UP chart (with the annual demand shown as purple bars, and the cumulative of that, shown as the red line). To be sure, many of these jobs are ones that make a wage better suited to purchasing a starter condominium rather than a single family home.

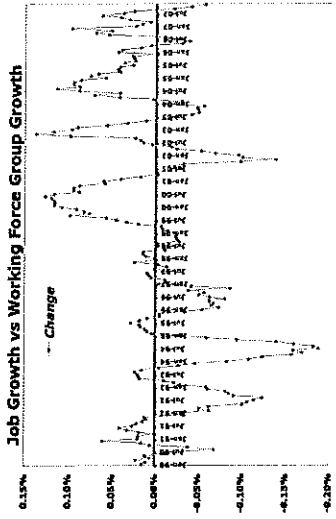


However, this leads to a concern going forward: if the growth of jobs is outpacing the supply of housing, will it continue to underwrite rising housing prices, with the effect of reducing the number of workers that are available to businesses within the local economy. This is what is behind the recent initiatives to grow the stock of workforce housing.

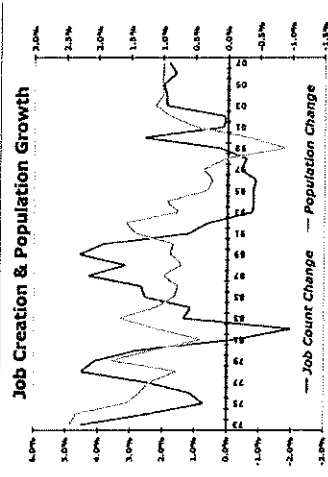
Another of the clouds on the horizon is rising costs, specifically energy and labor ones. The first ups the costs of travel and shipping, and hampers both visitor and consumer spending, and thus ripples through the local economy.

The second (labor) boosts inflation, and cuts into real wage income. This occurs when there are not enough employees to fill the jobs, or specifically when the growth of jobs outpaces the growth of the work force.

As seen in the JOB GROWTH VS. WORKING FORCE CHART, this condition (more jobs than bodies to fill them, when the line rises above 0%) has existed for most (75%) of this decade. However, the indicator just dipped into negative territory, signaling an increase in the work force population (and hopefully leading to a moderation in wage inflation).

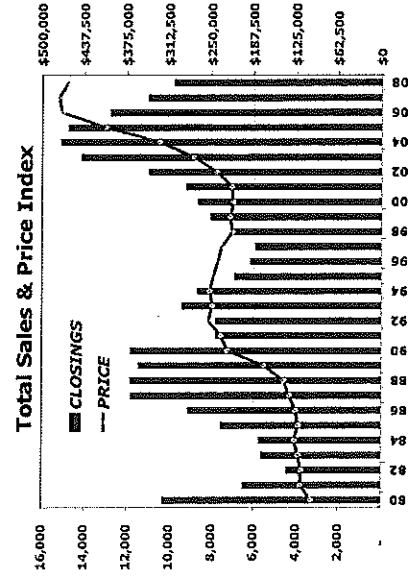


Given all of this job creation and personal income growth, the economy will drive in migration in growing numbers, as seen in the following chart, relating **JOB GROWTH AND POPULATION**.
 Hawaii has traditionally been the destination of choice for a variety of groups, West Coast retirees, Asians entering the US for the first time, military personnel returning to become private residents, and Americans wanting to be close to Asia (and vice versa).

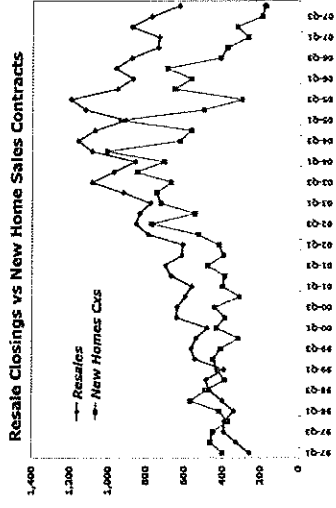


In sum, Oahu is undersupplied with housing, albeit reasonably priced housings. Now, we turn to examine the residential market in detail.

V. CURRENT REAL ESTATE MARKET TOTAL MARKET



SALES & PRICES: Oahu's market for residential property is now four years passed the top of the cycle. Sales are off 45% from the peak, down to the 9,800 mark. At this level, it is right about the historical 20-year average of 9,300 sales/year. Unlike the last cycle, this one did not linger at the peak – instead, it went down by double digits in each of the last three years, 2006+.



The chart also shows that the developer market lead the way, followed shortly after by resales. The table below looks at the component parts of the market:

RECENT HOUSING ACTIVITY

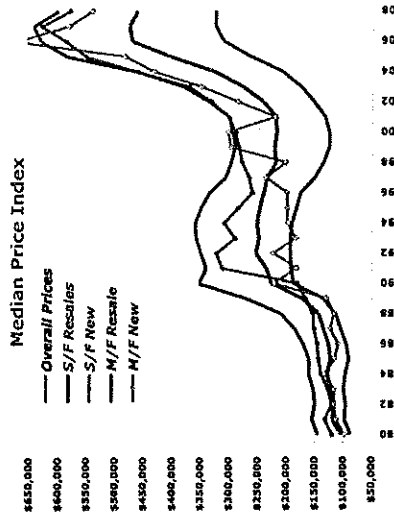
	Totals	Resale Homes	New Homes	Resale Condos	New Condo
2002	10,961	3,906	1,229	5,406	420
2003	14,152	4,420	2,093	6,907	762
2004	15,107	4,702	1,611	7,888	906
2005	14,773	4,617	1,170	7,790	1,198
2006	12,762	4,041	1,058	6,380	1,283
2007	10,983	3,627	586	5,498	1,271
2008*	9,123	2,700	583	4,400	1,440

* Forecast based on YTD data, Feb., 2008

It shows:

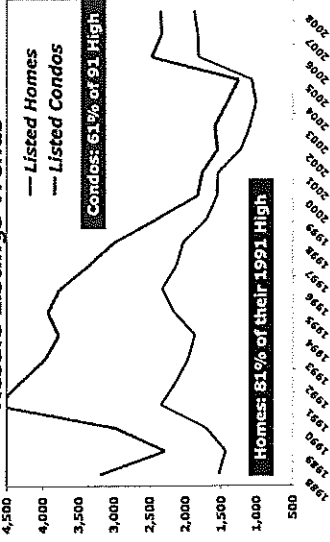
- That the market for total single family homes peaked in 2003 five years ago.
- That the condo market topped out in 2005, three years ago, and
- That the new market peaked also in 2003, five years ago, while resales hit the ceiling in 2004, four years ago.

As seen in the MEDIAN PRICE INDEX Chart, demand pushing prices stopped last year. The All-Housing price index (all resales, single family and multifamily, and all new sales, single family and multifamily), fell from \$475,955 in 2007, top of the market, to \$461,000 YTD this year. That is a 3.2% fall, and will probably be added to as the year continues. The cumulative rise in prices, since they turned up in 2000, is over 110%.



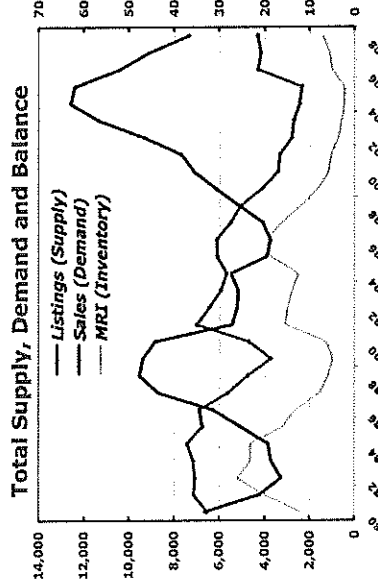
LISTINGS AND MONTHS OF REMAINING INVENTORY: With demand peaked, the issue of supply becomes important, particularly for future prices. Traditionally, Oahu's major source for housing supply came from resale listings -- new sales averaged 18% of all sales, 1999-2008.

Resale Listings Trends



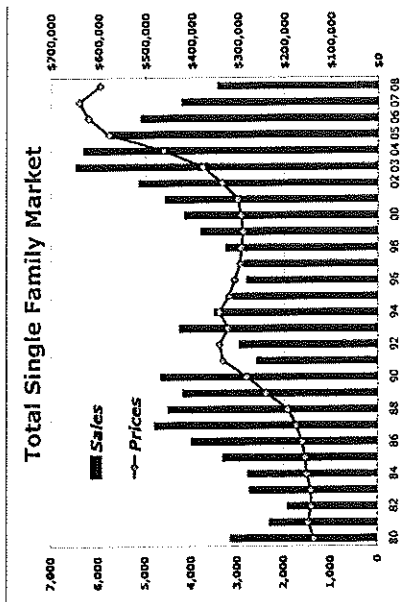
As seen in the RESALE LISTINGS Chart, listings have expanded dramatically this year: single family listings are at 81% of where they were at the top of the last cycle, 1996, while condos are 58% of the way up to their high point, set in 1995.

While alarming if taken out of context, listing levels need to be related to sales and inventory. This can be seen in the TOTAL SUPPLY, DEMAND AND BALANCE Chart, which shows the balance in the relationship between listings (supply) and sales (demand) -- months of remaining inventory (MRI).

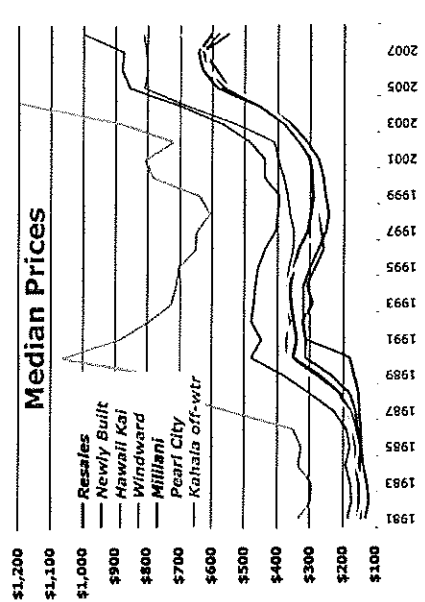


Months of Remaining Inventory is the number of total listings (supply) divided by current demand, and expressed in the amount of time it would take current demand to exhaust current supply. Currently, there is only 7 months of supply available on the market, which is still lower than the 8.9 average over the last 20 years.

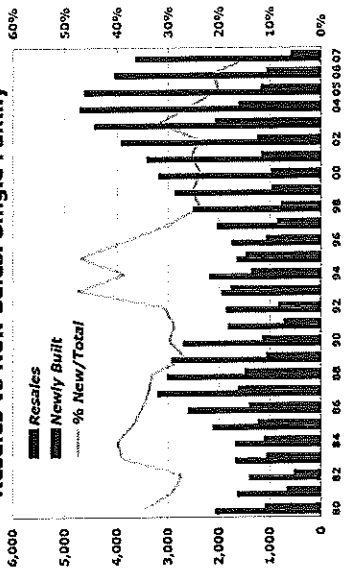
SINGLE FAMILY



SALES & PRICES: The sales of single-family homes have fallen the last four years and YTD 2008's trend will make it five in a row. Much of this is thanks to prices and production bottlenecks. The overall price index rose 122% over the last eight years, since the last low in 1998. This year it is looking to fall by (YTD) 5-8%.



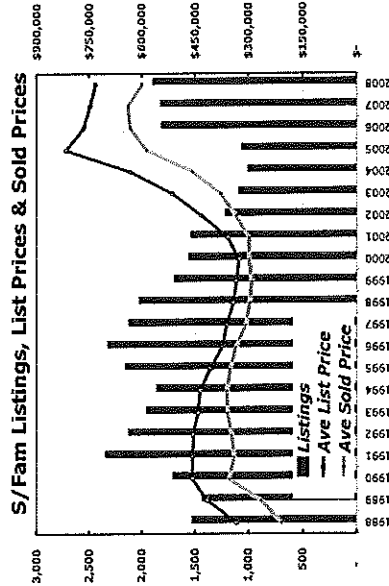
Resales vs New Sales: Single Family

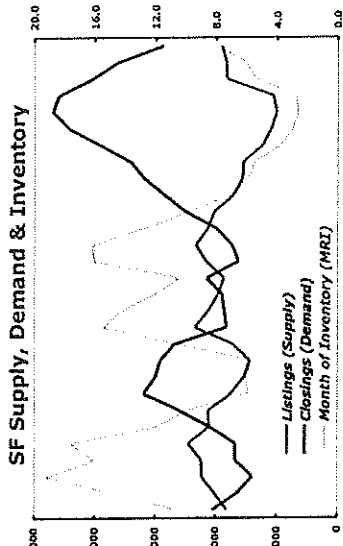


As for production bottlenecks, this is in the REALES vs. NEW SALES Chart, illustrating the share of market differences. The new homes industry's output has been falling for the last two year, three if you include YTD 2006. At the same time, the resale market has slowed just last year and this.

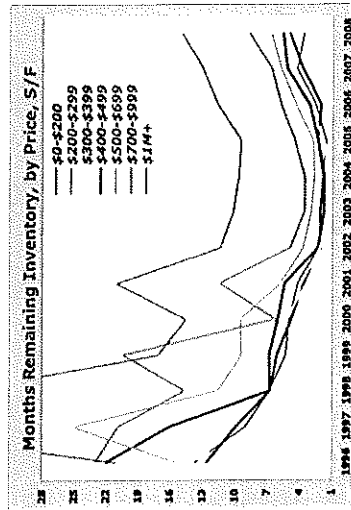
SUPPLY SIDE TRENDS: Looking at the supply side of the single-family market, two years ago there was a big jump listings (see the LISTINGS, LIST PRICES & SOLD PRICE Chart) but it hasn't moved much upwards from that level.

In conjunction with that, listing prices also fell, and almost immediately. Since that time, they have trended downwards, and exerted an influence on sold prices (which hit a plateau last year, then fell this).



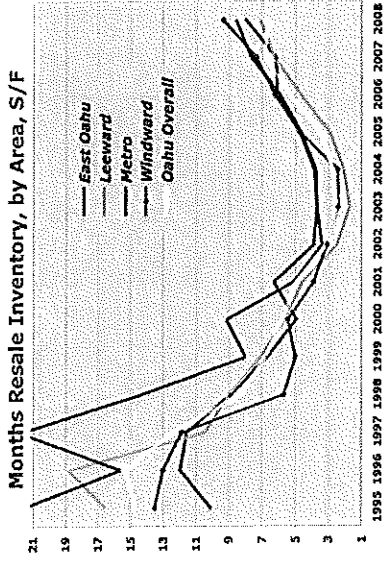


MONTHS OF REMAINING INVENTORY (MRI): MRI relates sales activity to listings so as to indicate whether demand is exhausting supply (i.e., a shrinking number, or trend) or supply is overwhelming demand (a growing one). In 2006, the single family MRI (light red line, SUPPLY, DEMAND & INVENTORY Chart) turned upwards for the first time in a decade, and is now about half the way up to where the last highs were made.



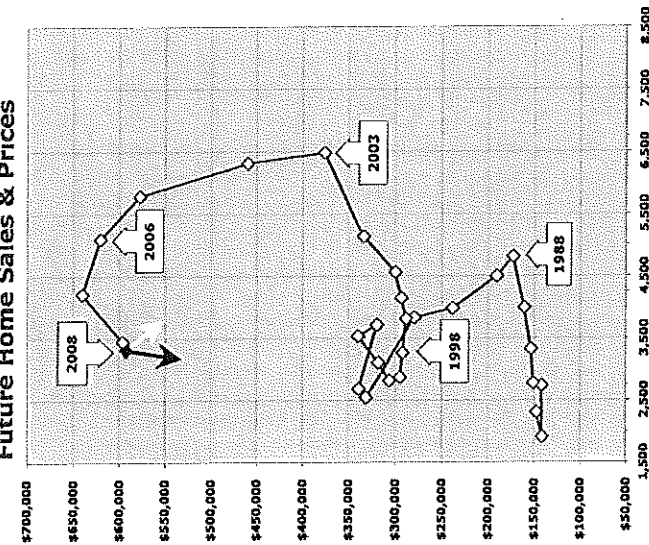
The price sectors that are the tightest are the \$0 to \$200,000 and the \$300,000 to \$399,000 price segments.

At the market segment level, the communities that show the tightest markets are Leeward Oahu and Metro areas.



OUTLOOK

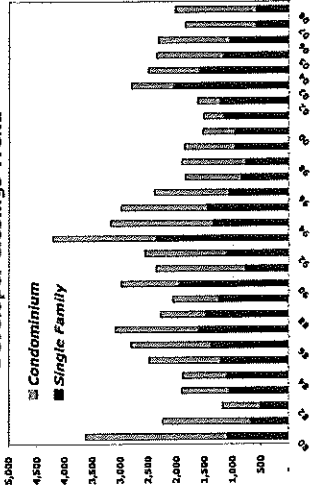
This FORECASTING SALES AND PRICES Chart plots the relationship between price and sales, with sales at the bottom and price on the right. It illustrates the general tendency of markets to follow a pattern (or cycle) that starts with low sales and low prices, moves to higher sales followed by higher prices, goes to yet higher prices and lower sales, followed by even lower sales with falling (and then



The yellow points on the blue line in the chart represent the market's position in terms of the intersection of closings and prices) for every year since 1988. The arrows from the call out box for 2008 illustrate our general outlook or forecast (the red arrow illustrates our pessimistic view and the yellow one our optimistic view).

Although past is not always predictive, we think current conditions will call for slightly higher prices and lower sales in 2007.

Developer Closings Trend

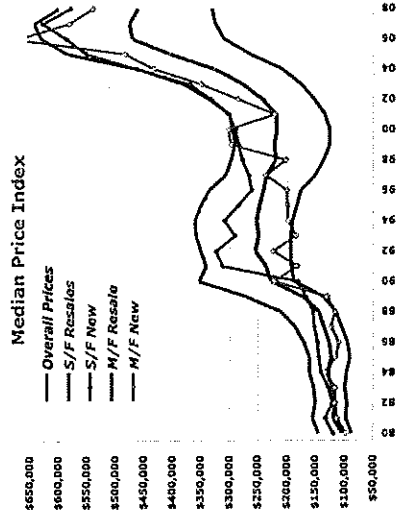


VI. REVIEW OF THE NEW HOME MARKET

CLOSINGS AND PRICES: Interestingly, the new homes market had its first breakout year in a decade in 2003, hitting 2,845 units. Unfortunately, it was not able to build on it, thanks to the concrete strike and other material shortages (including zoned land, ultimately).

Part of the reason for this is that several major master planned communities are running out of land (or have run out of land). Relative to several years ago, Waikole, Kapolei and Kunia are no longer producing homes this year, and Milliam will be out of its inventory of entitled lots this year or the next. Furthermore, there may not be a smooth transition to higher production, as Horton's big project in Kapolei, Koa Ridge and Waiawa are more than 3 years away from delivering homes (or more)

Indeed, the strength and breadth of the market was such that when builders ran into these shortages, they had to raise prices. And as they raised prices, they slowly had to roll out single family and into condominium production.

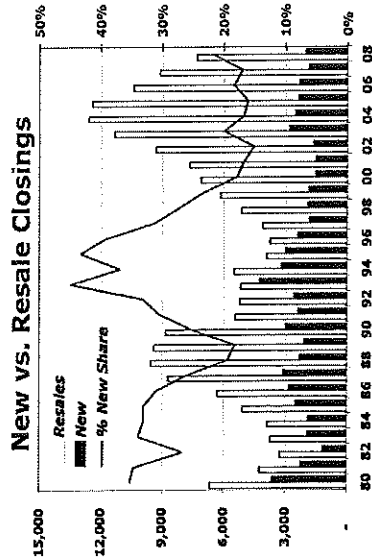


Prices also held back sales – the new MF homes price index climbed sharply the last few years, thanks to a bevy of high-end, high-rise closings (up over 40%). Indeed, the index went from being the fourth or the fifth lowest price index (in the last cycle) to being the top of the second or third (and the spread between itself and its resale MF brethren increased dramatically).

Breaking out the pricing trends by resale and new, condo and single family, the MEDIAN PRICE INDEX Chart shows that single family developers were able to price their homes at or just below the comparable area resale homes, while the condominium market was able to price substantially above resales, thanks to the stronger market for new product and high-end infill locations (like Hawaii Kai, Kapiolani or Waikiki) or on resorts (Ko Olina).

At this stage in the cycle, developers are targeting demand for primary housing, mainly workforce in nature, and trying to bring their cost of construction to a level that allows them to build in this lower price segment.

In spite of all of this activity, the developer share of the overall market is quite low, particularly by historical standards (as seen in the NEW Vs RESALE CLOSING Chart). Even with the strong growth this year, developer market share has only just moved above the high teens. This leads us to believe that this sector can grow further in 2008 and beyond, if and as resources are available at a reasonable cost.



The following table gives a better description of the trends in the new homes market. It shows the contracts (Sales), closings, the average list prices, and the average closing prices.

	2002	2003	2004	2005	2006	2007
Sales	2,268	3,076	2,930	2,410	2,132	1,423
Closed	1,509	2,563	2,246	2,291	2,144	1,845
Ave List \$	\$338,117	\$424,579	\$505,617	\$558,164	\$693,812	\$802,509
Ave Closed \$	\$321,419	\$364,684	\$451,788	\$516,902	\$687,753	\$595,185

As seen, the sales (contracts written) have been slowing since 2003, but really fell off in 2007. The culprit firstly was single family (see below) and then condos.

	2003	2004	2005	2006	2007
Sales	1,822	1,183	1,067	650	526
Closed	1,928	1,492	1,125	989	543
Ave List \$	\$388,609	\$465,223	\$537,540	\$596,310	\$618,348
Ave Closed \$	\$370,102	\$461,394	\$551,328	\$587,057	\$628,387

TOTAL NEW SINGLE FAMILY HOMES MARKET TRENDS

V. COMPARABLE PRODUCT MARKET

The following shows the market trend for single-family homes sold as fee-simple below the price of \$1 million over the past few years.

OAHU SINGLE FAMILY MARKET, 2003 TO 2008

	Sold	Price	Intr sf	DOM	Sales/List\$	\$/sf
2003	3,572	\$406,272	1,511	97	98.2%	\$269
2004	3,712	\$471,835	1,482	40	98.9%	\$318
2005	3,403	\$583,028	1,468	38	99.0%	\$383
2006	2,908	\$604,592	1,465	62	98.0%	\$413
2007	2,801	\$607,350	1,485	69	97.9%	\$409
	Sold	Price	Intr sf	DOM	Sales/List\$	\$/sf
2004	4%	16.1%	-2%	-59%	0.6%	18.4%
2005	-9%	19.3%	-1%	-5%	0.2%	20.4%
2006	-15%	7.4%	0%	65%	-1.1%	7.6%
2007	-10%	0.5%	1%	11%	-0.1%	-0.9%
	Sold	Price	Intr sf	DOM	Sales/List\$	\$/sf
1 Yr	-10%	0%	1%	11%	-0.1%	-0.9%
2 Yr	-13%	4%	1%	38%	-0.6%	3.4%
3 Yr	-11%	9%	0%	24%	-0.3%	9.1%
	MRI	List/Sales Premium				
2005	2.21	100%				
2006	5.71	101%				
2007	6.08	105%				
	Listings	Price	Intr sf	DOM	\$/sf	
2004-A-2Q	1,109	\$470,280	1,505	79	\$312	
2005-A-2Q	626	\$557,283	1,542	71	\$368	
2006-A-1Q	1,382	\$635,552	1,479	61	\$430	
2007-A-4Q	1,318	\$612,285	1,476	102	\$415	
	Listings	Price	Intr sf	DOM	\$/sf	
2005	-43.6%	20.6%	2.4%	-10.1%	17.8%	
2006	120.8%	12.0%	-4.0%	-14.0%	16.7%	
2007	-4.6%	-3.7%	-0.2%	66.7%	-3.4%	
	Yr	Price	Intr sf	DOM	\$/sf	
1 Yr	-4.6%	-3.7%	-0.2%	66.7%	-3.4%	
2 Yr	58.1%	4.2%	-2.1%	26.3%	6.7%	
3 Yr	24.2%	9.7%	-0.6%	14.2%	10.4%	

As seen, the market is slowing, but prices still are rising, except for price per square foot. Listings have grown, and as a result the Months of Remaining Inventory (MRI) has risen significantly. However, listing prices have not fallen much, and the Days on Market indicator (DOM) has grown. Tellingly, so has the Sales Price to List Price, which shows that sellers are not able to get as much as the asking price from buyers.

Next, we look at the area around Kahuku, TMK Zone 1-5, for the same data parameters:

WINDWARD OAHU SINGLE FAMILY MARKET, 2003 TO 2008

	Sold	Price	Intr sf	DOM	Sales/List\$	\$/sf
2003	94	\$439,279	1,371	118	98.6%	\$320
2004	95	\$502,946	1,447	57	97.1%	\$348
2005	70	\$601,075	1,311	47	96.4%	\$459
2006	51	\$678,592	1,309	78	95.7%	\$519
2007	48	\$639,323	1,153	104	97.1%	\$554
	Sold	Price	Intr sf	DOM	Sales/List\$	\$/sf
2004	1%	14.5%	6%	51%	-1.5%	8.5%
2005	-26%	19.5%	-9%	-19%	-0.7%	31.9%
2006	-27%	12.9%	0%	67%	-0.7%	13.1%
2007	-6%	-5.8%	-12%	33%	1.5%	6.9%
	Sold	Price	Intr sf	DOM	Sales/List\$	\$/sf
1 Yr	-8%	-8%	-12%	33%	1.5%	6.9%
2 Yr	-17%	4%	-6%	50%	0.4%	10.0%
3 Yr	-20%	9%	-7%	27%	0.0%	17.3%
	MRI	List/Sales Premium				
2005	3.43	111%				
2006	7.76	97%				
2007	15.50	108%				
	Listings	Price	Intr sf	DOM	\$/sf	
2004-A-2Q	45	\$557,481	1,549	103	\$360	
2005-A-2Q	20	\$582,800	1,247	74	\$468	
2006-A-1Q	33	\$734,576	1,356	72	\$542	
2007-A-4Q	62	\$701,060	1,333	111	\$528	
	Listings	Price	Intr sf	DOM	\$/sf	
2005	-55.6%	4.5%	-19.5%	-28.4%	29.9%	
2006	65.0%	26.0%	8.8%	-2.7%	15.9%	
2007	87.9%	-4.6%	-1.6%	54.7%	-3.0%	
	Yr	Price	Intr sf	DOM	\$/sf	
1 Yr	87.9%	-4.6%	-1.6%	54.7%	-3.0%	
2 Yr	76.4%	10.7%	3.6%	26.0%	6.5%	
3 Yr	32.4%	8.7%	-4.1%	7.9%	14.3%	

In this, we see the market is not very large, but the trends are the same - sales down, MRI up, DOM way up. However, average prices are down 6%, to around \$640,000.

Lastly, we look at the market most immediate to Kahuku Village, i.e., Kahuku, Laie, Hauula and Punaluu. Again, we see most of the same trends and tendencies:

KAHUKU AREA SINGLE FAMILY MARKET, 2003 TO 2008

Year	Sold	Price	Intr sf	DOM	Sales/List	\$/sf
2003	52	\$357,394	1,221	115	100.0%	\$301
2004	64	\$458,511	1,392	60	96.9%	\$328
2005	49	\$642,719	1,391	47	95.8%	\$462
2006	31	\$658,113	1,335	71	96.6%	\$494
2007	31	\$761,613	1,276	11	96.1%	\$597
	Sold	Price	Intr sf	DOM	Sales/List	\$/sf
2004	23%	24.3%	14%	-48%	-3.1%	9.0%
2005	-23%	40.8%	0%	-21%	-1.1%	40.9%
2006	-37%	2.6%	-4%	50%	0.8%	6.8%
2007	0%	15.6%	-4%	56%	-0.6%	20.9%
	Sold	Price	Intr sf	DOM	Sales/List	\$/sf
1 Yr	0%	16%	-4%	56%	-0.5%	20.9%
2 Yr	-18%	9%	-4%	53%	0.1%	13.9%
3 Yr	-20%	20%	-9%	20%	-0.3%	22.9%
	MRI	List/Sales	Premium			
2005	4.41	147%				
2006	15.10	163%				
2007	15.10	152%				
	Listings	Price	Intr sf	DOM		\$/sf
2004-A-2Q	31	\$672,059	1,613	103		\$417
2005-A-2Q	18	\$1,046,278	1,615	89		\$649
2006-A-4Q	39	\$1,002,479	1,446	116		\$693
2007-A-4Q	39	\$698,083	1,562	137		\$572
	Listings	Price	Intr sf	DOM		\$/sf
2005	-41.9%	56.0%	0.2%	-13.7%		55.7%
2006	116.7%	-4.4%	-10.5%	30.1%		6.9%
2007	0.0%	-10.4%	7.4%	18.6%		-16.6%
	Sold	Price	Intr sf	DOM		\$/sf
1 Yr	0.0%	-10.4%	7.4%	18.6%		-16.6%
2 Yr	58.3%	-7.4%	-1.6%	24.4%		-4.8%
3 Yr	24.9%	13.7%	-1.0%	11.7%		15.3%

What is remarkable is the depth of the MRI, despite sales being flat (instead of down) and prices being up. Listings also are flat, though listing prices are down.

In sum, this is a market that is completely divorced from the market for these affordable homes -- the only thing it proves is that a home selling for \$75,000 in this market is a rarity. It suggests that there will be no problem selling five or ten times the amount contemplated here.

VI. TARGET MARKET DEMOGRAPHIC ANALYSIS

MARKET OVERVIEW: Affordably priced housing has always been a chronic and serious problem on the island and, with the recent real estate boom, has only gotten worse. As the very strong residential real estate market cycle has pushed up housing values, it has acted to take housing off the market at the low end (especially), as owners have finally been able to cash out at a profit. Plus, high construction costs make it difficult to expand the housing stock to address the issue of its scarcity.

DEMOGRAPHIC ANALYSIS: The market area we define as the Island of Oahu, otherwise known as the City & County of Honolulu. We do this because, in general, people living on a small island identify themselves with the whole island. This is even truer when the island is very remote from all other major land areas.

Furthermore, we consider the whole island (within a 40 mile radius from the site) to be the target market because this particular product -- affordable housing -- is both scarce and vital.

In accessing long-term population driven housing demand, we will use the numbers from CLARITAS, a well-known demographic forecasting company. Using their household growth projection, which equates roughly to housing demand, we see a potential housing demand annually of almost 3,600 dwelling units since 2001. Note, this figure does not take into account second home demand, which absorbs about 15%-16% of the new home supply annually, and puts additional pressure on the residential market.

When this is compared to the annual production of new housing on Oahu over the same time period, we see a deficit running of some 1,200 homes.

POPULATION GROWTH DRIVEN HOUSING DEMAND

Households	5 Yr. Growth	1 Yr. Growth	New Home Production	Annual Housing Deficit
2001	286,731			
2007	304,505	17,774	3,555	2,200
2012	316,079	11,574	2,315	2,000
				1,205
				375

Looking ahead, the rate of household growth, i.e., housing demand is projected to slow to around 2,300 dwelling units a year. We believe that the production of new homes over the next few years will fall to 2,000.

Our reasons for this are that:

1. The high-rise condominium boom has run its course, and there will be no more 200+ unit projects moving forward, save for the high-end and around Waikiki;
2. The production builders in the state will continue to build, but at a lower level, in response to lower demand due to high prices, high costs and difficult lending environment; and
3. A number of factors, including a low supply of entitled land and a slowing economy.

As such, we foresee a deficit in housing, relative to potential demand. This will make the current shortage of housing even more acute. Thus, any projects that provides housing, particularly at the low end, is both timely and meaningful.

Turning now to the specific target market, we begin by looking the demographic segments that would be the ones demanding the units provided by the proposed project.

We do this by looking at the project's specific units and the particular income group that they are dependent on demand coming from. Then, we look to see how numerous a group that is, and whether it is sizable enough to absorb this new supply.

In terms of the target market, the table below takes the proposed purchase price and defines it in terms of the likely mortgage the household will take out, in order to finance it (although some will pay cash, this is done to back into an income range necessary for home purchase... with which we can then calculate the number of households on island who could qualify for a purchase).

POTENTIAL MORTGAGE FOR \$75,000 HOME PURCHASE

Price	Mortgage	Loan at 10% Down	Interest Rate	Monthly Mortgage	Annual Income (66%)
\$75,000	\$67,500	90.0%	6.0%	\$364	\$13,245

As seen, the minimum income needed to buy this home is \$13,245.

We then relate this number of potential applicants that could qualify. We arbitrarily use as a cut off, those making 80% or more of the Area Median Income of \$63,400 (or \$52,400), as this is the threshold most developers cannot easily develop for. Again, we turn to Claritas for an estimation of the number of people, broken out by income bands. Note, we are not considering those who are either under 25 years old or over 75 years old, although they certainly could qualify and purchase.

POTENTIAL MARKET FOR \$75,000 HOME, UNDER 80% AMI

2007 Estimate Age Groups	Age 25-34	Age 35-44	Age 45-54	Age 55-64	Age 65-74	TOTAL
Income \$15,000 - \$19,999	1,555	1,538	1,464	735	713	1,388
Income \$20,000 - \$24,999	2,020	1,839	1,639	809	732	1,560
Income \$25,000 - \$29,999	2,677	2,296	2,243	1,023	948	1,413
Income \$30,000 - \$34,999	2,591	2,746	2,229	1,037	939	1,609
Income \$35,000 - \$39,999	2,824	2,664	2,429	1,247	1,150	1,419
Income \$40,000 - \$44,999	2,789	2,715	2,392	1,019	935	1,427
Income \$45,000 - \$49,999	2,861	2,996	2,469	1,010	974	1,388
Sum	17,117	16,764	14,865	6,880	6,392	10,202

Note, we cut the market off at the tail ends of the price spectrum (under \$15,000, to the \$13,245, and over \$50,000, to the \$52,400), but they are miniscule, relative to the whole number. Thus, the total market for this offering is certainly over 77,400 households on Oahu. And, as such, it appears these 139 units (72 existing and 67 newly built) will be sold quickly (as this 139 represents 0.0018% share of potential market).

VII. DESCRIPTION OF COMPARABLE UNITS IN THE MARKET AREA

On Oahu overall, there are no for-sale affordable housing units, period. There is a for-sale affordable town home project in Kapolei and an affordable high-rise in Waipahu. Both are described below, and can be seen as not comparable:

WAIPAHAU PLANTATION HIGH-RISE CONDO PRICING, 120% AMI

Bedrms/Baths	Sq. Ft.	Int. Est.	Maint Fee	Parking	Price Range (FS)	Avg Price
Jr. 1-Bdrm/1-Bath	362		\$171	1	\$131,500 - \$143,000	\$137,250
1-Bdrm/1-Bath	444		\$208	1	\$182,500 - \$194,500	\$188,500
2-Bdrm/1-Bath	555		\$255	1	\$230,000 - \$242,000	\$236,000
2-Bdrm/1-Bath	555		\$255	1	\$231,000 - \$243,000	\$237,000
3-Bdrm/1-Bath	643		296	2	\$291,000 - \$302,000	\$296,500

This project met with some resistance when it came to market, as many of the potential buyers were unsure whether they wanted to live in a high-rise (as many of them preferred a more traditional, and familiar, single family home).

The next one met with more success, in large part because it is part of the Second City at Kapolei (and the builder is known and well-respected).

KAPOLEI NOHONA KAI CONDO PRICING, 140% AMI

Units	Count	Average Price	Average Sq. Ft.
2	6	\$303,000	920
3	14	\$336,643	1,158
Grand Total	20	\$326,550	1,086

However, no everyone is satisfied with these efforts. The following is taken from an article on Nohona in the Star Bulletin, a year ago.

Some housing advocates, however, said while the new housing will help middle-income families, the units are still not affordable enough for many Hawaii residents. The Rev. Bob Nakata, a member of the non-profit group Faith Action for Community Equity, said the new housing project is "part of the solution, but it's too bad that it has to be at such a high price. It's sad that that's what's considered affordable in the for-purchase market," he said.

"More affordables are being built, but not fast enough to affect the market right now, and as a consequence, homelessness is still getting worse," said Nakata, whose organization has been encouraging nonprofit and for-profit companies to develop more affordable housing.

VIII. ANALYSIS OF PRACTICALLY AVAILABLE RENTS, VACANCY RATES, OPERATING EXPENSES AND TURNOVER RATES OF COMPARABLE PROPERTIES IN THE AREA.

Not applicable.

IX. ANALYSIS OF PRACTICALLY AVAILABLE RENTS, VACANCY RATES, OPERATING EXPENSES AND TURNOVER RATES OF MARKET RATE PROPERTIES IN THE MARKET AREA.

Not applicable.

X. PROPOSED PROJECTS IN THE MARKET AREAS

Nothing is being proposed in the immediate area. At some point in the future, there will be housing produced to the south, by the Mormon church's for-profit arm. There will likely be some affordable units. Similarly, there is a 10% affordable requirement governing the Turtle Bay development, but this is not eminent, nor even likely, given the governor's proposal that the state purchase it.

XI. MARKET ACCEPTANCE COMMENTARY & ABSORPTION FORECAST

We reviewed:

- The overall market, as well as
- The new single family homes market, and
- The new homes condominium market, and
- The resale multifamily market, and
- The resale single-family homes market in the island, the coast and the immediate area.

In each case, the contemplated values of this project are significantly below those other sub-markets. Period.

Most importantly, we compared it to the two for-sale projects currently on the market and found that it was far superior in terms of price, and product (inasmuch as this was a single family dwelling with a very large yard).

Therefore, given the magnitude of the potential demand and the paucity of supply at this, the lowest end of the single family market, we believe that this project will receive a sufficient number of buyers (and applications) to be able to achieve 100% sellout within the first one to three months of availability.

Appendix J

Dune Characterization Study



Sea Engineering, Inc.
Makai Research Pier 41-305 Kalaiananole Hwy.
Waimanalo, Hawaii 96795-1820
Ph: (808) 259-7966 Fax: (808) 259-8143
Email: se@seaengineering.com
Website: www.seaengineering.com

Memorandum

DATE: April 25, 2008
TO: Project Team
FROM: Scott Sullivan
SUBJECT: Kahuku Village Beach

A site visit was made on April 9 to investigate the general condition and characteristics of the beach and shoreline in the vicinity of Kahuku Village, along the ocean side of the golf course. Marc Erickson and Scott Sullivan of Sea Engineering conducted the site inspection. Scott Sullivan is a coastal engineer with over 35 years of experience in coastal projects in Hawaii. Marc Erickson is a coastal geologist and has accomplished several dune surveys on Maui which are now required as part of the Maui County coastal development approval process.

Dunes are broadly defined as hills of sand largely built by eolian, or wind-blown processes. In Hawaii, large waves also contribute to the development of dunes. Natural coastal dunes built by the prevailing wind and wave conditions, or established and/or nourished by deliberate human action, can contribute significantly to overall long term shoreline stability. High dunes prevent wave overtopping of the beach and backshore flooding. During storm events, when the beach may be undergoing increased erosion, the dune can release sand into the littoral system and help prevent landward recession of the beach. Dunes are therefore important ecosystems that are increasingly targeted for protection in most coastal counties.

Almost the entire shoreline area seaward of the golf course at Kahuku can be classified as a coastal dune environment. It consists of undulating hills, ridges and mounds of unconsolidated beach sand, partially vegetated by salt tolerant grasses and shrubs, and occasional trees. There is ample evidence that dune formation is an active process in the area, including wind ripples in the sand, fields and patches of loose sand, and sand entrapment in the vegetation. Houses proposed seaward of the golf course would be built within this dune environment.

In Hawaii, Maui County has been most progressive in safe guarding coastal resources. The county has enacted a grading ordinance, Section 20.08.035, which prohibits the grading of coastal dunes. The intent of this law is to prevent beach loss due to erosion by keeping dune sediment available for inclusion in local littoral processes. The county ordinance defines a coastal dune as "one of possibly several continuous or nearly continuous mounds or ridges of unconsolidated sand contiguous and parallel to the beach, situated so that it may be accessible to storm waves and seasonal high waves for release to the beach or offshore waters." Thus, there are three main criteria that are used to establish the presence or limits of a dune:

1. Morphology - a dune is a mound or ridge formation, that rises to a crest, and slopes downward on the back, or landward side. The backside "heel" of the dune can be located and surveyed to determine a backshore dune line.
2. Unconsolidated sandy soil - is the material comprising the dune primarily beach quality sand. Small holes or trenches can be dug to determine the presence of sand or earthen material.

3. The possible reach of storm or seasonal high waves - is the dune sand accessible to storm waves, such that it is available and can be released into the littoral system during storm events.

The limits of a coastal dune may not always be definitive, however. Sometimes there is no clearly defined break in slope, sometimes the terrain is obscured by heavy underbrush, or there may be several lines of dunes. In heavily used areas the coastal dune structure can be obscured by terrain alteration due to vehicle or foot traffic, or by previous grading and construction activities.

This Maui grading ordinance and dune definition, nevertheless, provides a basis for evaluating the Kahuku dune area, and for establishing a landward dune limit with the overall dune environment. During our April 9 site visit, the three dune criteria listed above were utilized to estimate possible landward limits of the coastal dune. The Kahuku Village shoreline is very representative of a well established coastal dune ecosystem. It consists entirely of beach sand, is accessible to storm waves, and is well vegetated to stabilize it against wind erosion. The backside, or "heel", is not pronounced at all locations, which may partially be attributable to rather extensive human alteration of the area. Accessibility to storm waves was judged based on distance from the water, ground elevation, and the extent nature of shoreline vegetation. The attached figure illustrates our initial estimation of the dune limit as would be defined by Maui County, as well as the proposed home locations. (The landward extent of the dune is shown by the magenta colored line.)

Based on this initial determination of the dune limit, and our field observations, we have the following initial evaluation of the 18 proposed house locations.

- Lots 1-5: The home sites are located above the +20-foot elevation, and the dune heel is located approximately at the location of the homes shown on the drawing. If moved a little more landward these homes would be reasonably located with regard to the dune system and vulnerability to storm wave damage.
- Lots 6-10: These homes as shown are located completely seaward of the dune line, and in addition are at a relatively low elevation of +10 to +15 feet. It is our opinion, based on the site characteristics and the narrower beach at this location, that homes located as shown on the drawing would be very vulnerable to possible storm wave impacts.
- Lots 11-14: These homes are also located completely on the dune, seaward of where we would place the dune heel. They are however, generally located at or above the +20 foot elevation, and the beach is wider, thus they are not as vulnerable to storm waves. However, during a severe storm event the dune could erode and recede, thus possibly subjecting the homes to significant risk.
- Lots 15-18: These homes are again located completely on the dune, seaward of the dune heel, and at very low elevations (+10 to +12 feet). The beach is wide at this location, however the low elevations are potentially subject to storm wave runoff and inundation.

The recent shoreline historical position analysis accomplished by the University of Hawaii Department of Geology shows the shoreline to be stable over the long term, despite the rather extensive sand mining operations conducted there in the 1950s and 60s. This is likely due in large part to the protection provided by the broad beach rock shelf at the beach toe. The extensive dune system also likely makes a significant contribution to the stability of the beach, permitting it to weather severe storms without receding inland. Thus the site is not subject to a prevailing or chronic erosion and shoreline recession problem. Preservation of the existing shoreline conditions so far as practicable would greatly help protect any backshore development from possible future damage by storms or

erosion. An additional consideration is the very real possibility of sea level rise over the next century. There is increasing evidence that significant sea level rise may in fact be beginning. An intact and functioning dune system at Kahuku, and placing structures at higher elevations, would provide a valuable safety factor for near shore development in the event that the sea level does rise.

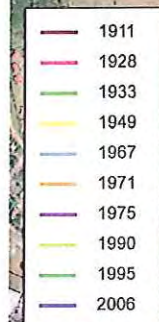
In summary, the coastal area seaward of the golf course in Kahuku can be considered a functioning coastal dune ecosystem environment, and any development planned in this area will likely encounter opposition from environmental groups and coastal advocates. Maui County regulations on coastal dunes provide a basis for evaluating the site. Initial estimation of a dune limit indicates that only Homes 1 to 5 are partially situated behind the dune limit; homes 6 to 18 are situated seaward of the dune. Ideally, these homes should be relocated on the landward side of the dune. Further, Homes 6 to 10 and 15 to 18 are located at low elevations that would render them vulnerable to storm wave damage.

Appendix K

Coastal Change Study

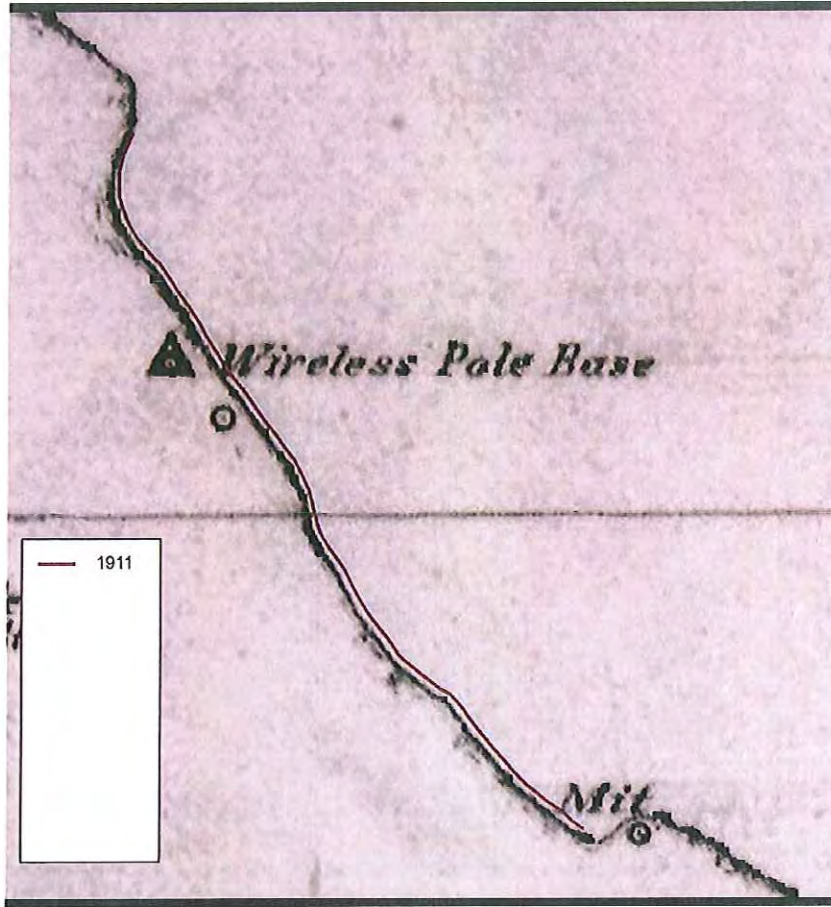
Kahuku Beach Shoreline Change

University of Hawaii Coastal Geology Group

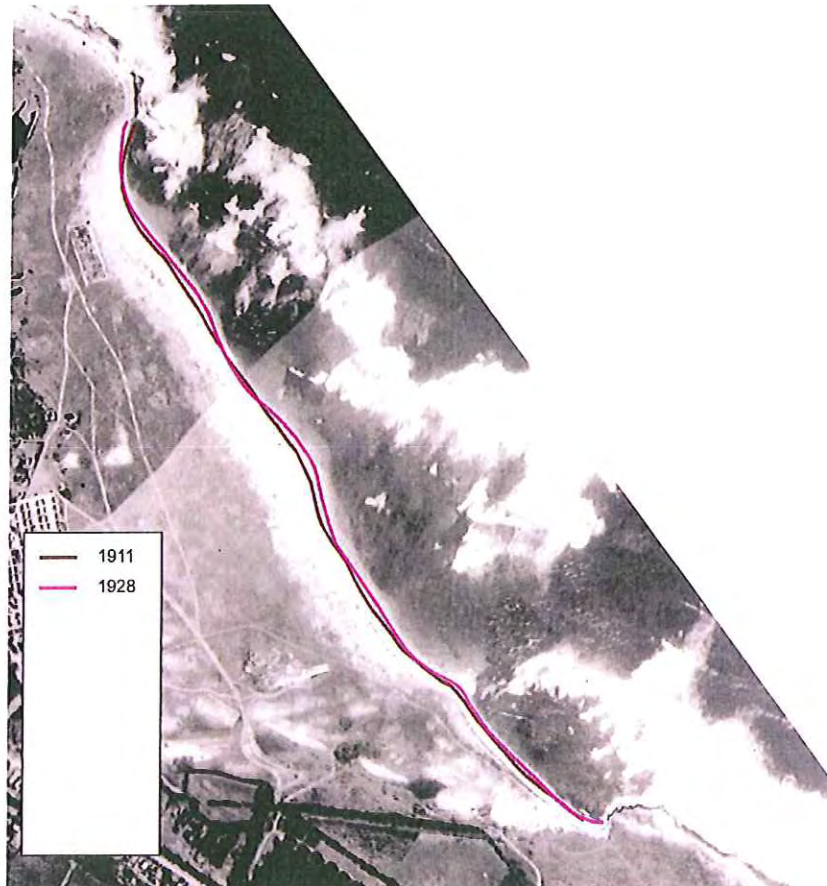


Historical Shoreline Positions
1911 - 2006

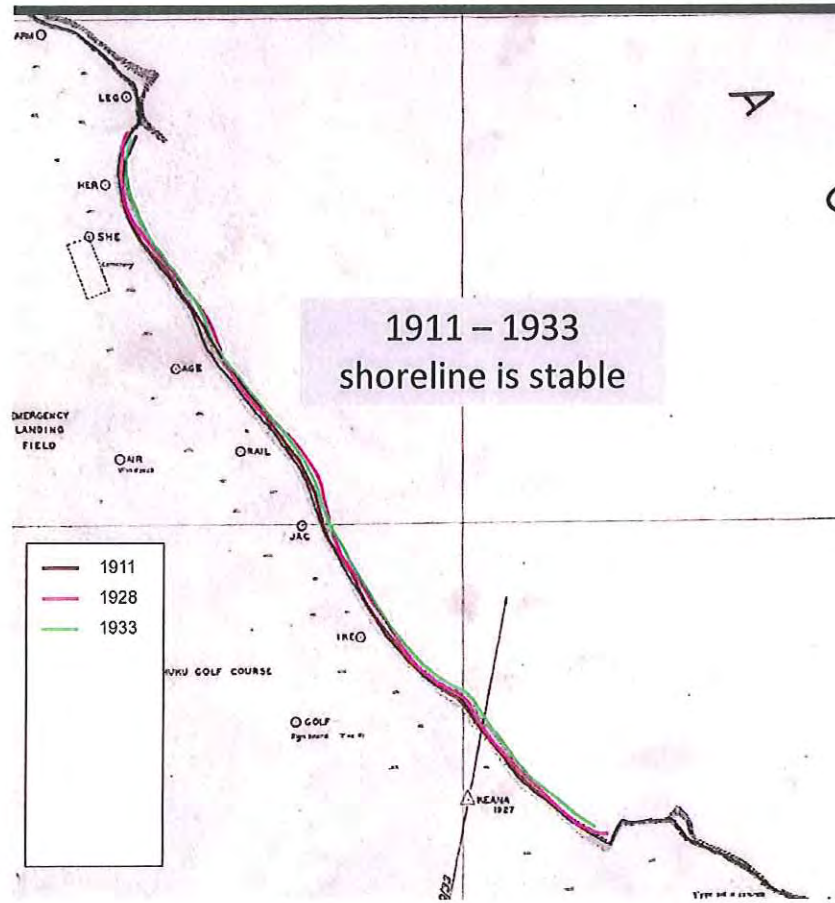
1911
T-Sheet



1928



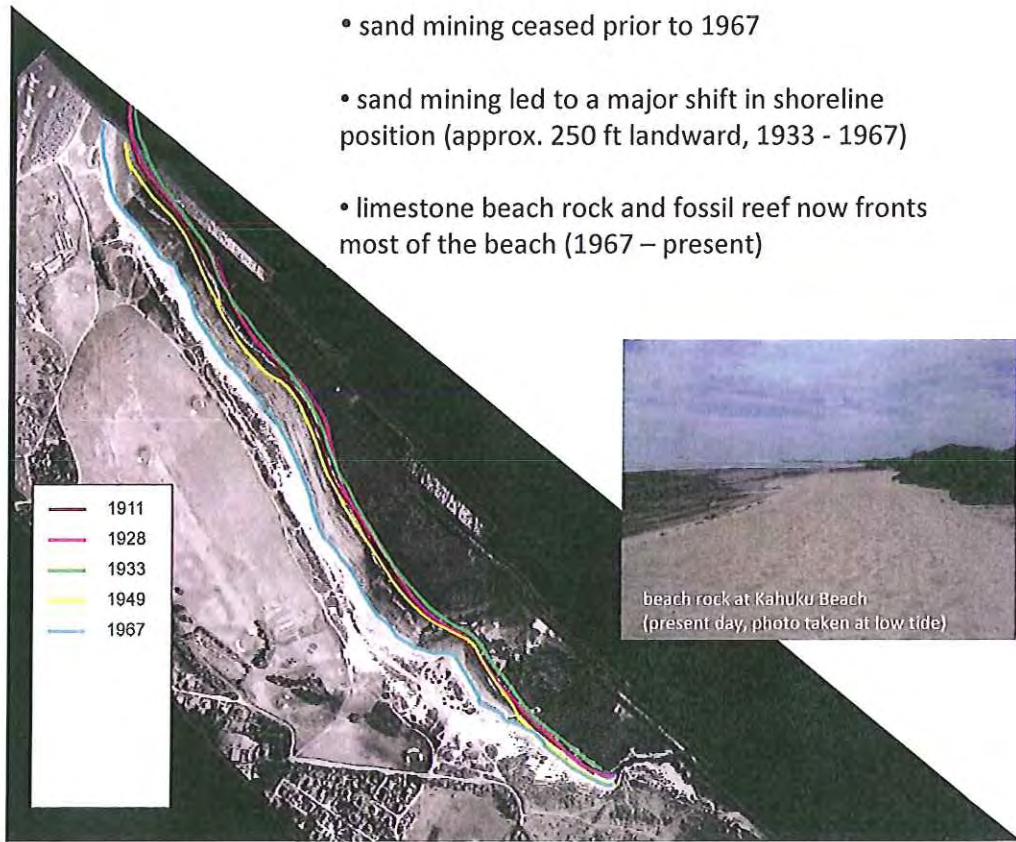
1933
T-Sheet



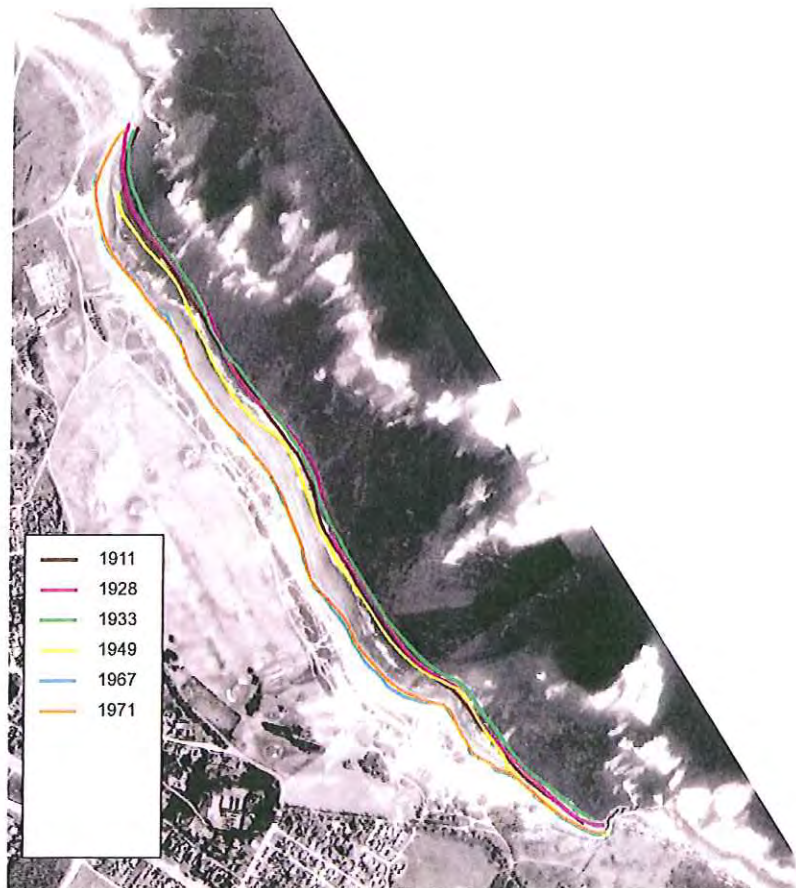
1949



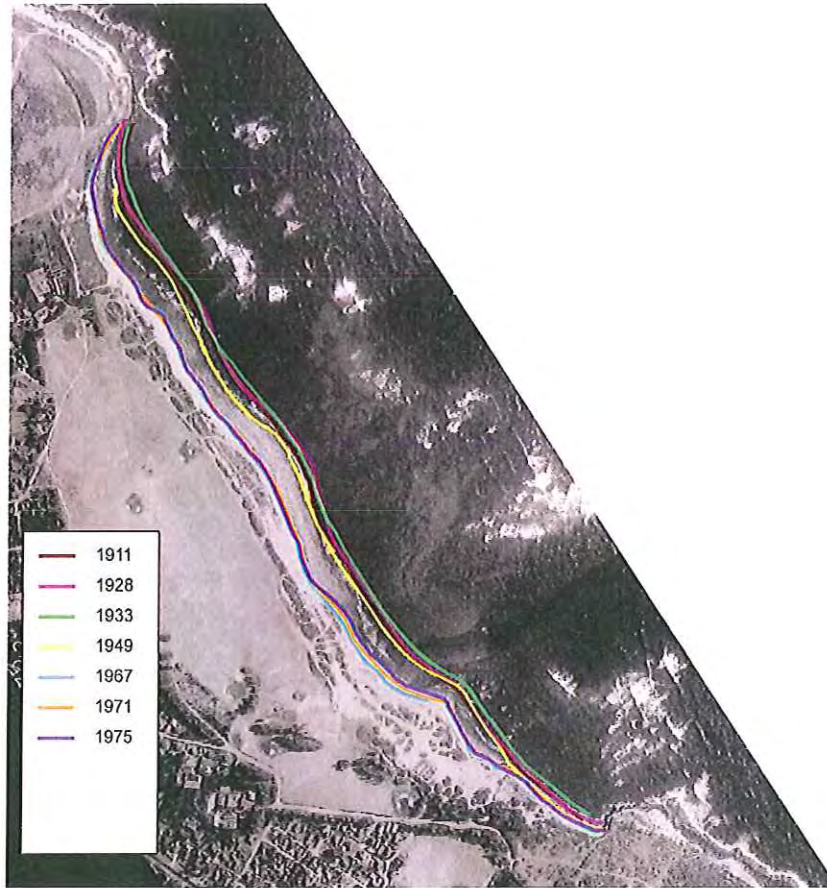
1967



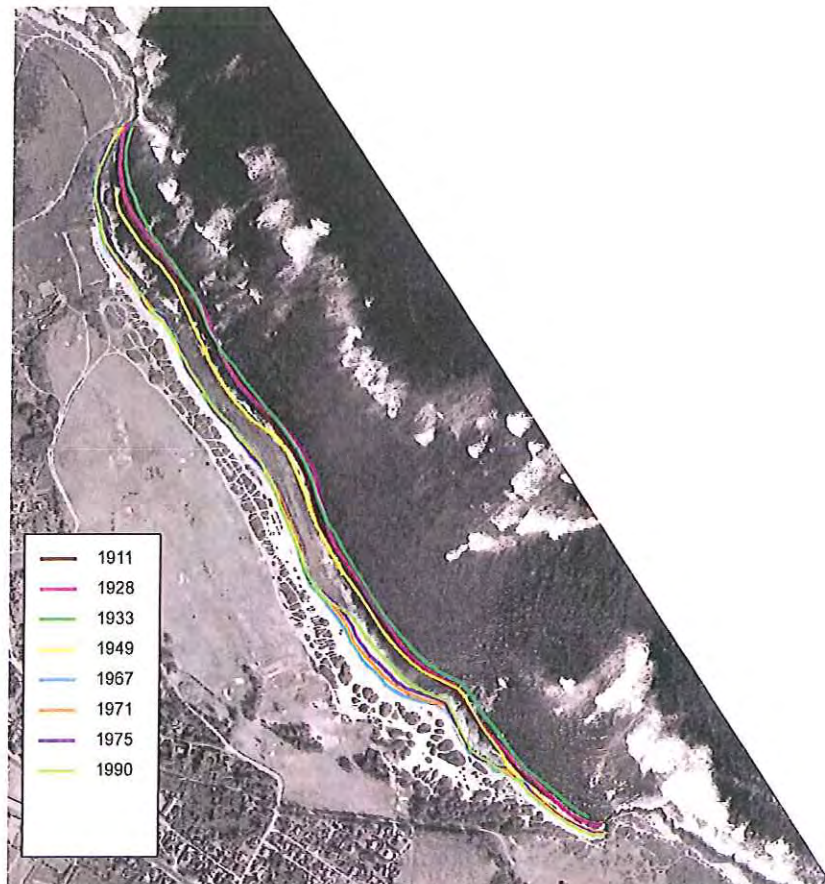
1971



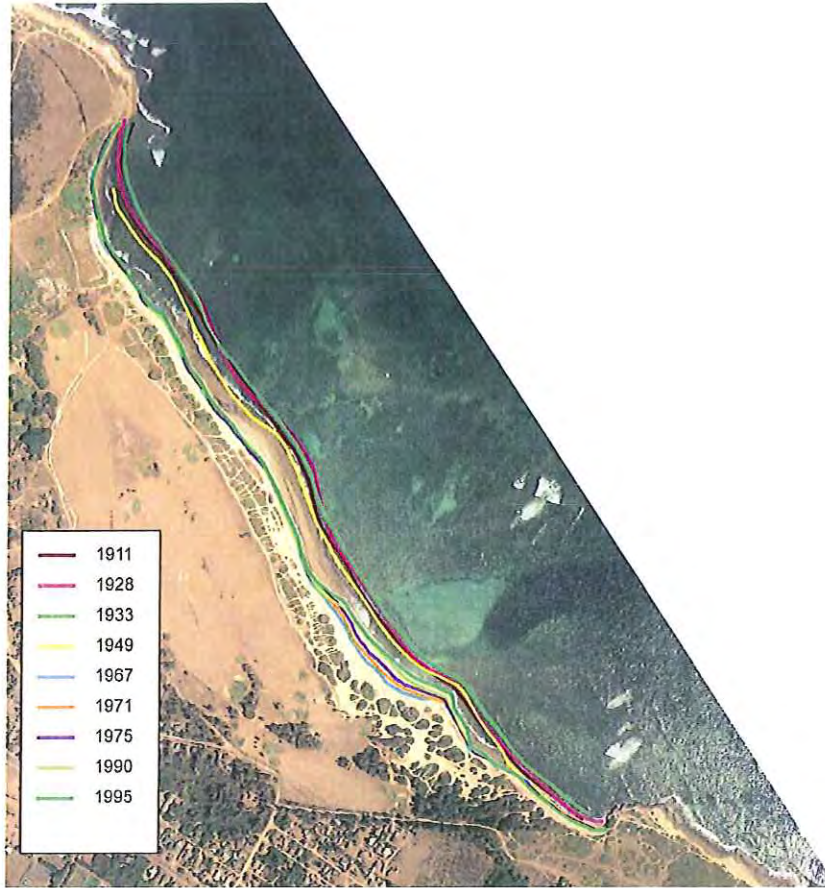
1975



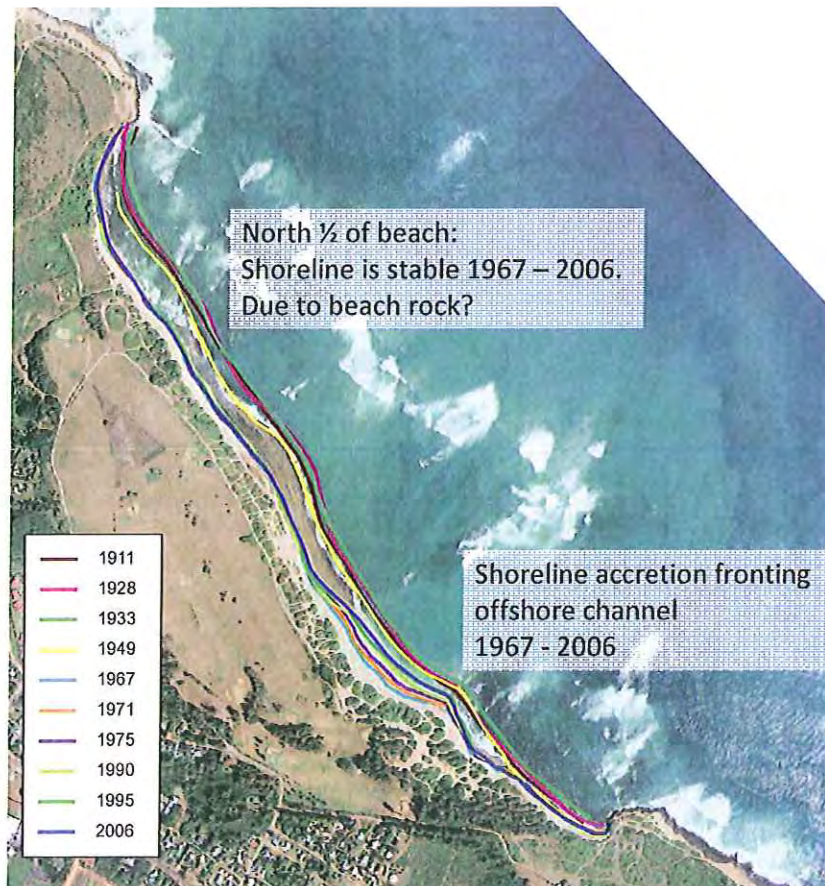
1990



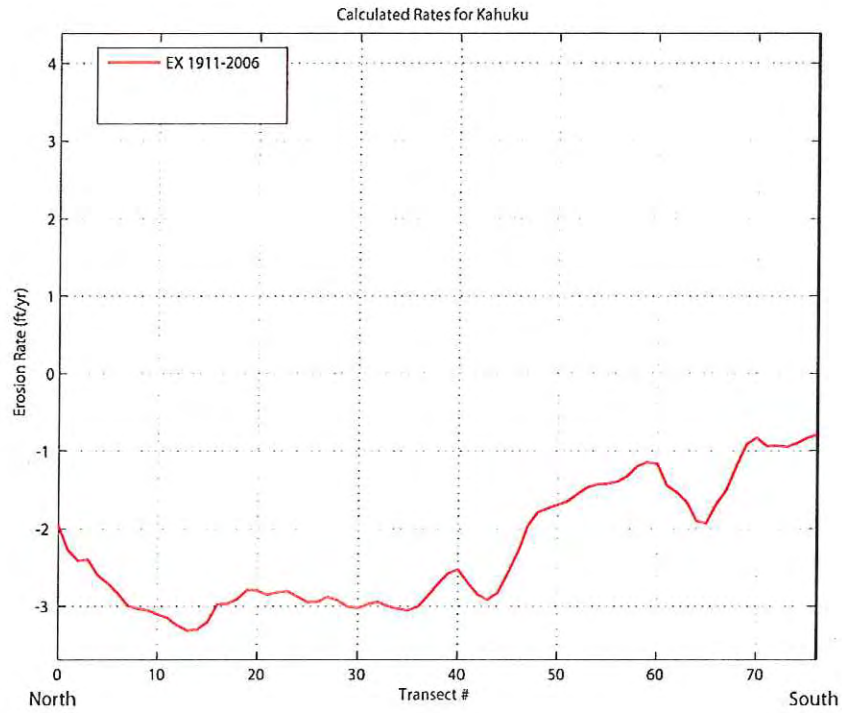
1995



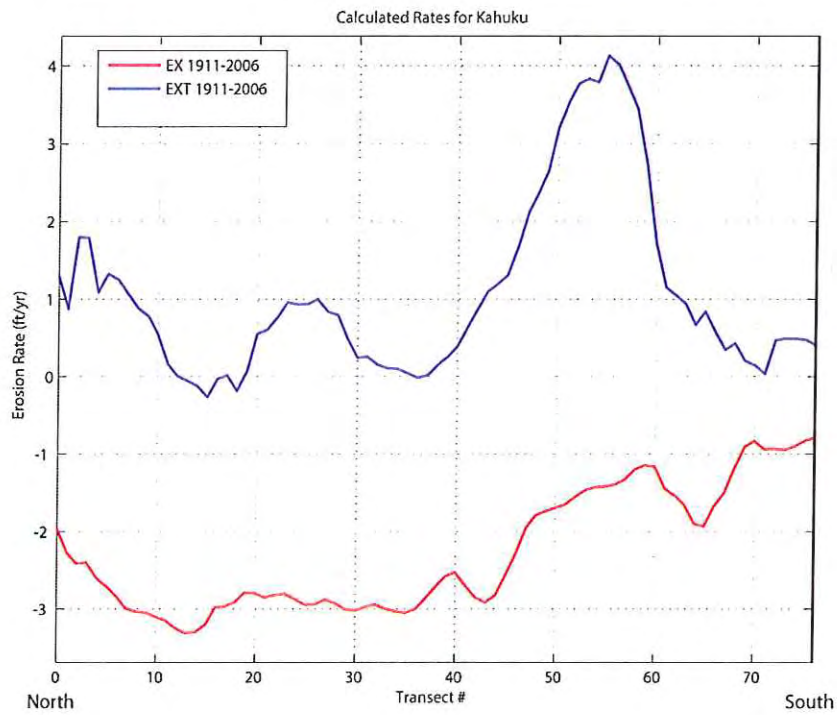
2006



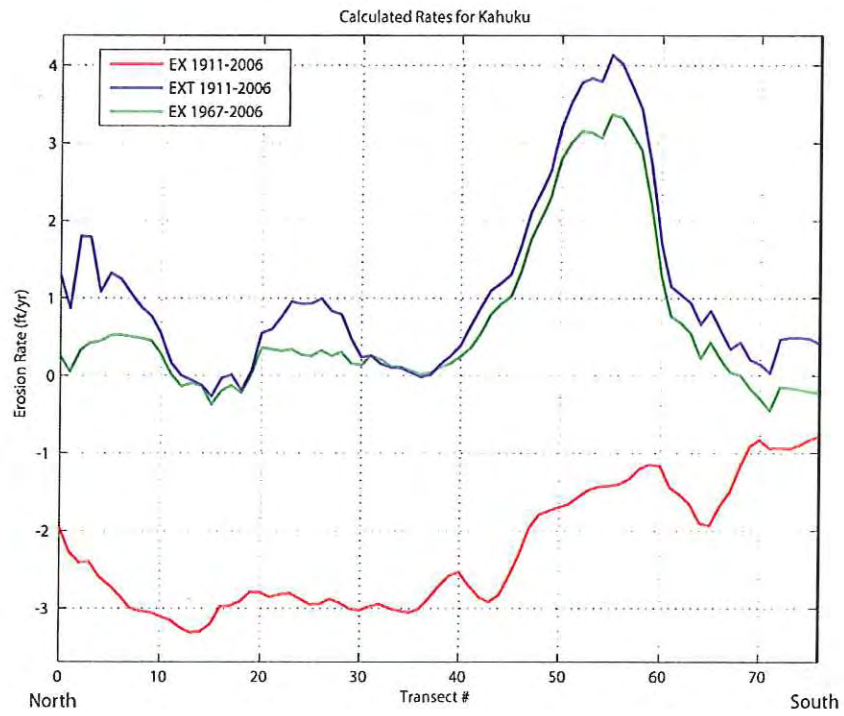
Calculating Shoreline Change Rates: EX 1911 – 2006 (all shorelines)



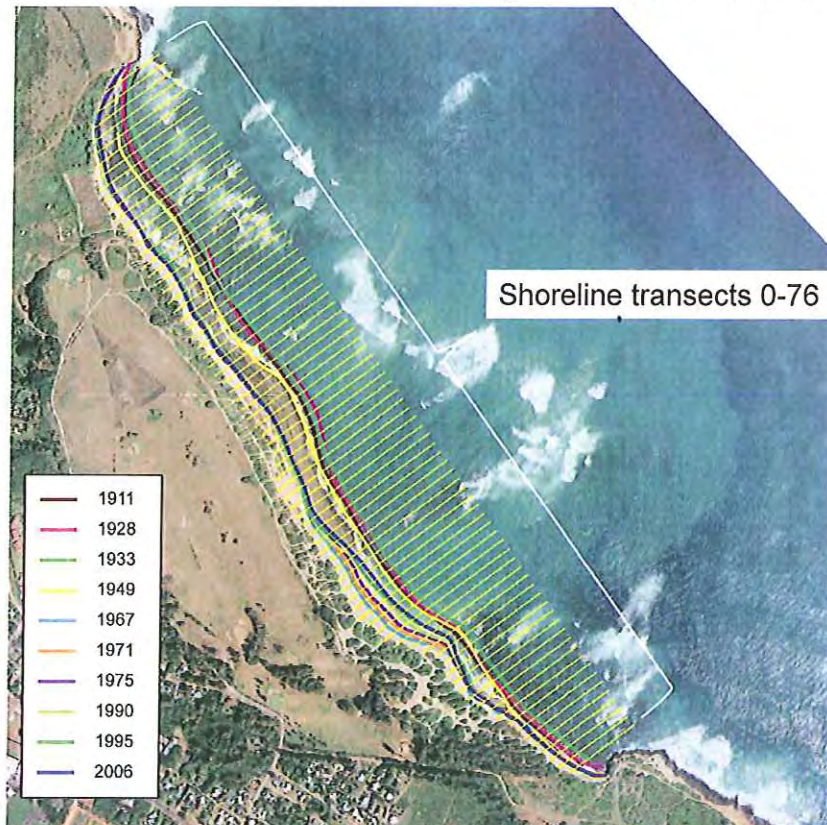
Calculating Shoreline Change Rates: EXT 1911 – 2006 (all shorelines)



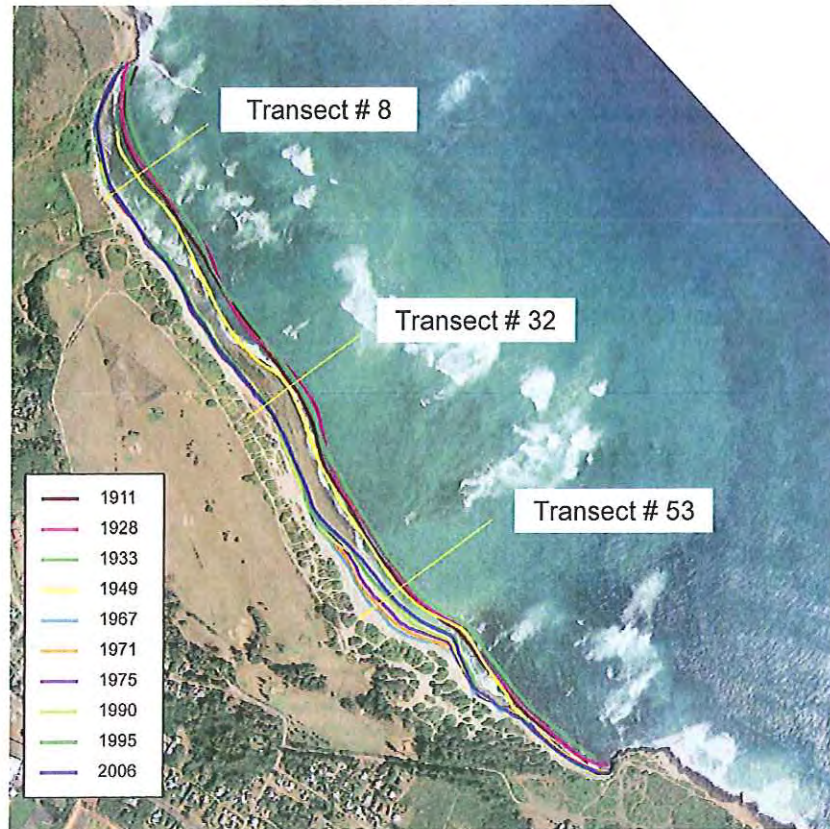
Calculating Shoreline Change Rates: EX 1967 – 2006 (post-mining)



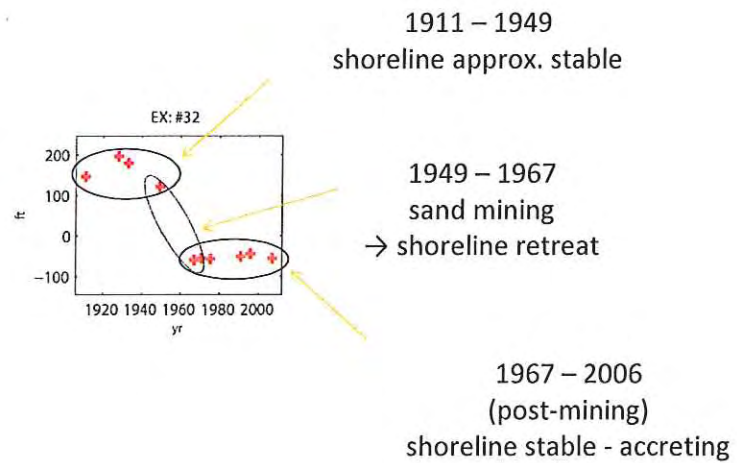
Let's look at the fit of the shoreline change models at a few transects



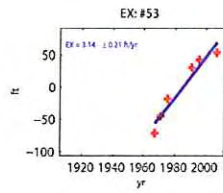
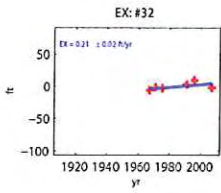
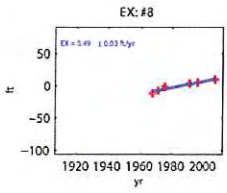
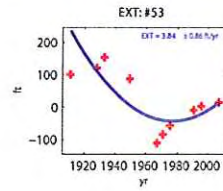
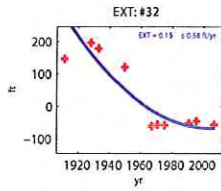
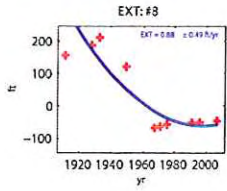
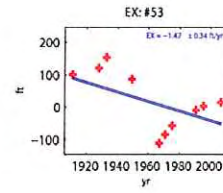
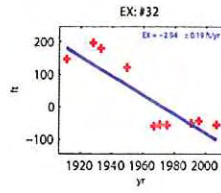
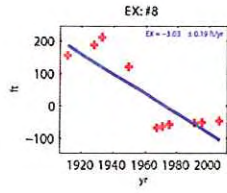
Let's look at the fit of the shoreline change models at a few transects



Transect 32: time series of shoreline positions



Shoreline change models sampled at a few transects



Kahuku Beach, Oahu, Hawaii

SHORELINE CHANGE RATES

- █ Accretion Rate
- █ Erosion Rate

Historical shoreline positions are measured every 66 ft along the shoreline. These sites are denoted by yellow shore-perpendicular transects. Changes in the position of the shorelines through time are used to calculate shoreline change rates (ft/yr) at each transect location.

Annual shoreline change rates are shown on the shore-parallel graph. Red bars on the graph indicate a trend of beach erosion, while blue bars indicate a trend of accretion. Approximately every fifth transect and bar of the graph is numbered. Where necessary, transects have been purposely deleted to maintain consistent along-shore spacing. As a result transect numbering is not consecutive everywhere.

The EX method is used to calculate shoreline change rates for the study area. The rates are smoothed along shore using a 1-3-5-3-1 technique to normalize rate differences on adjacent transects. For more information on erosion rate methods and results see: <http://www.soest.hawaii.edu/asp/coasts/oahu/index.asp>



AREA DESCRIPTION

Kahuku Beach (5600 ft) is located on the northern windward coast of Oahu in an embayment between Kaohana Point and Makahoa Point. The backshore of the beach consists of vegetated dunes and the Kahuku Golf Course. The foreshore of the beach consists of eroded limestone "beach rock", except for a short portion to the south fronting a channel in the offshore reef. Kaohana Point and Makahoa Point are comprised of limestone platforms with a flat top a few feet above the high water line. Kahuku beach is exposed to large seasonal swell during winter months and persistent easterly tradewind swell year-round.

Historical shorelines from 1911 to 2006 indicate three stages of shoreline change at Kahuku Beach. From 1911 to 1933 the shoreline was relatively stable. Between 1933 and 1967 the entire shoreline retreated at a high annual rate. This was likely due to sand mining activity that can be observed in the 1949 aerial photo. The shoreline retreated up to 230 ft landward during this stage, exposing beachrock along the shoreline. 1967 aerial photography shows that sand mining ceased sometime between 1949 and 1967. From 1967 to 2006, the beach has remained relatively stable or accreted.

Annual shoreline change rates depicted in the histograms are calculated using all shorelines (1911-2006). The shoreline change rate averaged along all transects on the beach is -2.27 ± 0.22 ft/yr (erosion).

Results are similar to those of Hwang's (1981) analysis using the water line as a shoreline proxy, which found net landward movement of the water line (erosion) between 1949 and 1975. However, Hwang (1981) and Sea Engineering (1988) found net seaward movement of the vegetation line in most areas between 1949 and 1988. This calculation reflects recovery of coastal dune vegetation after sand mining ceased. For more information see: <http://www.soest.hawaii.edu/asp/coasts/oahu/index.asp>

Hwang, D., 1981, Beach Changes on Oahu as Revealed by Aerial Photographs, State of Hawaii, Department of Planning and Economic Development, Urban and Regional Planning Program.

Sea Engineering, 1988, Oahu Shoreline Study Part 1 Data on Beach Changes. Prepared for City and County of Honolulu.

HISTORICAL SHORELINES

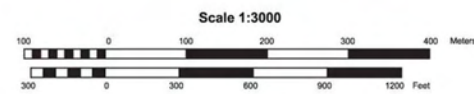
- █ 1911 T-sheet
- █ 1928
- █ 1933 T-sheet
- █ May 1949
- █ Apr 1967
- █ Feb 1971
- █ Jun 1975
- █ Nov 1990
- █ Sept 1995
- █ Dec 2006

█ Erosion rate measurement locations (shore-normal transects)

Historical beach positions, color coded by year, are determined using orthorectified and georeferenced aerial photographs and National Ocean Survey (NOS) topographic survey charts. The low water mark is used as the historical shoreline, or shoreline change reference feature (SCRF).

Movement of the SCRF along shore-normal transects (spaced every 66 ft) is used to calculate erosion rates.

Charles Fletcher, Bradley Romine, Matthew Barbee, Siang-Chyn Lim, Amanda Vinson
 University of Hawaii Coastal Geology Group
 School of Ocean and Earth Science and Technology
 1680 East West Rd., Honolulu, HI 96822, U.S.A
<http://www.soest.hawaii.edu/asp/coasts/oahu/>



Appendix L

Agricultural Feasibility Study

INTRODUCTION

Continental Pacific, LLC, James Campbell Company, LLC and James Reynolds, Inc. hold fee interests in one or both TMK: 5-6-002:010 and 016 (collectively the "Property") located in Kahuku, Koolauloa, Oahu. The parties propose to consolidate the two parcels and resubdivide the consolidated site into 9 agricultural lots, each having a minimum lot area in excess of 20 acres. In addition to the 9 agricultural lots, two large remnant parcels will be created in the northwest portion of the Property to be retained by the James Campbell Company as an open space buffer for the James Campbell National Wildlife Refuge. RM Towill Corporation will prepare and process the subdivision application as the authorized agent for the owners.

Most of the Property is zoned AG-2 General Agriculture, with other areas designated Residential or Preservation. The subdivision of agricultural land on Oahu is regulated by Section 1-115 of the Subdivision Rules & Regulations, which implements Chapter 22, Revised Ordinances of Honolulu ("ROH"). Among the provisions relating to agricultural land, Section 1.115 requires the preparation of an Agricultural Feasibility Report to demonstrate that the subdivided lots can be used for viable agricultural activities. This study was undertaken in compliance with the foregoing requirement.

The following Table summarizes pertinent information on the Property, which is covered in greater detail within the Report:

Location	Kahuku, Koolauloa, Oahu
Tax Map Keys	5-6-002:010 & 016
Land Area	91.47 acres and 183.95 acres
Configuration	Elongated from NW to SE
Elevation	10' to 30', mound reaches 55'
Topography	Relatively Flat
State Land Use Designation	Urban, Agricultural, Conservation
City Zoning Designation	R-5, AG-2, P-1 & P-2
Special Management Area	Within the SMA
Flood Hazard	Zones X, AE & VE
LSB Soil Productivity	"B" and Unrated
ALISH Classification	Unclassified

AGRICULTURAL FEASIBILITY REPORT

VILLAGE GOLF COURSE SUBDIVISION

KAHUKU, KOOLAULOA, OAHU

Prepared For:

RM Towill Corporation
420 Waiakamilo Road Suite 411
Honolulu, Hawaii 96817-4941

Prepared By:

Development Strategies, LLC
3465 Waiatae Avenue Suite 260
Honolulu, Hawaii 96816

Agronomics By:

Tropical Crops Services
94-350 Punono Street
Miliama, Hawaii 96789

May 2007

THE PROPERTY

Description of the Property

Location:

The Property is located adjacent to the plantation town of Kahuku, on the makai ("ocean") side of Kamehameha Highway (Figure 1). A significant portion of the Property is occupied by the Kahuku Golf Course, a 9-hole layout that lies between the old residential area of Kahuku Village and the shoreline. A portion of the Property meanders through the residential area, abutting Kamehameha Highway at one location.

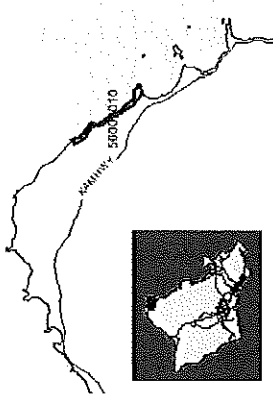


Figure 1. Location Map

Configuration:

The site is irregular in shape and elongated in a northwest to southeast orientation (Figure 2).

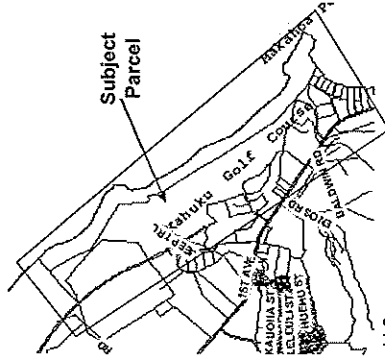


Figure 2. Configuration Map

Land Area:

TMK: 5-6-002:010 ("Parcel 10") is a narrow strip of land 91.469 acres in size that stretches along the shoreline. TMK: 5-6-002:016 ("Parcel 16") is located just inland and comprises 183.945 acres. The aggregate area of the Property is 275.41 acres.

Street Address:

The street address for Parcel 16 is 56-501 Kamehameha Highway, Kahuku, Hawaii. There is no street address for Parcel 10.

Topography:

The Property is relatively flat, sloping upwards from the shoreline at less than a 3% gradient. Elevation in the area of the Village ranges from 20' to 30' above mean sea level. Most of the Golf Course ranges in elevation from 10' to 20'. A knoll located at the southeast corner of the Golf Course rises to an elevation of 55'.

Current Use:

The Property is predominately occupied by the Kahuku Golf Course, a municipal facility that is operated for public play by the Department of Enterprise Services of the City & County of Honolulu ("City"). The Golf Course is the original plantation golf course, having been in operation since 1936.

The Property also encompasses parts of the Village, which is an old plantation camp associated with the former Kahuku Sugar Plantation. Efforts to convey the plantation dwellings to former employees of Kahuku Sugar are currently in progress.

The remainder is made up of the extensive shoreline and an undeveloped area located at the northwest end of the Property which serves as an open space buffer for the James Campbell National Wildlife Refuge.

Historical Context

Koolauloa:

The Sustainable Communities Plan for the Koolauloa District describes this sparsely populated region of Windward Oahu as rural in nature. Small towns, reminiscent of traditional plantation villages, dot the coastline from Waialeale to Kahaluu. Kamehameha Highway is the only arterial roadway linking this area with the North Shore and Koolaupoko to the south (Figure 3).

Koolauloa is to remain rural under the City's General Plan. The Sustainable Communities Plan supports the General

REGULATORY ENVIRONMENT

Entitlements

State Land Use:

The majority of the Property on which the Golf Course and the Village is situated in the State Urban District (Figure 4). In the area of the Golf Course, the State Urban designation extends to the shoreline. In the northwest portion of the site, the undeveloped open space buffer is in the State Agricultural District, with the adjacent coastline designated Conservation.

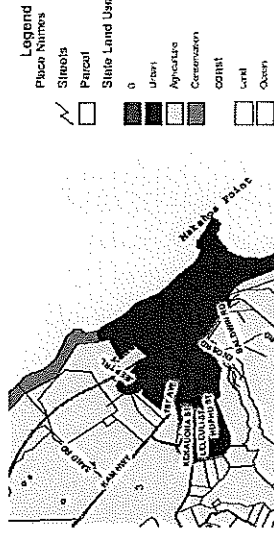


Figure 4. State Land Use Map

The Golf Course, along with the abutting area to be consolidated and resubdivided, is almost entirely within the Urban District. However, a slight overlap into the Agricultural District would occur at the northwest end of the Golf Course.

City Zoning:

The Property, including the Golf Course area, is predominantly zoned AG-2 General Agriculture (Figure 5). The portion of the site within the Village is zoned R-5 Residential, with the area along the shoreline either P-1 Restricted Preservation or P-2 General Preservation. The Agricultural zoning has ramifications with respect to subdivision of the Property. This is discussed in greater detail below in the section on the Subdivision Rules & Regulations.

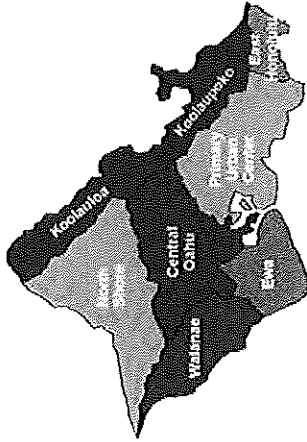


Figure 3. Oahu Development / Sustainable Communities Plan Area Map

Plan and places a priority on enhancing existing communities to retain the rural fabric of the area. Residential development is directed to areas within the Rural Growth Boundary which encompasses areas with adequate physical infrastructure.

Kahuku Village:

The rural character of this region and its agricultural history is reminiscent of old Hawaii. Within this context, the town of Kahuku still reflects its history as a plantation village when employment and community life were closely tied to the cultivation sugarcane and processing of raw sugar. The plantation era was an important period which made a significant contribution to and imprint on the history of Hawaii. Today, the converted Kahuku Sugar Mill still serves as a reminder of this vibrant period.

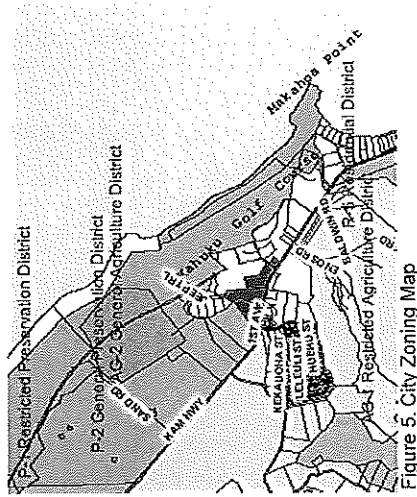


Figure 5. City Zoning Map

Regulatory Considerations

Flood Hazard:

The Federal Emergency Management Agency Flood Insurance Rate Map for the Kahuku area indicates that portions of the Property are covered by Flood Hazard Zones VE, AE and X (Figure 6). These designations indicate the potential for inundation by runoff from a 100-year storm.

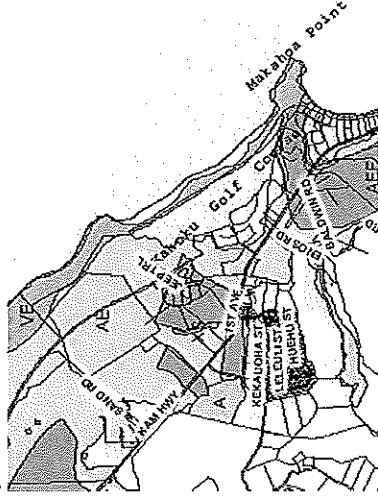


Figure 6. Flood Zone Designation Map

Zone VE – This corresponds to coastal floodplains subject to inundation from the 100-year storm, which has additional

exposure to hazards due to storm waves. Within Zone VE, the lowest habitable floor of a dwelling must be constructed above the Base Flood Elevation (as computed by a licensed engineer). Flood insurance is mandatory. The only area of the Property designated VE occurs within Parcel 10.

Zone AE – This designates floodplains that are subject to impacts from the 100-year storm. The lowest habitable floor of a dwelling within Zone AE must be raised above the level of the Base Flood Elevation. Flood insurance is mandatory within Zone AE. The low lying portions of the Village and the open space buffer are within Zone AE. A floodway (Zone AEF) skirts the southeast edge of the site.

Zone X – This designation indicates areas that are outside of the 100-year floodplain or areas where the depth of runoff from a 100-year storm averages a depth less than 1 foot. Flood insurance is *not required*. The most of the Village and the Golf Course is designated Zone X.

Note that the term “100-year storm” is somewhat misleading. This does not refer to a storm that happens once in a hundred years, but indicates a storm event that has a 1% probability of occurring within a year. Due to prior experience with flooding, the City pays particular attention to plans for the construction of improvements within floodplains.

Special Management Area:

The SMA extends from the shoreline to the inside edge of the Golf Course (Figure 7). The SMA designation means that any activity that constitutes “development” as defined in Chapter 25, ROH, requires a SMA Use Permit (major) if the cost of the improvement exceeds \$125,000. While “development” includes the

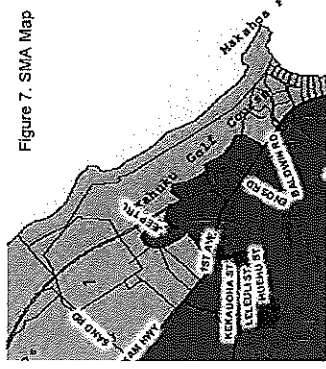


Figure 7. SMA Map

division of subdivision of land (i.e., a change in the density or intensity of use), a one time waiver provision is provided for the subdivision of land into lots greater than 20 acres in size.

Shoreline Setback:

Pursuant to the provisions of Chapter 23, ROH, the setback from the shoreline for new dwellings 60' (as opposed to 40' for existing structures). Note that the setback would be applied from the shoreline as established by a current shoreline survey, which must be certified by the State Department of Land and Natural Resources. This process takes into account the highest wash of waves as indicated by the vegetation line or the debris line resulting from storms.

Subdivision of Agricultural Land:

As indicated previously, the subdivision of agricultural land on Oahu is regulated by the City's Subdivision Rules & Regulations. In particular, Section 1-115 of the Subdivision Rules stipulates special requirements for agricultural subdivisions as follows:

1. **Source of Non-Potable Water – Verification by the Board of Water Supply ("BWS")** of the availability of sufficient non-potable water to support the agricultural use of all lots proposed for subdivision. The City Department of Planning & Permitting ("DPP") forwards a copy of the subdivision application to BWS for certification as to the sufficiency of non-potable water.
2. **Agricultural Covenants –** The subdivision of agricultural land requires the recordation of specific agricultural covenants as a condition for Final Subdivision Approval. A sample of the restrictive covenants is attached as Appendix A.
3. **Agriculture Disclosure –** All sales documents and contracts must include a disclosure that the subdivided lot must be primarily used for bona fide agricultural activities. A sample of the form of disclosure is attached as Appendix B.
4. **Agricultural Feasibility Report –** DPP requires the submittal of an Agricultural Feasibility Report ("Report") as part of the subdivision application package. The Report is forwarded to the State Department of Agriculture for review and approval as part of the agency review process on the subdivision application.

NOTE: While the zoning of the Property is predominantly AG-2, the area underlying the 9 proposed lots is within the State Land Use Urban District. Given the foregoing and the fact that the soil is not classified under both ALISH and the Land Study Bureau rating systems, greater discretion may be applied with respect to processing of the subdivision.

SUBDIVISION CONCEPT

Continental Pacific, LLC, James Campbell Company, Inc. and James Reynolds, Inc. propose to consolidate Parcels 10 and 16 into a single property and to resubdivide the site into 9 agricultural lots and 2 large remnant parcels located in the northwest portion of the Property (Figure 8). In addition, several smaller lots will be created for the internal roadway system. Of the 9 lots (the "Subdivided Lots"), James Reynolds would receive Lot 1 and Continental Pacific would have 8 conveyable lots. The James Campbell Company would retain the two large remnant parcels as an open space buffer for the wildlife refuge. A table indicating the approximate area of each of the lots is provided below:



Figure 8. Proposed Subdivision Map

Lot No.	Area
1	25.57 acres
2	20.25 acres
3	27.59 acres
4	20.05 acres
5	20.05 acres
6	20.09 acres

7	20.33 acres
8	20.83 acres
9	42.26 acres
10	45.38 acres
11	31.13 acres
Total	293.53 Acres

In pursuing the consolidation/resubdivision action, the parties are aware of the open space and recreational importance of the Kahuku Golf Course to the local community. They are fully committed to retaining the Golf Course as an outdoor recreational amenity for public play under the City Department of Enterprise Services.

To provide for this, the portion of the Subdivided Lots on which the Golf Course is presently situated will be subject to a master license agreement that would provide the City with the ability to keep the present Golf Course intact. To ensure continuity of golf course operations, the master license would provide for a common term of use that would be applicable to all of the owners of the Subdivided Lots and prohibit any owner from unilaterally terminating the license over his Subdivided Lot. The master license agreement would also prohibit the erection of vertical improvements within the fairways or in the area immediately adjacent to the tees and greens.

While it is recognized that golf courses are presently not a Permitted Use within the AG-2 General Agriculture District, the Kahuku Golf Course has been a long standing outdoor recreational amenity for the residents of the area and other members of the general public. Constructed in 1936, the Golf Course predates the Land Use Ordinance and its predecessor the Comprehensive Zoning Ordinance. As such, the Golf Course is "grandfathered" as a Non-Conforming Use and the proposed subdivision action would not increase the extent of the non-conformity. The present grandfathering should be continued in light of the location of the Golf Course within the State Urban District.

The long-term viability of the 9-hole course is unknown, but it is presently strongly supported by the community and the political representatives of the Kahuku area. In the event operation of the Golf Course ceases, the owners of the Subdivided Lots would have the ability to terminate the master license agreement and utilize the area for pasture or other agricultural activity. At that time, the lot owners would be able to fence off the Subdivided Lots or arrange to maintain a common pasture with their adjoining neighbors.

Infrastructure

Agricultural Water: Although the golf course fairways are not irrigated, conversion to active pasture management will require a

source of non-potable water to assure optimum germination and growth of giant bermudagrass. Alternative agricultural activities on the Subdivided Lots will also require non-potable water for irrigation. A commit to provide non-potable from the Owner is included in Appendix C.

Potable Water: A preliminary commitment letter from the Board of Water Supply is provided in Appendix D.

Sewage: Discussions with Dennis Nishimura, Chief of the Wastewater Branch of DPP, indicates that the site is not within the service area for the Kahuku WWTP and the facility is up to capacity. The denial of the Sewer Connection Application is provided in Appendix E.

Based on the foregoing, a letter was transmitted to the State Department of Health ("DOH") in regard to the use of Individual Wastewater Systems to service the Farm Dwellings. The favorable response from the DOH is attached as Appendix F as the area is located well below the Underground Injection Control Line.

Drainage: The site naturally drains from areas inland to the ocean and no major floodway crosses the Property. As such, unusual on-site drainage improvements are not anticipated. In heavy rains, the gentle topography slows the sheet flow of runoff across low lying areas of the site. The sand dunes that run parallel to the shoreline present a barrier that hinders the flow of runoff to ocean resulting in ponding.

As noted previously, the Golf Course area is primarily in Zone X with the portion parallel to the shoreline designated VE. The extent to which the construction of a Farm Dwelling might be impacted would be dependent upon where the building pad is sited.

Electricity: The Hawaii Electric Company ("HECO") was not contacted for this assessment as electrical power is provided to the Village via overhead lines. HECO is required to provide service to customers pursuant to Rule 7 of the PUC. Since only 9 Farm Dwellings are projected and no special refrigeration requirements are anticipated, extension of service from the area of the Village is not expected to pose a significant problem.

Ingress/Egress:

To permit subdivision of the Property into the 9 lots, appropriate roadway improvements will be required. The design of the internal roadways will comply with City standards and roadway access is not contemplated to pose a significant issue.

Within the subdivided lots, long driveway runs may require that the widths of the access drives be expanded from 12' to 16' to accommodate emergency vehicles. However, this is an item to be addressed at the point of application for a Building Permit and is not anticipated to impact the subdivision approval process.

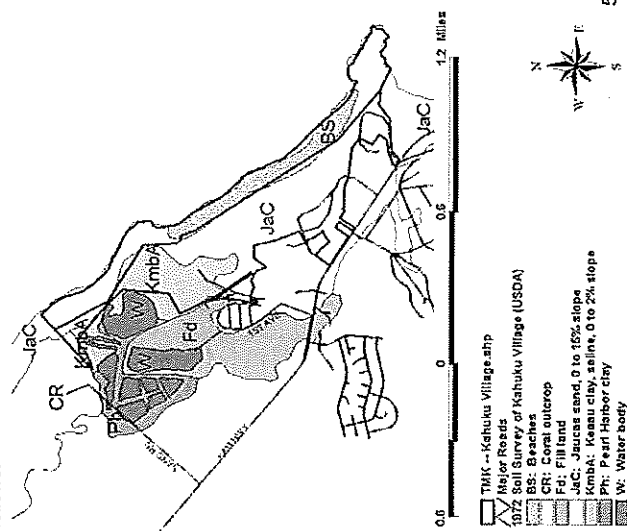
Field Observations

On Wednesday 16 May 2007, a site visitation of the Property was conducted to observe field conditions, particularly the nature of the vegetation during spring drought. Observations included the regular use of potable water for irrigation of the golf course tees and greens and to supply fresh water to the stables in the northwest area. The dry sandy soil under the Golf Course area will demand irrigation for the sustainability of a managed pasture. Considerable soil amendments will also be required for productive plant growth in the sandy soil.

AGRICULTURAL CONSIDERATIONS

At such time as the Golf Course cease operations, existing pasture inland of the northwest end of the Property establishes a precedent for future agriculture activity. With the exception of the coastal sand dunes and coral outcrops, productive pasture can be developed over the areas that are presently the tees, greens and fairways. However, conversion of the area to pasturage cannot be accomplished without careful attention to the two different soils on the Property. In addition, pasturage cannot be done without an appreciable capability to irrigate the area. Soils and irrigation dominate the agricultural considerations which are covered in depth below.

Soil Description: As illustrated in Figure 9, the Property is located on four soil map units described below. The Property is adjacent to standing water and wetland habitat in the Northwest. It is also surrounded by a mosaic of other soils. The four soil map units within the Property are described by the Soil Survey of Islands Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii (1972. USDA Soil Conservation Service) as follows:



Development Strategies
Tropical Crops Services

Figure 9. Soils Description Map

Beaches (BS): This soil map unit occupies about 10 percent of the Property. Beaches in the Soil Survey (1972) are sandy, gravelly, or cobbly areas that are washed and reworked by ocean waves. The beaches in the Kahuku area consist mainly of light-colored sands derived from coral and seashells. Beaches have no value for farming or pasturage. The Soil Survey (1972) recognized their suitability for recreational uses and resort development.

Jaucas Sand (map unit JaC): This soil map unit occupies about 60 percent of the Property. The Jaucas sand soil series is an excessively drained, calcareous soil that occurs as narrow coastal strips. The soil developed from wind- and water-deposited sand from coral and seashells. In many places the surface layer is dark brown as a result of accumulated organic matter and alluvium. The soil is neutral to moderately alkaline throughout the profile. Pebble-size fragments of coral and seashell are common in the profile.

Permeability is rapid, and runoff is very slow to slow. The hazard of water erosion is slight, but wind erosion is a severe hazard where vegetation has been removed. The available water capacity is 0.5 to 1.0 inch per foot of soil. In places roots penetrate to a depth of 5 feet or more. Workability is slightly difficult because the soil is loose and lacks stability for use of equipment. The natural vegetation consists of kiawe, koa haole, bristly foxtail, bermudagrass, fingergrass, and Australian saltbush.

Coral Outcrop (map unit CR): This map unit occupies less than 2 percent of the Property on the Northwest boundary. The map unit refers to coral or cemented calcareous sand that contains up to 20 percent of soil material in cracks, crevices and depressions... Coral outcrop is frequently found associated with Jaucas sand on Maui and Oahu. Vegetation is typically sparse, consisting of kiawe, koa haole, and fingergrass.

Keaau Saline Clay (KmbA): This map unit occupies less than 20 percent of the Property along the inland perimeter of the

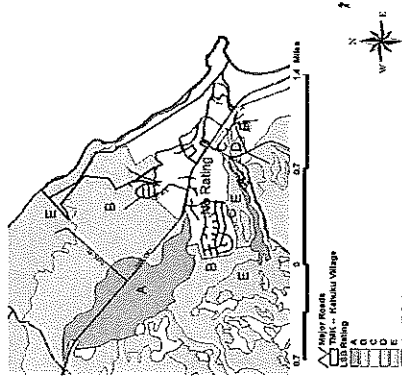
northwest portion of the site. The Keaau soil series consists of poorly drained soils on coastal plains of Oahu. The soil consists of montmorillonitic clay developed from alluvium deposited over reef limestone or consolidated coral sand. Permeability is slow. Runoff is slow and the erosion hazard is no more than slight. The available water capacity is about 1.5 inches per foot of soil. Roots are restricted by the consolidated coral sand, reef limestone, and water table. Workability is difficult because the soil becomes very sticky and very plastic when moistened and shrinks with severe cracks when drying.

The Keaau soil series is geographically associated with lowland areas of coral sand, Mokuleia clay loam and Pearl Harbor clay. The Keaau clay is found in areas with 20 to 35 inches annual rainfall, most of which occurs between November and April.

The Keaau saline clay at the Northwest end and inland portion of the Property is strongly affected by salts as it is found in a coral depression where seepage water evaporates. Its natural vegetation consists of kiawe, bermudagrass, bristly foxtail, pickleweed, and fingergrass. Some areas of this soil are barren due to the saline subsoil. It is generally used for stabled horses on the Property

The surface layer is very dark grayish-brown clay about 15 inches thick. The subsoil, about 19 inches thick, is very dark grayish-brown and dark-brown, mottled clay... The substratum is white to very pale brown reef limestone or consolidated coral sand. The soil is mildly alkaline in the surface layer and subsoil and moderately alkaline in the substratum. The water table is at a depth of 1 1/2 to 3 feet.

Productivity Rating: The Land Study Bureau of the University of Hawaii prepared an inventory and evaluation of the State's land resources during the 1960's and



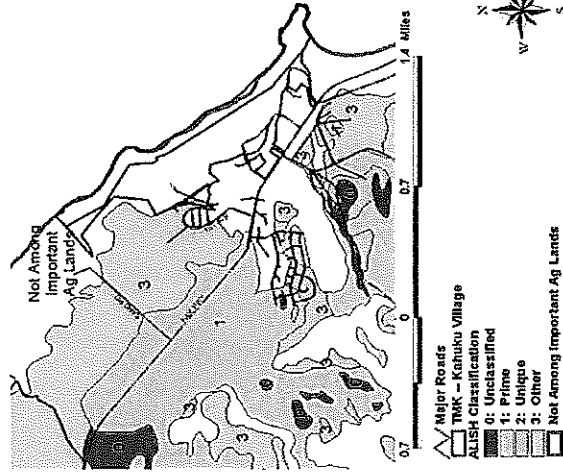
Development Strategies, LLC
Tropical Crops Services, Inc.

early 1970's. A five-tier productivity rating system using the letters "A", "B", "C", "D" and "E" was based on climate, topography, local histories of crop production, and especially on soil properties such as texture, structure, depth, drainage, parent material, and stoniness. "A" represents the soils with the highest productivity rating and "E" lowest.

About two thirds of the Property, coinciding with the golf course and the Village, is unrated (Figure 10). The remaining one third located towards the northwest portion of the Property is rated "B" in the interior where the stables are located and the sand dunes along the coast are rated "E".

ALISH:

As the Soil Survey (1972, USDA Soil Conservation Service) was being completed, the Hawaii State Department of Agriculture produced a complementary classification entitled The Agricultural Lands of Importance to the State of Hawaii. The Property is not covered in the ALISH land classification (Figure 11).



Development Strategies, LLC
Tropical Crops Services, Inc.

FEASIBILITY ASSESSMENT

Prevailing Wind: Typical wind direction is from the northeast to the southwest ("tradewinds"). Over the summer months, the Pacific High Pressure Area is located north of the islands and tradewinds come in off the ocean at a steady velocity of 10 to 20 miles per hour. During the winter season, the tradewind pattern is interrupted by cold fronts and Kona storms, which are short-term events.

The on-shore winds carry significant salt spray over the site, which limits the types of plant material and crops that can be cultivated.

Temperature: Daytime temperatures in the area range from the high-70s to the high-80s, with an annual average of 81 degrees Fahrenheit. Fluctuations in daily temperature are moderated by the tradewinds which blow in from the ocean.

Precipitation: Average annual precipitation in the area of the Property is estimated between 35 and 40 inches. A distinct variation in rainfall occurs during the year, with precipitation lowest in the summer months and highest in the rainy season which runs from November to April.

Irrigation: Given the seasonal variation in rainfall and the high permeability of the soil, a source of non-potable water will be essential to managed pasturage on the site.

Subdivision of the Property is intended to enable the future owners of the Subdivided Lots an opportunity to pasture livestock. Historically, the Golf Course has not been irrigated, except for the tees and greens. The fairways have a turf made up of bermudagrass that survives periodic (and at times extended) drought conditions and recovers to playable form. Only the inland portion of the northwest corner of the Property has a recent history of agriculture which provides an on-site basis for projections as to viability. That area has been used for horse stables with considerable supplemental feed and minimal pasture.

The large Subdivided Lots would easily be converted to manageable paddocks, but grubbing and grading of the fairways will be of limited advantage, if not counterproductive. The grazing of cattle and horses are revenue-generating activities that are consistent with the use along the northwest perimeter of the Property and elsewhere in the greater Kahuku area.

Pasturage: Horses can be pastured at a ratio of about one horse per acre. The size of the Subdivided Lots would permit several horses to be pastured. As a point of reference, commercial operations charge about \$130 to \$200 per month to pasture a horse. Supplemental feed for livestock will be necessary in proportion to the deficit of water for pasture forage. Hence, an appreciable part of the cost to pasture livestock will be divided between irrigation and feed. The irrigation component is assessed in the Agricultural Management Plan (below) on acre-by-acre basis, given a 9,000 gall/ac/day water requirement for a productive pasture grass.

Given the extensive area that would be released at the point Golf Course ceases operation, outdoor recreational activities such as trail rides, quarter horse and equestrian training could supplement the pasturing of horses.

Other Ag Activities: An irrigation infrastructure is essential, whether the area is to be used for pasturage or other forms of plant cultivation due to the sparse rainfall. The availability of agricultural water would permit the establishment of landscape nurseries for trees, palms, and foliage as an alternative activity on the site. The manageable size of the areas available for cultivation and the ability to live on the lot would attract individuals interested in developing or expanding niche markets for supplemental income.

AGRICULTURAL MANAGEMENT PLAN

Subdivision of the Property is intended to allow the future owners of the Subdivided Lots an opportunity to convert the area to pasture. Stables, pasture and equestrian activities would contribute to the agricultural base of the Kahuku area. With proper irrigation, the Jaucas sand soil that primarily comprises the Subdivided Lots is capable of supporting giant bermuda at about 4,000 lb dry forage/acre/yr.

Pasture

The Management Plan will be provided to each prospective purchaser of a Subdivided Lot as a tool for the creation and maintenance of a managed pasture. This is intended to guide development of the Property to the productive use that is consistent with its agricultural zoning. In addition, small acreage irrigation systems will encourage manageable improvements that will enhance the productivity of the pasture on each of the individual lots. Left as a single large parcel, there is little economic incentive to pursue such customized improvements.

Site Preparation:

Cultivation and grading will be minimal, if needed at all. Giant bermudagrass can be directly seeded into the sandy soil without cultivation at specific locations where irrigation is installed for the establishment of the new grass. The present common bermudagrass should remain as a natural cover. The herbicide program presently used by the golf course should be continued to prevent the infusion of weeds. Glyphosate can be used for a wide range of site-specific weeds, especially along the boarders, fairway interspaces and perimeter of the Property.

Soil Improvement

Soil amendments will be required in the locations which will be improved and irrigated for the production of giant bermudagrass forage. The choice of amendments and their application will follow different recommendations for the two soils – the deep well drained Jaucas sand. A qualified agronomist will be consulted for site-specific recommendations once the nature of the paddocks and their irrigation design are determined.

Irrigation: An irrigation infrastructure is critical for agriculture on the Subdivided Lots to be feasible. Converting

Development Strategies, LLC
Tropical Crops Services, Inc.

21

portions of the area within the Subdivided Lots to productive pasture will require giant bermudagrass to be planted in controlled paddocks according to the available irrigation water.

During the summer months, one acre of giant bermudagrass could be planted for every 9,000 gal/day of available irrigation water. A different irrigation schedule will be necessary for the clayey and sandy soil areas. It is very important for the irrigation systems to be designed as a collaborative effort among the owner(s), a qualified agronomist, and an irrigation contractor who specializes in systems for agriculture.

During the summer (May to October), giant bermudagrass will consume 1/3 inch water per day in this windy off-shore environment. During the winter, less irrigation is required due to rainfall and cooler temperatures. However, subsoil moisture storage does not contribute appreciably to the water balance of a productive pasture on the Jaucas sand soil. The easily drained sand makes supplementary irrigation a year-around requirement.

To address the specific nature of management units within each lot, sprinkler irrigation shall be designed in one-acre blocks that best support a paddock system of grazing. The paddocks shall be grazed and rested in rotation. Supplemental feed will be used to prevent overgrazing. A 30-day rotational fallow is typically required for the recovery of giant bermudagrass. Irrigating four "resting" acres out of five during the dry weather period from May to October will require up to 36,000 gallons/day.

Alternative Agricultural Activities

The prevailing on-shore winds severely limits the cultivating of most plant material and absolutely prohibits the planting of salt sensitive and wind sensitive plants for the horticultural market. Isolated but hardy ironwood stands create pockets of wind protection on the site that can be used to advantage when planning for small plant nurseries. Structures covered with shade cloth could also be erected to shelter areas for the propagation of seedlings and cuttings from the sun and wind. However, the large and wide-open nature of the Property does not support crop cultivation.

Development Strategies, LLC
Tropical Crops Services, Inc.

22

The planting of hardy coconut and royal palms under grow contracts would be alternative use for the area. The salt load and on-shore winds are not detrimental to these hardy species of palm trees which could be cultivated on a grow contract basis.

CONCLUSION

Interim use for most of the Property is predicated upon the preservation of the Kahuku Golf Course as a public recreational amenity. Constructed in the 1930s, the Golf Course is a 9-hole facility that is operated as a public course by the City's Department of Enterprise Services. The proposed subdivision would permit operation of the Golf Course to continue under a master license agreement if the 9 subdivided lots are conveyed to individual buyers.

The underlying State Land Use designation for the Golf Course is almost entirely Urban, which allows for a golf course. Portions at the northwest edge of the Golf Course are in the Agricultural and Conservation Districts. The zoning for the Golf Course area is AG-2 General Agriculture, which subjects the proposed subdivision to the provisions of Section 1-115 of the Subdivision Rules.

The assessment conducted for the Agricultural Feasibility Report determined that the portion of the Property that would constitute the 9 Subdivided Lots is comprised predominantly of Jaucus sand, which is highly permeable and does not retain water. Accordingly, any activities on the Subdivided Lots that involves the cultivation of crops will require non-potable water for irrigation given the marginal rainfall of 35 to 40 inches per year.

The area is also subject to steady on-shore winds, which accelerates the evaporation of water in the soil. The tradewinds also carry salt spray over the Property, severely limiting the potential for productive crop cultivation. While the wind and salt spray can be offset through the use of shade screen structures, the wide open terrain does not readily lend itself to typical corps.

Managed pasturage would be a viable agricultural alternative for the Subdivided Lots at such time as operation of the Golf Course is discontinued. The Management Plan for the conversion of the fairways into managed pasture is provided herein. The Management Plan does not contemplate extensive regrading of the area, but non-potable water would be essential for a managed pasture.

It should be noted that the Management Plan does not call for the entire area of a Subdivided Lot to be converted to active pasture management, favoring instead the incremental creation of managed units wherein paddock would consist of five grouped 1-acre fields. This configuration would permit grazing to be rotated within the paddock, optimizing the regeneration of the giant bermudagrass while managing the amount of water required for irrigation. The portion of the Subdivide Lot not under active pasture management would be available for riding or other agricultural activities.

The Management Plan favors the incremental expansion of the area devoted to pasture. This would permit germination of the giant bermudagrass seeds during the rainy season, reducing the requirement of water for irrigation. Based on the foregoing concept, this Report concludes that managed pasturage would be a viable agricultural activity.

APPENDIX A

WITNESSETH:

WHEREAS, Declarant is the owner of two (2) parcels of property situate at Kamehameha Highway in Kahuku, Koolauloa, City and County of Honolulu, State of Hawaii, Tax Map Key Nos. (1) 5-6-002-010 and 016, which are more particularly described in Exhibit "A" attached hereto and incorporated herein by reference; and

WHEREAS, Declarant, as said owner, plans to consolidate the two parcels and resubdivide them under the provisions of Chapter 22, Revised Ordinances of Honolulu, as amended, to create an Agricultural Subdivision situated at Kahuku, Koolauloa, City and County of Honolulu, State of Hawaii, as depicted on Exhibit "B" attached hereto and incorporated herein by reference; and

WHEREAS, Declarant, as said owner, desires to establish restrictive covenants relating to the use of said property; and

WHEREAS, Chapter 205 of the Hawaii Revised Statutes requires that subdivisions within the agricultural district with soil classified by the Land Study Bureau's Detailed Land Classification Productivity Rating Class A or B shall be restricted to uses primarily in pursuit of an agricultural activity, and further, that any deed, lease, agreement of sale, mortgage or other instrument of conveyance covering any land within the agricultural subdivision shall expressly contain the restriction on uses and the conditions as prescribed in said Chapter and shall be encumbrances running with the land;

REGULAR SYSTEM

LAND COURT SYSTEM

Return by Mail Pickup To:

Total Pages: _____

Tax Map Key No.: (1) 5-6-002-010 and 016

**DECLARATION OF RESTRICTIVE COVENANTS
(AGRICULTURAL USES)**

This Declaration is made this _____ day of _____, 2007, by CONTINENTAL PACIFIC, I.I.C., a Delaware limited liability company, whose mailing address is Post Office Box 1350, Santa Rosa Beach, Florida 32459, and JAMES C. REYNOLDS, INC., a California corporation, whose mailing address is 841 Bishop Street, Suite 1700, Honolulu, Hawaii 96813, hereinafter collectively referred to as "Declarant."

DRAFT

1753541.1

NOW, THEREFORE, Declarant hereby declares and agrees that the agricultural subdivision (described on Exhibit A and depicted on Exhibit B) is held and shall be held, conveyed, mortgaged, encumbered, leased, rented, used, occupied and improved subject to the following declarations, which declarations shall constitute covenants running with the land and shall be binding on and for the benefit of Declarant, its successors and assigns, and all subsequent owners, lessees or occupants of all or any part of the real property and their respective heirs, executors, administrators, successors, and assigns:

1. USE. The Agricultural Subdivision shall be made subject to the restriction of permissible uses as prescribed in Chapter 205-4.5, Hawaii Revised Statutes, and any deed, lease, agreement of sale, mortgage, or other instrument or conveyance covering any land within the agricultural subdivision shall expressly contain the restriction of uses and the condition as prescribed in the statute, which restriction and condition shall be encumbrances running with the land.

All of the lots shall be subject to the provisions of Section 205-4.5(a) and (b) of the Hawaii Revised Statutes, while the soil of the land is classified Overall (Master) Productivity Rating Class A or B under the Detailed Land Classification of the Land Study Bureau of the State of Hawaii, including the following:

- a. The condition that the land shall be used primarily in and for the pursuit of an agricultural activity;
- b. The restriction of the use thereof to those uses specified in Section 205-4.5(a) above mentioned;

c. The restriction and condition above mentioned shall be encumbrances running with the land until such time that the land is reclassified to a land use district other than agricultural district; and

d. Any deed, lease, agreement of sale, mortgage, or other instrument of conveyance of the land shall expressly contain the restriction on uses and the condition above mentioned.

2. DURATION. The covenants, conditions and restrictions herein contained are to run with the land and shall be binding on all parties and persons claiming under them.

3. VIOLATIONS. The owner of any lot in the above described real property or any part thereof or interest therein violating any provisions hereof, shall be subject to the violation and penalty clause of applicable State and City laws and regulations. Failure by Declarant, any other property owner or owners or their representatives, heirs, successors or assigns or said City and County of Honolulu to enforce any of the covenants, restrictions, reservations, easements or charges herein contained shall, in no event, be deemed a waiver of the right to do so thereafter, unless otherwise herein provided.

4. AMENDMENTS. It is specifically agreed by each owner that this Declaration shall continue in full force and effect and shall not be repealed, amended or altered in any way, except with the written consent of the Director of the Department of Planning and Permitting of the City and County of Honolulu or his and/or its successor.

IN WITNESS WHEREOF, Declarant has caused this instrument to be executed
the day and year first herein above written.

CONTINENTAL PACIFIC, LLC,
a Delaware limited liability company

By _____
Jere A. Henderson
Its Manager

JAMES C. REYNOLDS, INC.,
a California corporation

By _____
James C. Reynolds
Its President

STATE OF HAWAII)
) SS.
CITY AND COUNTY OF HONOLULU)

On this _____ day of _____, before me personally
appeared JERE A. HENDERSON, to me personally known, who, being by me duly
sworn or affirmed, did say that such person executed the foregoing instrument as the free
act and deed of such person, and if applicable, in the capacity shown, having been duly
authorized to execute such instrument in such capacity.

Type or Print Name: _____
Notary Public, State of Hawaii
My commission expires: _____

STATE OF HAWAII)
)
) SS.
CITY AND COUNTY OF HONOLULU)

On this _____ day of _____, before me personally appeared JAMES C. REYNOLDS, to me personally known, who, being by me duly sworn or affirmed, did say that such person executed the foregoing instrument as the free act and deed of such person, and if applicable, in the capacity shown, having been duly authorized to execute such instrument in such capacity.

Type or Print Name: _____
Notary Public, State of Hawaii

My commission expires: _____

APPENDIX B

Disclosure to Prospective Purchasers

CONTINENTAL PACIFIC, LLC is the fee owner ("Owner") of the _____ () parcels identified as Lots ___ to ___ (hereinafter the "Subdivided Lots" or collectively the "Property") on the Schematic Subdivision Map attached as Exhibit A. The Subdivided Lots are vacant and undeveloped. Owner makes no representations or warranties regarding the previous or current condition of the Property or the suitability of the Subdivided Lots for a particular use or uses.

Prospective Purchasers interested in acquiring all or part of the Property are hereby advised that the Subdivided Lots may be subject to restrictions regulating their development and/or use, including but not limited to those provisions listed herein below:

State of Hawaii:

Land Use Commission – The Property is located within the State Land Use Agricultural District. Accordingly, the Subdivided Lots are subject to the requirements of Hawaii Revised Statutes ("HRS") Section 205-4.5 in regard to the recordation of restrictive covenants limiting use of the Subdivided Lots to agricultural activities.

City & County of Honolulu:

Land Use Ordinance ("LUO") – Implements Revised Ordinances of Honolulu ("ROH") Chapter 21. The Property is in the AG-2 General Agricultural District. Development and use of the Subdivided Lots will be subject to the provisions of ROH Section 21-3.50 relating to Agricultural Districts. Specific provisions of the LUO relevant to agriculturally zoned land are noted below:

- Section 21-5.250 provides that a "Farm Dwelling" in an AG-2 district shall not exceed one for each two (2) acres of lot area.
- Section 21-8.30(a) provides that any zoning lot, which has at least twice the required minimum lot size for the underlying zoning, may have two detached dwellings (i.e., detached dwellings on a zoning lot restricted to a maximum of two).
- Interpretation No.: 94-INT-3 provides that any Farm Dwelling and any accessory uses associated with the Farm Dwelling must be contained within a 5,000 square foot polygon (i.e., limits the size of a Farm Dwelling).

Subdivision Rules and Regulations – Implements ROH Chapter 22. In addition to the general requirements for the subdivision of land, the Subdivision Rules and Regulations contain specific provisions applicable to agriculturally zoned land. In particular, the following provision is noted:

DRAFT

175314.1

- Section 1-115 provides that prior to the subdivision of an agricultural parcel, the potential for agricultural use of the resulting lots be demonstrated. This Section further requires the recordation of covenants restricting use of the subdivided parcels to agricultural activities.

Special Management Area – The Subdivided Lots are located within the Special Management Area ("SMA") and subject to the provisions of ROH Chapter 25:

- Section 25-1.3 defines the term "Development" as a series of activities that impact the SMA, which includes an increase in density or intensity of use, including the division or subdivision of land.

Specific exemptions are provided for the following activities:

1. Construction of a single-family residence that is not part of a larger development;
2. The use of any land for the purpose of cultivating, planting, growing, and harvesting of plants, crops, trees and other agricultural, horticultural or forestry products or animal husbandry . . . or other agricultural purposes subject to review by the authority;
3. The subdivision of land into four or fewer parcels where no associated construction is proposed.

Prospective Purchasers should discuss the proposed use or uses of a Subdivided Lot with the Department of Planning & Permitting to confirm exemption from the provisions of the SMA requirements or the need to secure a SMA Minor or Use Permit.

Notwithstanding the foregoing, interested parties are encouraged to secure the services of qualified individuals and/or firms having the professional expertise required to assist in an independent evaluation of a Subdivided Lot to determine its suitability for a contemplated use.

CONTINENTAL PACIFIC, LLC

APPENDIX D

APPENDIX C



May 23, 2007

Mr. Robert Miyasato
 Development Strategies, LLC
 1432 Kalaeponohaku Street
 Honolulu, Hawaii 96816

Dear Mr. Miyasato:

Subject: Your Letters of May 3, 2007, and May 21, 2007 Requesting the Availability of Domestic Water to the Proposed 9-Lot Agricultural Subdivision, TMK: 5-6-2-10, 16

Thank you for your letter on the proposed 9-lot agricultural subdivision in Kahuku.

The existing water system is presently adequate to accommodate the domestic water requirements of the proposed subdivision. However, please be advised that this information is based upon current data and, therefore, the Board of Water Supply reserves the right to change any position or information stated herein up until the final approval of your building permit application. The final decision on the availability of water will be confirmed when the building permit application is submitted for approval.

The developer will be required to install the necessary water system improvements to provide adequate fire protection and peak hour pressures to each lot in accordance with our Water System Standards. The construction drawings should be submitted for approval.

When water is made available, the applicant will be required to pay our Water System Facilities Charges for resource development, transmission and daily storage.

The existing water system is not adequate to supply the non-potable water requirements of the proposed subdivision. The non-potable water requirements should be provided for by the non-potable source in the area.

The on-site fire protection requirements should be coordinated with the Fire Prevention Bureau of the Honolulu Fire Department.

If you have any questions, please contact Robert Chun at 748-5443.

Very truly yours,

 KEITH S. SHIDA
 Principal Executive
 Customer Care Division



SEWER CONNECTION APPLICATION

APPLICATION NO.: 2007/SCA-0297 STATUS: Denied
 DATE RECEIVED: 03/07/2007 IWDP APP. NO.:
 PROJECT NAME: Proposed Nine Farm Dwelling Units / Dwelling Unit
 LOCATION:
 Zone Section Plat Parcel
 5 6 002 010
 3,984,389 Sq. Ft.
 Zone Section Plat Parcel
 5 6 002 016 56-510 KAM HWY

APPLICANT: Development Strategies, LLC, Robert Miyasato
 3465 Waiaina Ave Sullu 250
 Honolulu, HI 96816

DEVELOPMENT TYPE: Dwelling, Single-family
 OTHER USES:
 SEWER CONNECTION WORK DESIRED: New

NON-RESIDENTIAL AREA: s.f. APPROXIMATE DATE OF CONNECTION: 07/07/2008

PROPOSED UNITS: No. of Existing Units: 0
 No. of New Units: 9
 UNITS TO BE DEMOLISHED: 0

Studios: 1-Bedroom: 1
 2-Bedroom: 2
 3-Bedroom: 3
 4-Bedroom: 4
 5-Bedroom: 5
 6-Bedroom: 6

REMARKS: This property is not serviced by the City sewer system. In addition, the Kahuku WWTP has no capacity to accommodate the proposed nine single dwelling units.

DENIAL DATE: 05/09/2007

REVIEWED BY: Arturo Saavedra Jr.



CRYSTINE LERNALA FUKUDA, M.D.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
HONOLULU, HAWAII 96822

In reply, please refer to:
CASE #06

KuluuauSuu006

May 23, 2007

Mr. Robert Miyasato
Development Strategies, LLC
1432 Kaliaopohaku Street
Honolulu, Hawaii 96816

Dear Mr. Miyasato:

Subject: Wastewater Treatment and Disposal
Agricultural Subdivision
TMK: (1) 5-6-002: 010, 016
Kahuku, Oahu, Hawaii

We have reviewed your letter of May 11, 2007, inquiring about the acceptability of using individual wastewater system (IWS) for a proposed nine (9) agricultural lot subdivision. The proposed subdivision is on 178.31 acre parcel (Parcel 16) and 91.47 acre parcel (Parcel 10).

Information provided to us states that the City and County of Honolulu has declined your request to sewer hook-up as the subject properties are not serviced by the City sewer system and the Kahuku WWTP has no capacity to accommodate the proposed development.

The subject property is in the "Pass Zone." Thus the use of IWSs for the treatment and disposal of wastewater from the proposed development (approximately 20 acre lot sizes) is acceptable to the Department. We also encourage you to check with the City & County of Honolulu on any zoning restrictions or other restriction on the number of dwellings that can be built on these lots.

All IWS plans must conform to applicable provisions of the Department of Health's Administrative Rules, Chapter 11-62, "Wastewater Systems." We do reserve the right to review the detailed wastewater plans for conformance to applicable rules at the time of any building permit application.

Should you have any questions, please feel free to contact the Wastewater Branch 586-4294.

Sincerely,

HAROLD K. YEE, P.E., CHIEF
Wastewater Branch

TS/mf

Appendix M

Traffic Study

Existing Traffic Conditions

The proposed project will be served by local streets that connect to Kamehameha Highway via Puuluana Street and South Golf Course Road. Kamehameha Highway is a two-lane highway under the jurisdiction of the State of Hawaii Department of Transportation. In the vicinity of the intersections with Puuluana Street and with South Golf Course Road, the posted speed limit on the highway is 35 miles per hour.

Table A1 shows the historical traffic volumes on the highway between Puuluana Street and Laie. Average day volumes and typical peak hour volumes in 1995, 1996, and 1997 are based on the Average Daily Traffic (ADT) estimates and factors for peak hour traffic published by the State Highways Division. The most recent published traffic counts of highway traffic at the nearby Malaekahana Stream Bridge are also shown.

Table A1 – Historical Traffic, Kamehameha Highway

l = southbound, 2 = northbound	Average weekday		AM Peak Hour		PM Peak Hour	
	Two-way total	SB	NB	SB	NB	NB
1995 average day	10,328	395	483	511	418	418
1996 average day	10,523	355	434	492	402	402
1997 average day	9,656	369	451	451	369	369
March 2005 counts (average of 2 days)	12,112	378	467	578	492	492
June 2006 counts (average of 2 days)	10,867	322	332	459	475	475

Source: State of Hawaii, Department of Transportation, Highway Planning Branch

As indicated by the highway volumes shown in Table A1, the AM Peak Hour volumes at the intersection have not changed significantly. The PM Peak Hour volumes and the daily totals increased by approximately 20% between 1996 and 2005 (the lower volumes counted in 2006 may be due to school schedules or seasonal variation). The increase from 1996 to 2005 reflects an average annual increase of 2 percent per year.

Puuluana Street intersects the highway at a cross-intersection where vehicular and pedestrian movements are controlled by a traffic signal. The intersection consists of the highway approaches, Puuluana Street, and a driveway to Kahuku High and Intermediate School that is located directly across the highway from Puuluana Street. Each approach

consists of a single lane shared by all movements. The north (makai) leg of Puuluana Street serves about half of the existing uses on the project site and other neighboring uses, including a 64-unit elderly housing site and a church. Manual traffic counts taken at the intersection showed a peak volume of approximately 1,300 vehicles per hour during the peak hours using the intersection. Table A2 shows peak hourly volumes recorded for Puuluana Street traffic from the recent count.

Table A2 – Traffic Volumes on Puuluana Street North of Kamehameha Highway

February, 2008 counts	AM Peak Hour		PM Peak Hour	
	approach	departure	approach	departure
Source: The Traffic Management Consultant (unpublished counts)	61	71	65	62

The estimated capacity of a signalized intersection is 1,200 vehicles per hour if none of the vehicular movements can be made concurrently. At the Kamehameha Highway and Puuluana Street intersection, many movements can be made concurrently (e.g., opposing through movements on the highway), and the intersection operates under capacity, even during peak hours.

South Golf Course Road intersects Kamehameha Highway as the stem of a "T"-intersection. South Golf Course Road serves the remainder of the existing uses on the project site. Traffic on South Golf Course Road entering the intersection is controlled by a stop sign and vehicles wishing to turn onto the highway must wait for an adequate gap in the highway traffic streams to proceed. Existing traffic volumes on South Golf Course Road, based on a recent count (Table A3), are well under the capacity (about 200 vehicles per hour) of a minor street approach controlled by a stop sign at a highway with a volume of 1,200 vehicles per hour (Exhibit 17-6 of the *Highway Capacity Manual*).

Table A3 – Traffic Volumes on South Golf Course Road North of Kamehameha Highway

February, 2008 counts	AM Peak Hour		PM Peak Hour	
	approach	departure	approach	departure
Source: The Traffic Management Consultant (unpublished counts)	18	9	19	27

Project Traffic Impact

The proposed project will increase traffic volumes in the area. The existing uses are not expected to change, so existing traffic generated by these uses will continue with no change in magnitude or pattern of travel. Therefore, the traffic generated by the existing uses, including 72 occupied residences, 2 beach parks, 2 cemeteries, the golf course, and the open space already exists. The project traffic impact would be due to the increases caused by the addition of dwelling units on the vacant residential lots for affordable housing, the shoreline lots, and the country lots. Each of the lots will be limited by zoning or covenants to a single dwelling unit, and further subdivision of large lots will not be permitted.

The project will add 67 affordable residential lots and 30 other lots. Most, but not all of the lots are expected to be used for residential purposes (some of the lots may remain as open space). The traffic impacts of the additional lots have been estimated using trip rates from the *Trip Generation*, a widely-used reference manual published by the Institute of Transportation Engineers. Examples of rates for various types of dwellings are shown in Table B1.

Table B1 – Trip Generation Rates, per Dwelling Unit

Dwelling type	Average weekday		AM Peak Hour		PM Peak Hour	
	Rate	entering	rate	entering	rate	entering
Detached single family	9.57	50%	0.75	25%	1.01	63%
Apartment	6.72	50%	0.51	20%	0.62	65%
Recreational home	3.16	50%	0.16	67%	0.26	41%
Senior adult (detached)	3.71	50%	0.20	38%	0.26	61%

Source: Institute of Transportation Engineers, *Trip Generation*, 7th Edition

A high-range estimate of the project impact to traffic is computed by applying the highest rates on the total number of lots, which assumes that each lot will have a new dwelling used by typical suburban commuters in a detached single family dwelling. Table B2 shows the traffic impacts.

Table B2 – Project Traffic Impact

Component	Average weekday		AM Peak Hour		PM Peak Hour	
	entering	exiting	entering	exiting	entering	exiting
67 Residential lots	321	321	13	38	43	25
18 Shoreline lots	86	86	3	10	11	7
12 Country lots	57	57	2	7	8	4
Total Project Impact	464	464	18	55	62	36

The additional traffic would be distributed onto two roadways that connect to Kamehameha Highway: Puuluana Street and South Golf Course Road. The traffic volumes generated by each type of dwelling units were distributed to these two streets based on the site layout and the road network. The additional traffic is expected to turn onto Kamehameha Highway in either the northwest (Waimea) direction or the Laie (southeast) direction in a manner similar to existing traffic. Peak hour traffic counts taken at Puuluana Street in 1996 as part of the traffic study for the installation of the traffic signals at the intersection with the highway were used to distribute the project traffic. The project traffic distribution is shown in Table B3.

Table B3 – Project Traffic Distribution

Street used for access	Average weekday		AM Peak Hour		PM Peak Hour	
	entering	exiting	entering	exiting	entering	exiting
Total Project Impact	464	464	18	55	62	36
Puuluana Street	228	228	9	27	31	18
S. Golf Course Road	236	236	9	28	31	18
Direction on Kamehameha Highway						
From/to Laie			10	20	37	17
From/to Waimea			8	35	22	18

* base on unpublished counts from The Traffic Management Consultant

The project impact, therefore, will be less than 100 vehicles per hour in one direction on any roadway segment during either peak hour and smaller impacts would be expected during other hours. The project impact is less than the threshold of significant traffic impact, as suggested by the Institute of Transportation Engineers "that a traffic access/impact study be conducted whenever a proposed development will generate 100 or

more added (new) peak direction trips to or from the site during the adjacent roadways' peak hours of the development's peak hour" (*Traffic Access and Impact Studies for Site Development*, Washington, D.C., 1991).

Table B4 shows the project impact on highway traffic volumes, assuming the project traffic is added to existing volumes. These increases compare to the 2% average annual increase in traffic between 1996 and 2005. If the dwellings on the vacant lots provided by the project are used by existing residents in the area who currently are living in multiple-household dwellings, the impact to highway traffic would be less than those shown in Table B4.

Table B4 – Project Traffic Impact on Highway Traffic

	Average weekday	AM Peak Hour	PM Peak Hour
Total Project Impact	464	73	98
Existing highway traffic*	12,112	845	1070
Late direction	280**	30	54
Potential increase	2.3%	3.6%	5.0%
Waimea direction	185**	43	40
Potential increase	1.5%	5.1%	3.7%

* based on March 2005 traffic counts

** assuming 60% to/from Laie

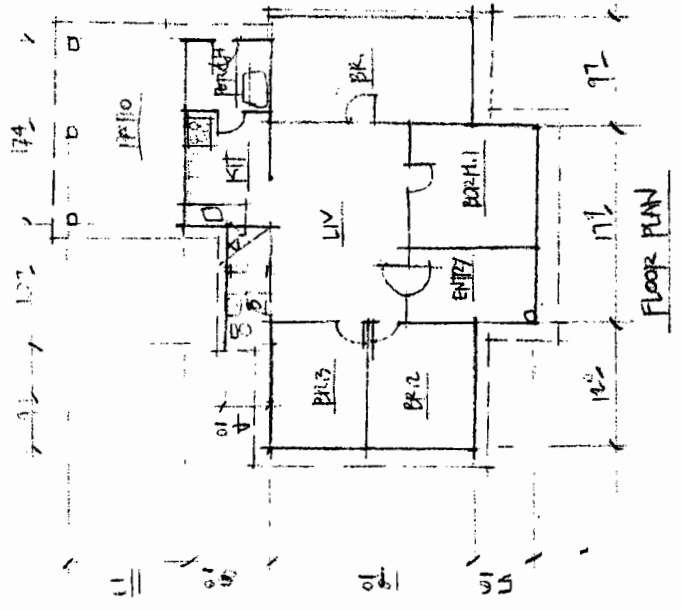
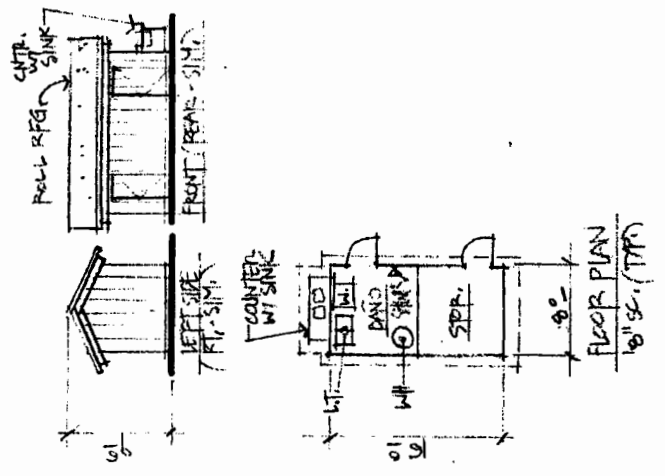
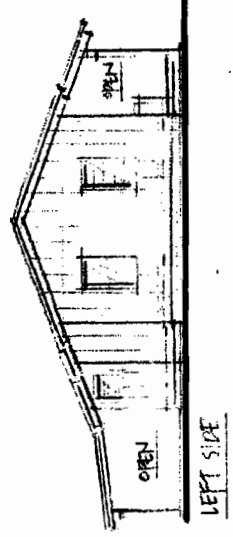
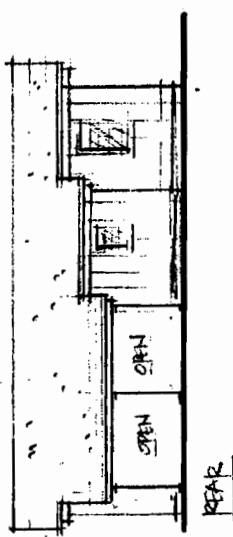
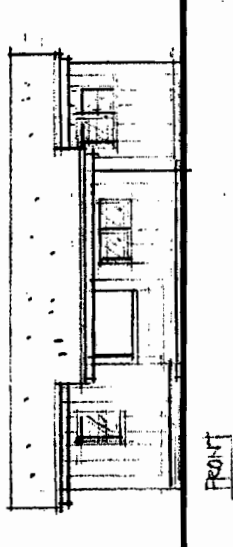
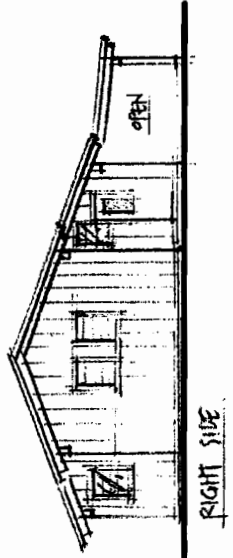
Appendix N

Existing House Floor Plans and Elevations

REVISIONS	BY

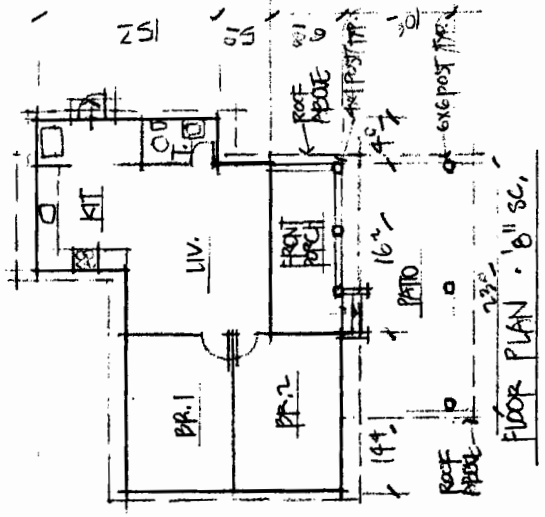
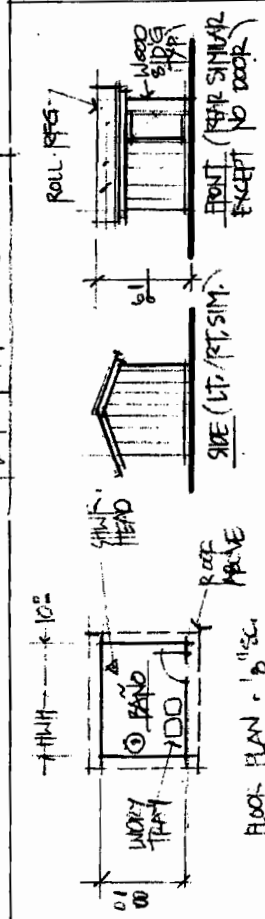
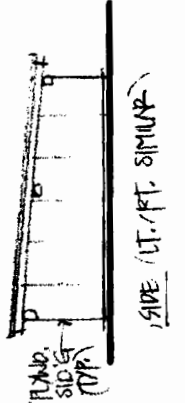
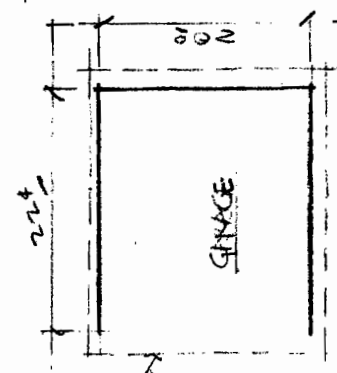
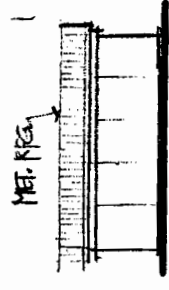
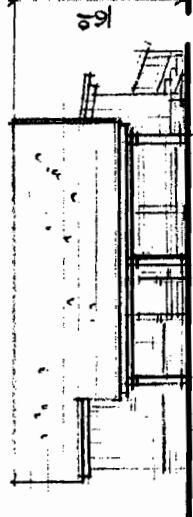
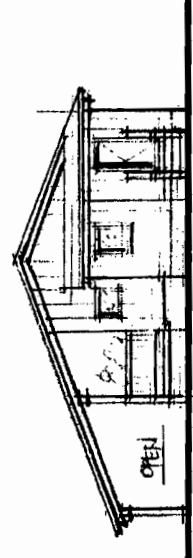
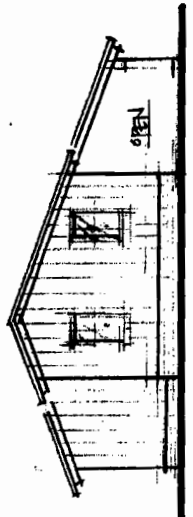
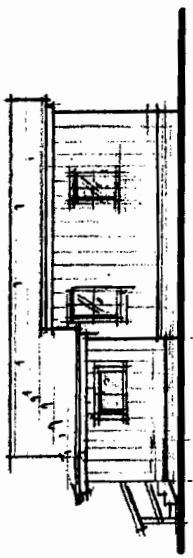
Exhibit "D"

Date	
Scale	AS SHOWN
Drawn	DY
Job	NEW 3
Sheet	
Of	



REVISIONS	BY

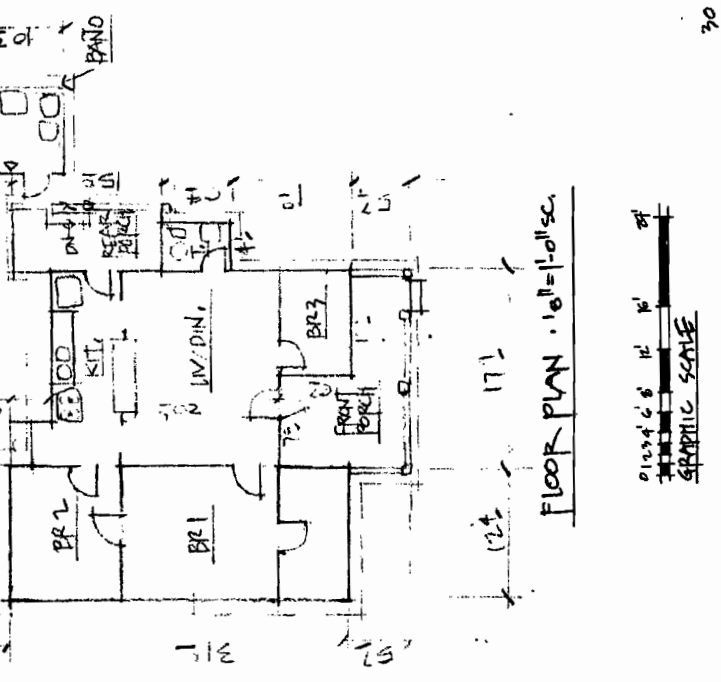
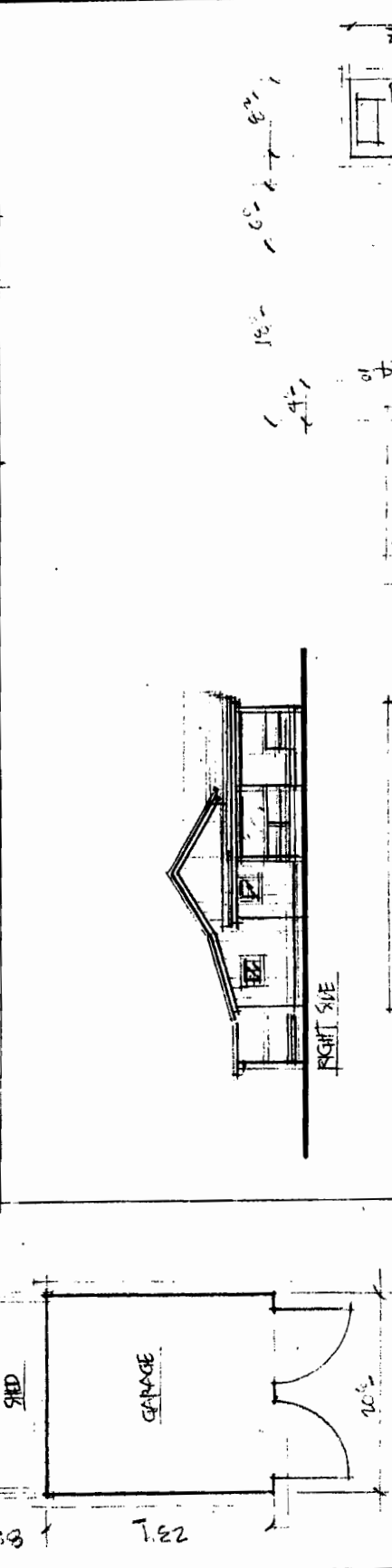
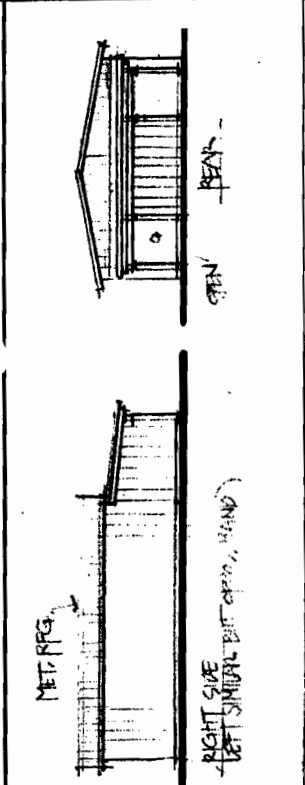
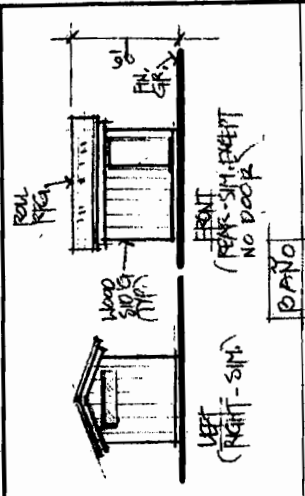
Date	
Scale	
Drawn	
Job	NEW IO
Sheet	
Of	
Sheets	



CHICAGO (CO) ...
 (P) ...
 ...

REVISIONS	BY

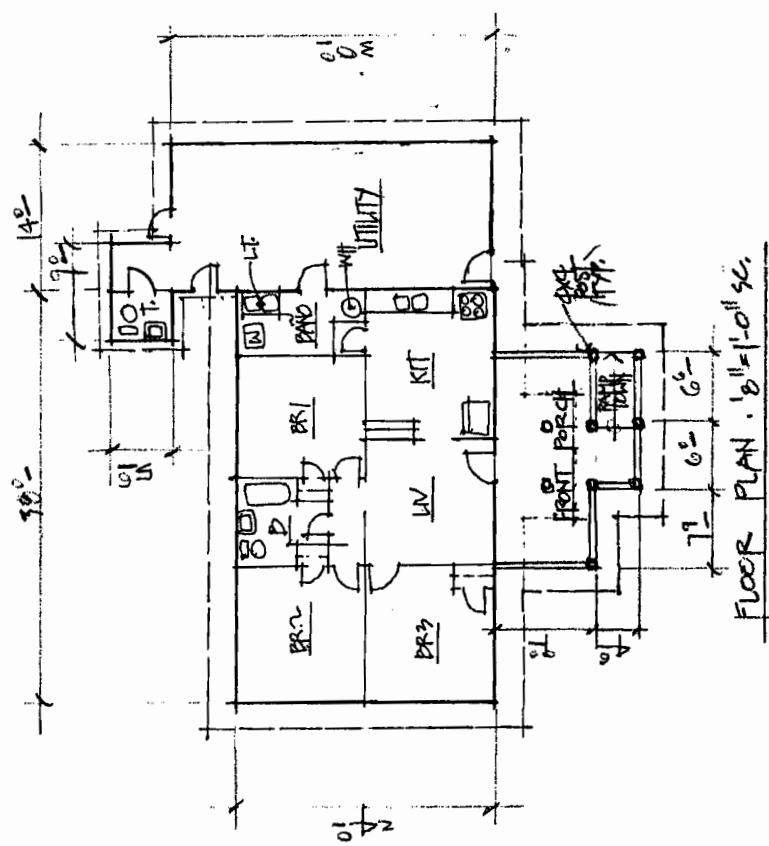
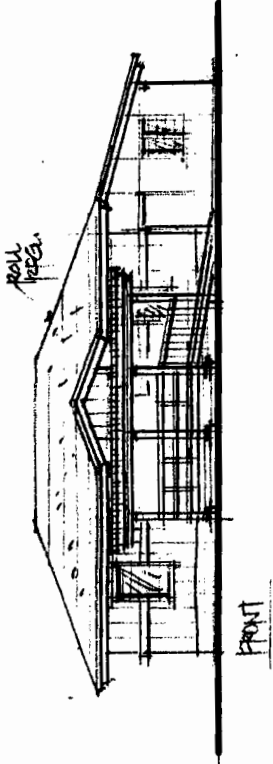
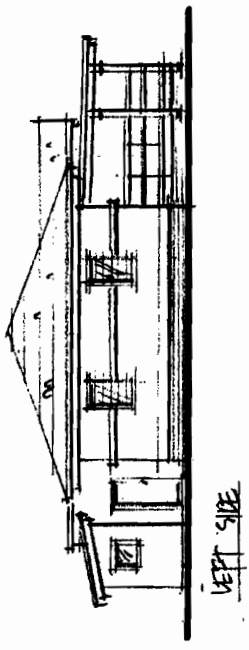
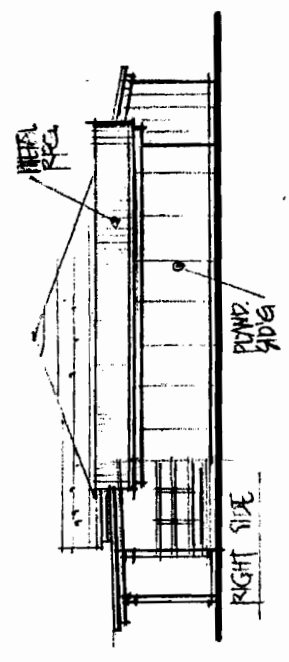
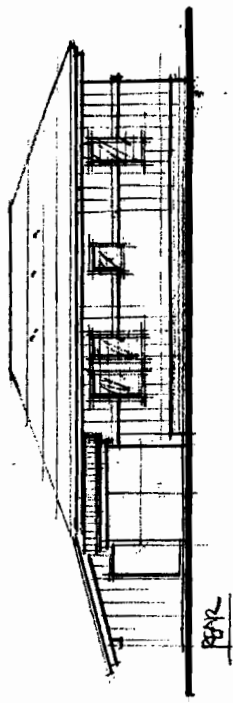
Date
 Scale AS SHRN
 Drawn DY
 Job NEW 13
 Sheet
 Of Sheets



FLOOR PLAN - 1/8" = 1'-0" SC.
 0 1 2 3 4 5 6 7 8 9
 GRAPHIC SCALE

REVISIONS	BY

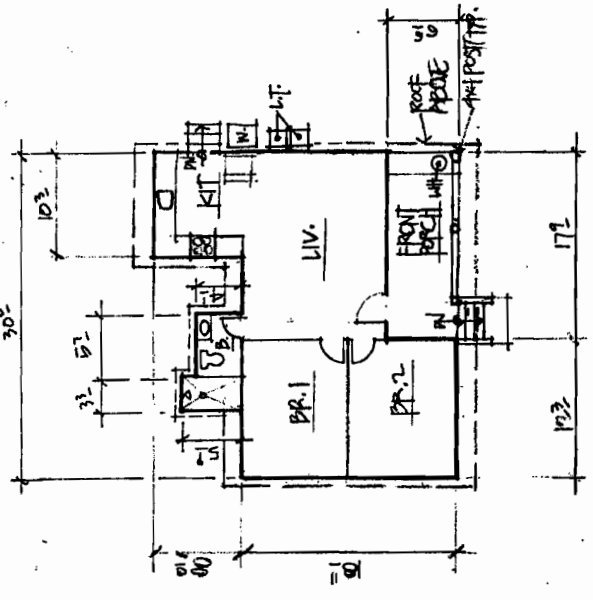
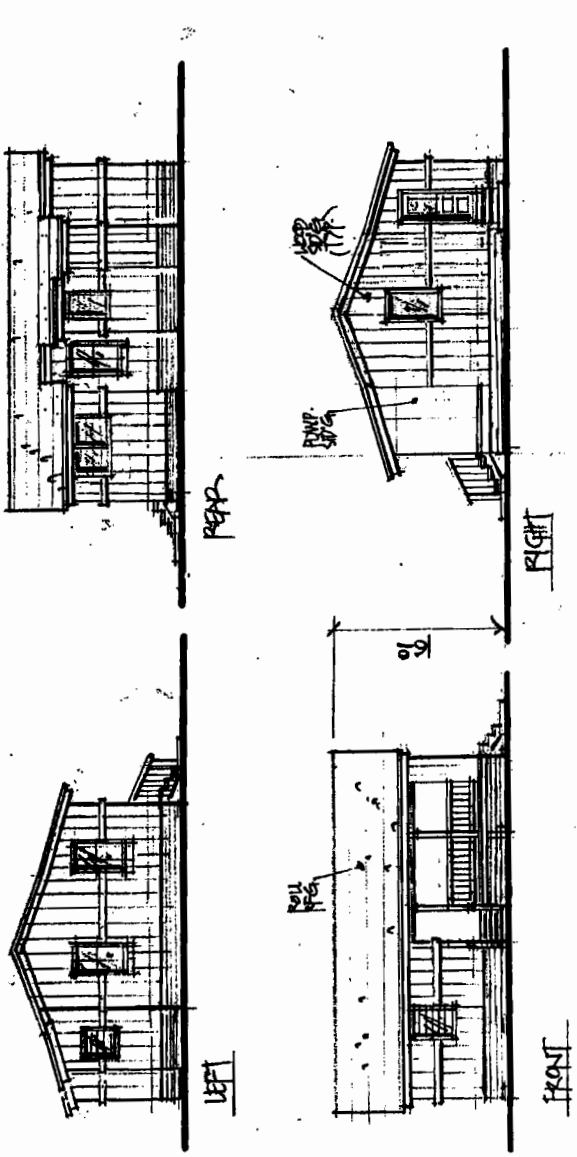
Date	
Scale	
Drawn	
Job	NEW 14
Sheet	
Ci	Sheets



REVISIONS	BY

Date	
Scale	
Drawn	
Job	NEW 22
Sheet	
Of	
Sheets	

LS



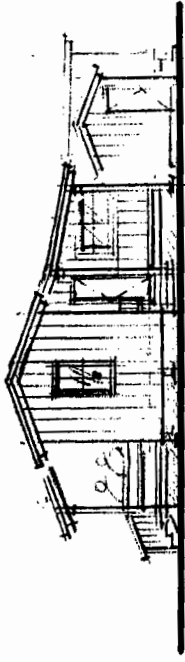
FLOOR PLAN - 1/8" SC.



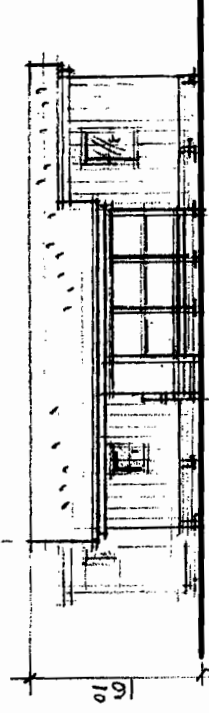
ABANDONED ARCH STYLING NOT FOR...

REVISIONS	BY

Date	
Scale	
Drawn	
Job No.	NEW 15
Sheet	
Cf	Sheets



RIGHT SIDE

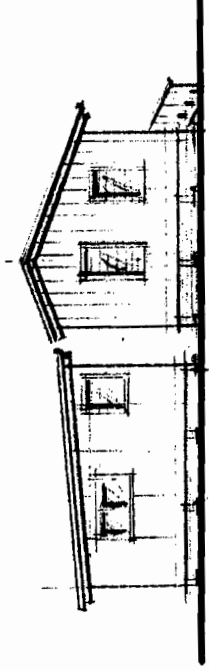


FRONT

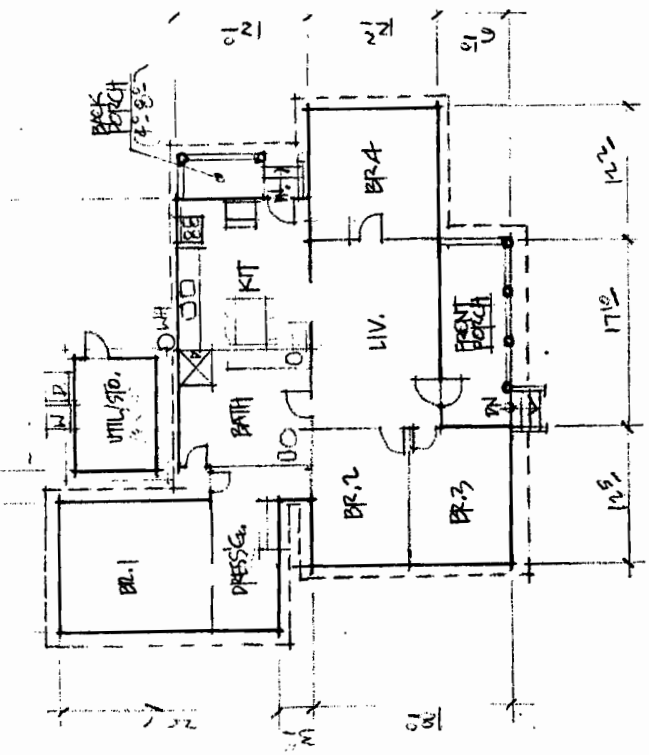
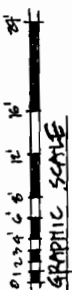
12'-0" 3'-0" 10'-0" 14'-0"



REAR



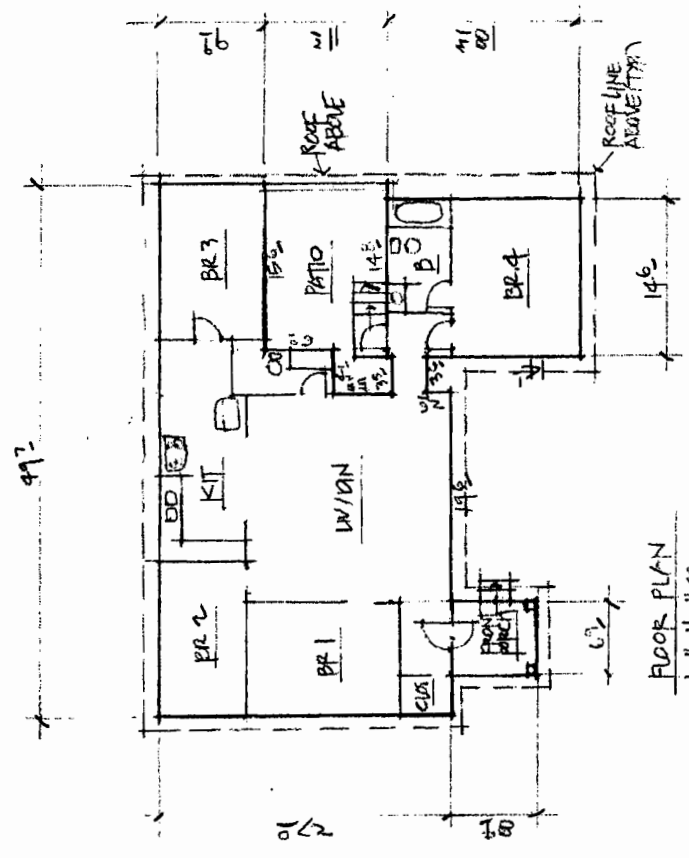
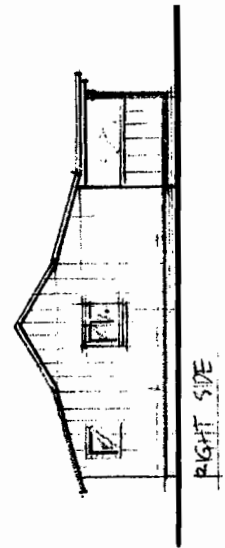
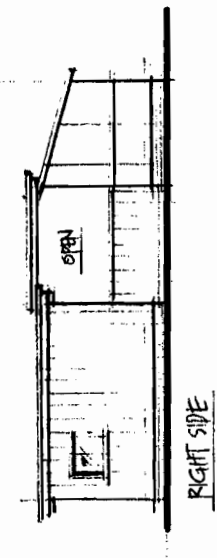
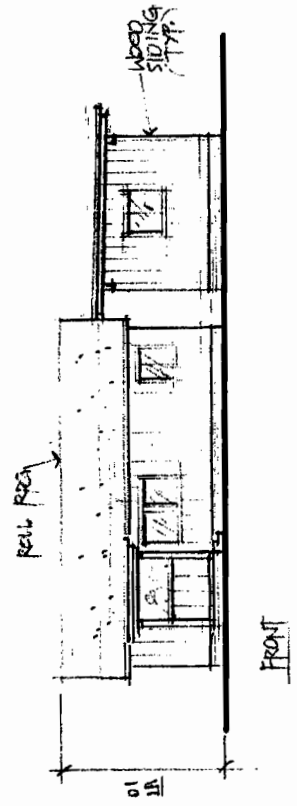
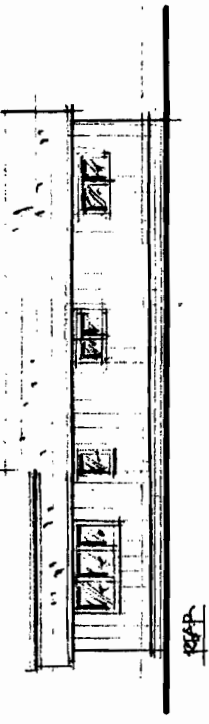
LEFT



FLOOR PLAN - 1/8" = 1'-0"

REVISIONS	BY

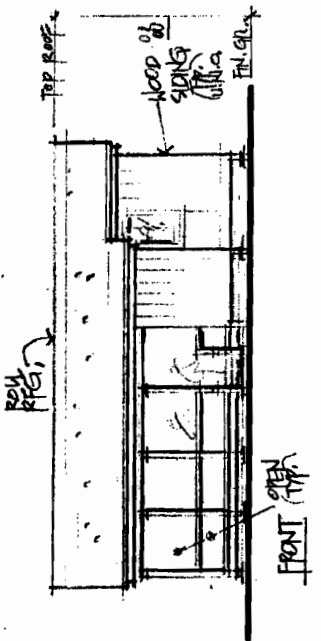
Date	Scale	Drawn	Job	Sheet	Of	Sheets
			NEW 27			



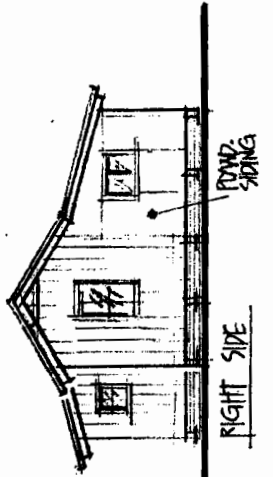
REVISIONS	BY

3/13/07

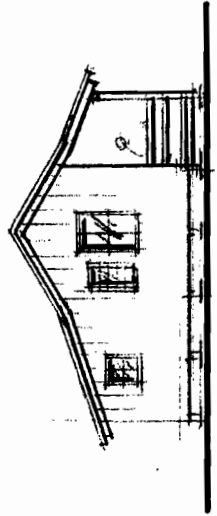
Date
Scale
Drawn
Job # **NEW 70**
Sheet
Of Sheets



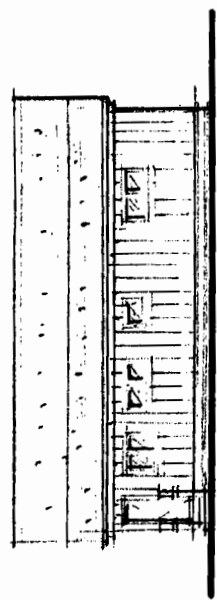
FRONT ELEVATION



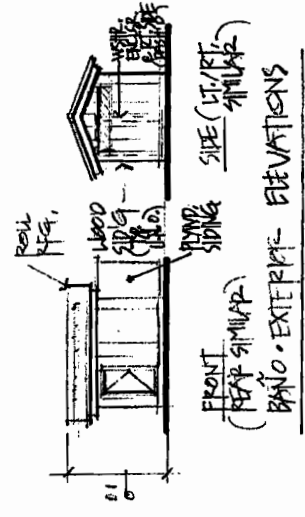
RIGHT SIDE



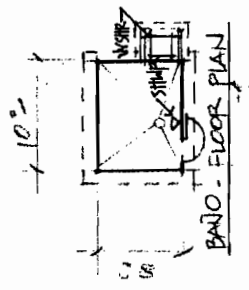
LEFT SIDE



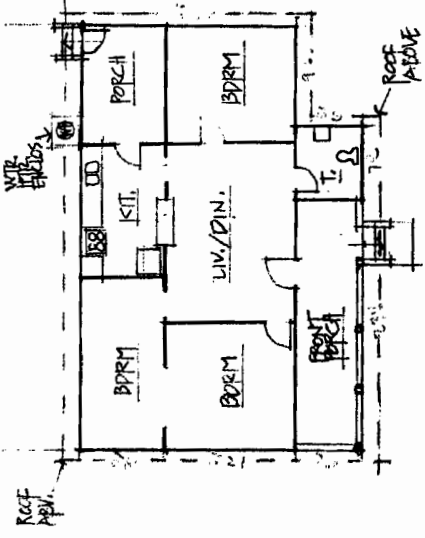
REAR



FRONT & RIGHT SIDE ELEVATIONS



BALCO - FLOOR PLAN

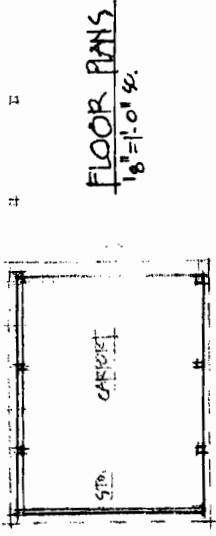
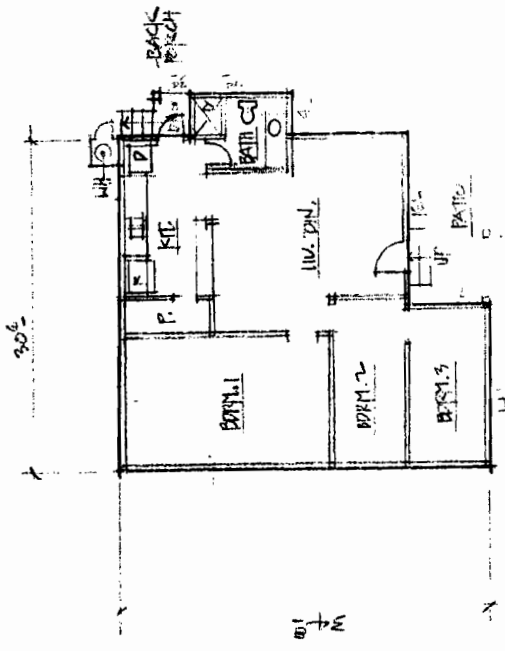
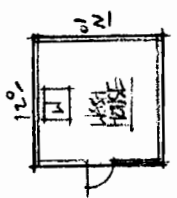
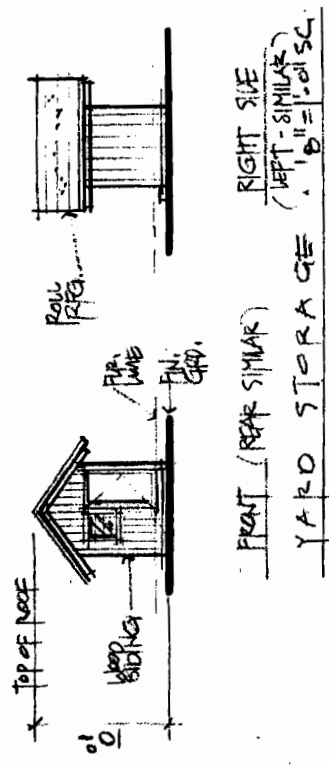


FLOOR PLAN, 1/8" = 1'-0" SCALE (TYP)

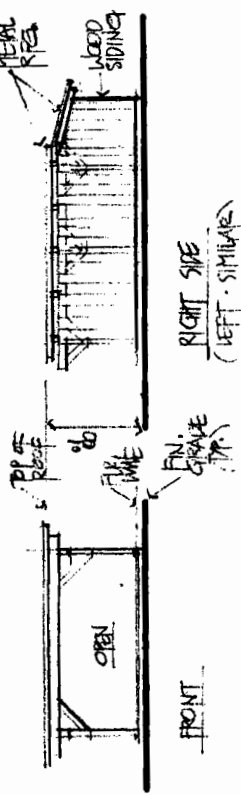


REVISIONS	BY

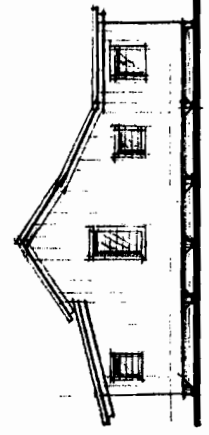
Date	Scale	Drawn	Job	Sheet
			NEW 37	



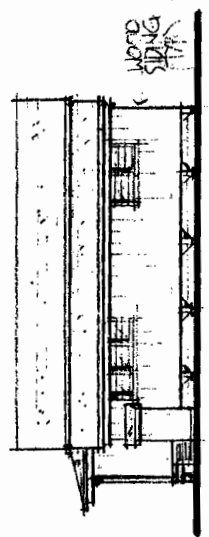
FLOOR PLANS
1/8" = 1'-0" SC.



CARPOR T 8'6" x 10'0" SC.
1/8" GRAPHIC SCALE (IN FT.)

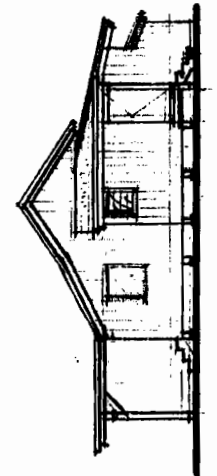


LEFT SIDE

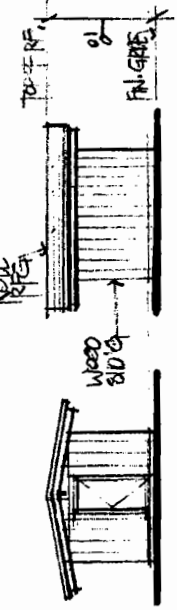


REAR

MAIN RESIDENCE

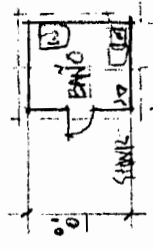
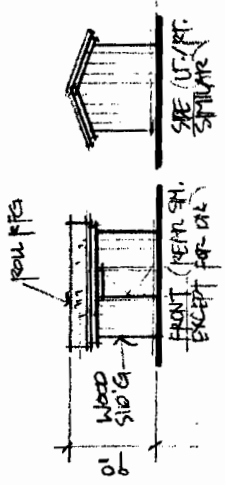
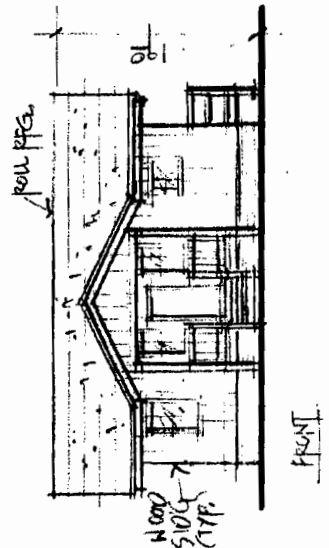
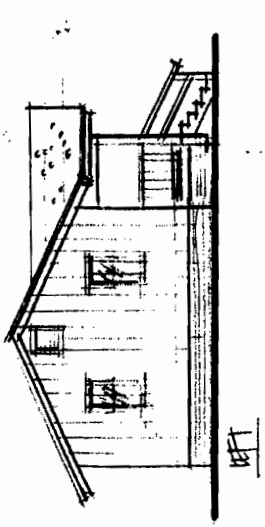
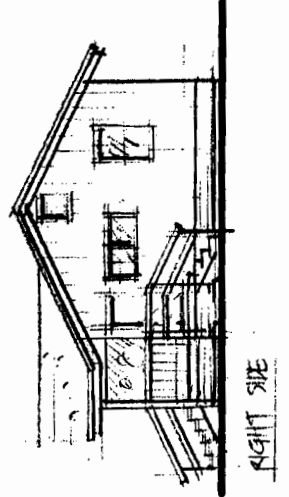
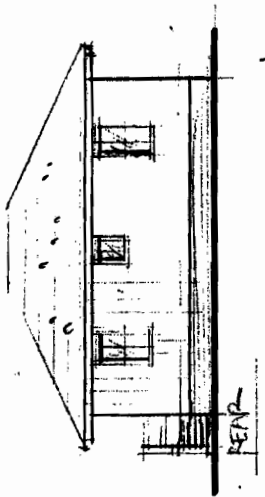


RIGHT SIDE

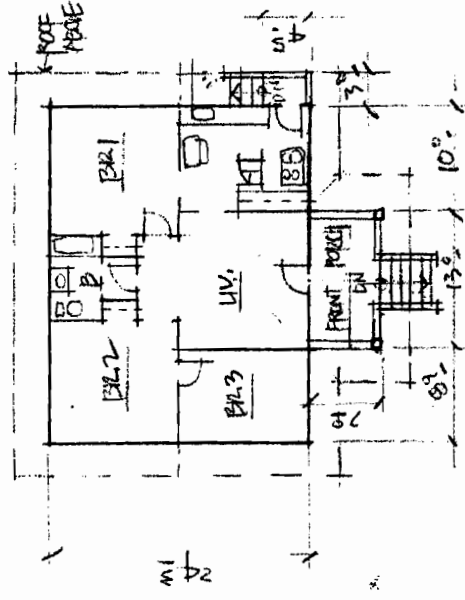


FRONT (REAR-SIMILAR)
RIGHT SIDE (LEFT-SIMILAR)
WASH HOUSE 8'0" x 10'0" SC.

REVISIONS	BY



FLOOR PLAN, 1/8" SC.



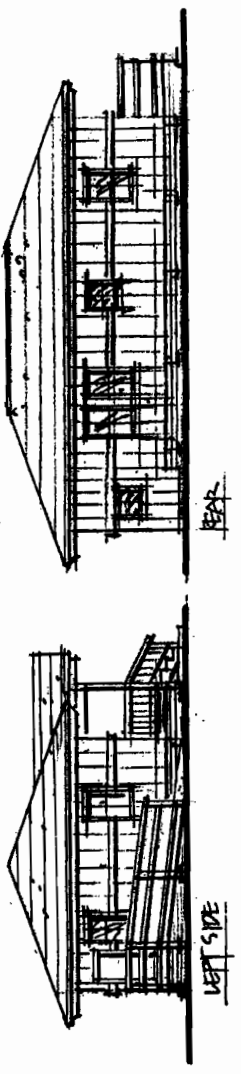
FLOOR PLAN, 1/8" = 1'-0" SC.



REAR SHEEDS + CARRY STRUCTURE NOT SHOWN.
 POOR CONDITION + SILL-SPARKING IN FRONT PORCH.

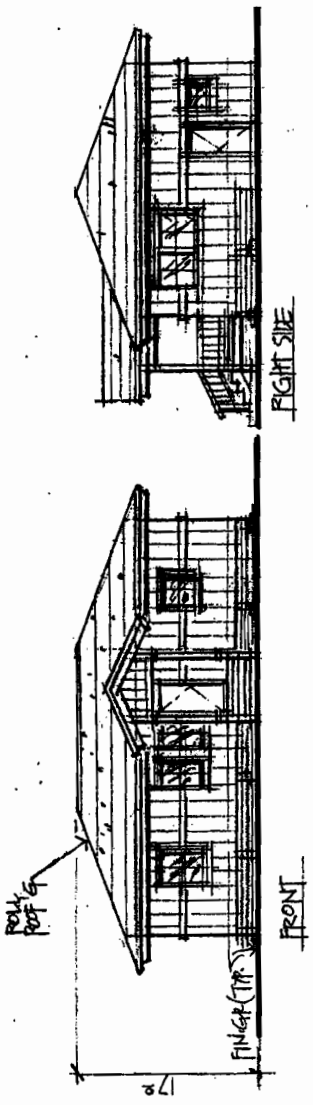
REVISIONS	BY

Date	
Scale	
Drawn	
Job	NEW 47
Sheet	
Of	
Sheets	



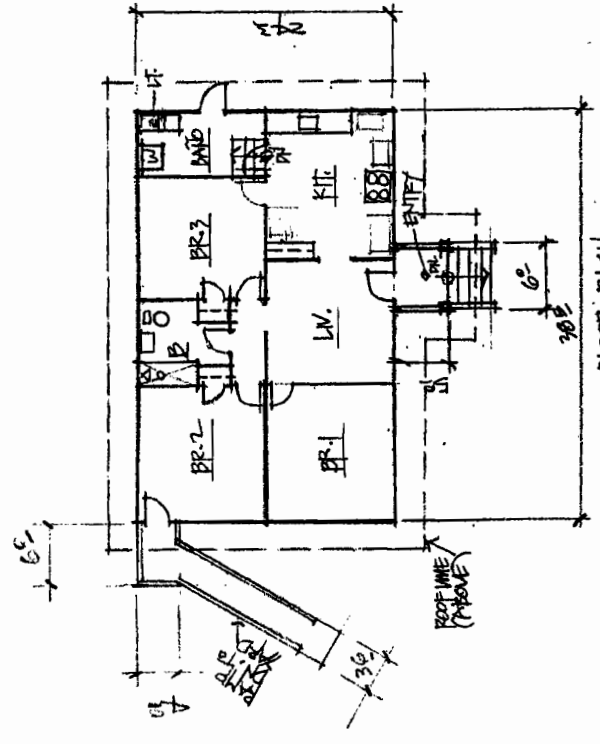
LEFT SIDE

REAR

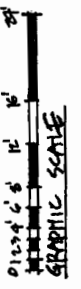


FRONT

RIGHT SIDE



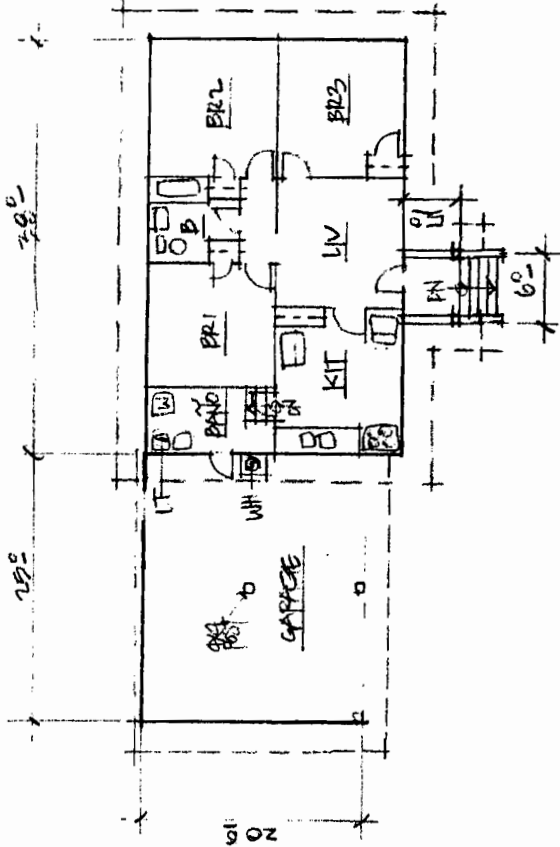
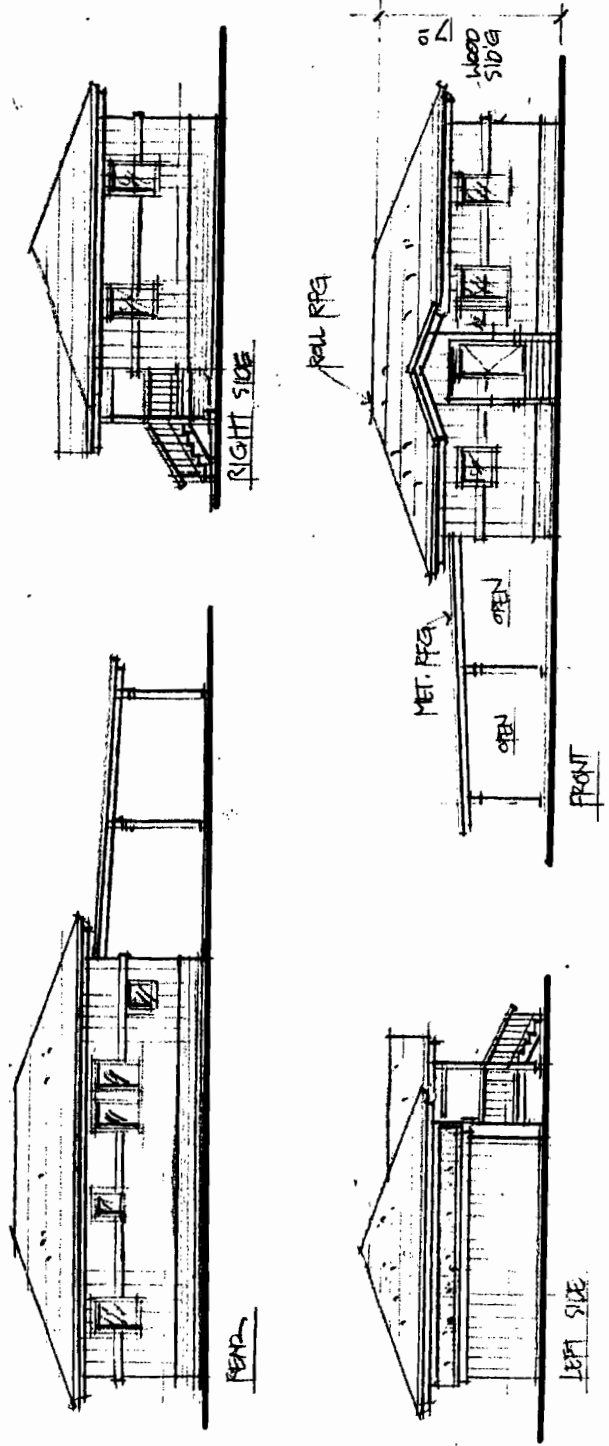
FLOOR PLAN
1/8" = 1'-0" (TR)



SHEDS NOT SHOWN! PROP. CONTAINS
& SUB-STANDARD CONSTRUCTION.

REVISIONS	BY

Date	
Scale	
Drawn	
Job	NEW 43
Sheet	
Of	
Sheets	

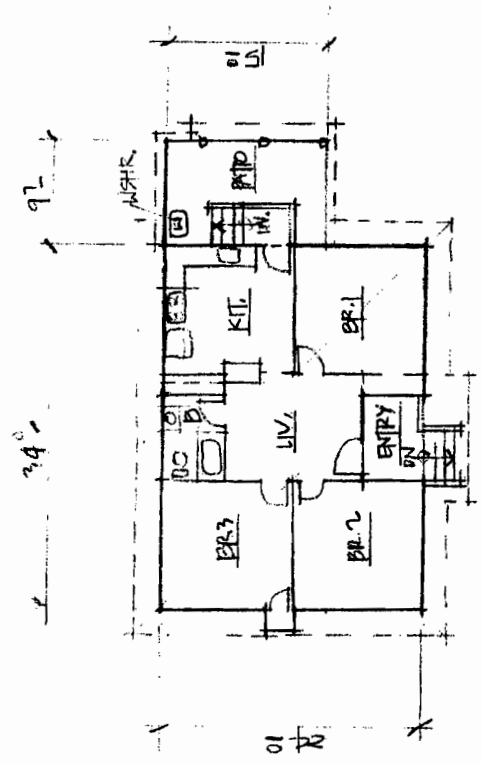
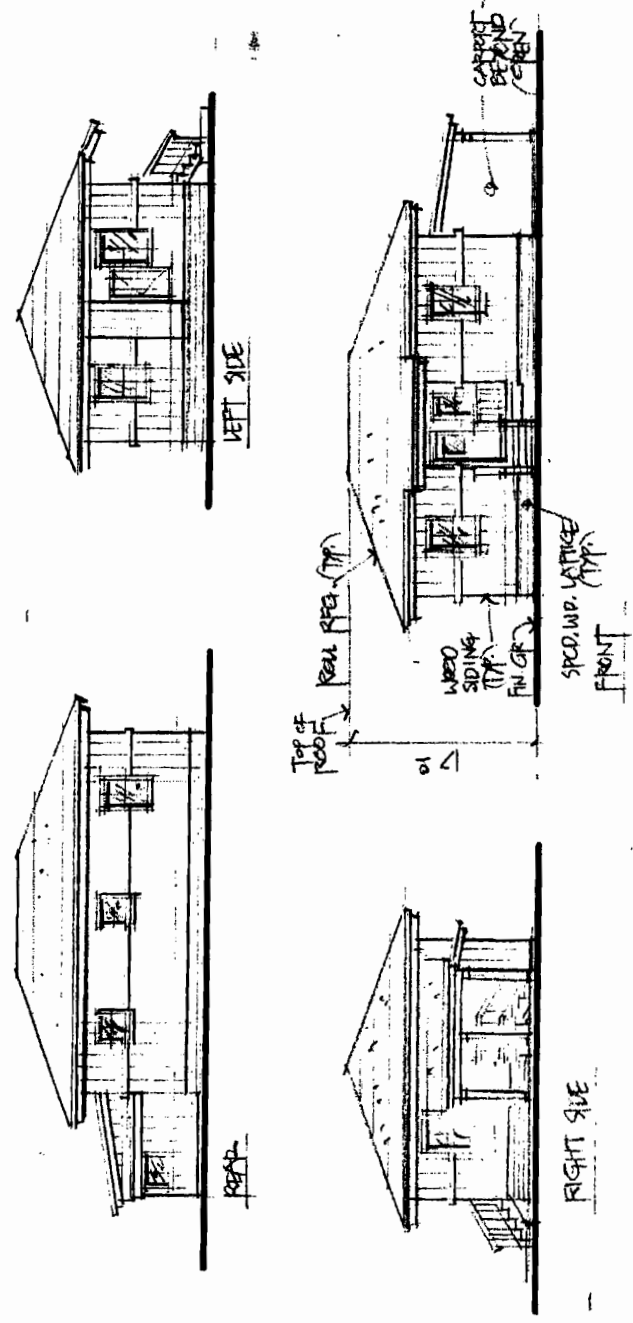


FLOOR PLAN, 1/8" = 1'-0" SC.
 GRAPHIC SCALE
 0' 6" 12" 18" 24"

DOGS SHED & PORCHES AT CORNER WITH...
 POOL CONSTRUCTION & SILL-SPACING CORRECTED

REVISIONS	BY

Date	Scale	Drawn	Job	Sheet	Of	Sheets
			NEW 44			

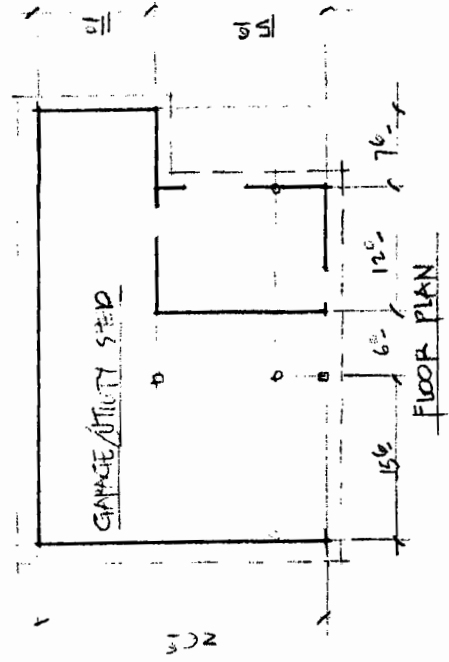
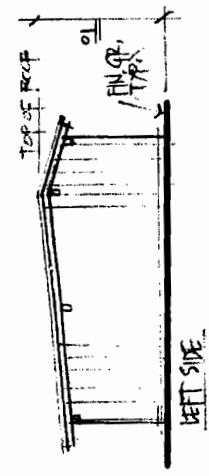
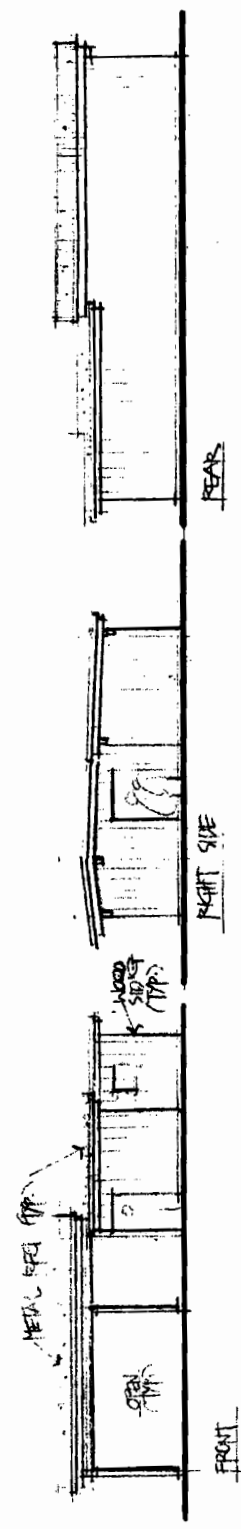


FLOOR PLAN - 1/8"=1'-0"

REVISIONS	BY

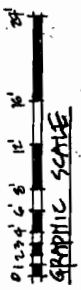
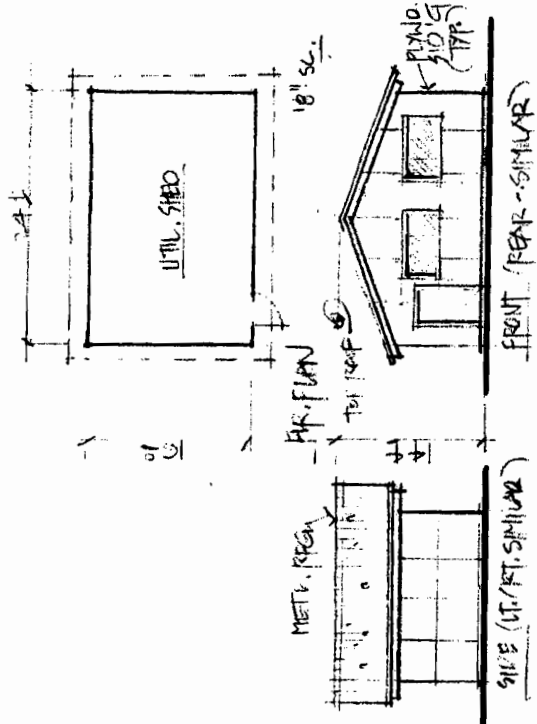
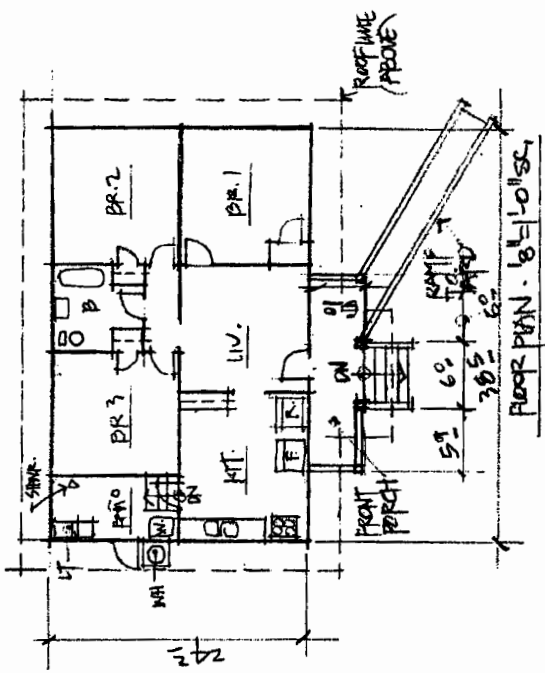
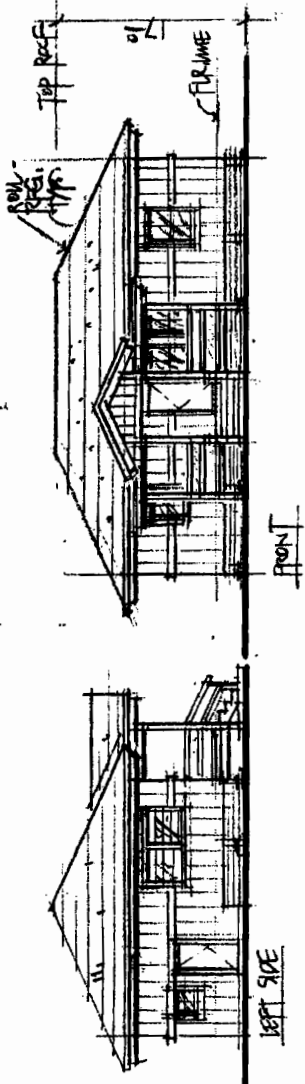
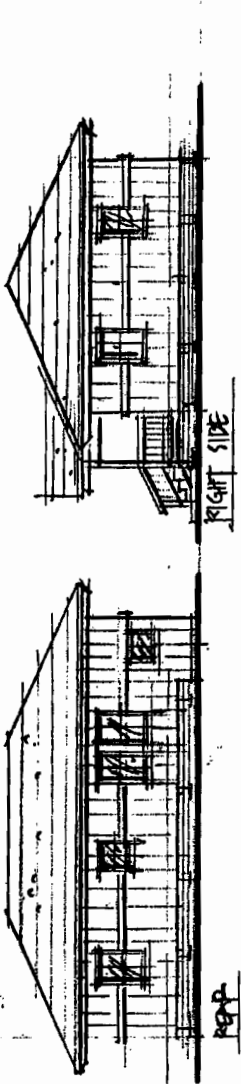
Date	
Scale	
Drawn	
Job No.	NEW 44
Sheet	
Of	
Sheets	

75



REVISIONS	BY

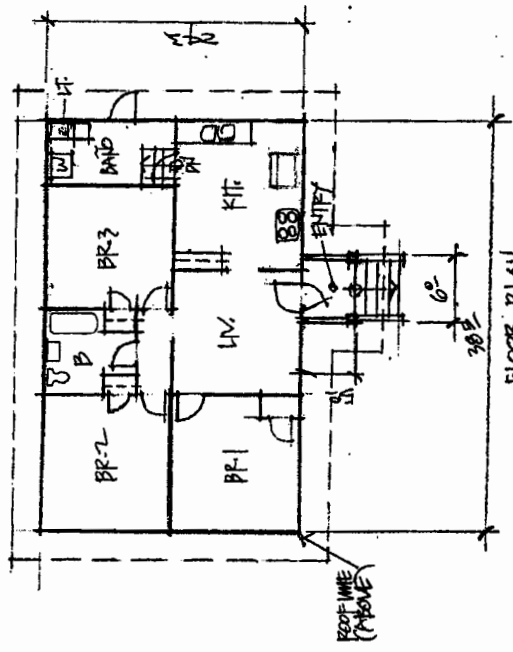
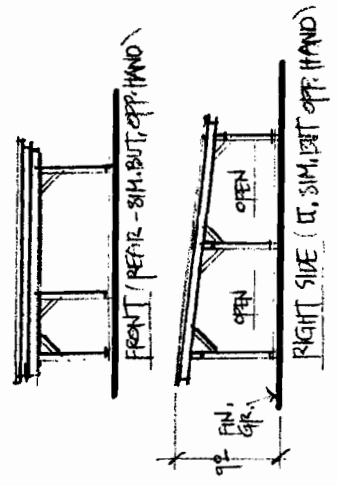
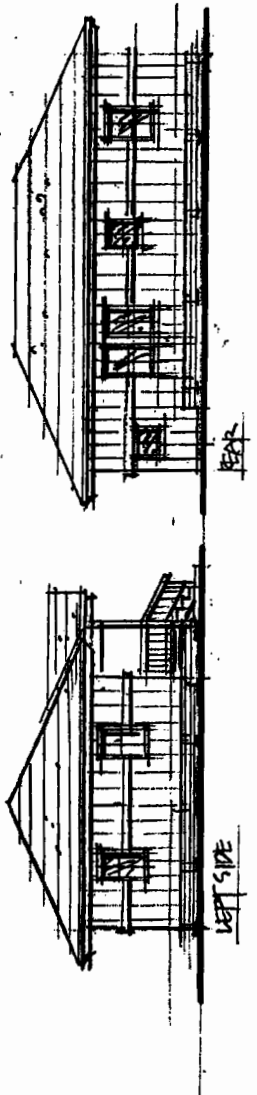
Date	
Scale	
Drawn	
Job	NEW 45
Sheet	
Of	
Sheets	



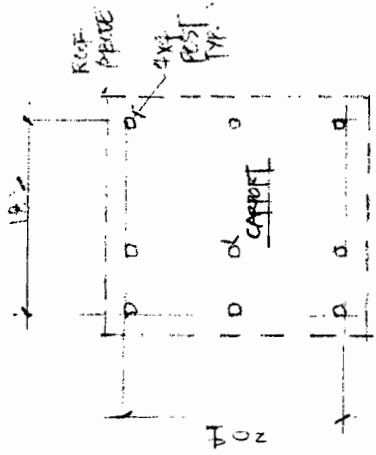
PORTION OF PLAN, SPEC. NOT SHOWN.
 POOR CONDITION & SUE-SPANNED CONSTR.

REVISIONS	BY

Date	Scale	Drawn	Job	Sheet	Of	Sheets
			NEW 46			



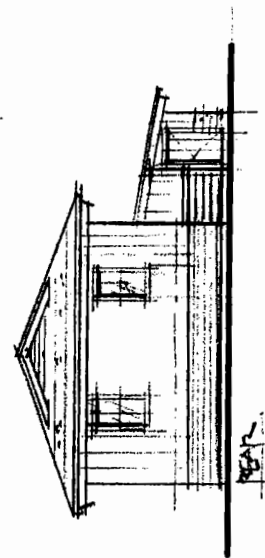
FLOOR PLAN
 1/8" = 1'-0" (TR)
 0 6 12 18 24
 GRAPHIC SCALE



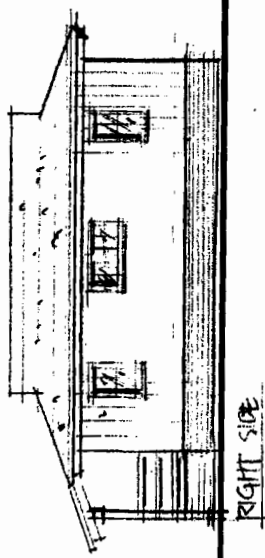
CHICKEN COOPS NOT SHOWN.

REVISIONS	BY

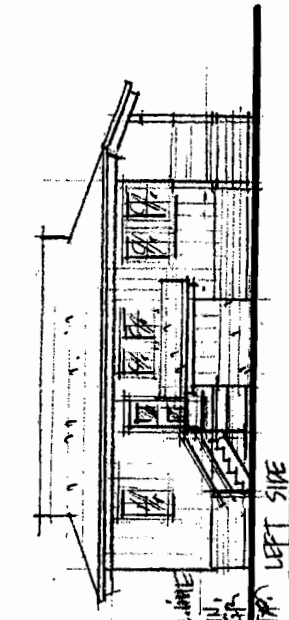
Date	Scale	Drawn	Job	Sheet	Of	Sheets
	AS SHOWN	DT	NEW 51			



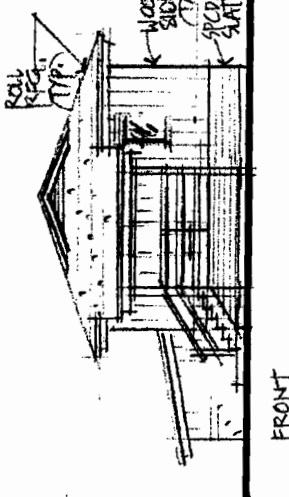
REAR



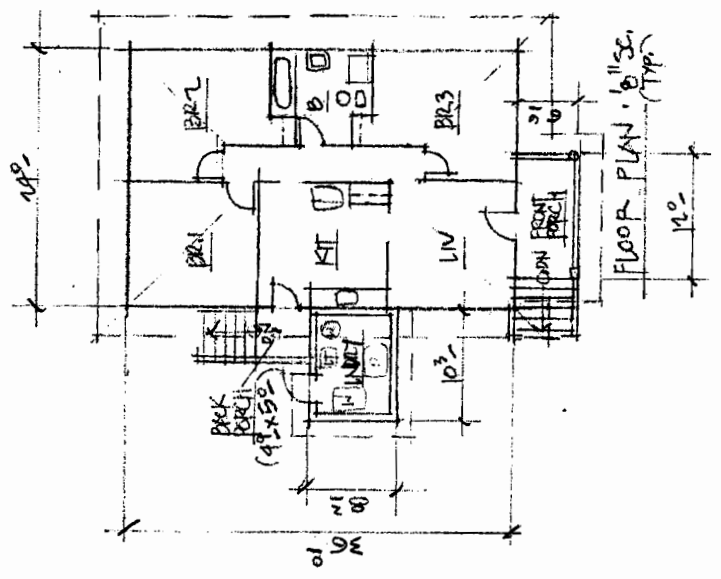
RIGHT SIDE



LEFT SIDE



FRONT
1/8" = 1'-0" (TYP.)



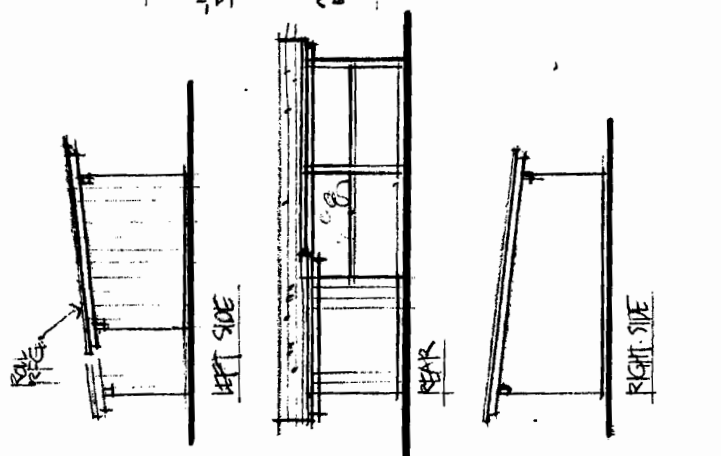
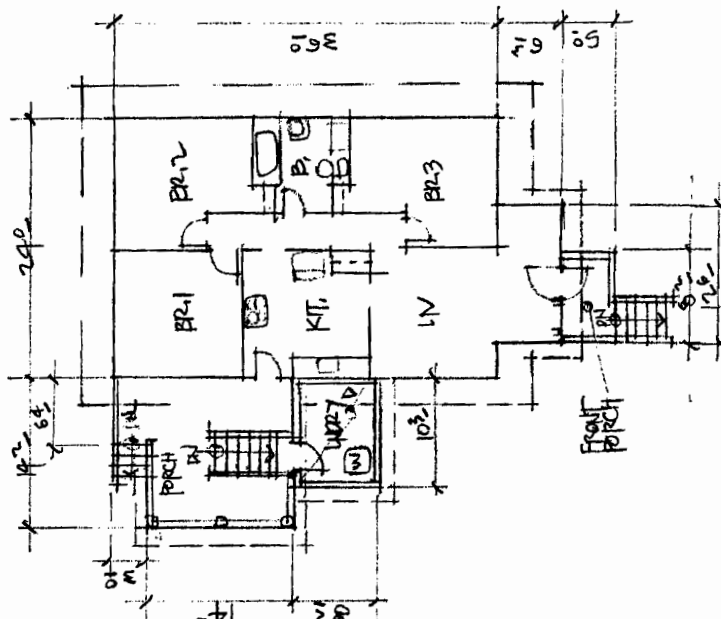
FLOOR PLAN 1/8" = 1'-0" (TYP.)



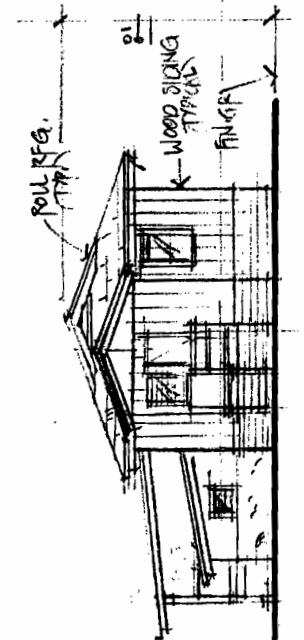
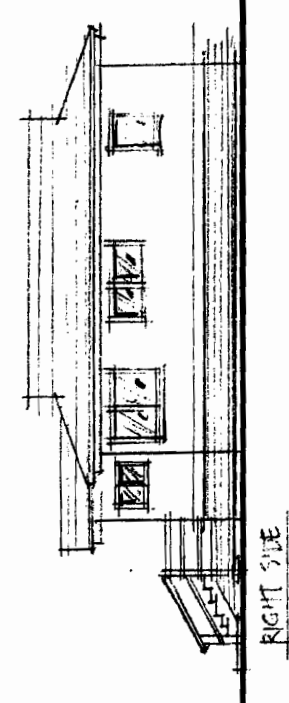
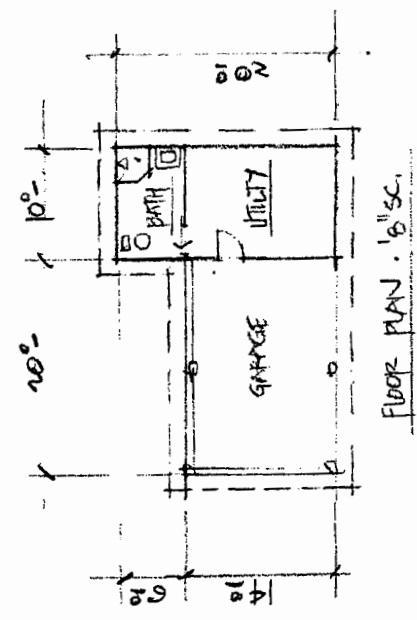
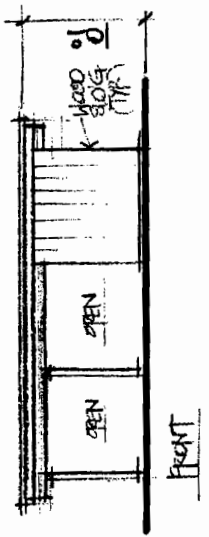
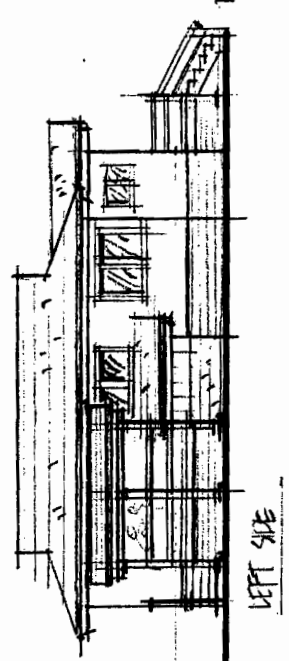
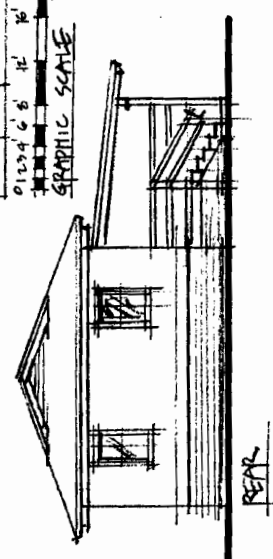
GRAPHIC SCALE

REVISIONS	BY

Date
 Scale AS SHOWN
 Drawn 07
 Job NEW SL
 Sheet
 01 Sheets



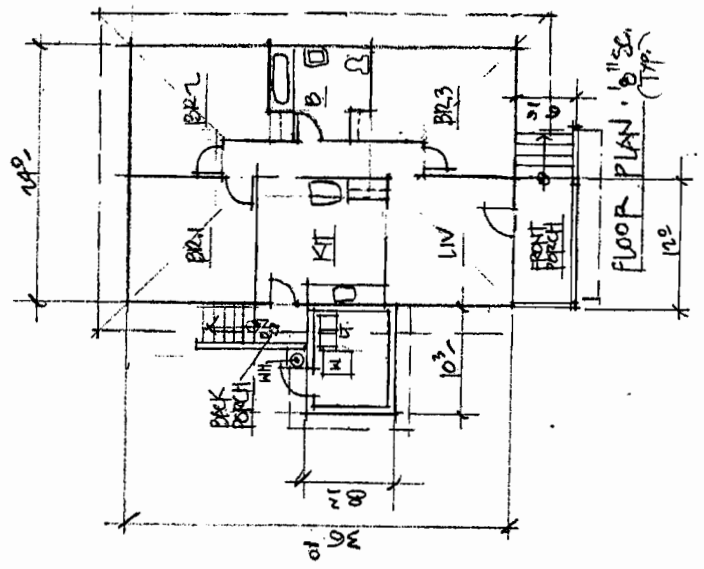
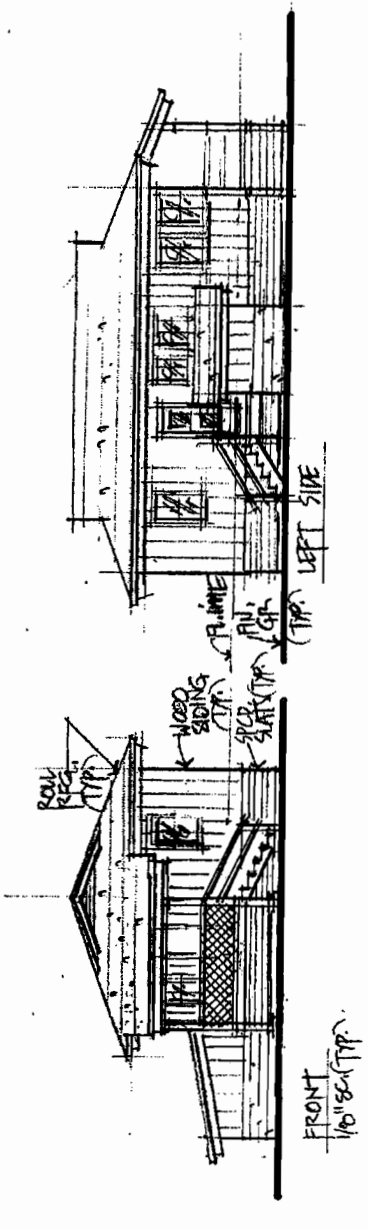
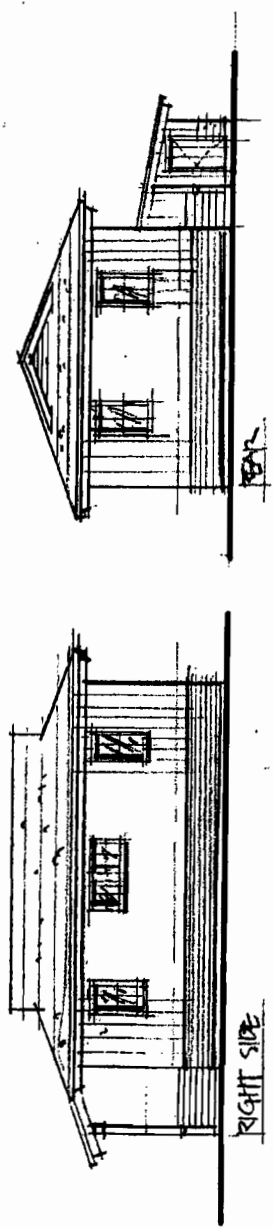
FLOOR PLAN - 1/8" SCALE



NOTES: SEE ATTACHED TO RUDERMAN'S SP. SHEET FOR DETAILS.

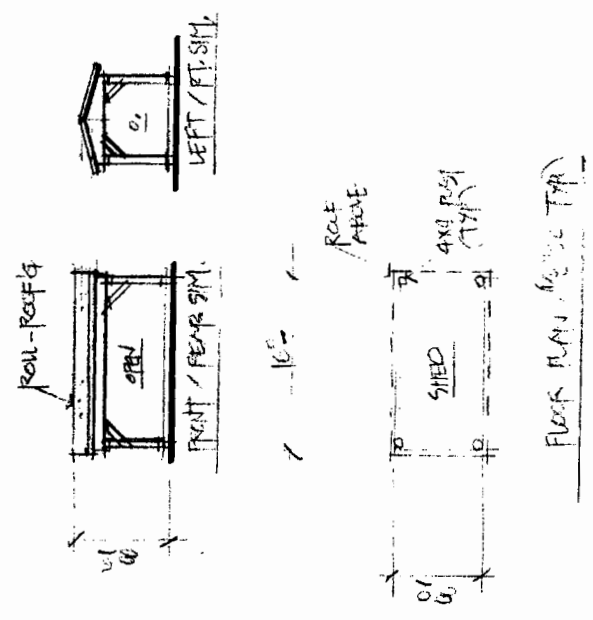
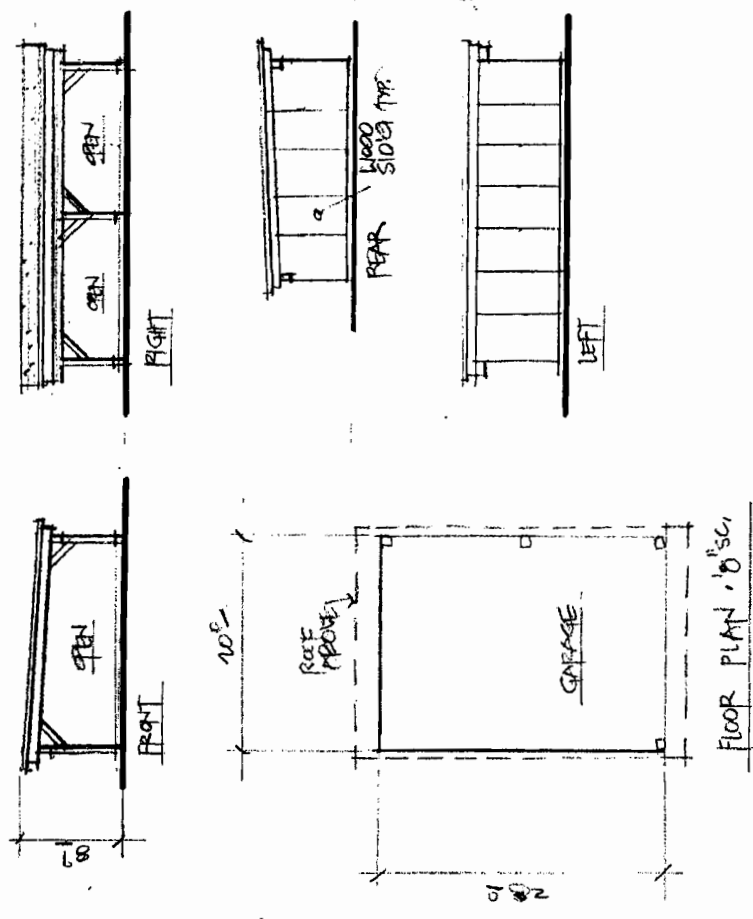
REVISIONS	BY

Date	Scale AS SHOWN
Drawn DT	Job NEW SA
Sheet	Sheet
01	Sheets



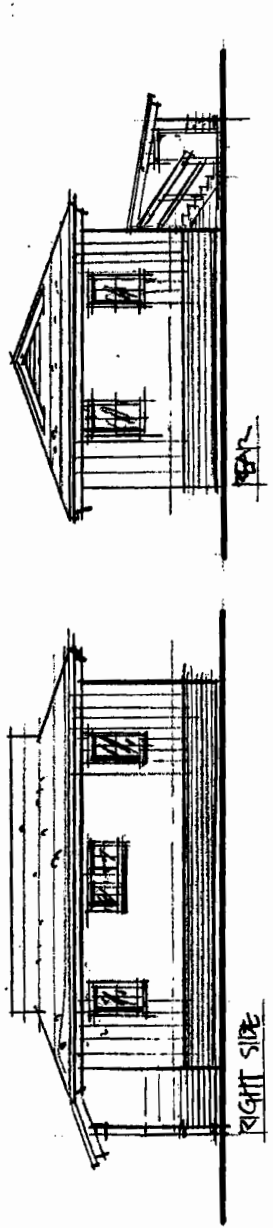
REVISIONS	BY

Date	
Scale	
Drawn	
Job	HEB 54
Sheet	
01	Sheets



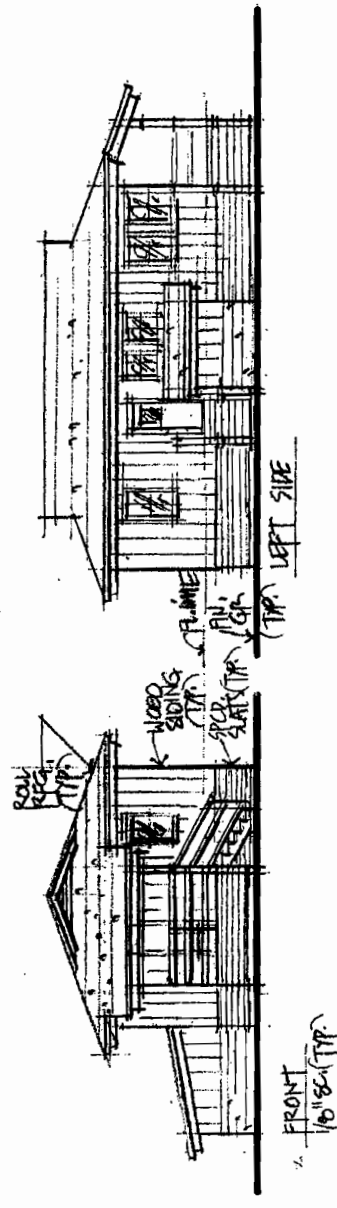
REVISIONS	BY

Date	Scale	Drawn	Job	Sheet	Of	Sheets
	MS SILLMAN	DT	NEW 5/3			



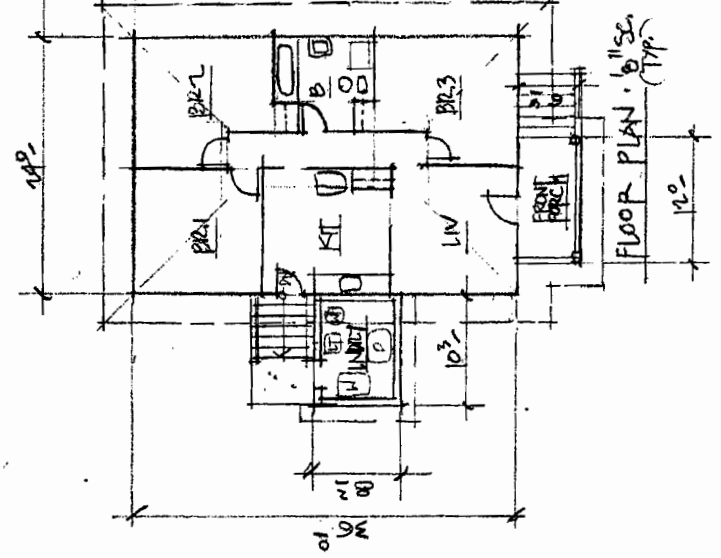
RIGHT SIDE

REAR

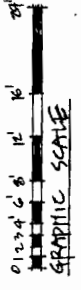


FRONT
1/8" = 1'-0" (TYP.)

LEFT SIDE
(TYP.)

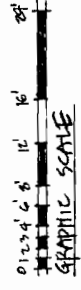
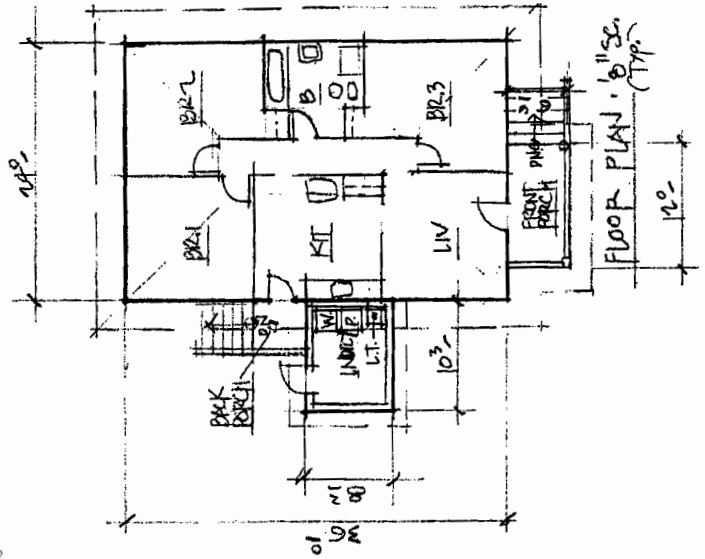
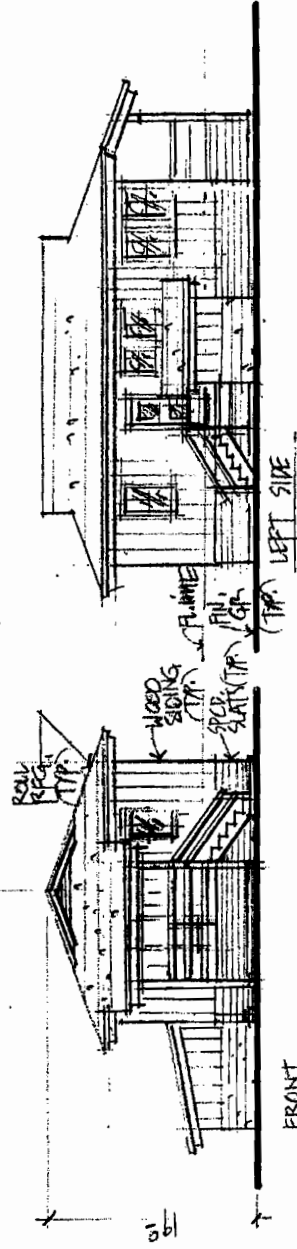
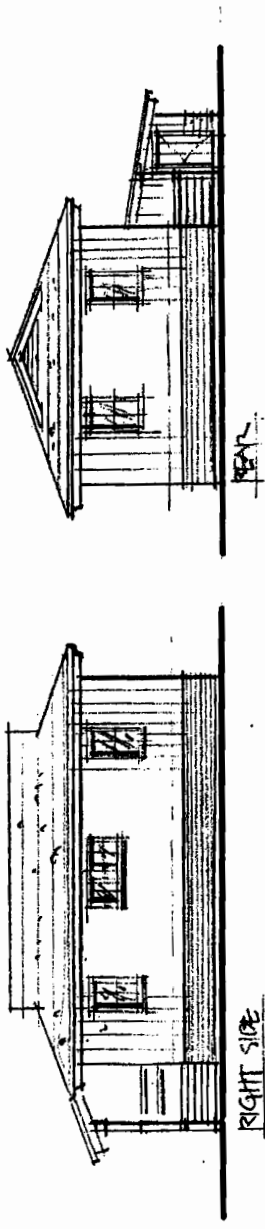


FLOOR PLAN - 1/8" = 1'-0" (TYP.)



REVISIONS	BY

Date	
Scale	
Drawn	
Job	NEW 510
Sheet	
Ct	
Sheets	

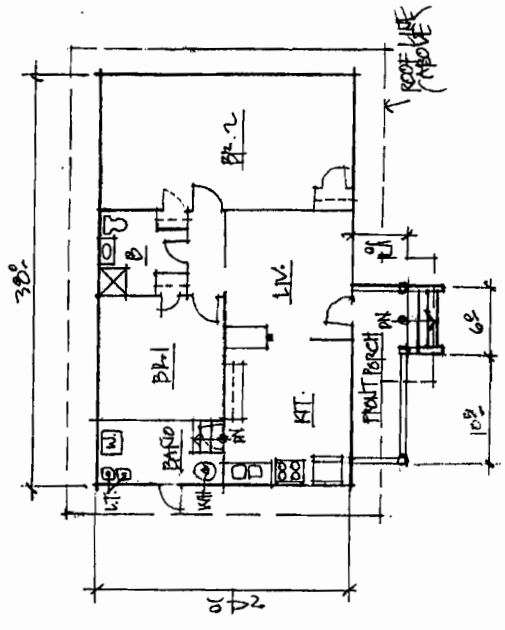
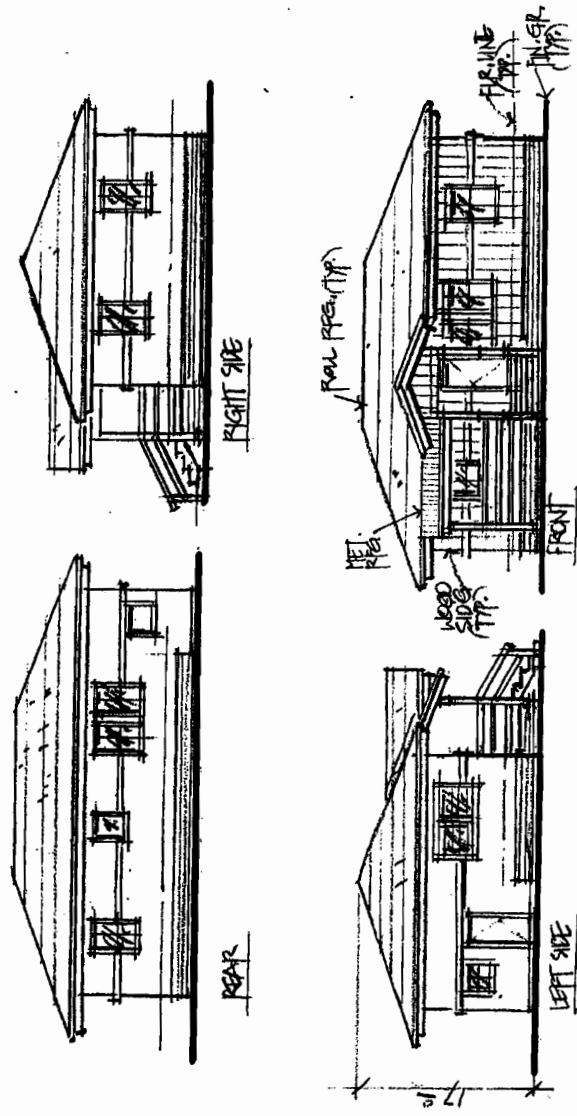


SHED NOT STAINLESS ROOF CONSTRUCTION.
SUB - STANDARD CONSTRUCTION.

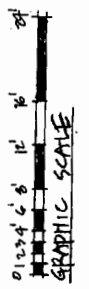
510

REVISIONS	BY

Date	
Scale	
Drawn	
Job	NEW 57
Sheet	
Of	
Sheets	

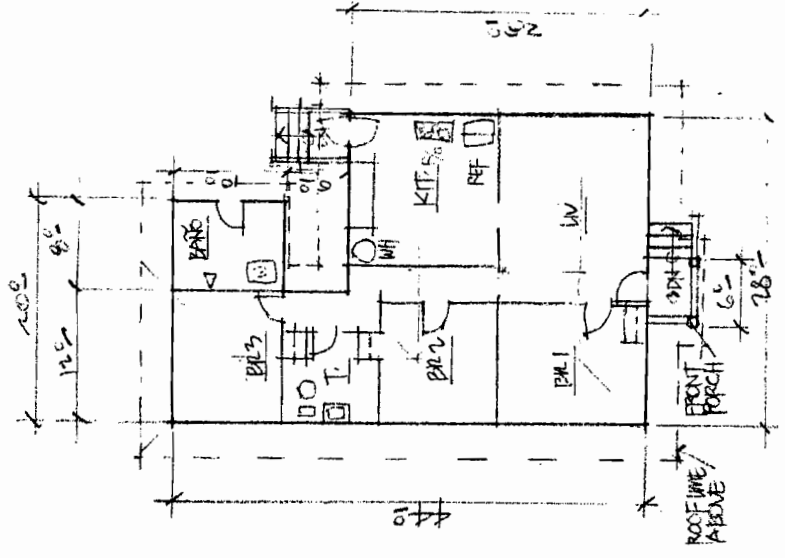
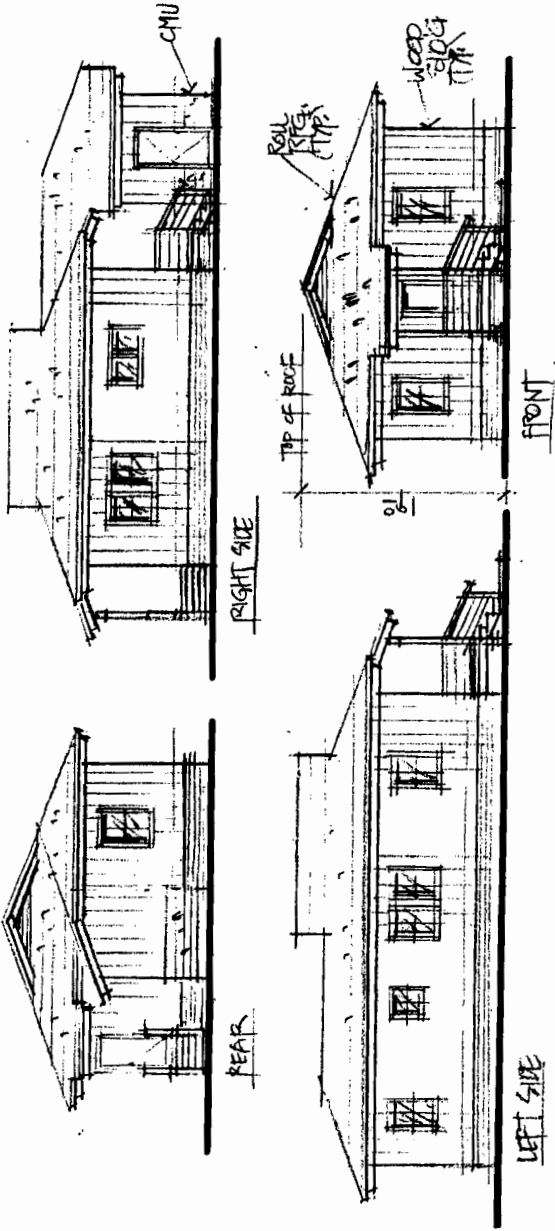


FLOOR PLAN - 1/8" SCALE

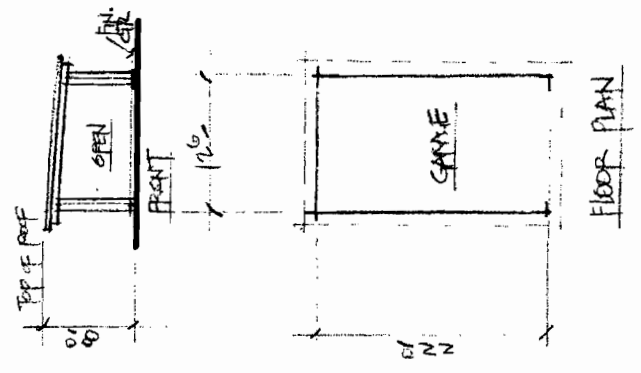
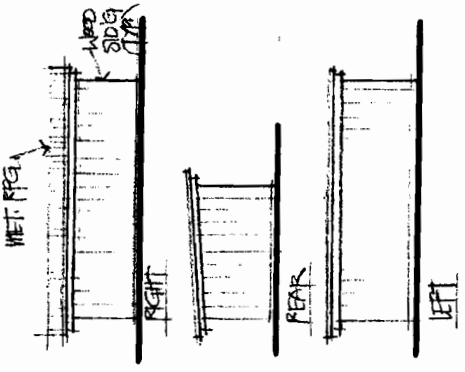


REVISIONS	BY

Date	
Scale	
Drawn	
Job	NEW 90
Sheet	
Of	
Sheets	

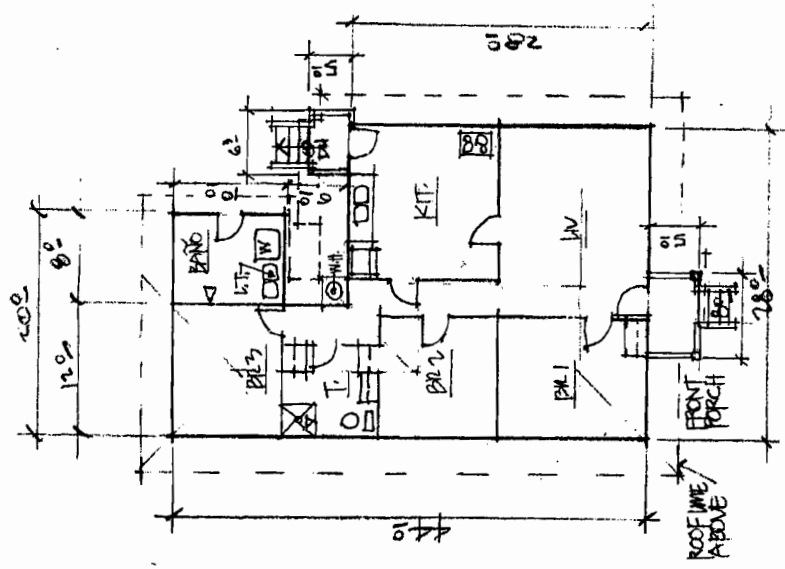
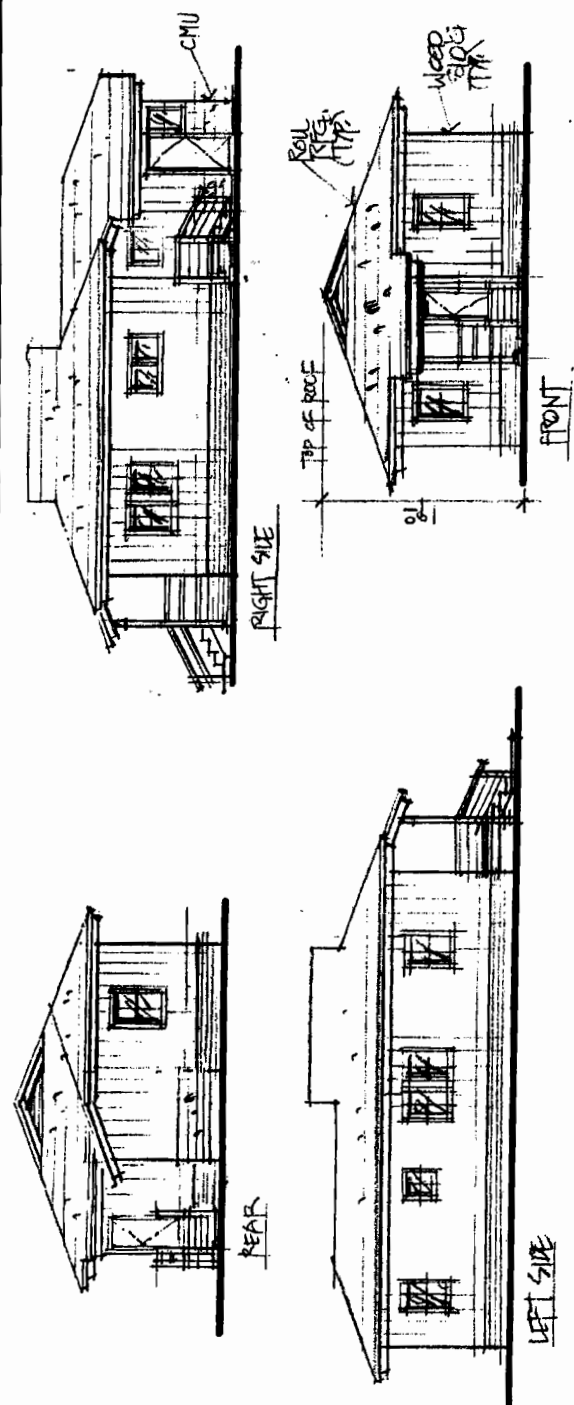


FLOOR PLAN - 1/8" = 1'-0" SC.

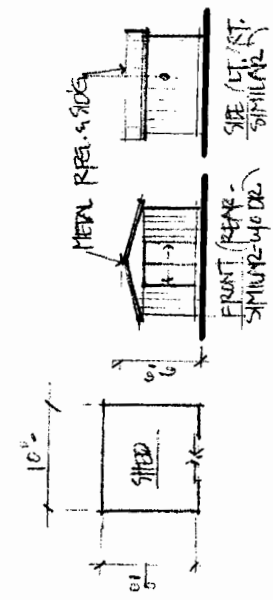


REVISIONS	BY

Date	Scale	Drawn	Job	Sheet
			NEW 59	

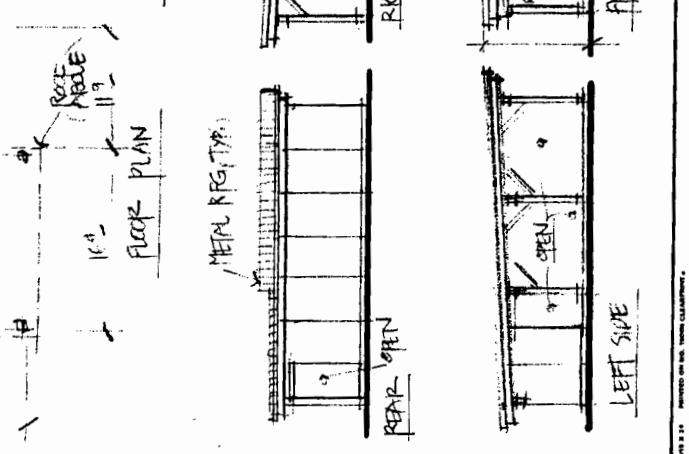
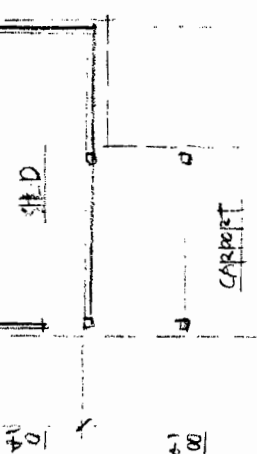
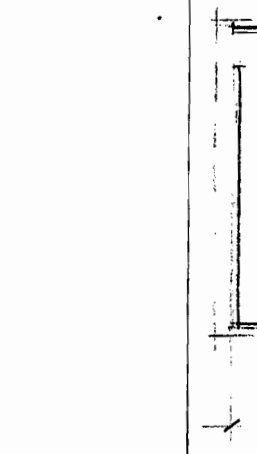
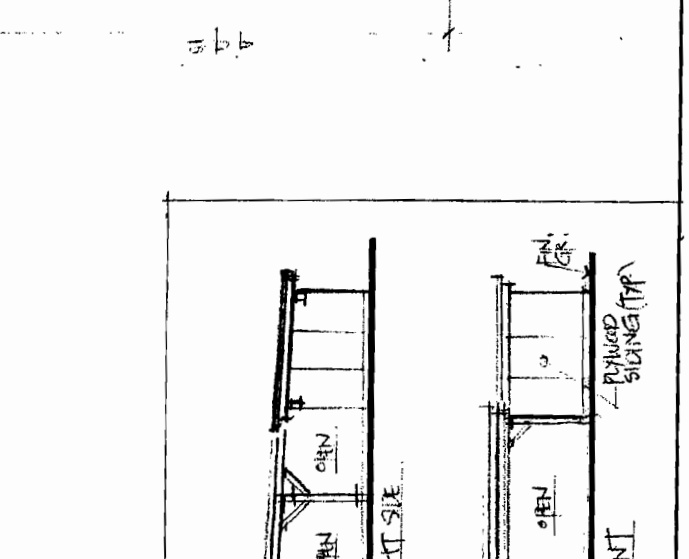
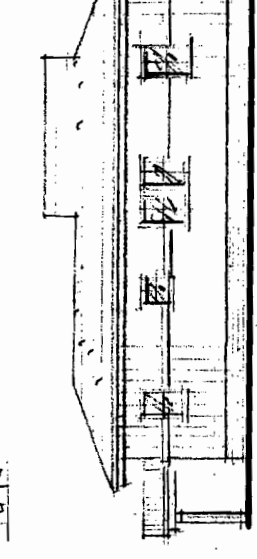
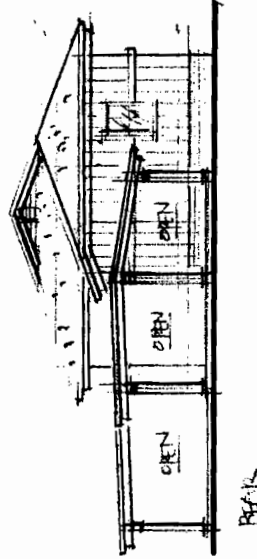
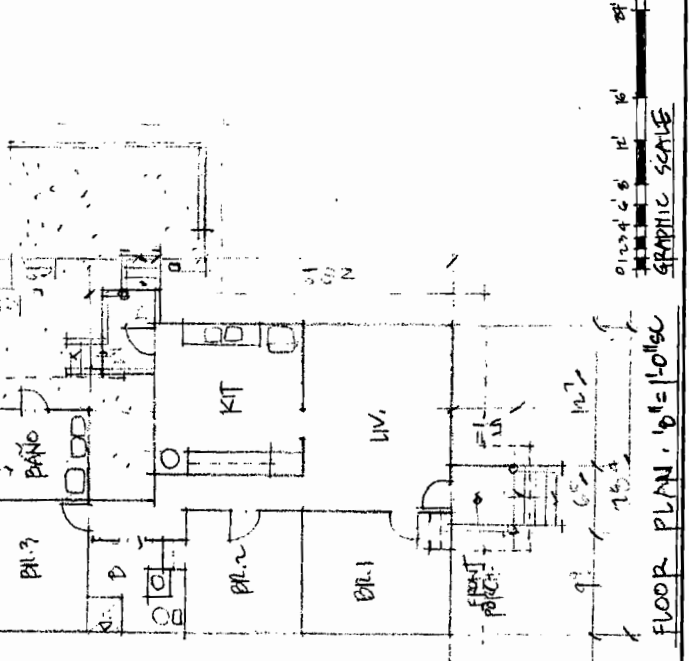
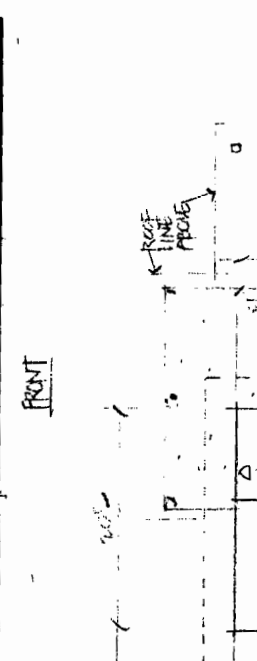
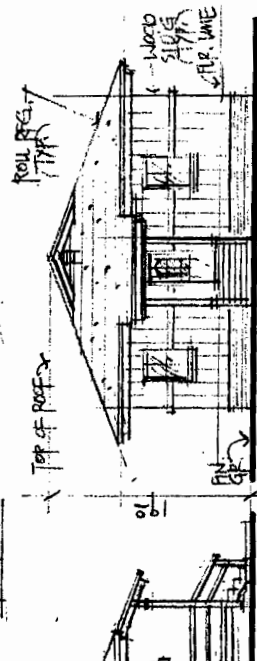
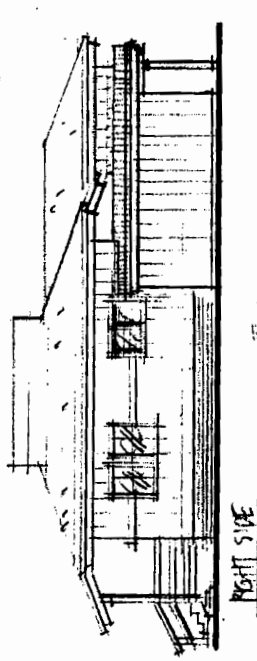


FLOOR PLAN • 1/8" = 1'-0" SC.



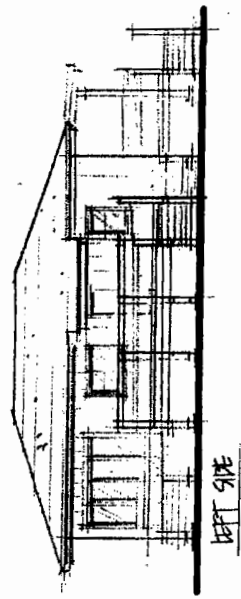
REVISIONS	BY

Date	Scale	AS SHOWN
Drawn	DT	
Job	NEW 60	
Sheet		
Of		Sheets

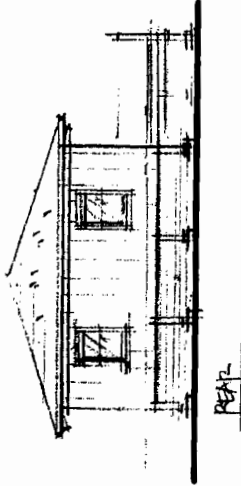


REVISIONS	BY

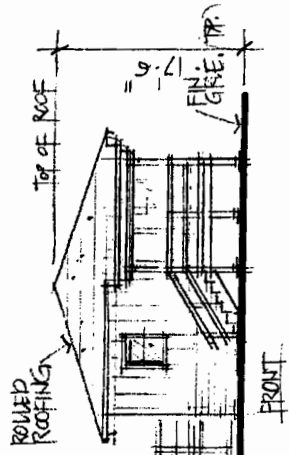
Date	
Scale	
Drawn	
Job No.	KVA
Sheet	MC 1856
Of	
Sheets	



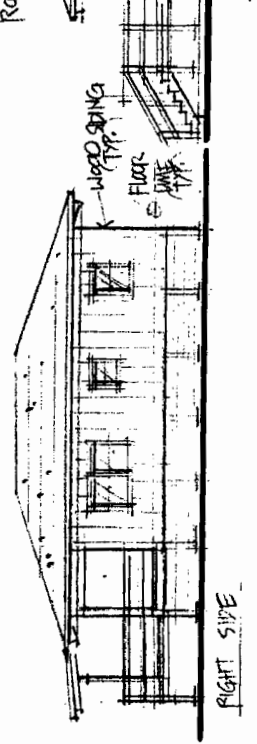
LEFT SIDE



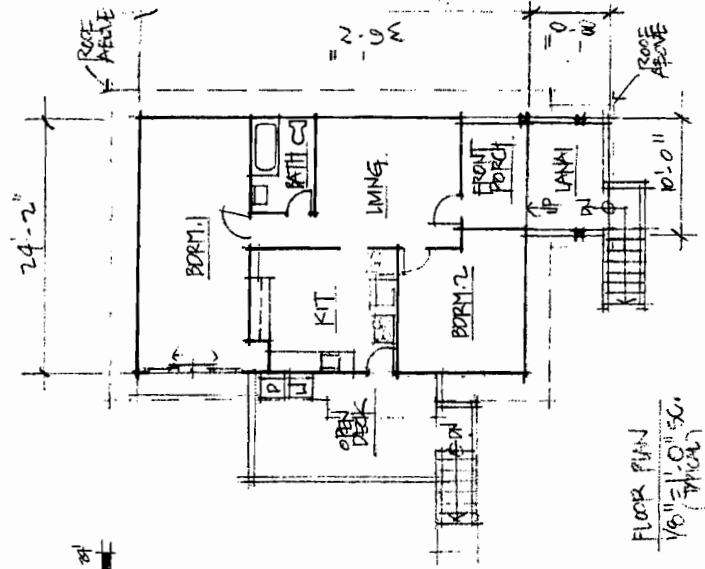
REAR



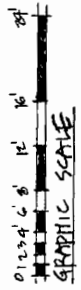
FRONT



RIGHT SIDE



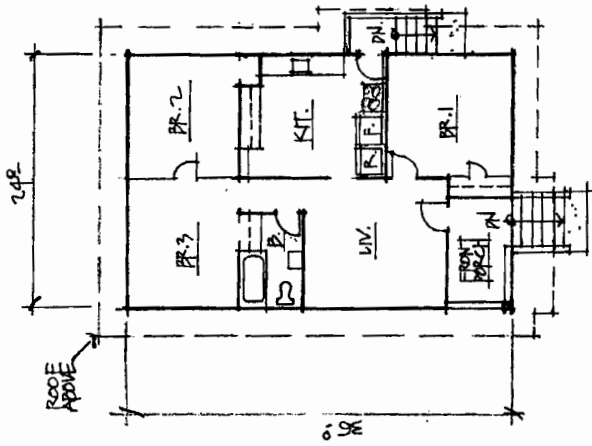
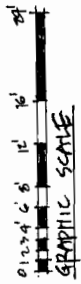
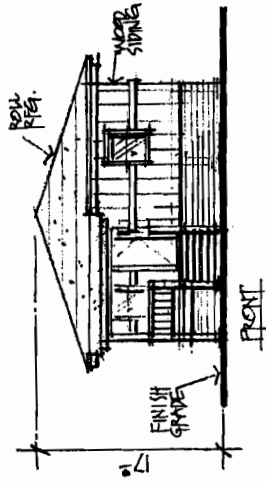
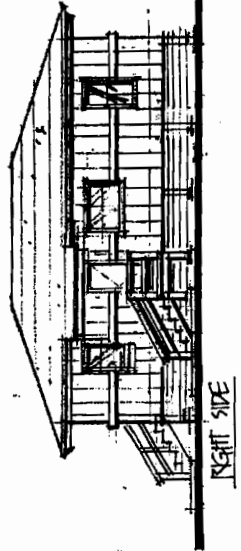
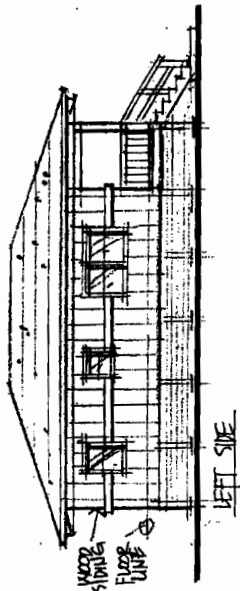
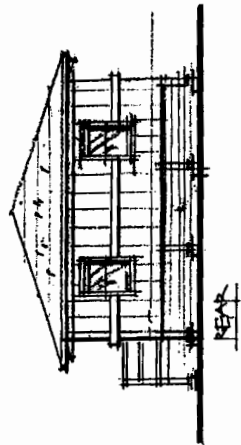
FLOOR PLAN
1/8" = 1'-0" S.C.
(APPROX.)



REVISIONS	BY

Date	
Scale	
Drawn	
Job No.	MC 757
Sheet	
Of	Sheets

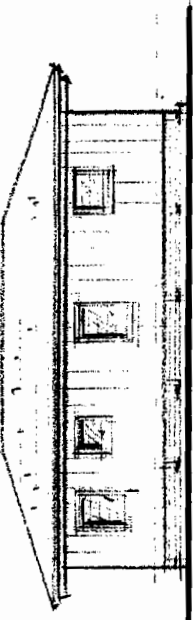
65



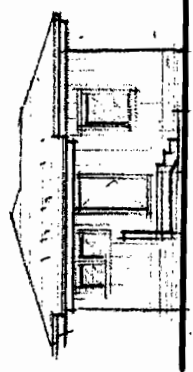
FLOOR PLAN - 1/8" = 1'-0" SC.

REVISIONS	BY

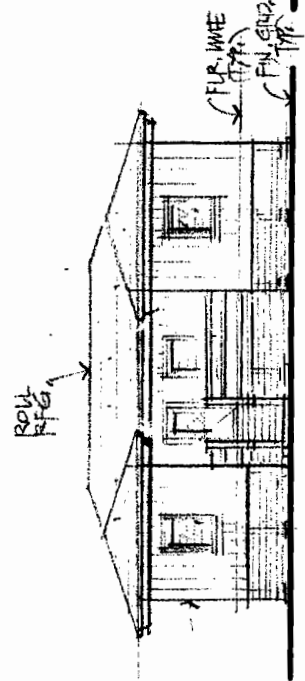
Date _____
 Scale AS SHOWN
 Drawn BY
 Job MA 1009
 Sheet
 Of Sheets



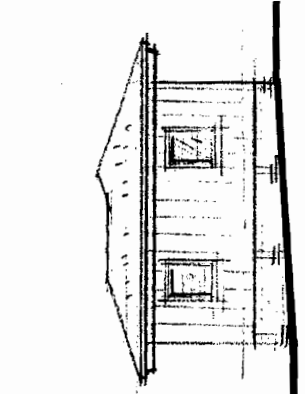
LEFT SIDE



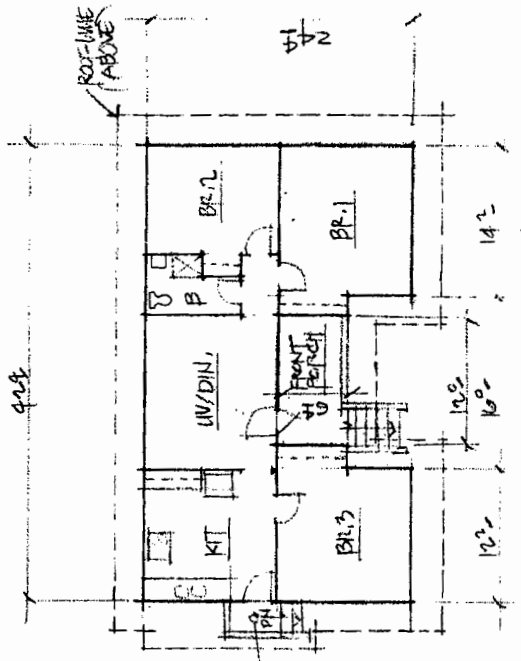
RIGHT SIDE



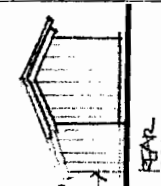
FRONT



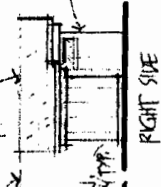
REAR



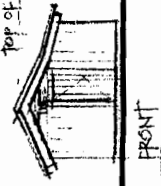
FLOOR PLAN, 1/8" = 1'-0" SC.



LEFT SIDE



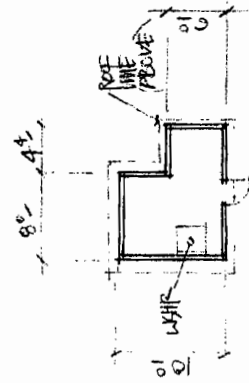
RIGHT SIDE



FRONT



REAR

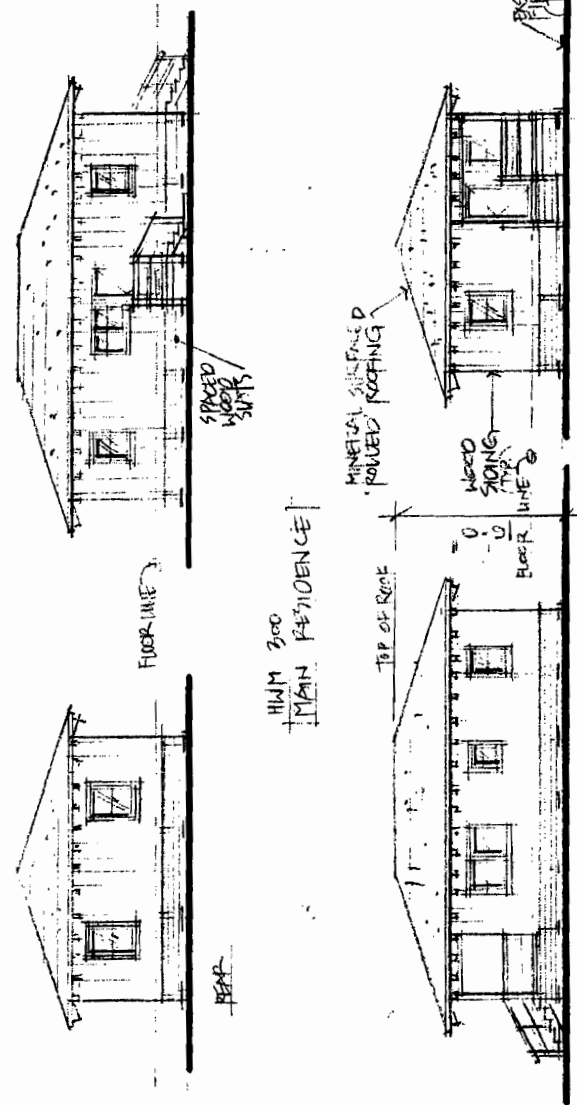
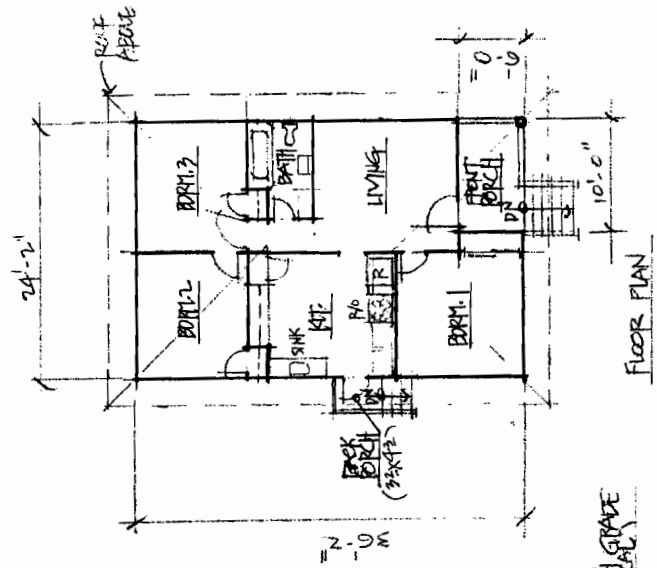
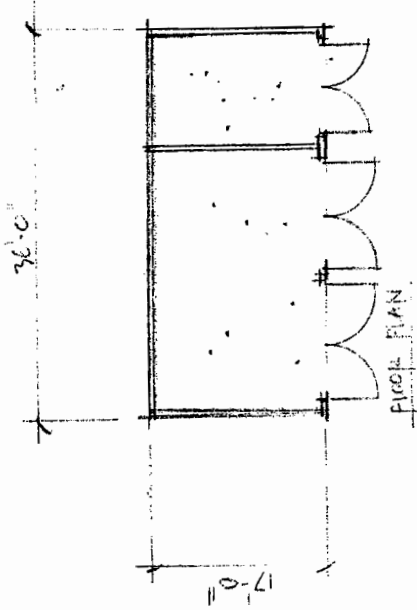
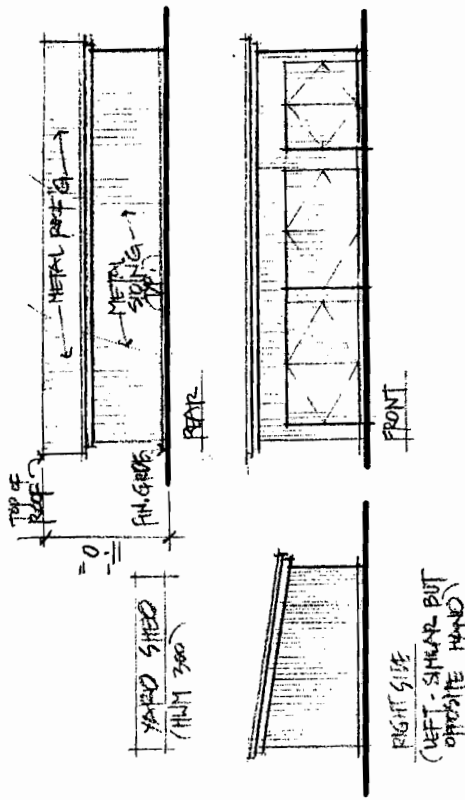


FLOOR PLAN, 1/8" SC.

BAND HOUSE

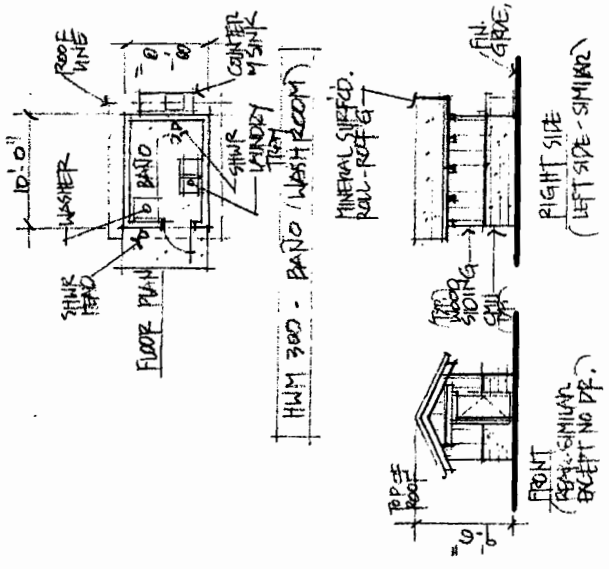
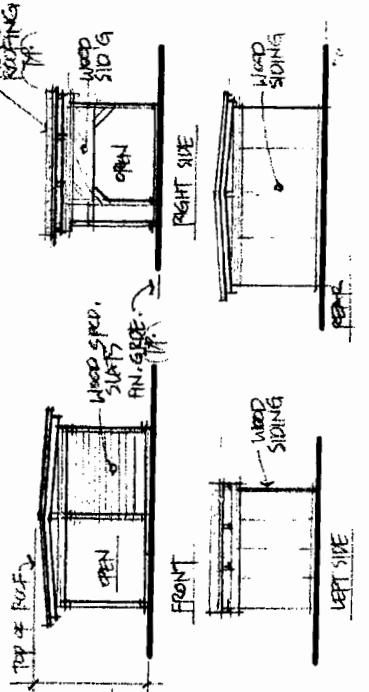
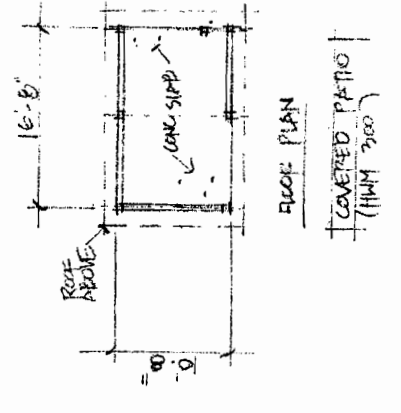
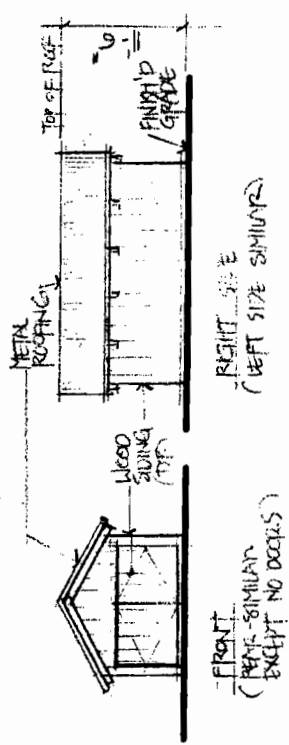
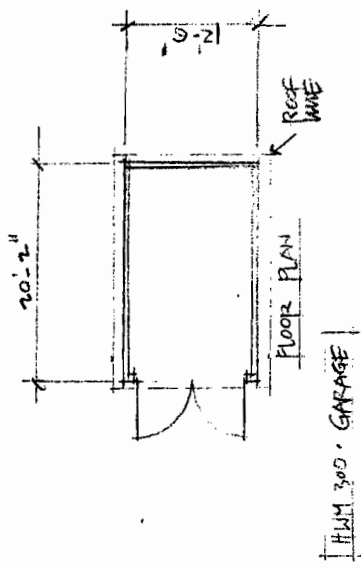
REVISIONS	BY

Date _____
 Scale A5 SHOWN
 Drawn DY
 Job No. JHM 300
 Sheet
 01 Sheets



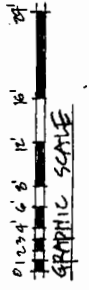
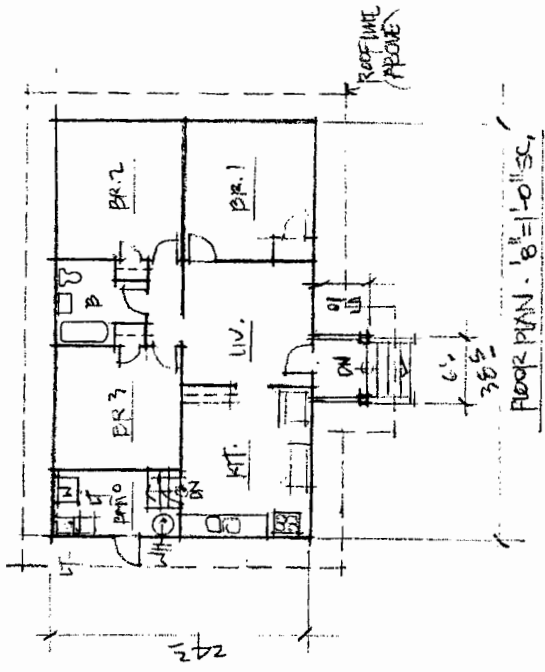
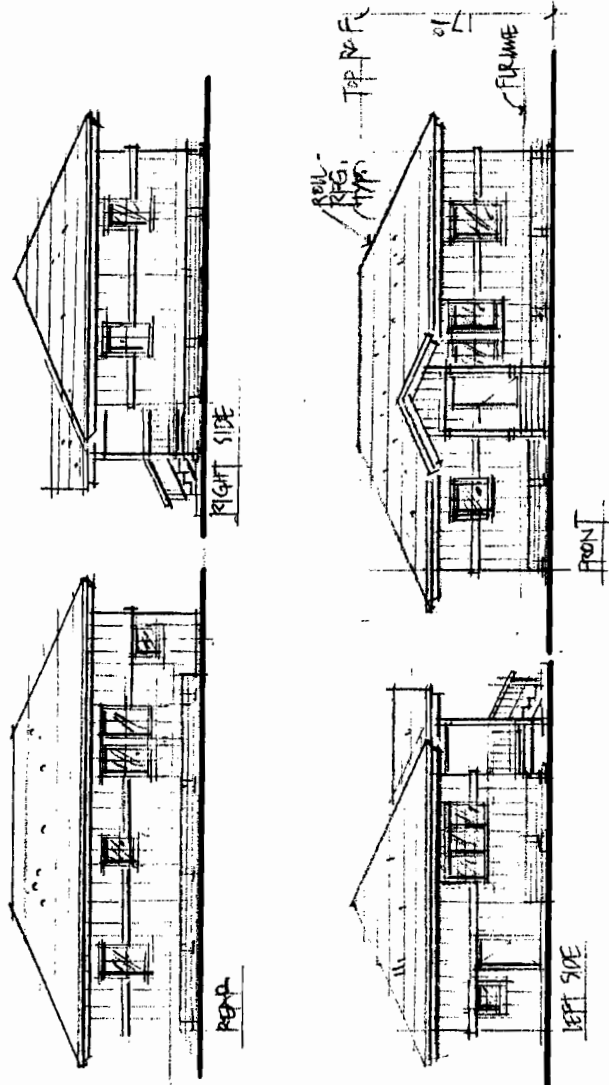
REVISIONS	BY

Date	Scale	AS SHWN
Drawn	BY	
Job No.	HMM 300	
Sheet		
CI	Sheets	



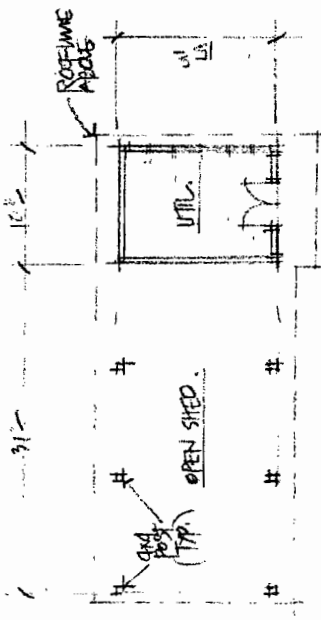
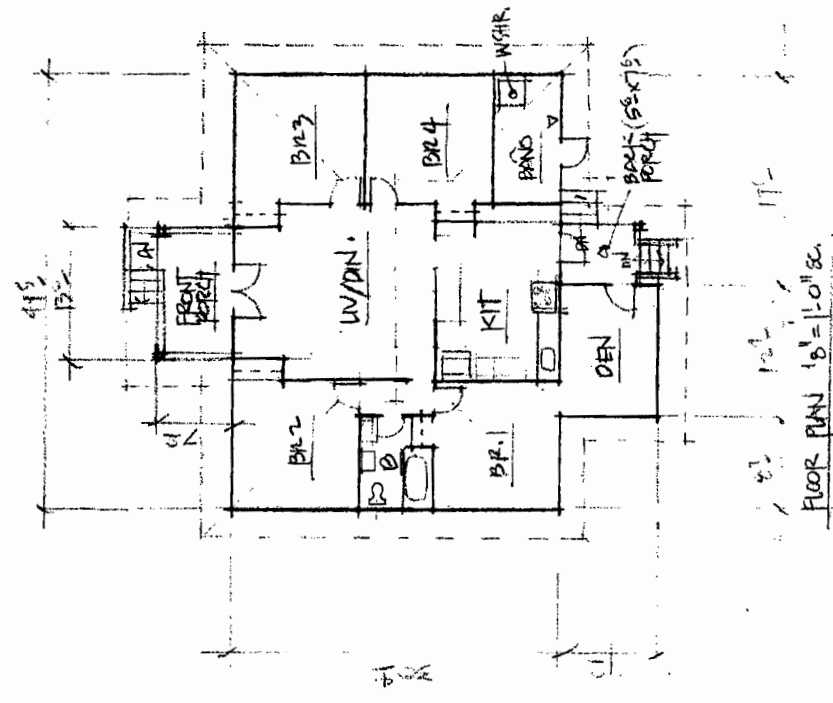
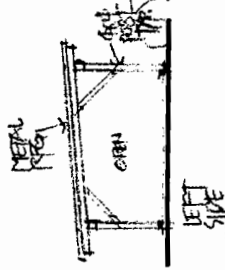
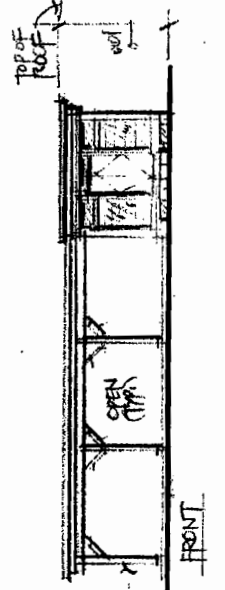
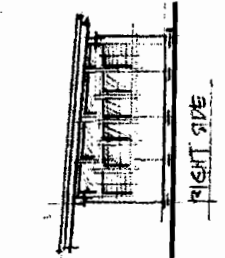
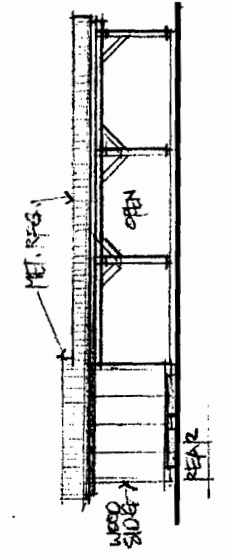
REVISIONS	BY

Date	Scale	AS SHOWN
Drawn	BY	HIGH
Job No.	335	Sheet
Of	17	Sheets

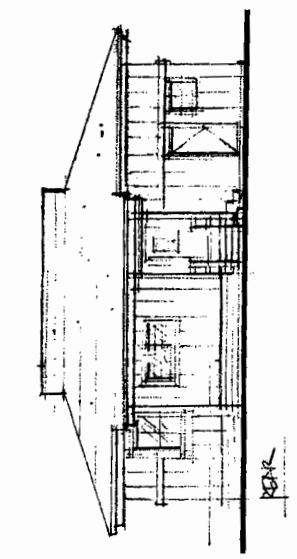
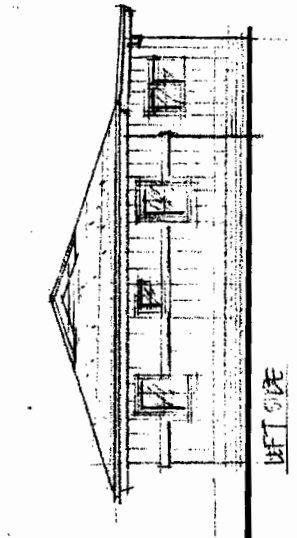
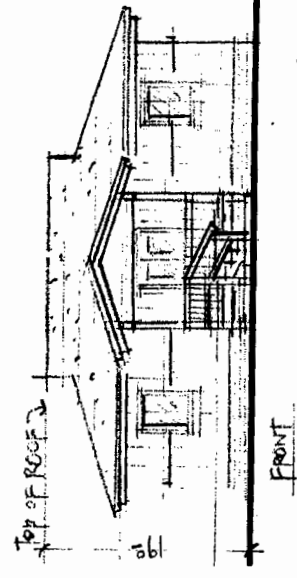
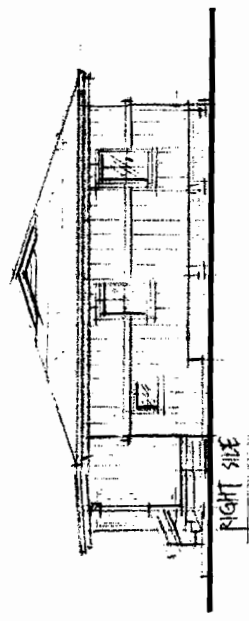
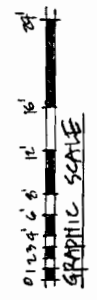


REVISIONS	BY

Date	Scale	As Shown
Drawn		
Job No.		
Sheet		
Of		
Sheets		

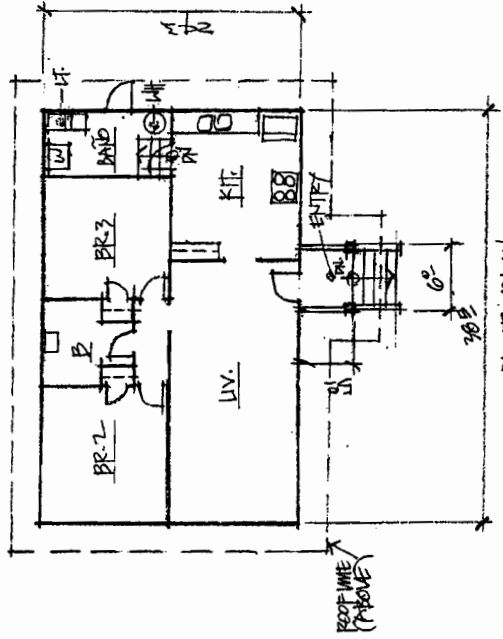
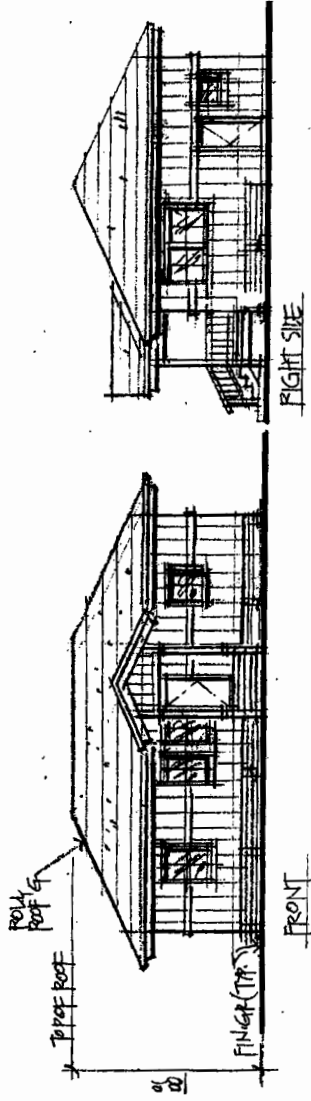
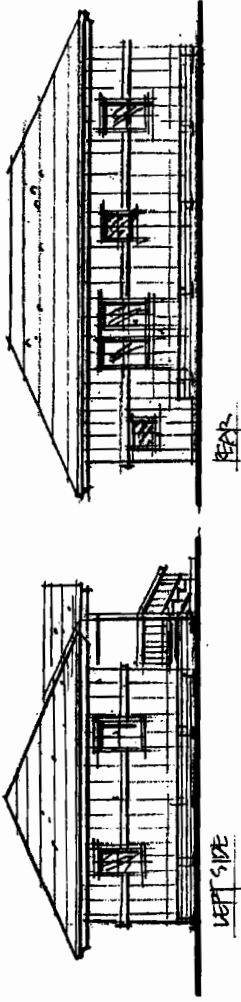


FLOOR PLAN - 1/8" = 1'-0" SC.



REVISIONS	BY

Date	Scale	Drawn	Job	Sheet	Of	Sheets
			HWA 345			

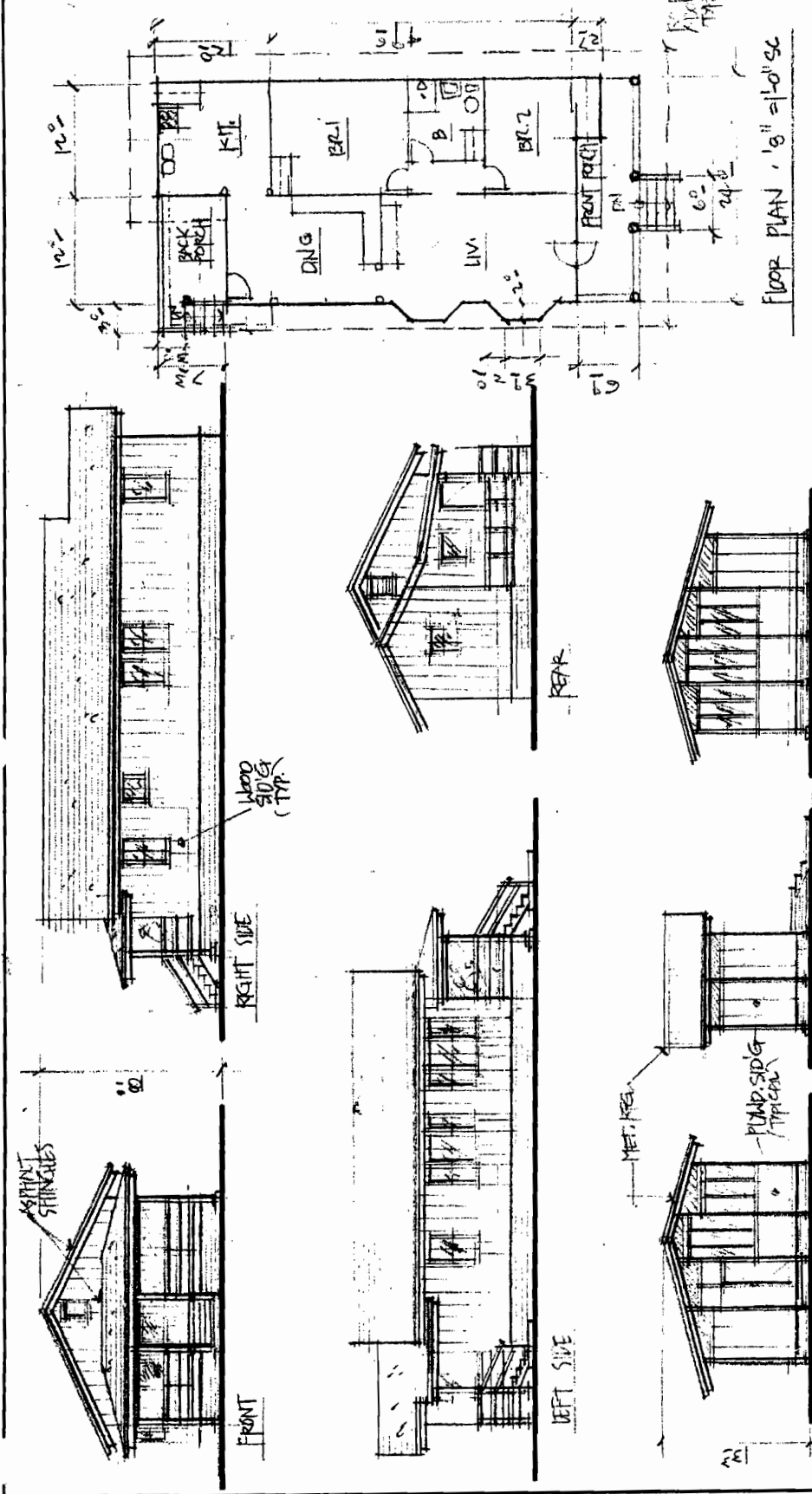


FLOOR PLAN
 1/8" = 1'-0" SC (TR)
 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20'
 GRAPHIC SCALE

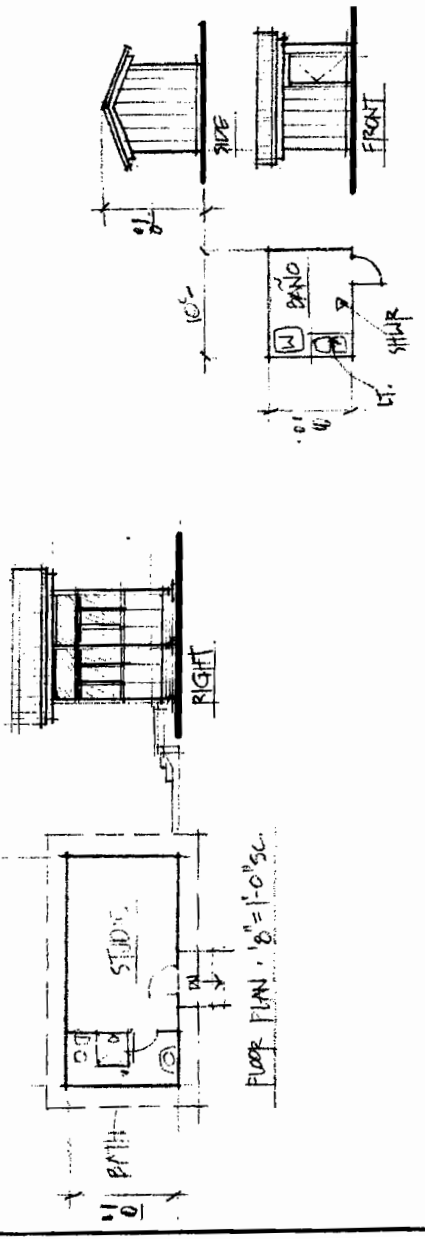
REAR SHEDS NOT SHOWN FOR CLARITY
 SUB-CORNER TO CORNER

REVISIONS	BY

Date
Scale
Drawn
Job OV 350
Sheet
Of
Sheets



FLOOR PLAN, 1/8" = 1'-0" SC
 GRAPHIC SCALE
 0 1 2 3 4 5 6 7 8 9 10 11 12

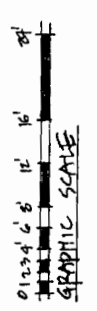
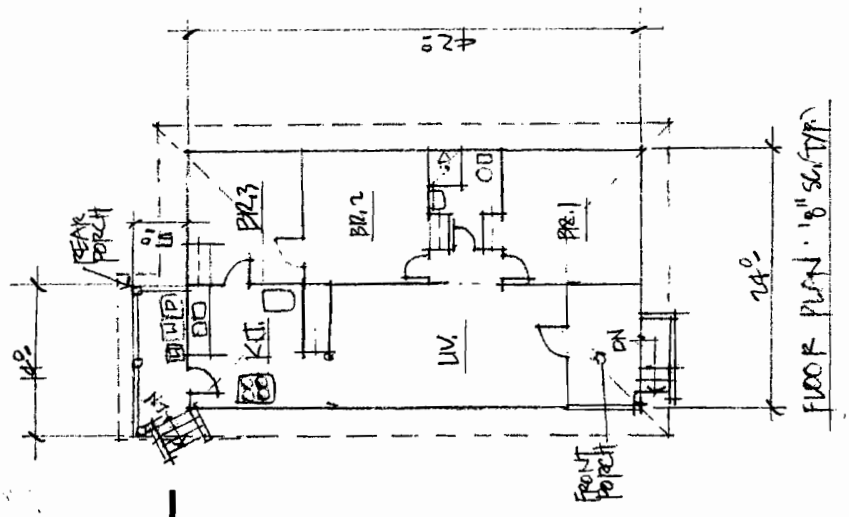
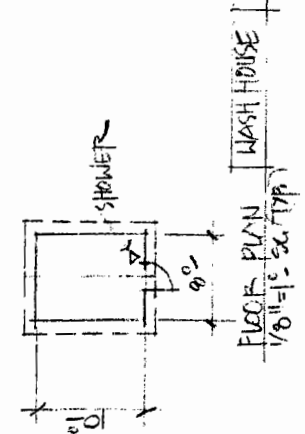
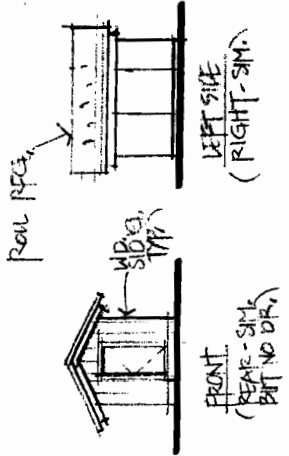
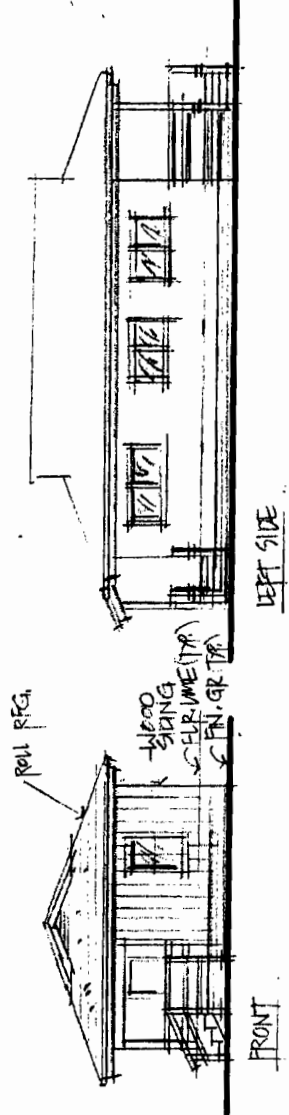
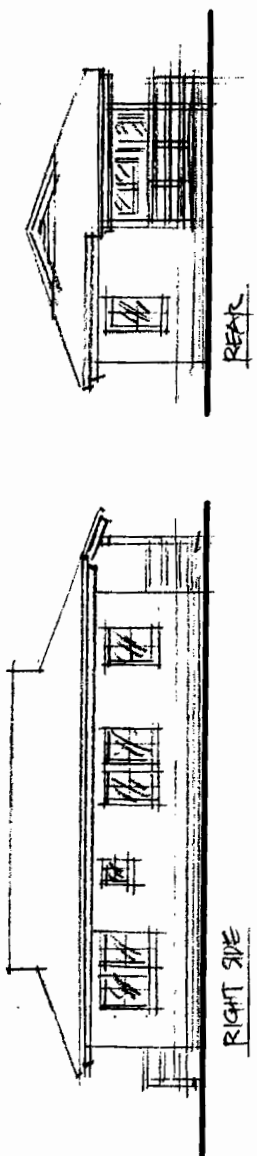


FLOOR PLAN, 1/8" = 1'-0" SC

NO. 12, 1954 - REPRODUCED BY ARCH. HOUSE, CHICAGO, ILL.

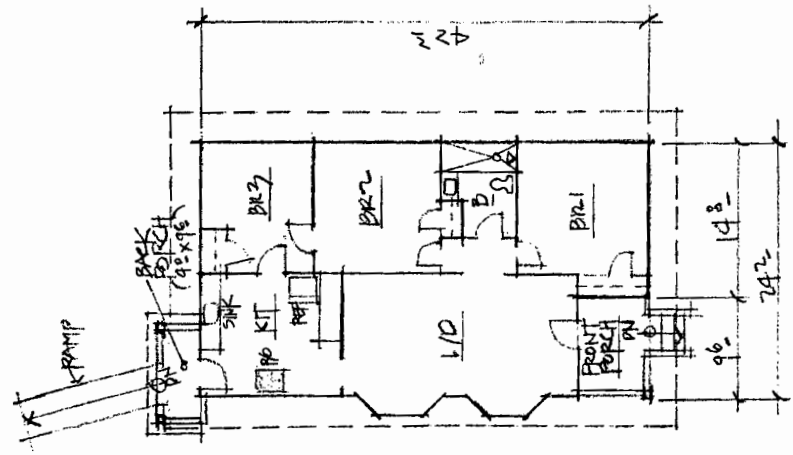
REVISIONS	BY

Date	Scale AS SHOWN	Drawn DT	Job HMM 351	Sheet	CI	Sheet
------	----------------	----------	-------------	-------	----	-------

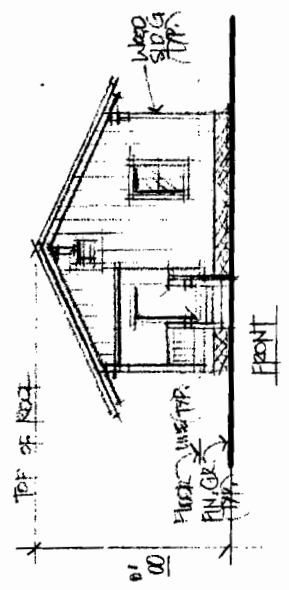
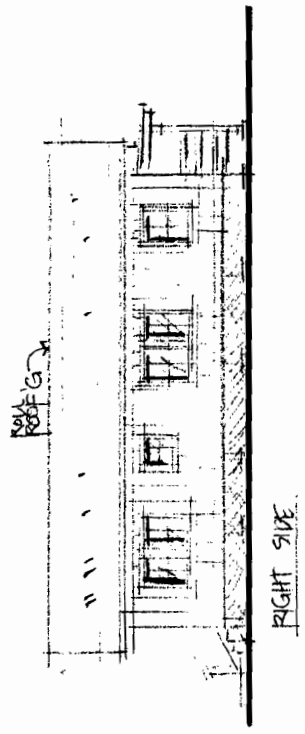
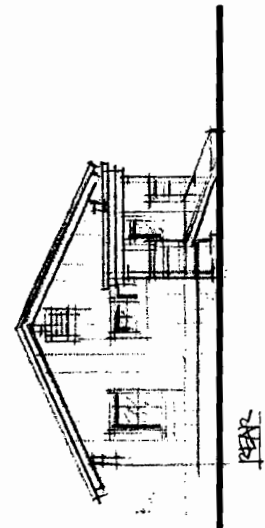
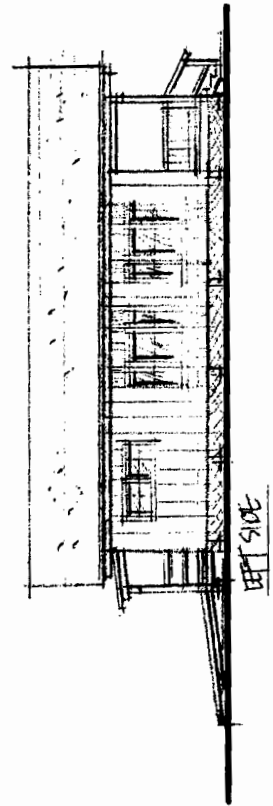


REVISIONS	BY

Date	
Scale	AS SHOWN
Drawn	DY
Job No.	11111
Sheet	
Of	
Sheets	

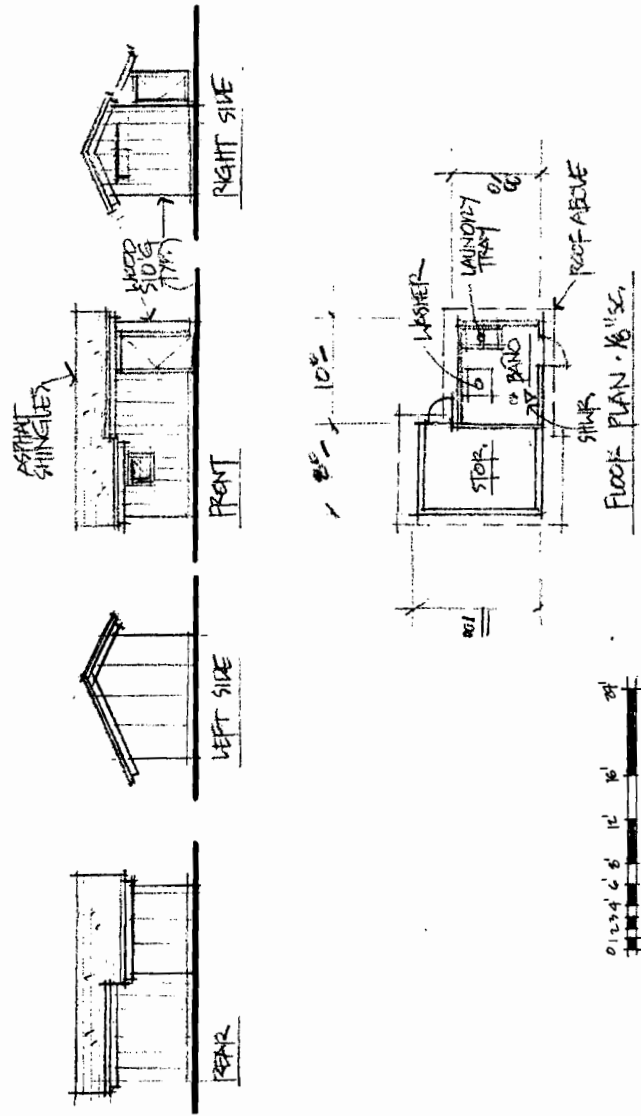
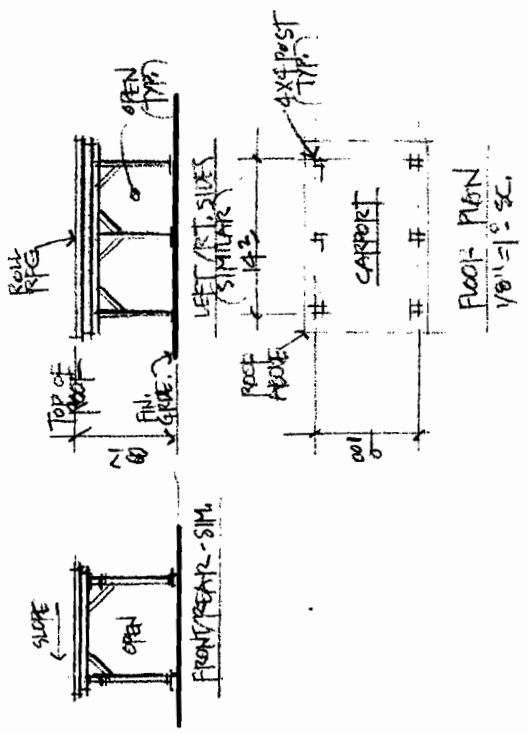


FLOOR PLAN - 1/8" = 1'-0"



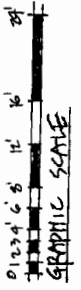
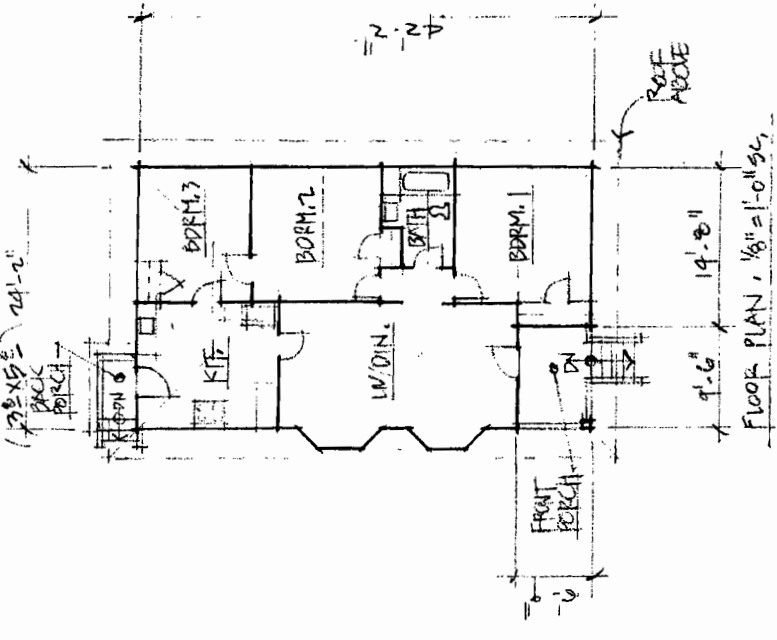
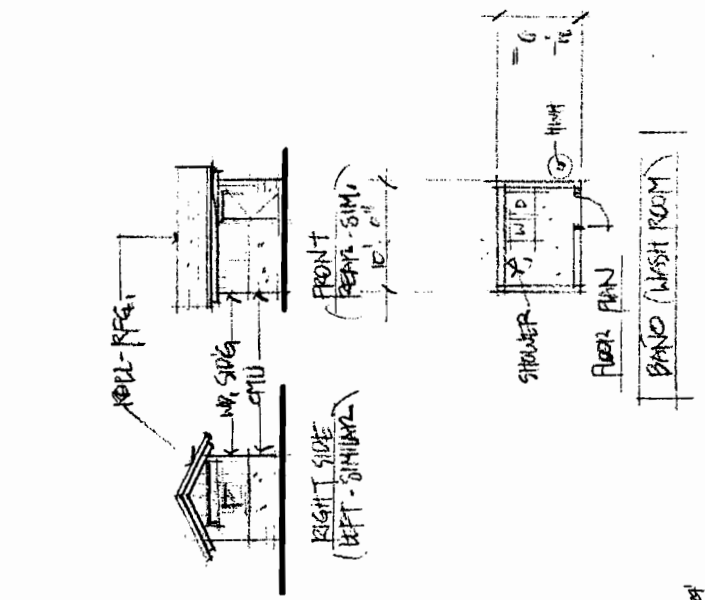
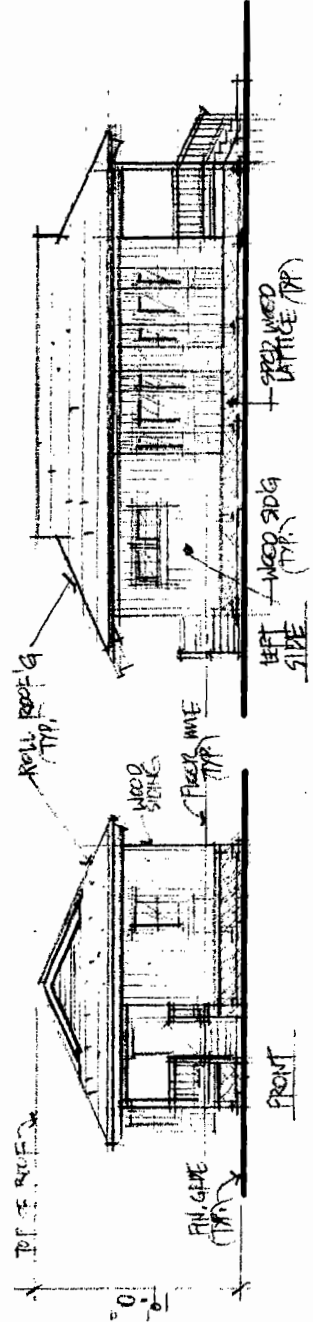
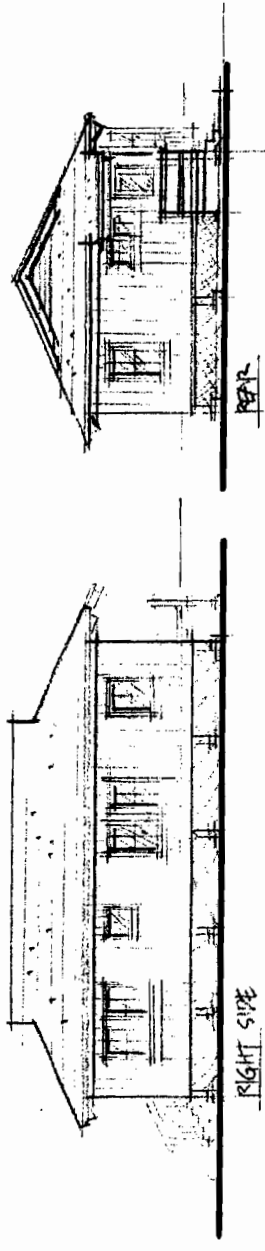
REVISIONS	BY

Date	Scale	AS SHOWN
Drawn	DY	
Joe KVA	INM	
Sheet	922	
Of	Sheets	6



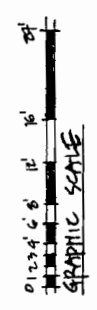
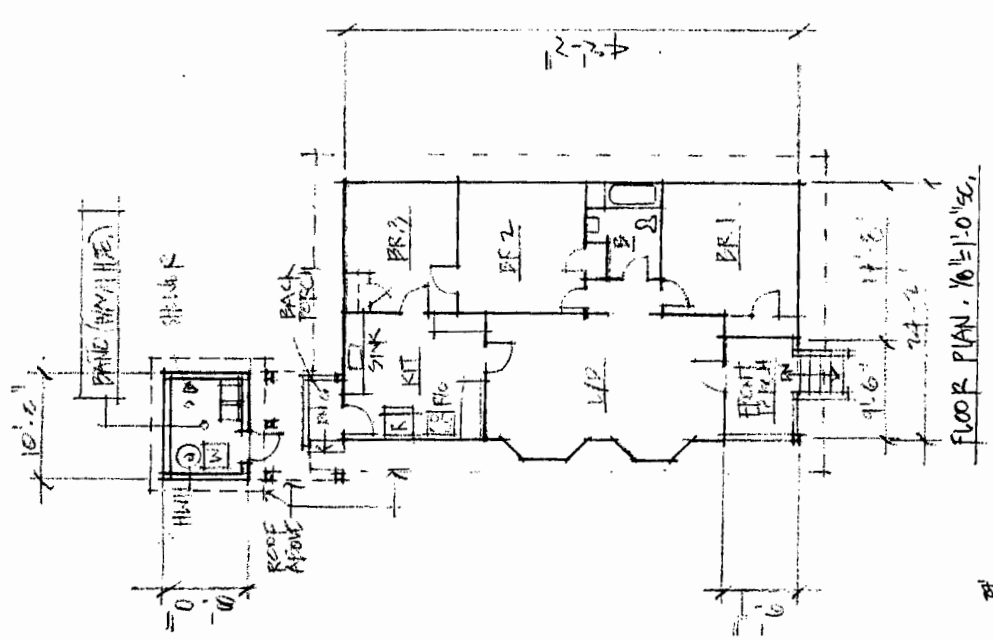
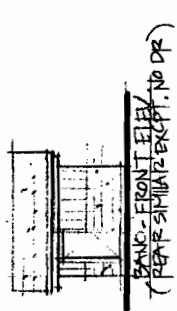
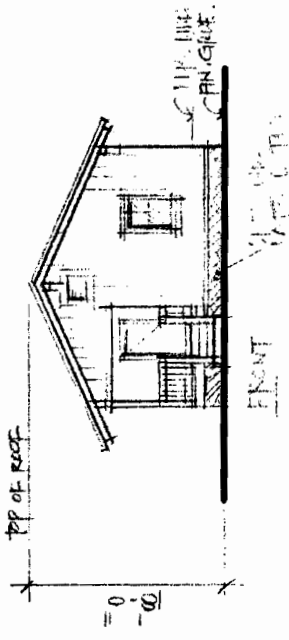
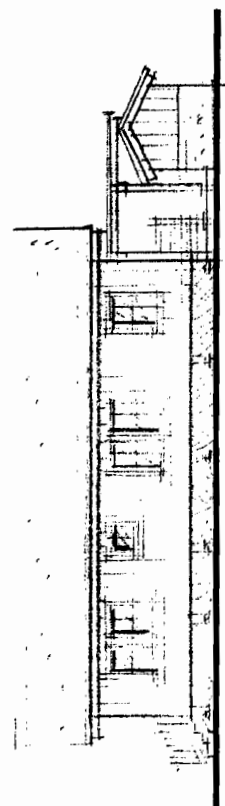
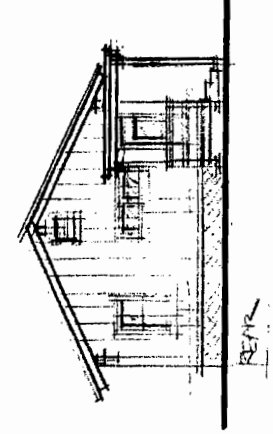
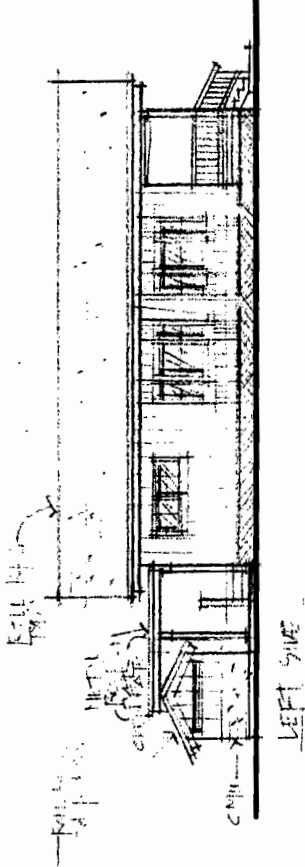
REVISIONS	BY

Date	Scale AS SHOWN	Drawn	Job No.	Sheet	Of	Sheets
		D7	KA			



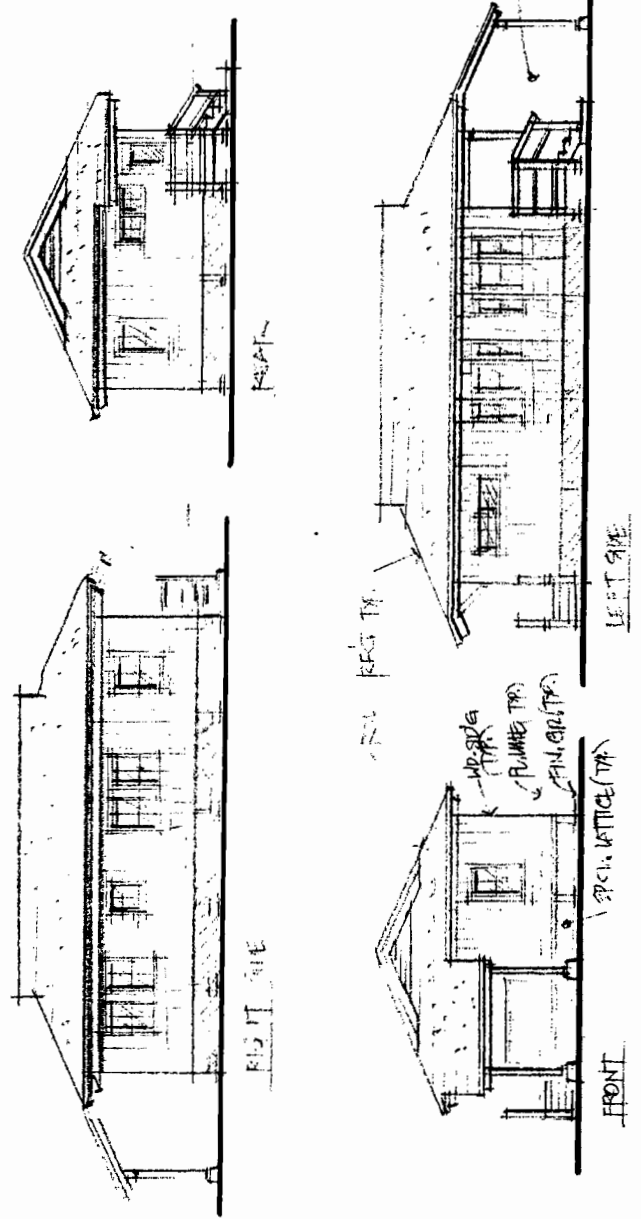
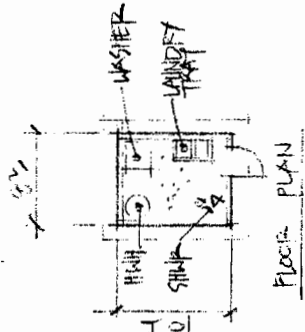
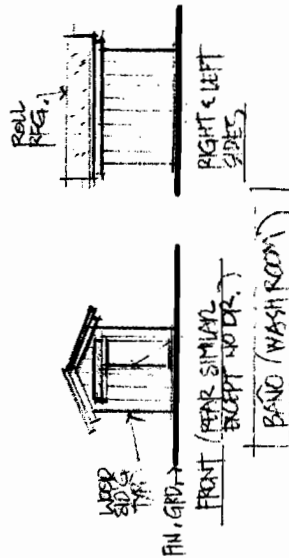
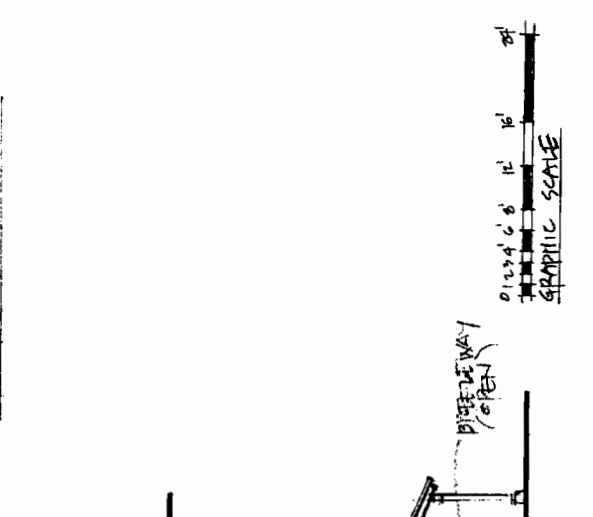
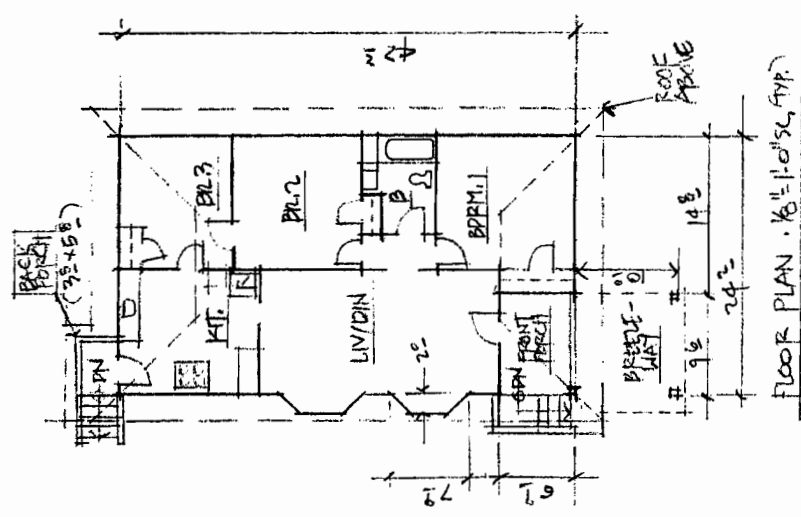
REVISIONS	BY

Date _____
 Scale AS SHOWN
 Drawn BY
 Job KVA
 Sheet
 CI Sheets



REVISIONS	BY

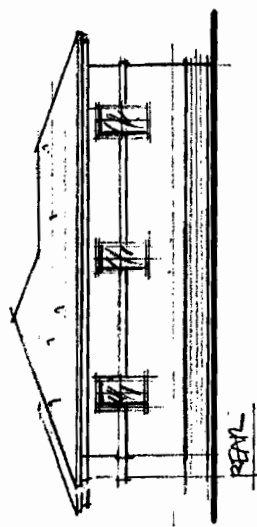
Date	Scale	Drawn	Sheet
	AS SHOWN		



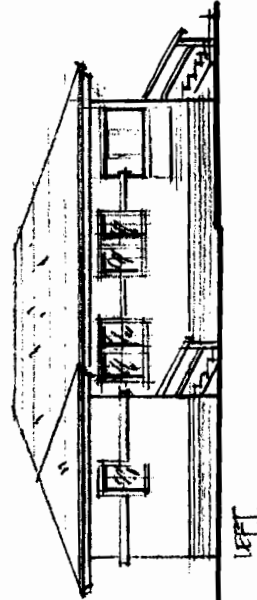
FROM SITE NOT DRAWN. PERS. CONDITION & CONSTRUCTION.

REVISIONS	BY

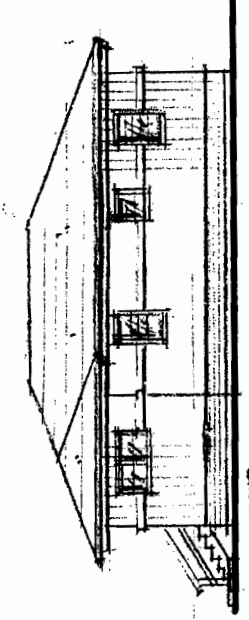
Date	
Scale	
Drawn	
Job	NEW 355
Sheet	
Of	Sheets



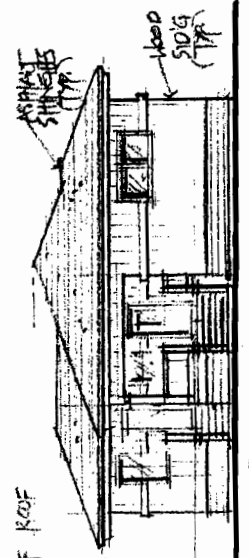
REAR



LEFT



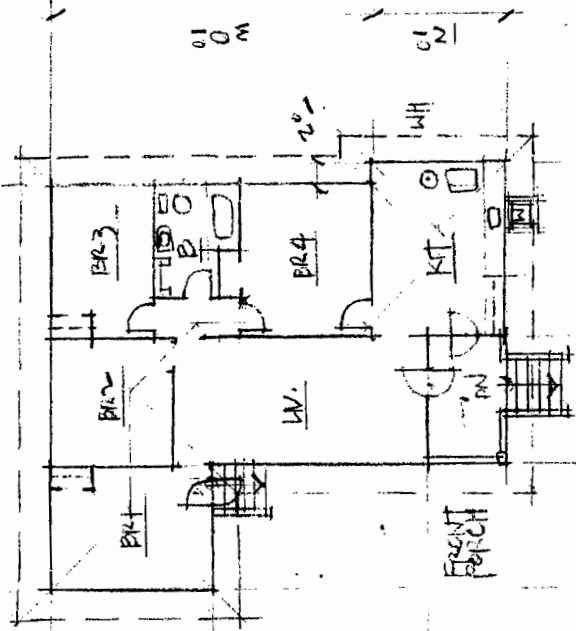
RIGHT



FRONT

TOP OF ROOF

38'-0"

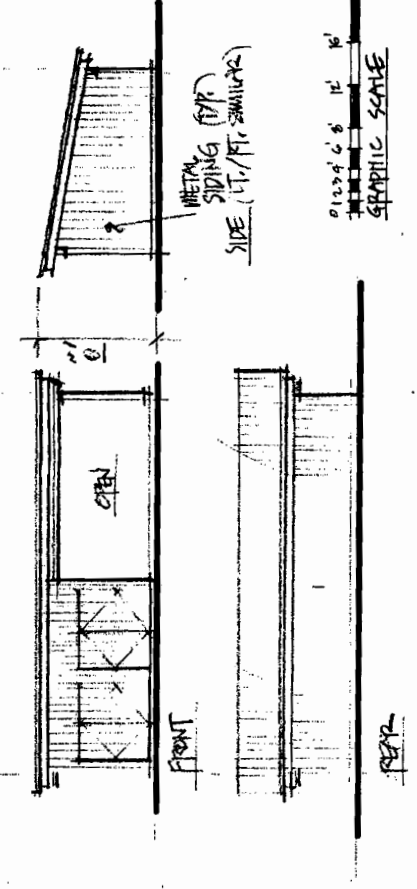
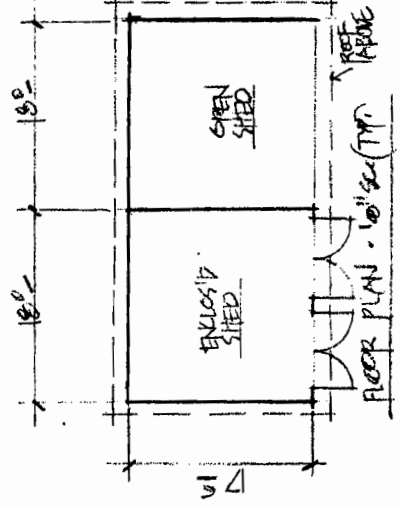
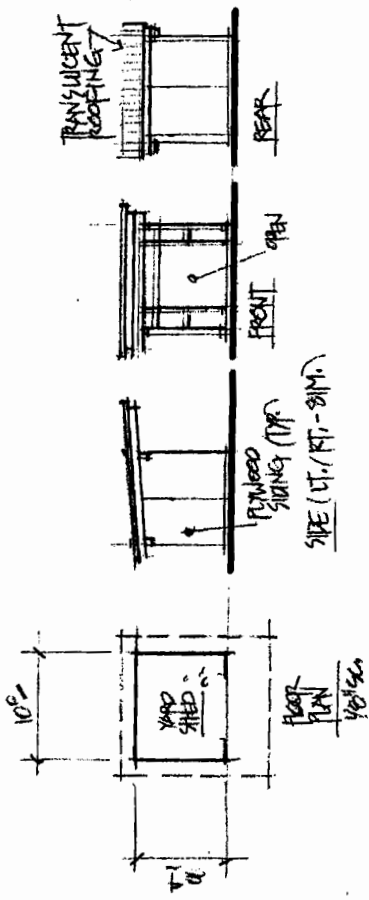


FLOOR PLAN, 1/8" = 1'-0" Scale



REVISIONS	BY

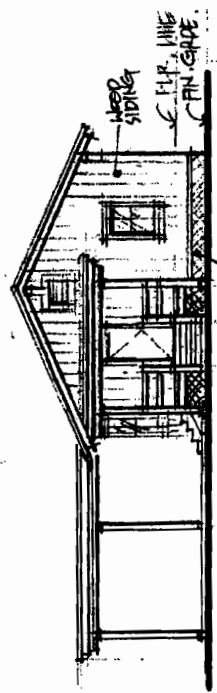
Date	
Scale	
Drawn	
Job	HWA 356
Sheet	
Of	
Sheets	



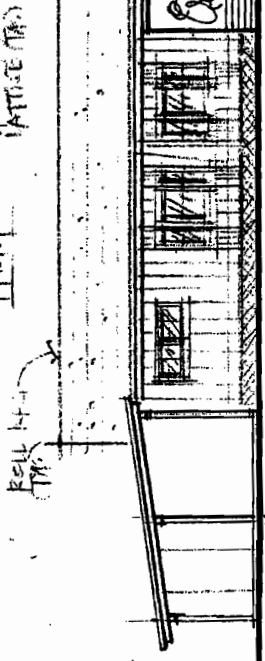
5/2

REVISIONS	BY

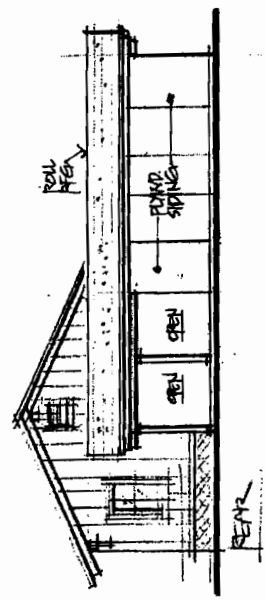
Date _____
 Scale _____
 Drawn _____
 Job HMM 356
 Sheet _____
 Of _____ Sheets



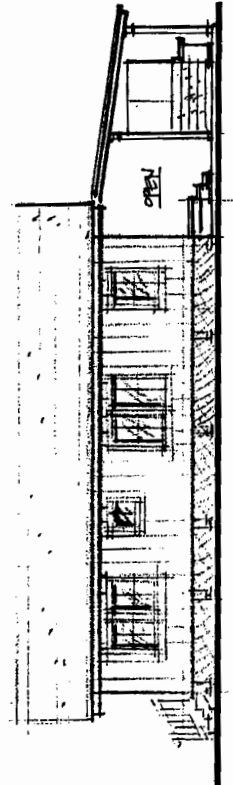
FRONT



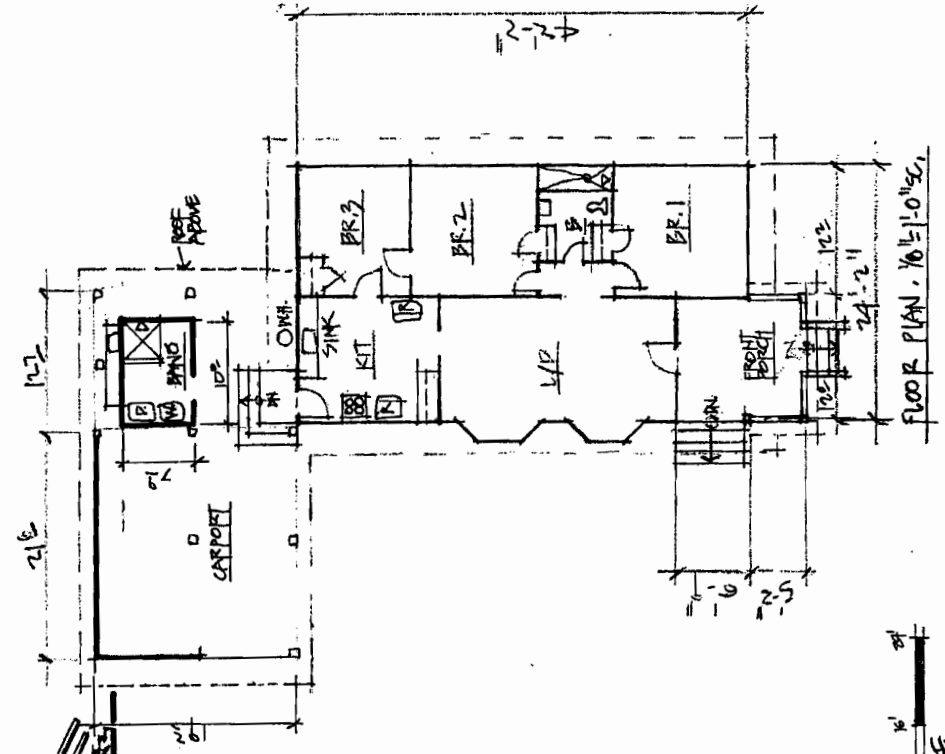
LEFT SIDE



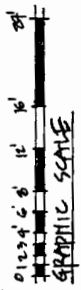
REAR



RIGHT SIDE



FLOOR PLAN, 1/8" = 1'-0" S.C.

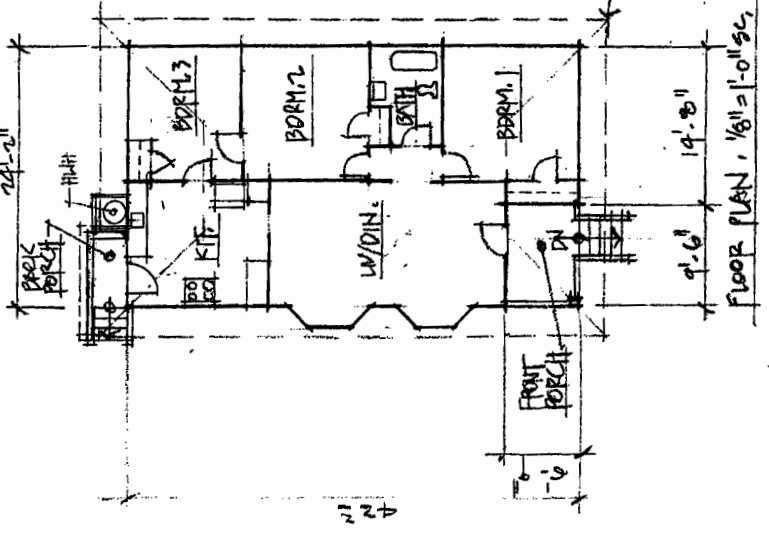
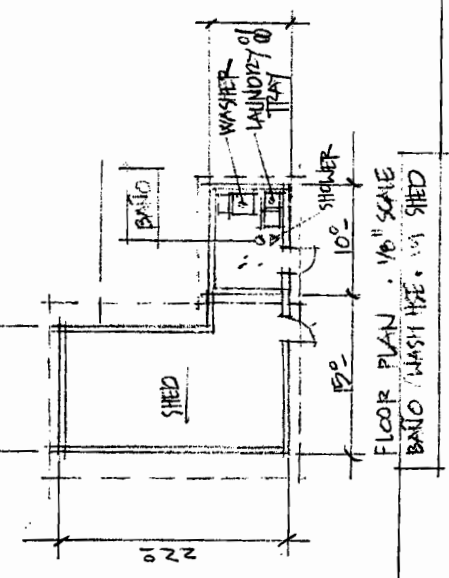
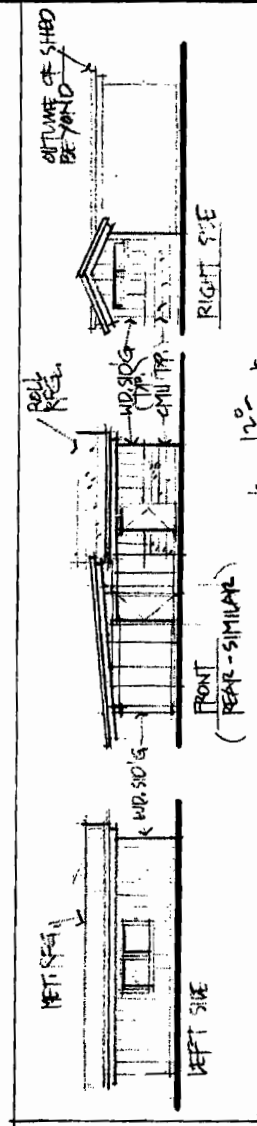
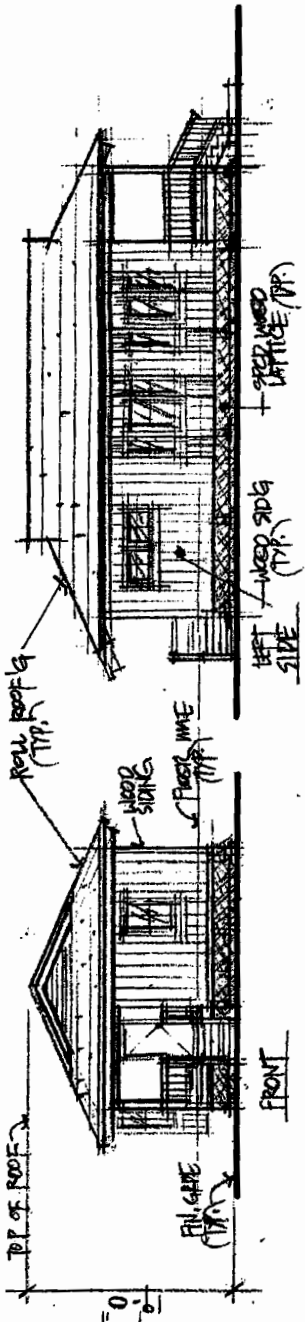
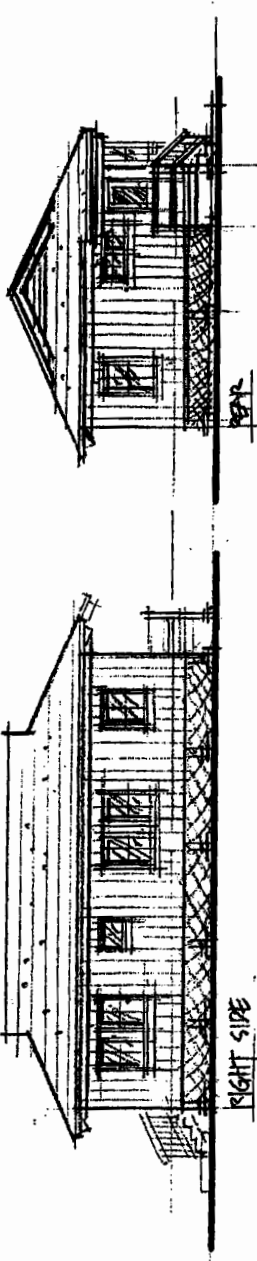


GRAPHIC SCALE

{S2}

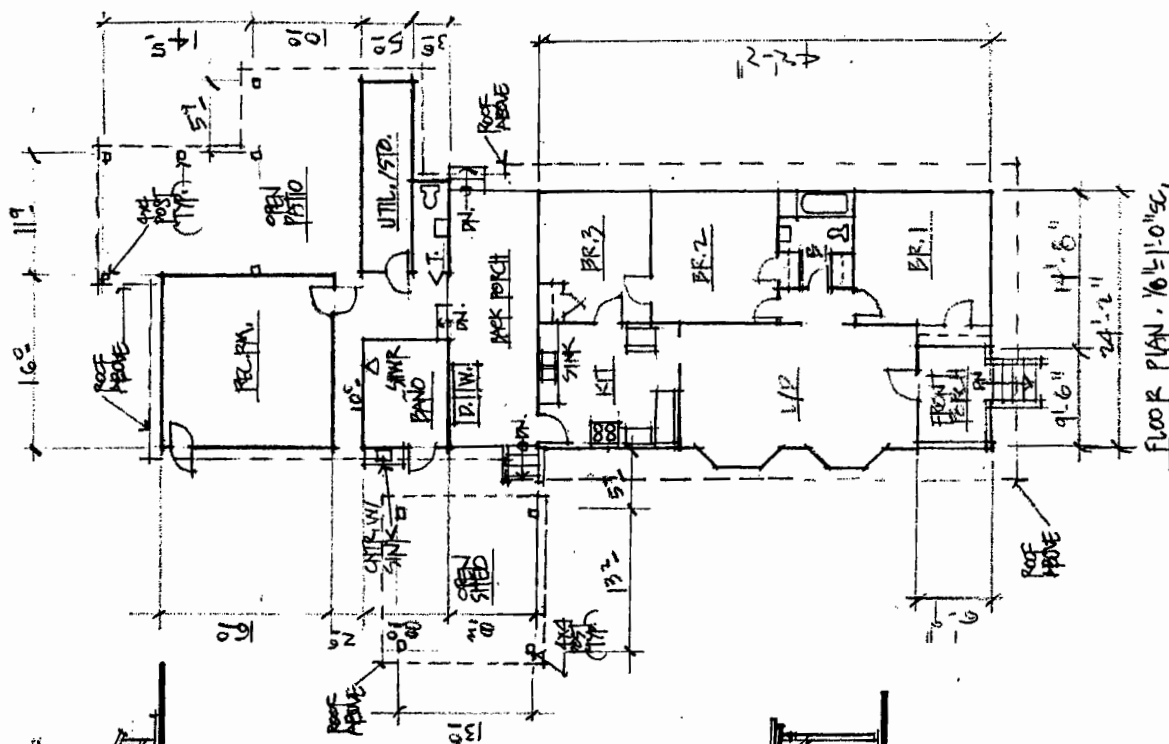
REVISIONS	BY

Date	Scale AS SHOWN
Drawn DY	Job KNA
Sheet 751-7	Of Sheets

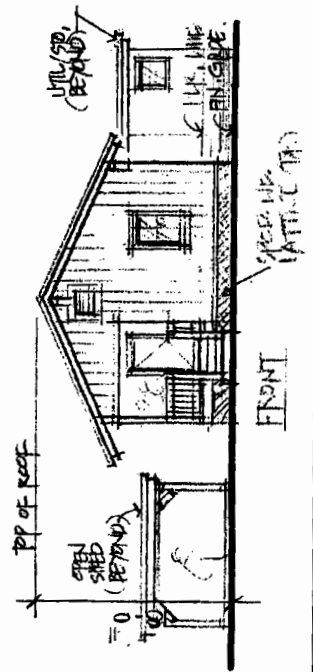
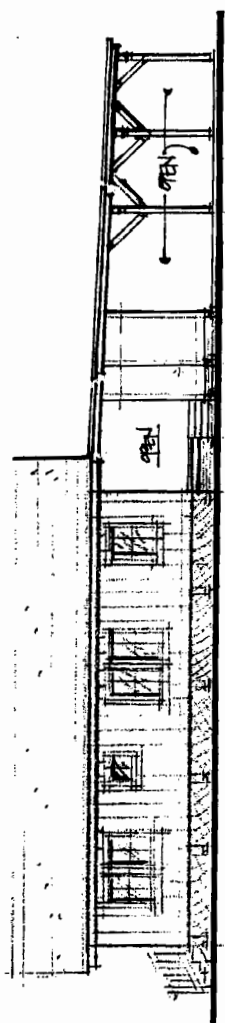
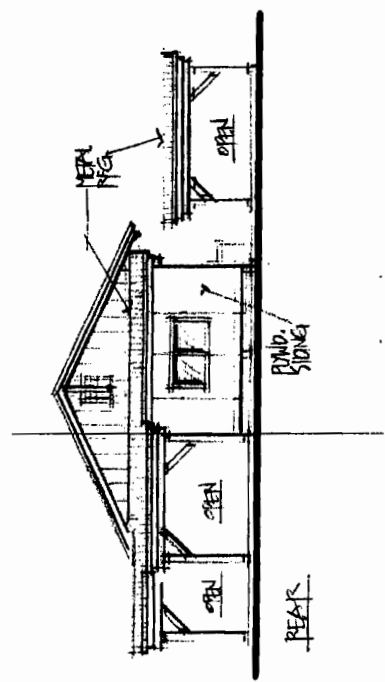
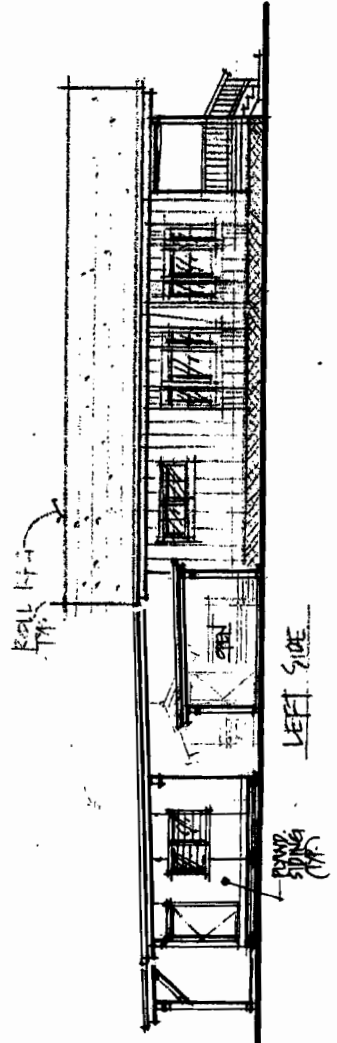


REVISIONS	BY

Date	
Scale	
Drawn	
Job No.	HW 358
Sheet	
Of	
Sheets	



64



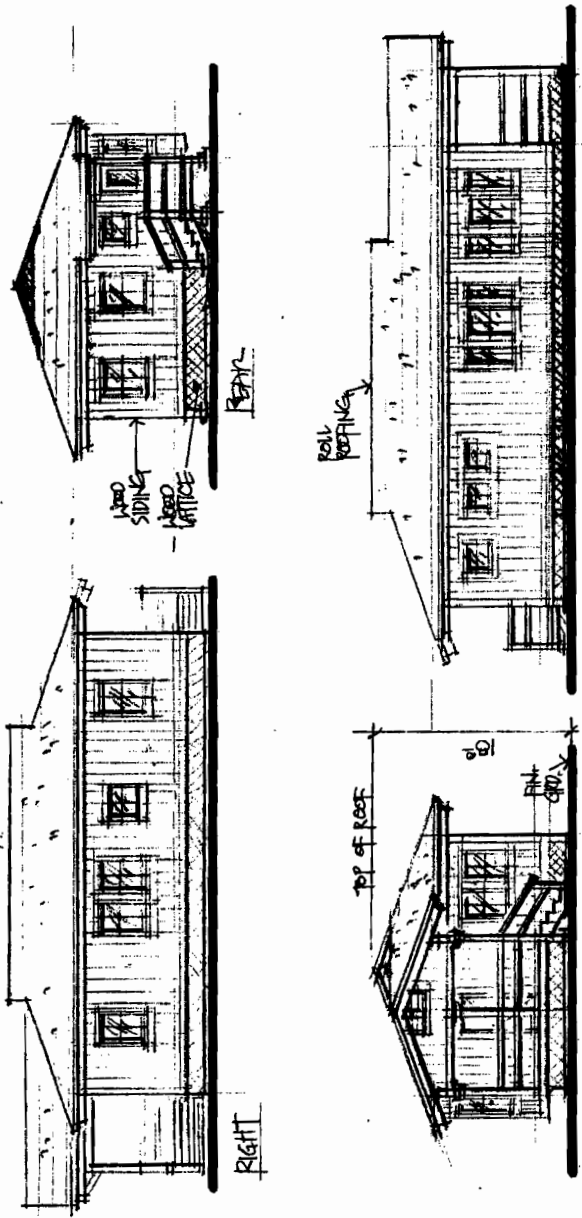
REVISIONS	BY

Date 3/13/07

Scale MS SHIMAN
 Drawn DY
 Job KVA/IM/360

Sheet

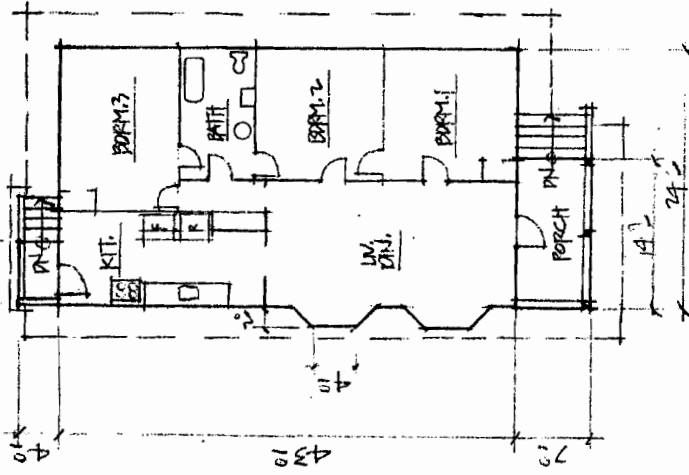
Of Sheets



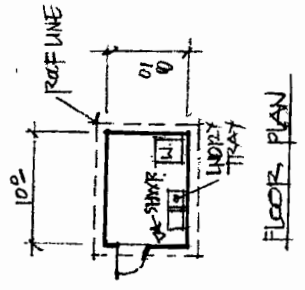
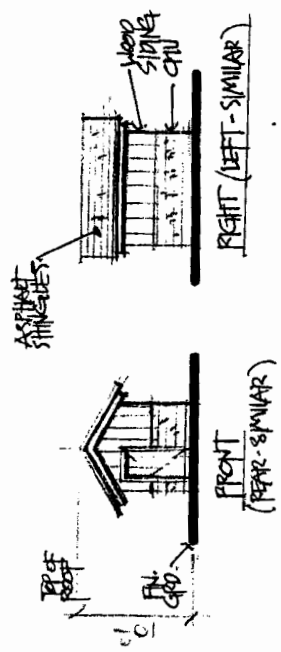
LEFT

FRONT

RIGHT

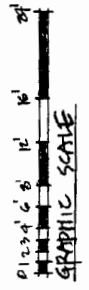


FLOOR PLAN - 1/8"=1'-0"



FLOOR PLAN

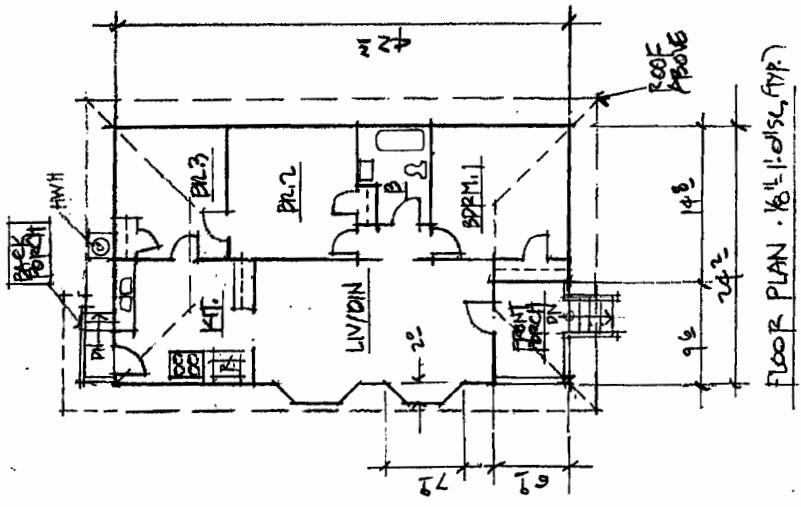
PANORAMA



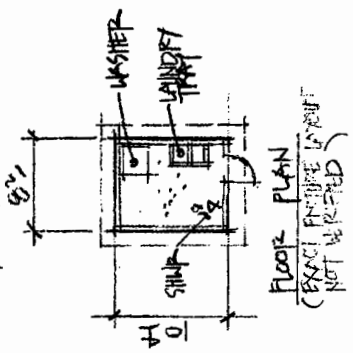
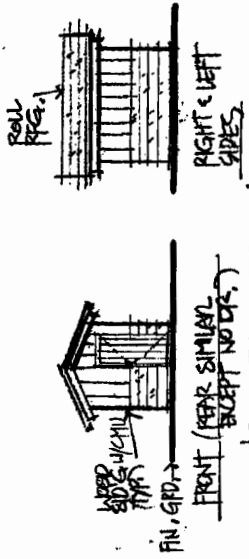
GRAPHIC SCALE

REVISIONS	BY

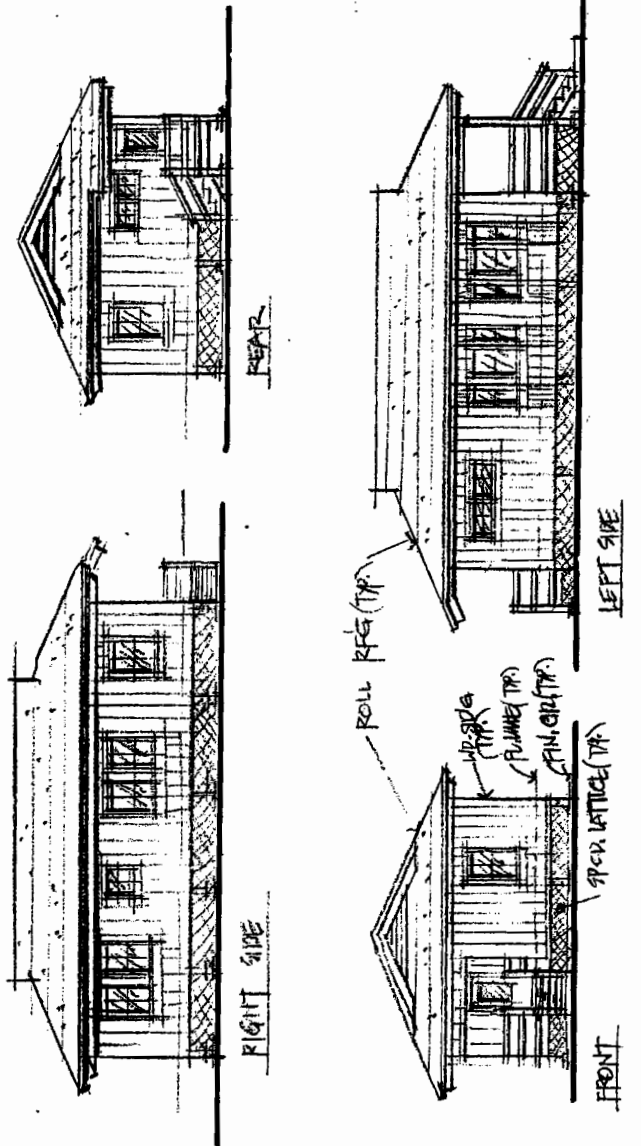
Date	
Scale	AS SHOWN
Drawn	D
Checked	JAKVA HW/H
Sheet	362
Of	Sheets



FLOOR PLAN - 1/8" = 1'-0" (1/8" = 1'-0")

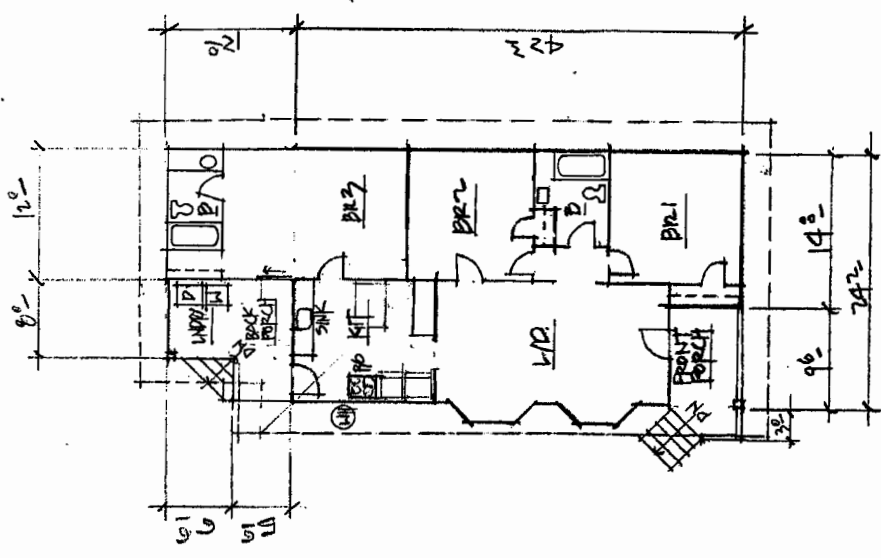
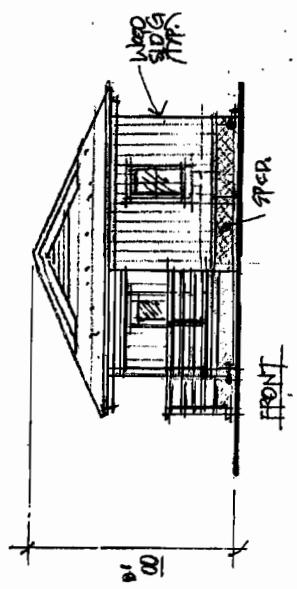
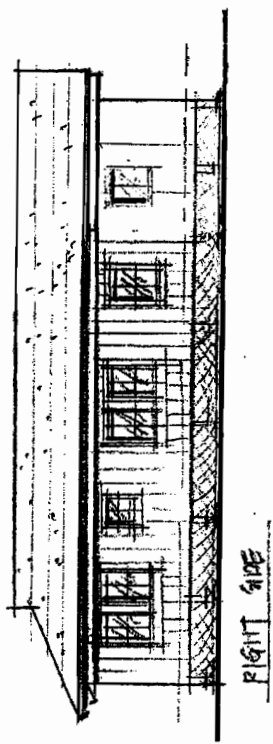
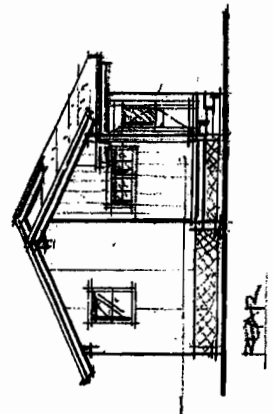
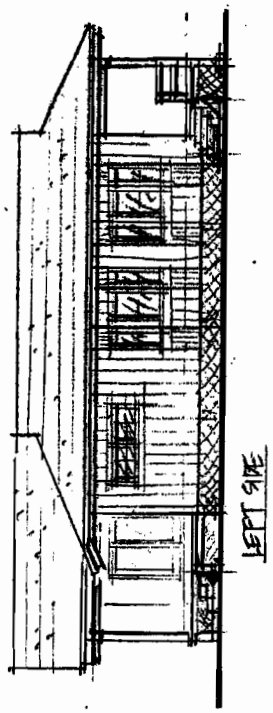


FLOOR PLAN (EXACT FINISHES & ROOF NOT REQUIRED)



REVISIONS	BY

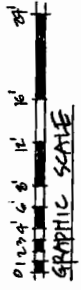
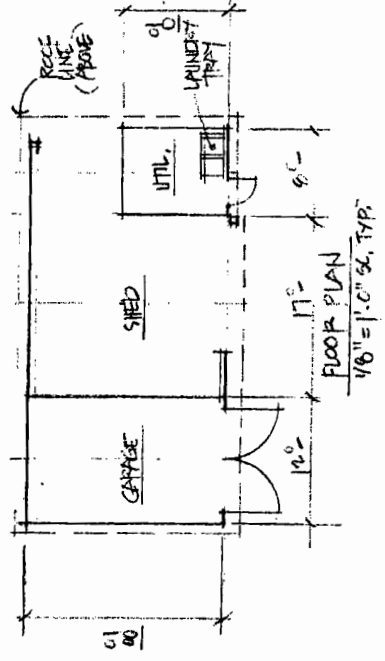
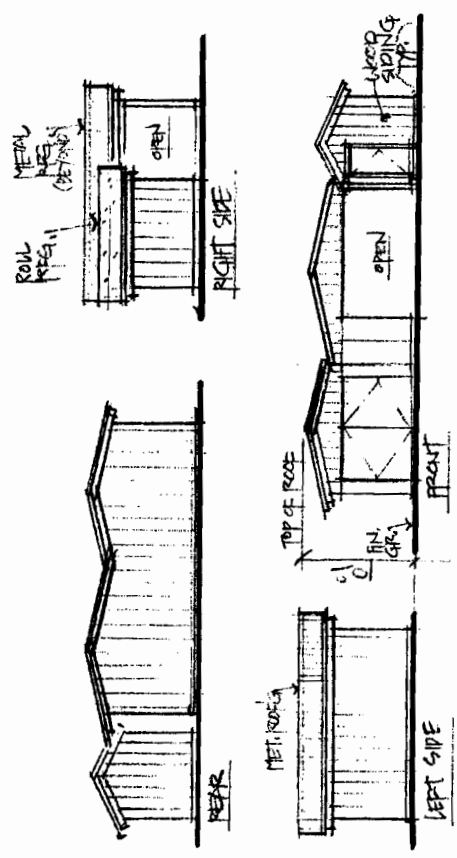
Date _____
 Scale AS SHAN
 Drawn DY
 Job No. 11111
 Sheet No. 103
 Of _____ Sheets



GRAPHIC SCALE
 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20'

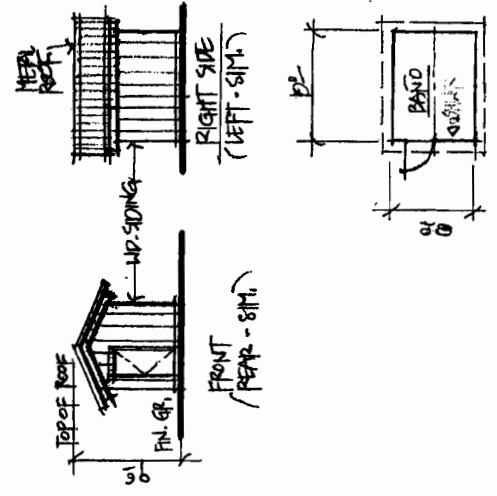
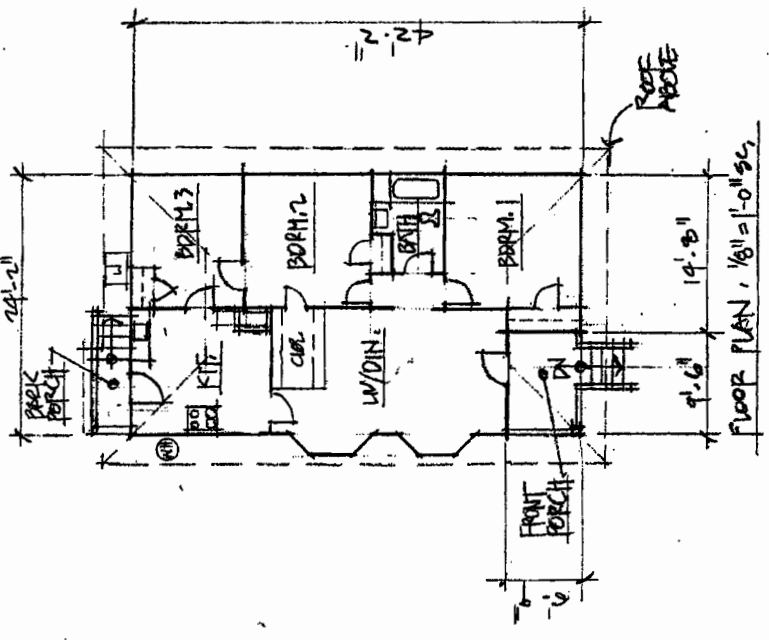
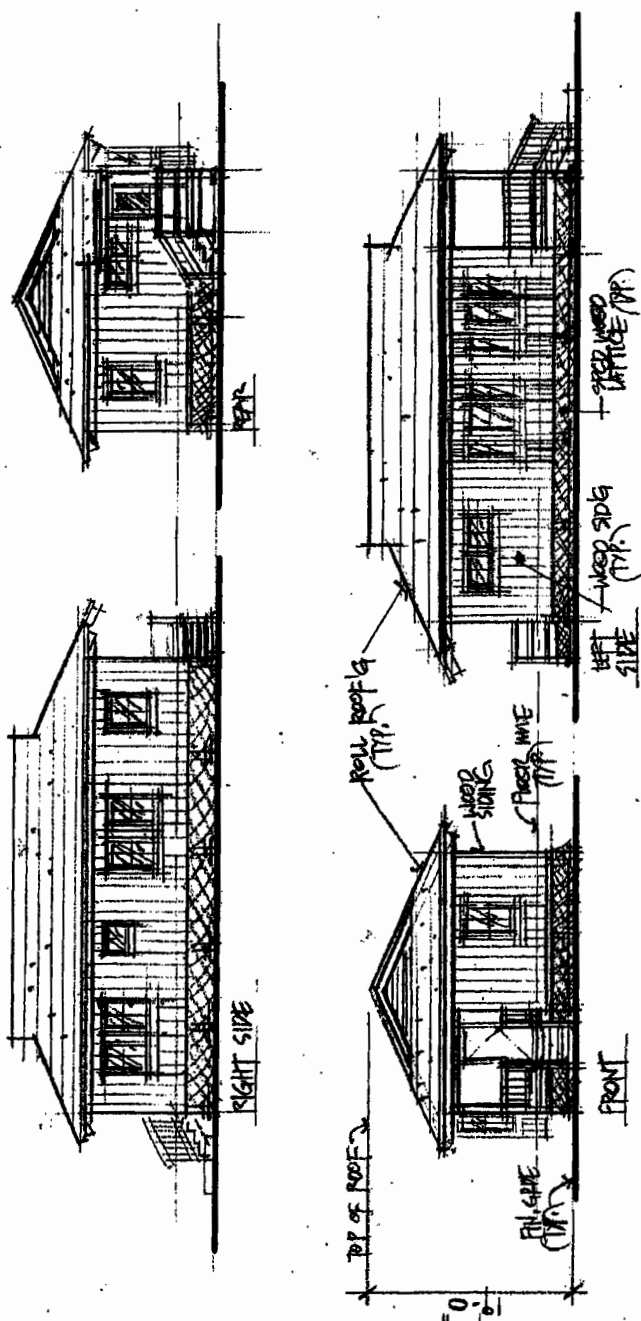
REVISIONS	BY

Date	Scale	Drawn	Job	Sheet
	AS SHOWN	DY	10/A	36/3



REVISIONS	BY

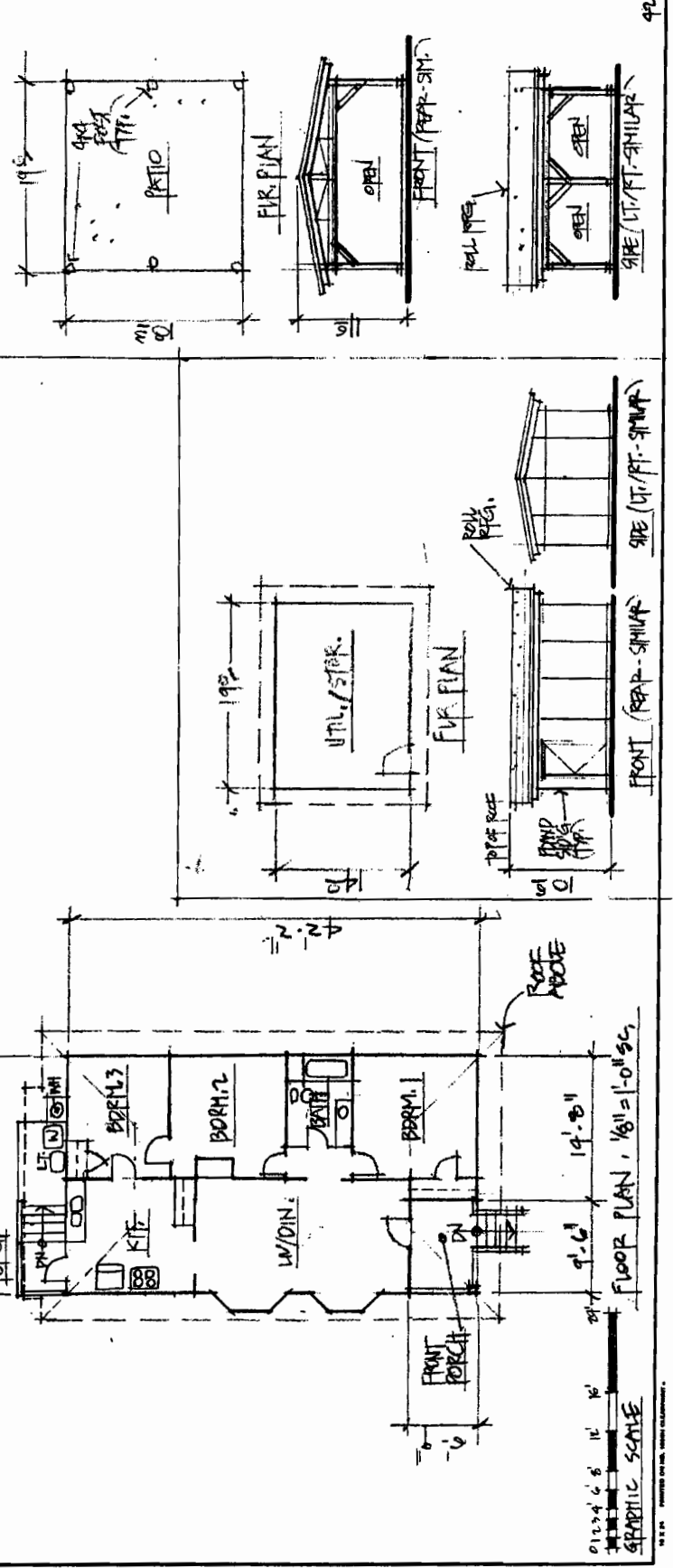
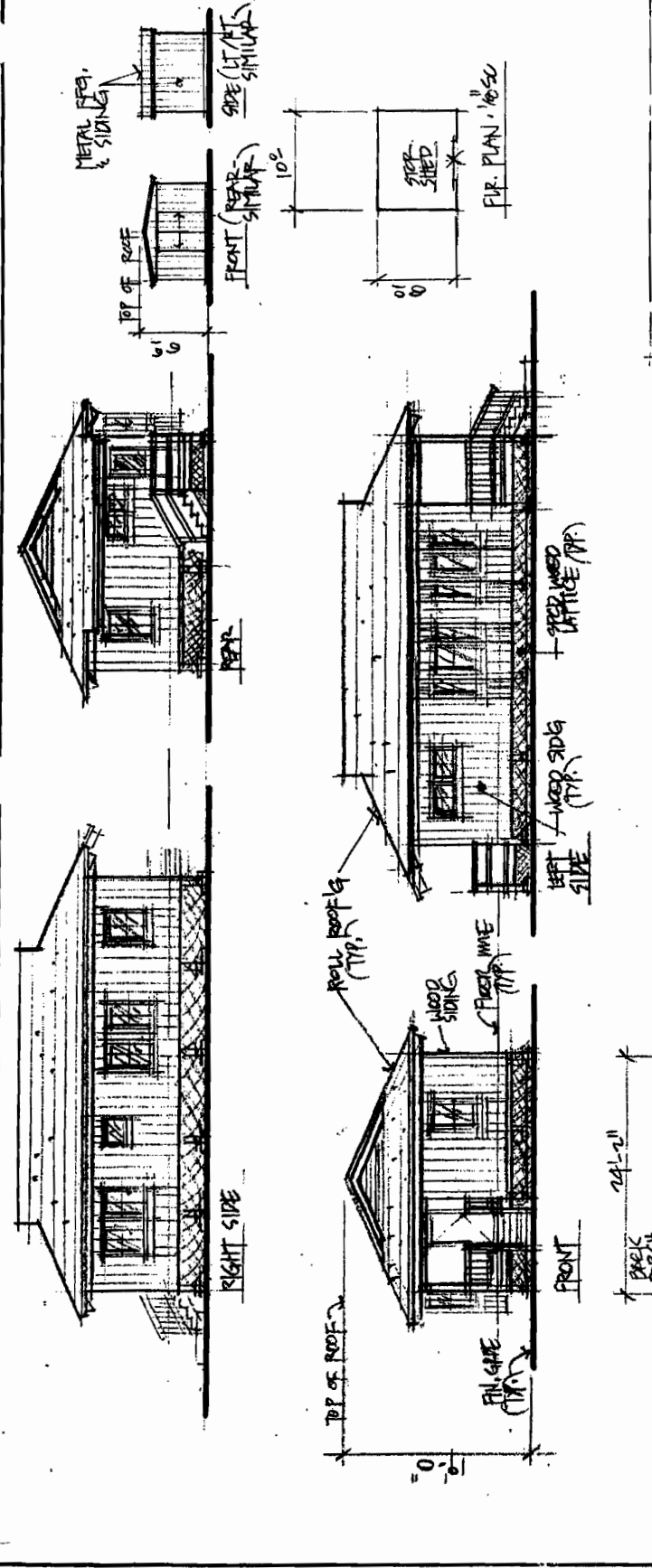
Date	Scale AS SHOWN
Drawn BY	Job NO. 1702
Sheet	Sheet
CI	Sheets



REAR SHEETS NOT SHOWN. REAR CONDITIONS IN CONSTRUCTION.

REVISIONS	BY

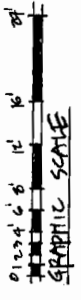
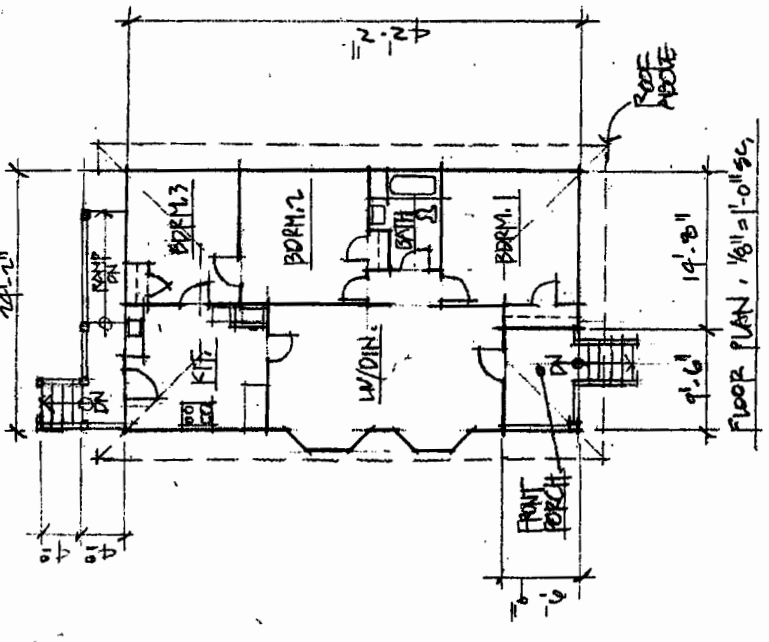
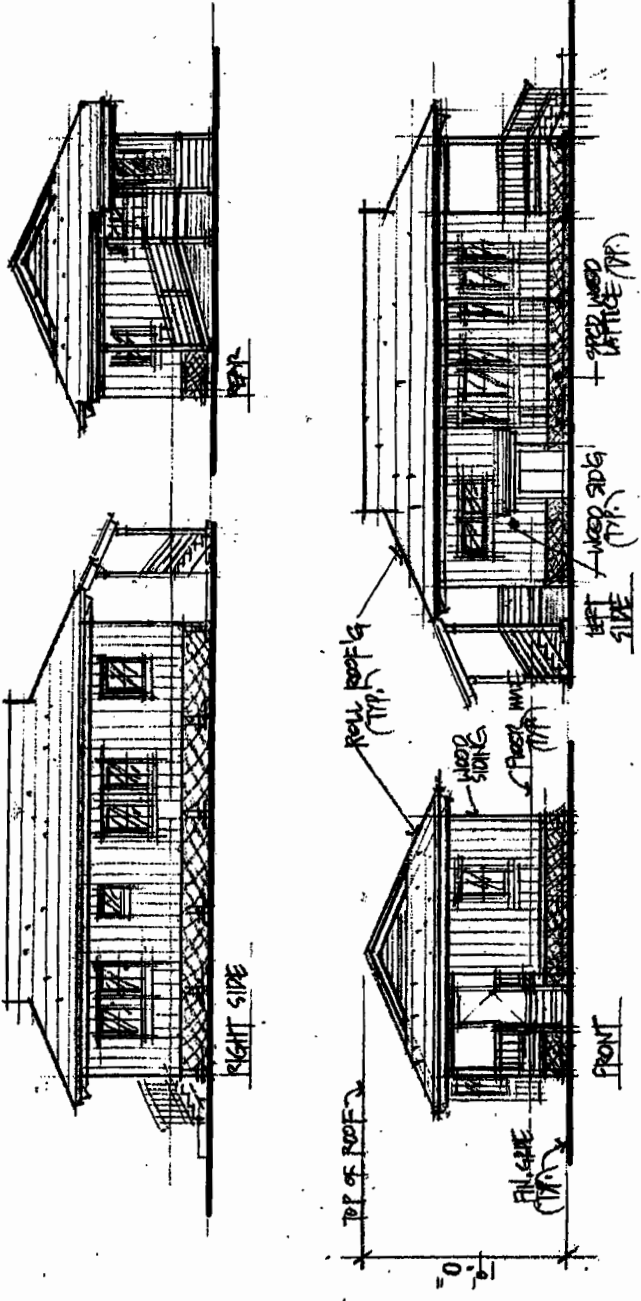
Date	Scale AS SHOWN	Drawn BY	Job No. 1000	Sheet	92



01004 6 8 16 18"
GRAPHIC SCALE

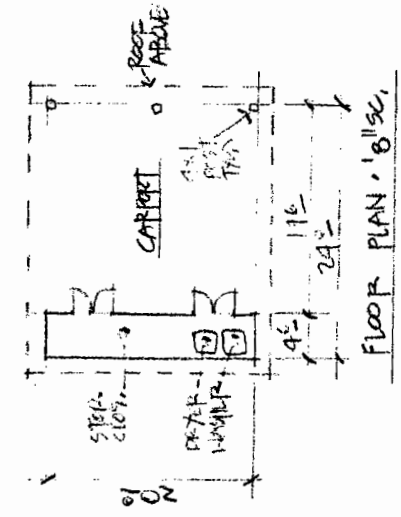
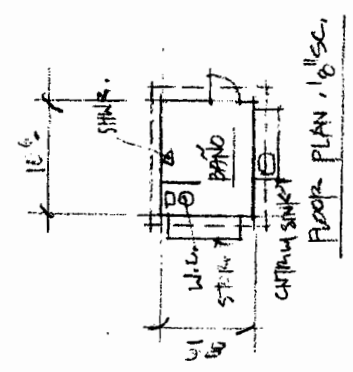
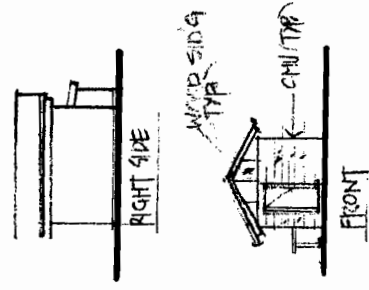
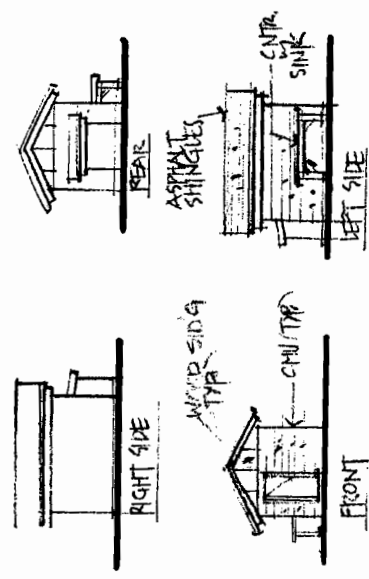
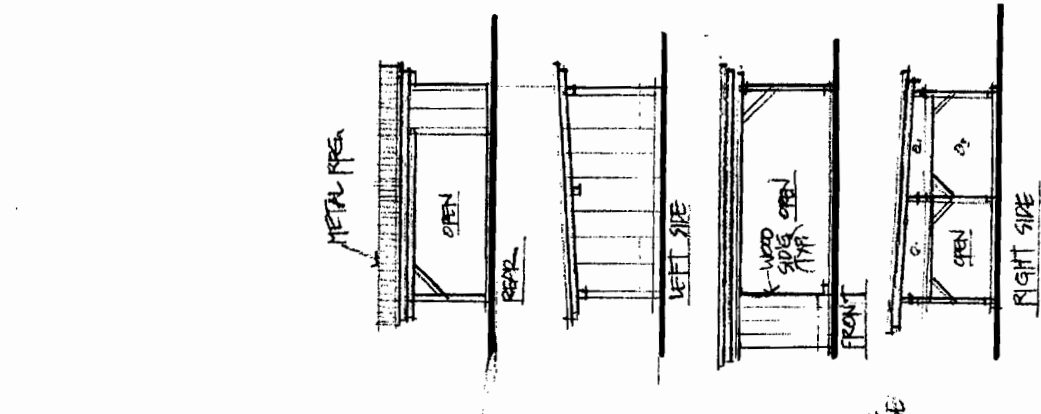
REVISIONS	BY

Date	
Scale	
Drawn	
Job	HNM 367
Sheet	
Of	
Sheets	



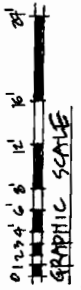
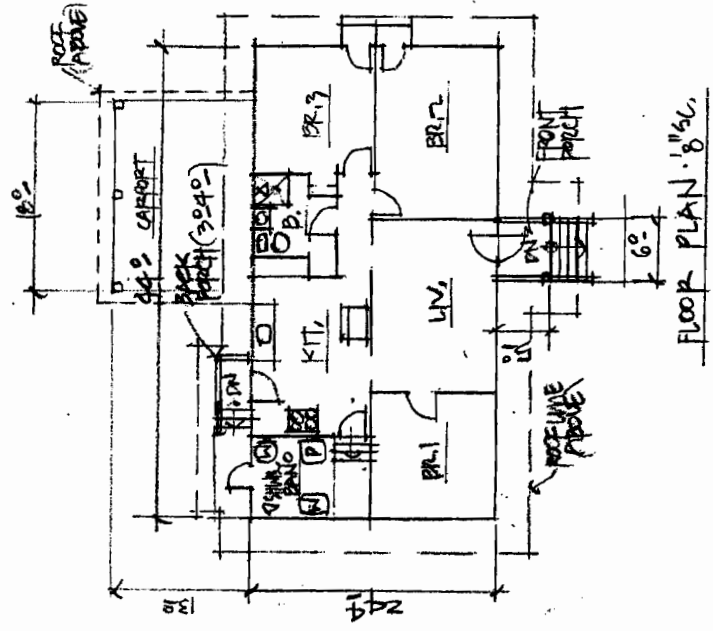
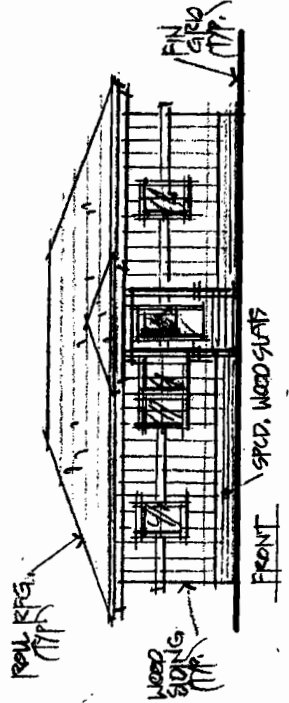
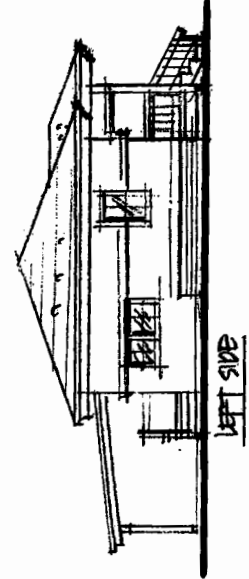
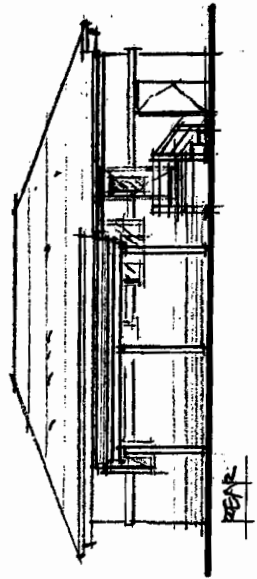
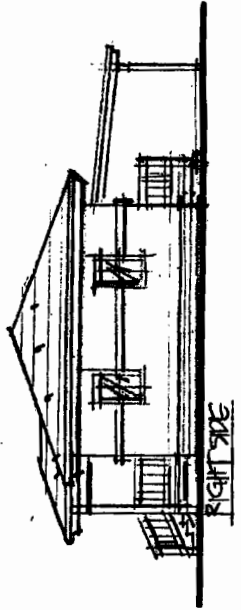
REVISIONS	BY

Date	
Scale	
Drawn	
Job	HW/M 367
Sheet	
Of	
Sheets	



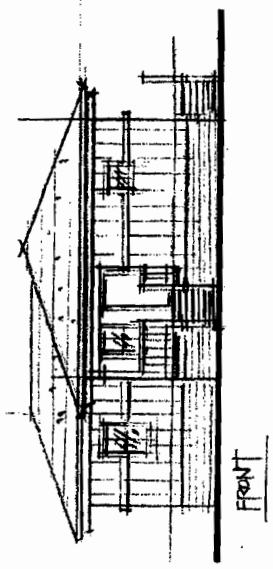
REVISIONS	BY

Date	
Scale	
Drawn	
Job	NEW 300
Sheet	
Of	
Sheets	

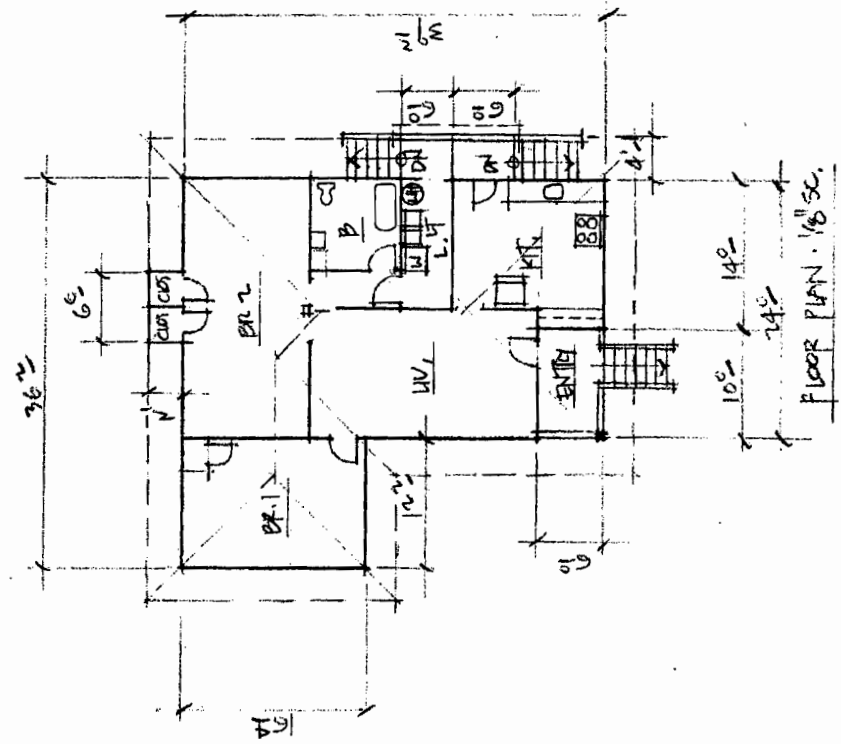


REVISIONS	BY

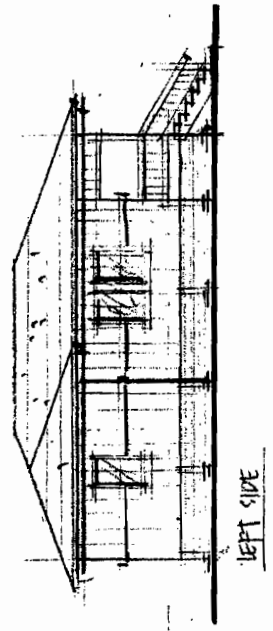
Date	Scale	AS SHOWN
Drawn	BY	
Job	NEW 369	
Sheet		
Of		Sheets



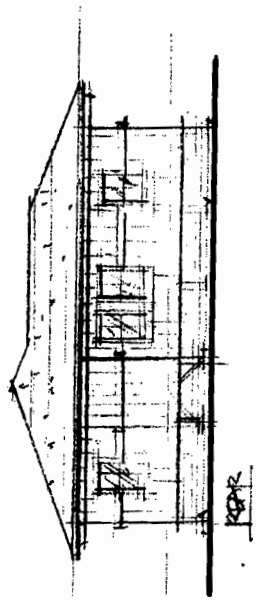
FRONT



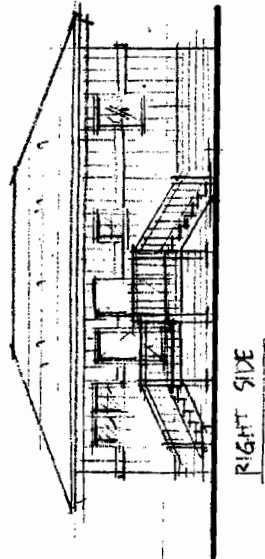
FLOOR PLAN - 1/8" SC.



LEFT SIDE



REAR



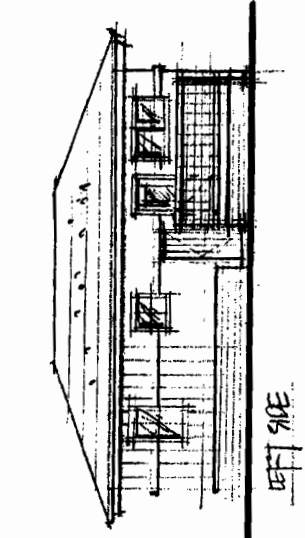
RIGHT SIDE



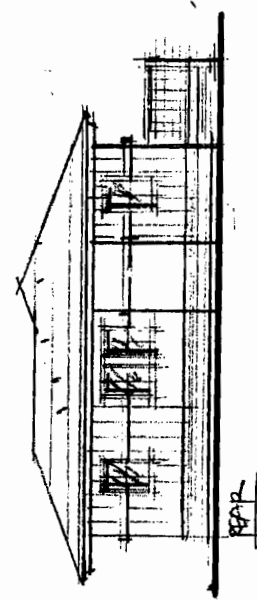
PLAN AND NOT SHOWN, IN PROGRESS AND CONSTRUCTION SPECIFICATIONS.

REVISIONS	BY

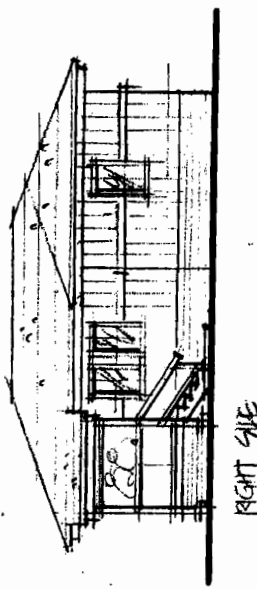
Date	
Scale	
Drawn	
Job	NEW 370
Sheet	
Of	
Sheets	



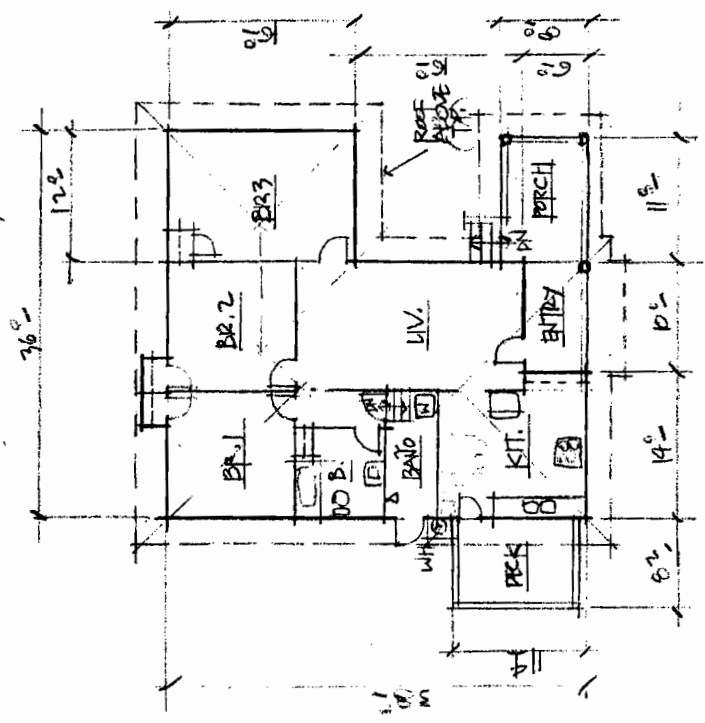
FRONT



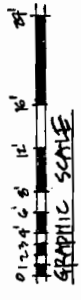
LEFT SIDE



RIGHT SIDE



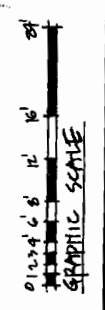
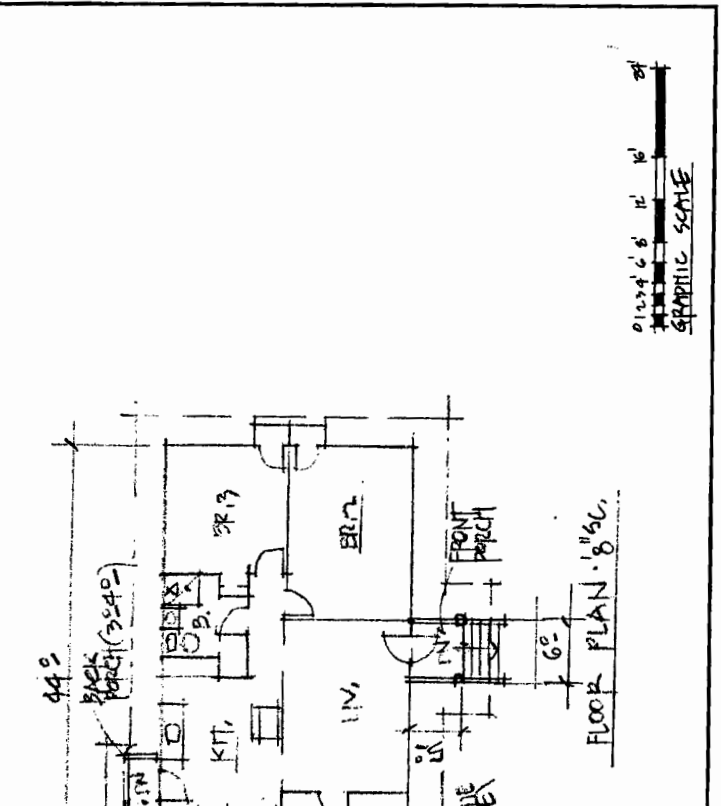
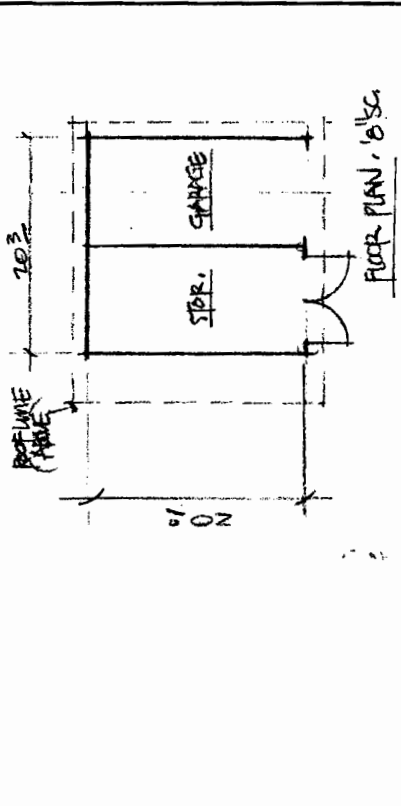
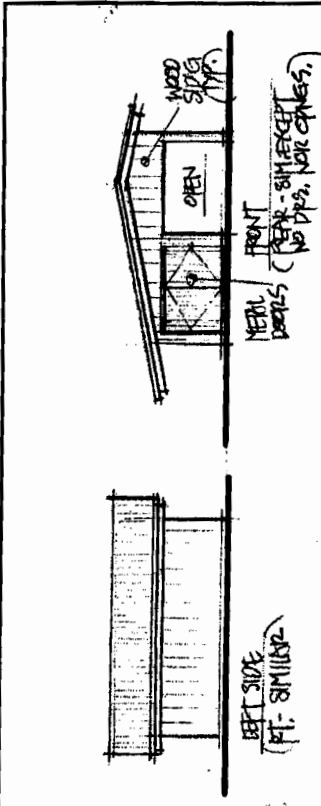
FLOOR PLAN, 1/8" = 1'-0" (TYP)



FRONT & REAR ELEVATIONS NOT SHOWN
 SEE-SPRINTING CONDITIONS & CONSTRUCTION.

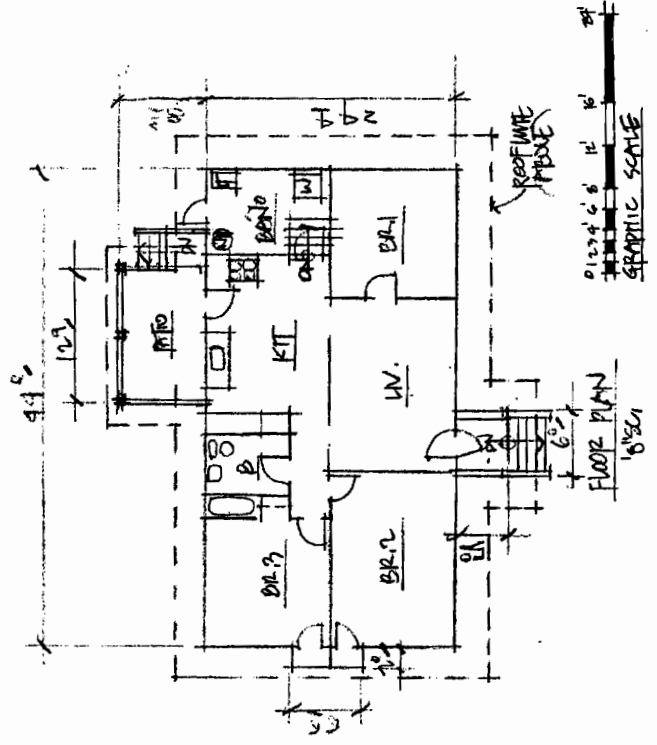
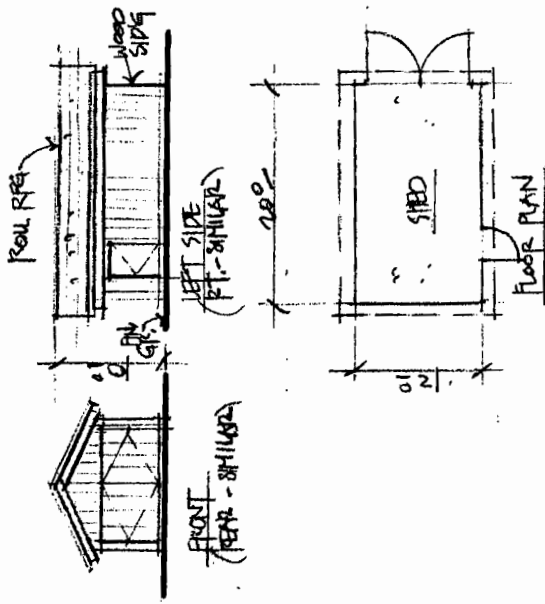
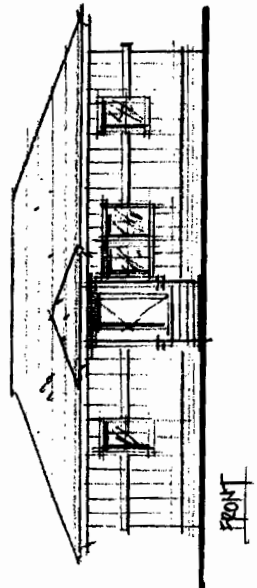
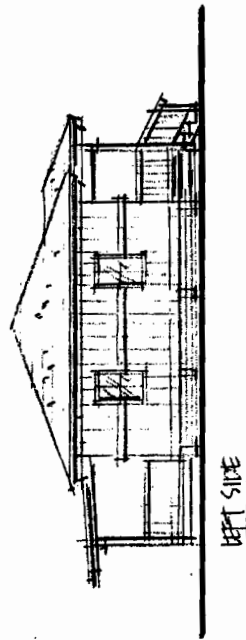
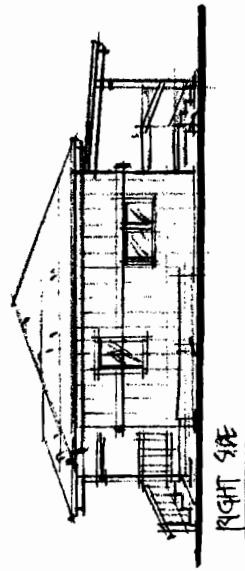
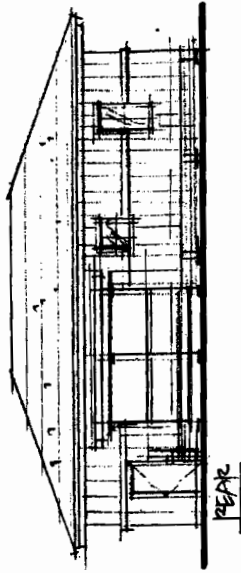
REVISIONS	BY

Date	Scale AS SHOWN	Drawn BY	Job NEW 371	Sheet	Of	Sheets



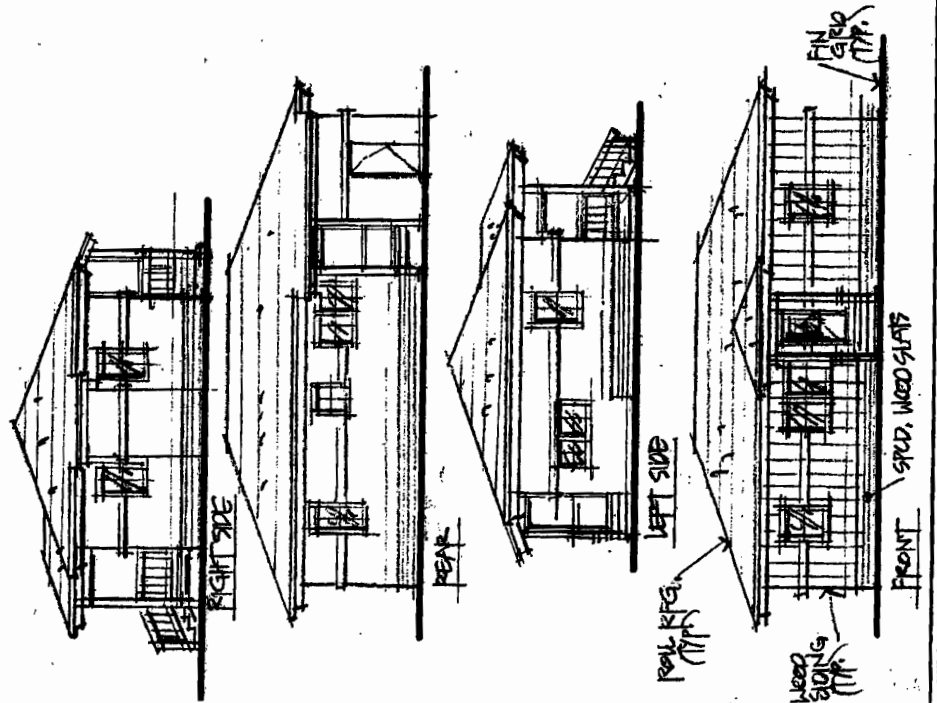
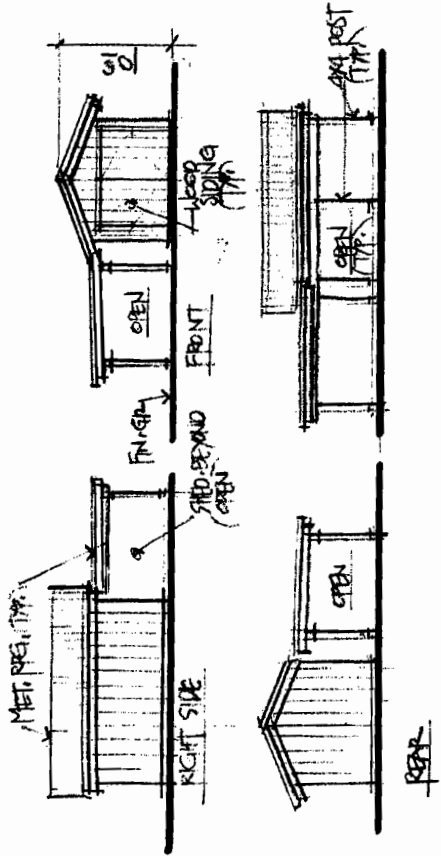
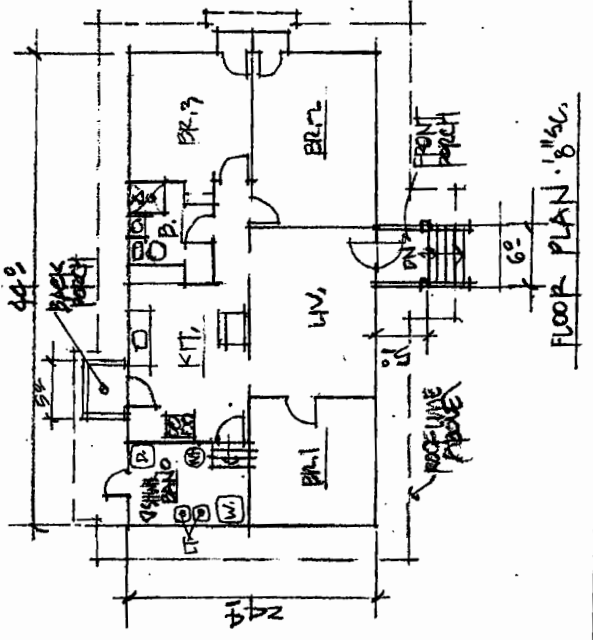
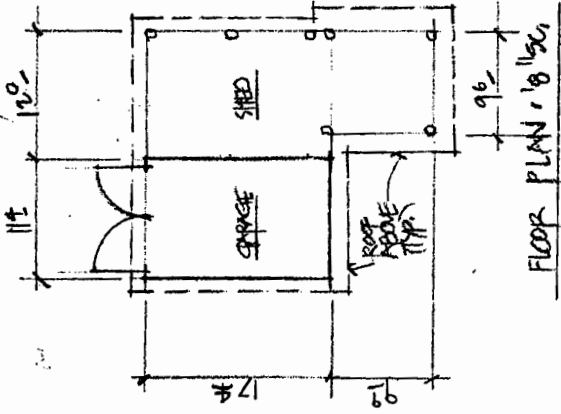
REVISIONS	BY

DATE	SCALE	DRAWN	JOB NO.	SHEET	OF	SHEETS
	AS SHOWN	DT	NEW 372			



REVISIONS	BY

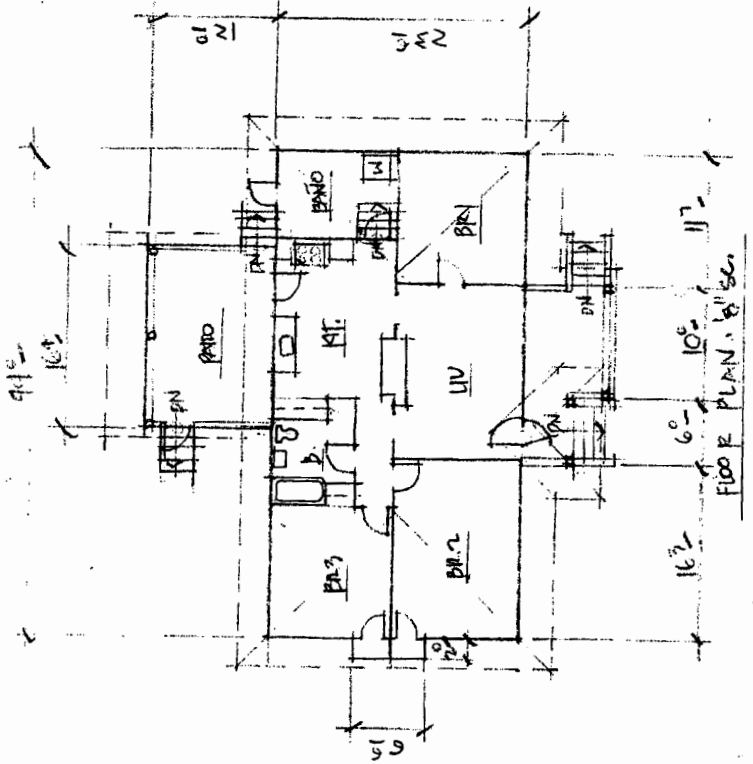
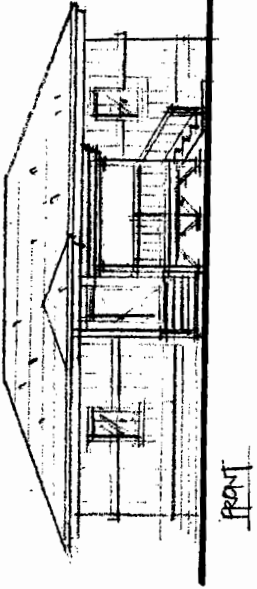
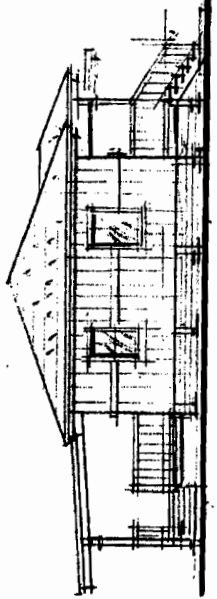
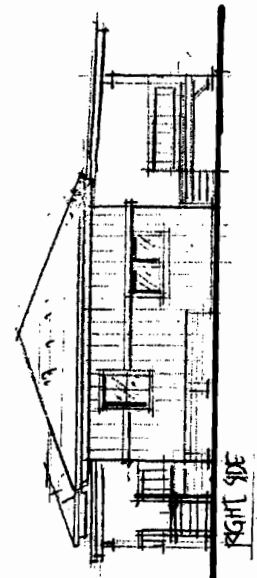
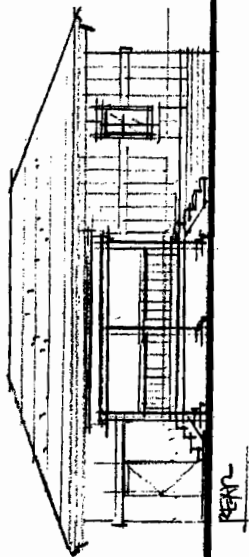
Date
 Scale AS SHOWN
 Drawn DT
 Job NEN 373
 Sheet
 Of Sheets



REAR SHED AND PORCH: TO BE CONSTRUCTED AS SUB-SPANNELED CONSTRUCTION.

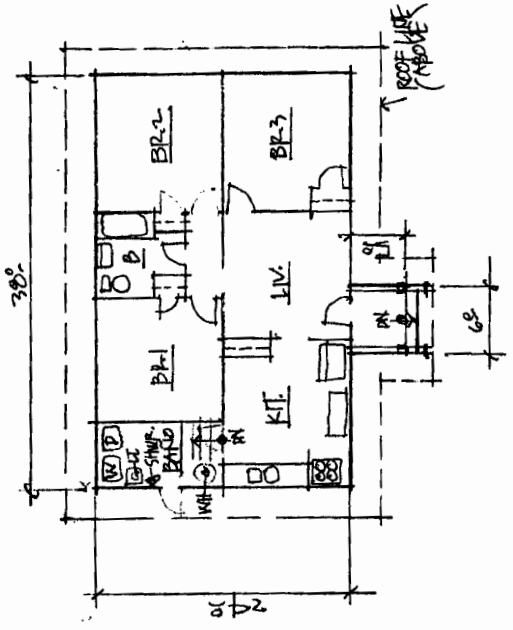
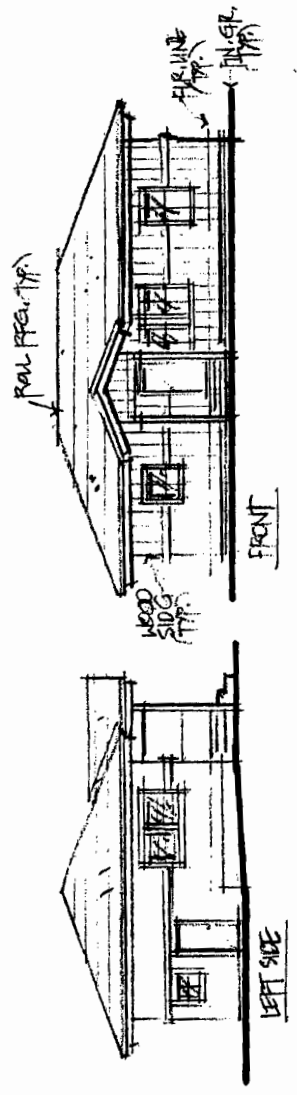
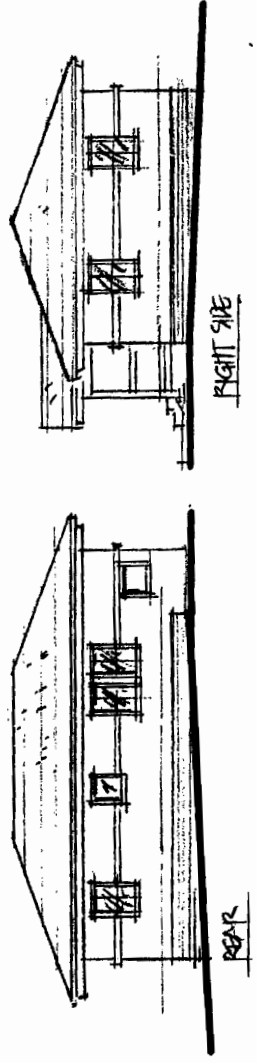
REVISIONS	BY

Date	Scale	Drawn	Job No.	Sheet	Of	Sheets
	1/8" = 1'-0"	MS SHAW				

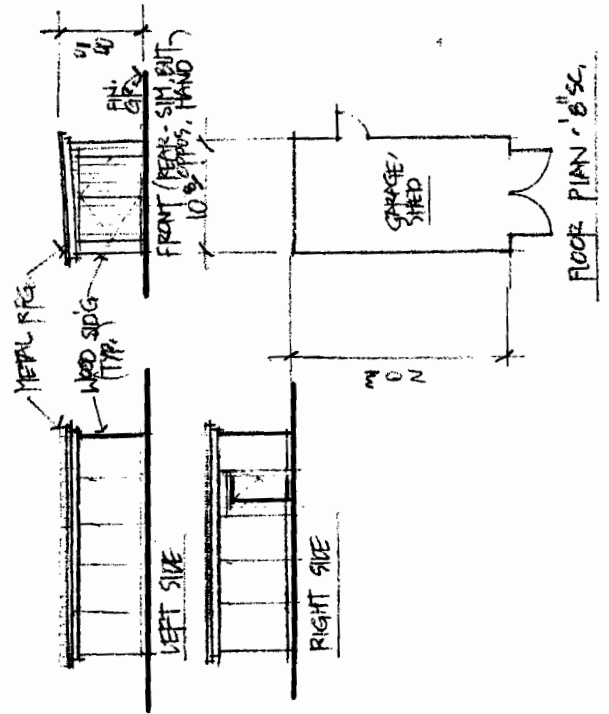


REVISIONS	BY

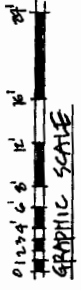
Date	Scale	AS SHOWN
Drawn	BY	DY
Job	NO	45
Sheet		
Of		Sheets



FLOOR PLAN - 1/8" SC. (TYP.)

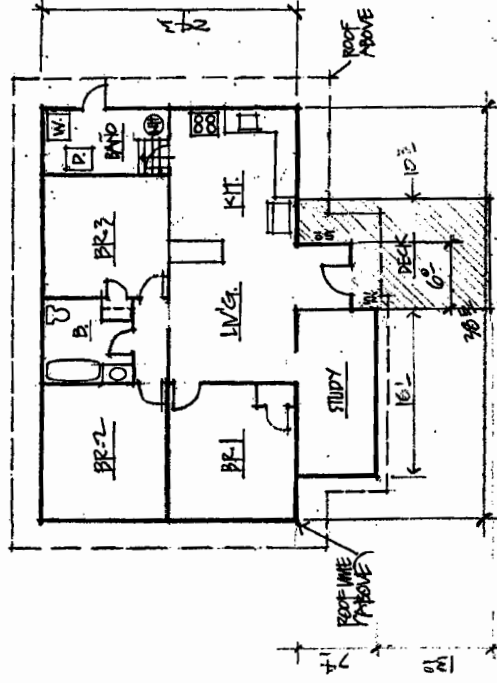
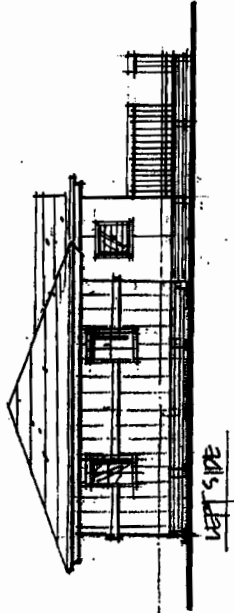
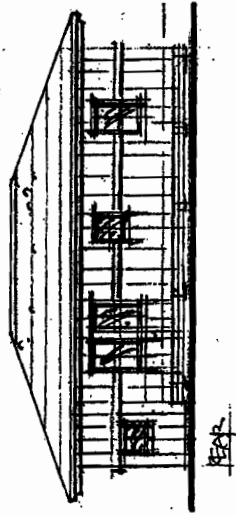
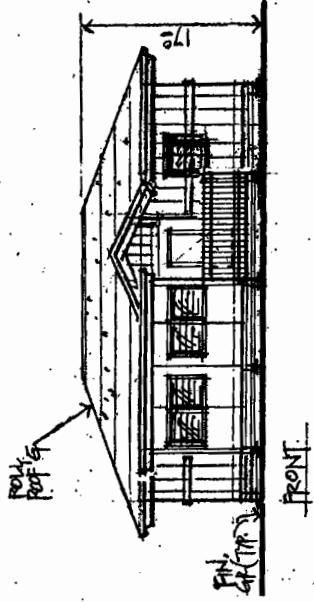
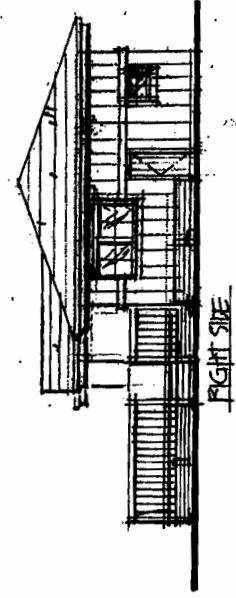


FLOOR PLAN - 1/8" SC.



REVISIONS	BY

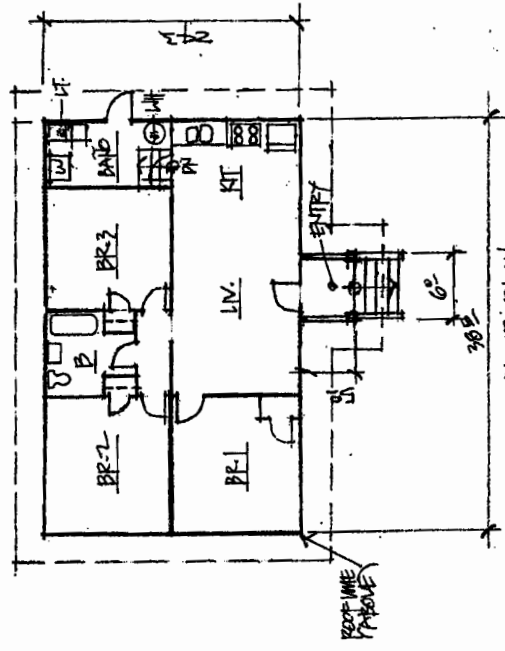
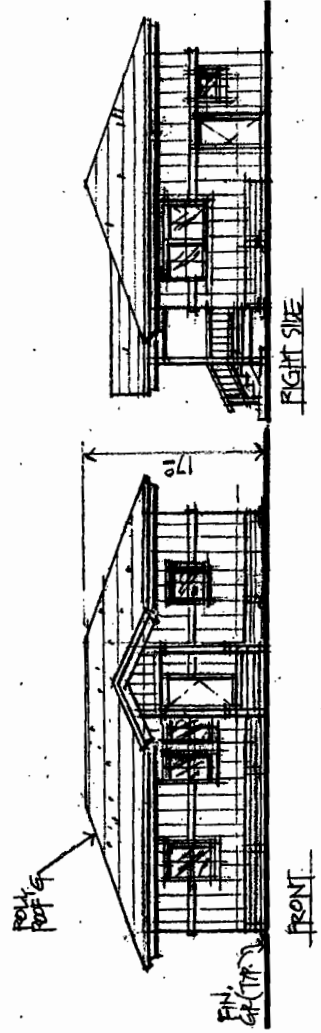
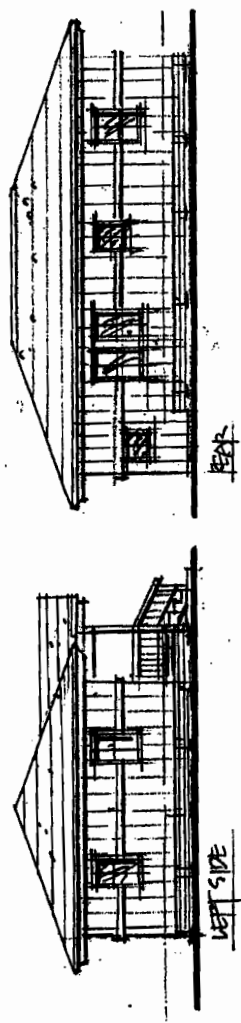
Date	Scale	Drawn	Job No. 453	Sheet	Of Sheets



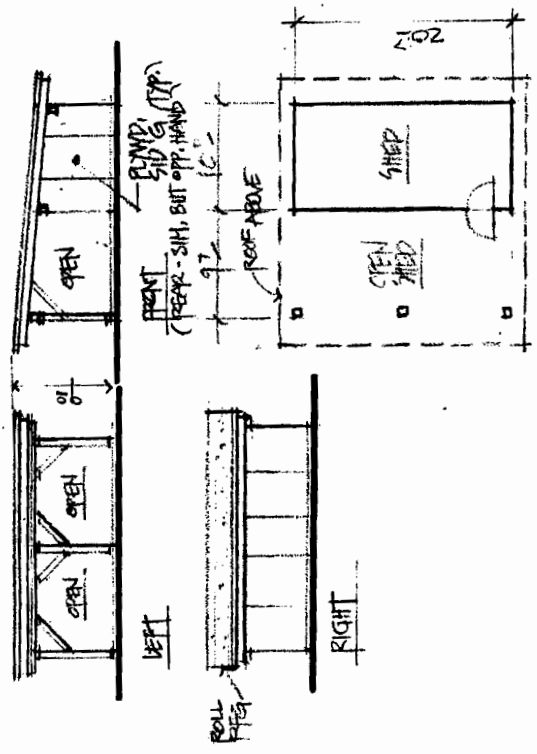
METAL STAIR. SHEET NOT SHOWN.

REVISIONS	BY

Date _____
 Scale _____
 Drawn _____
 Job **OV 455**
 Sheet _____
 Of _____ Sheets

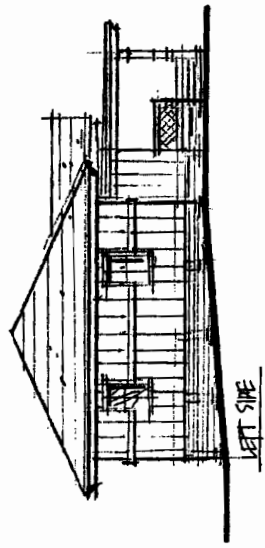
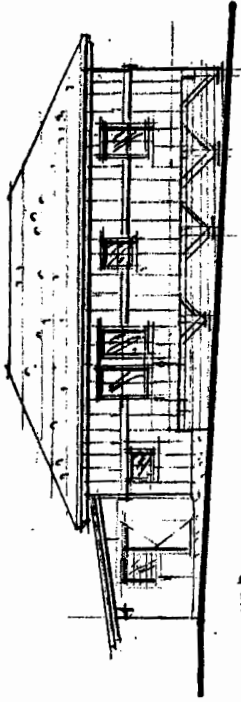
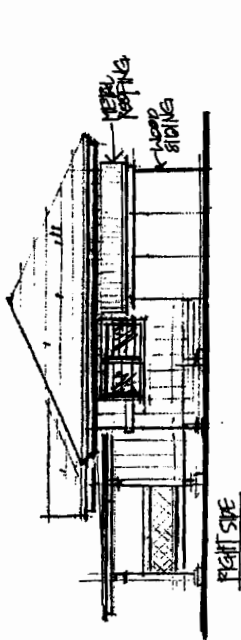
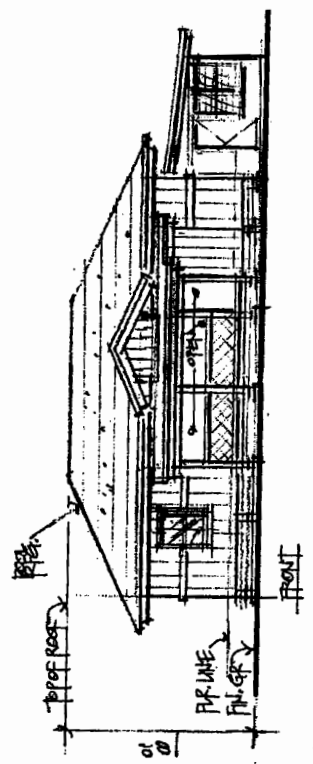
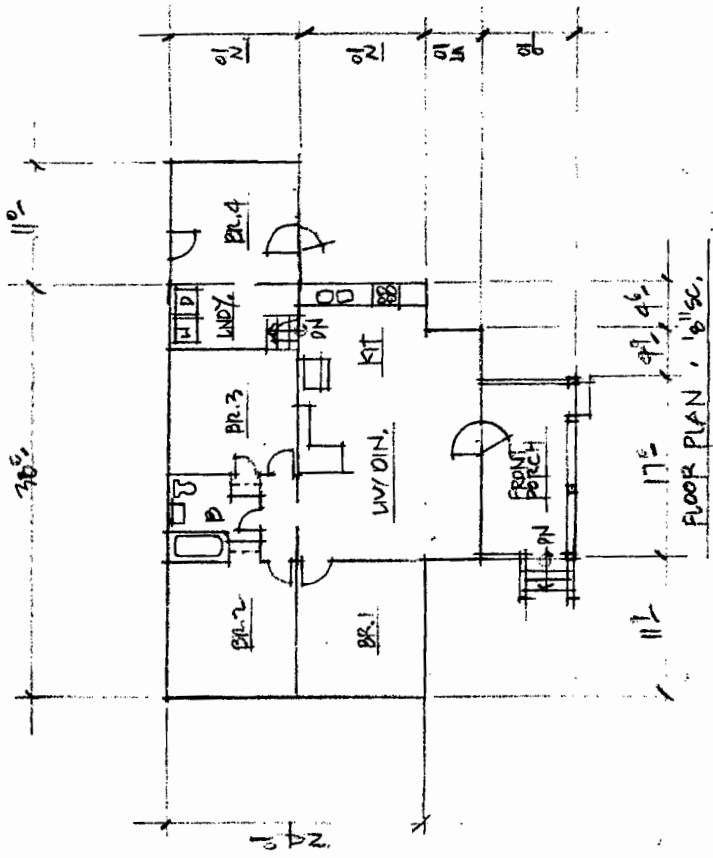


FLOOR PLAN
 1/8" = 1'-0" SC (TR)
 0 1 2 3 4 5 6 7 8 9 10
 GRAPHIC SCALE



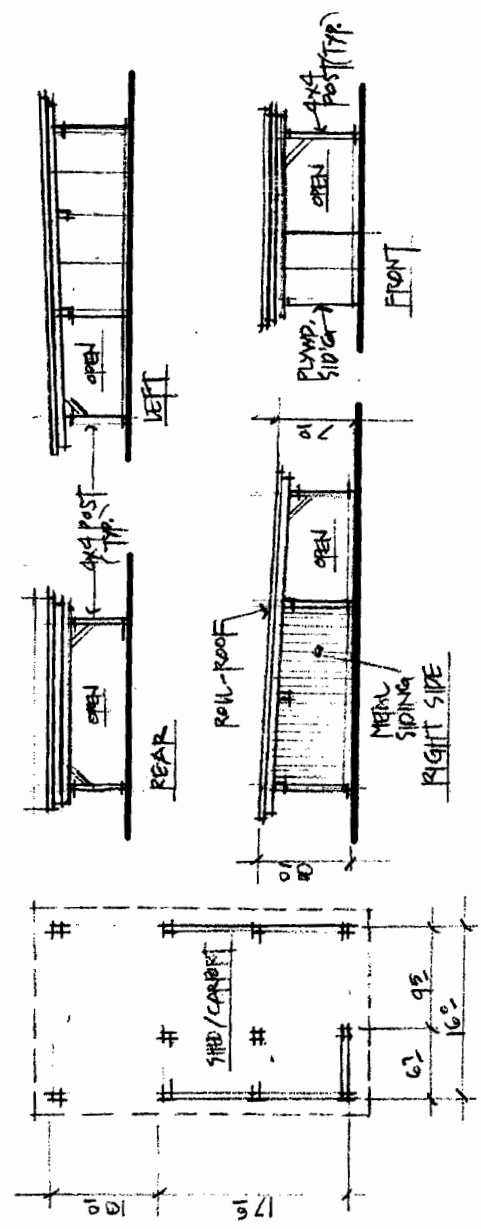
REVISIONS	BY

Date	Scale	As Shown
Drawn	DY	
Job	KPA	2450
Sheet		
Of		Sheets



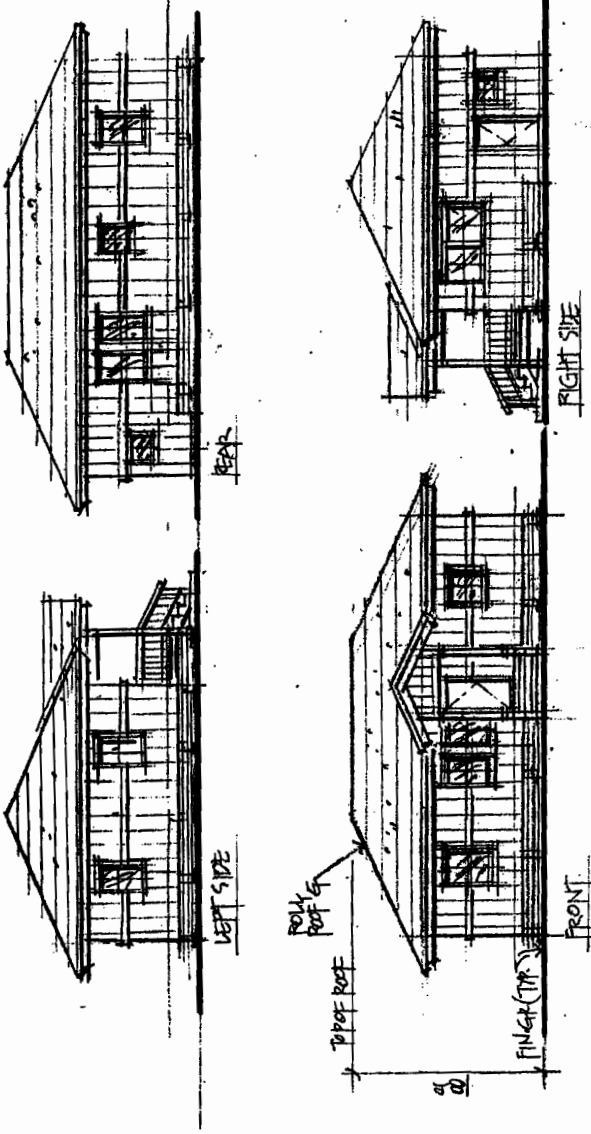
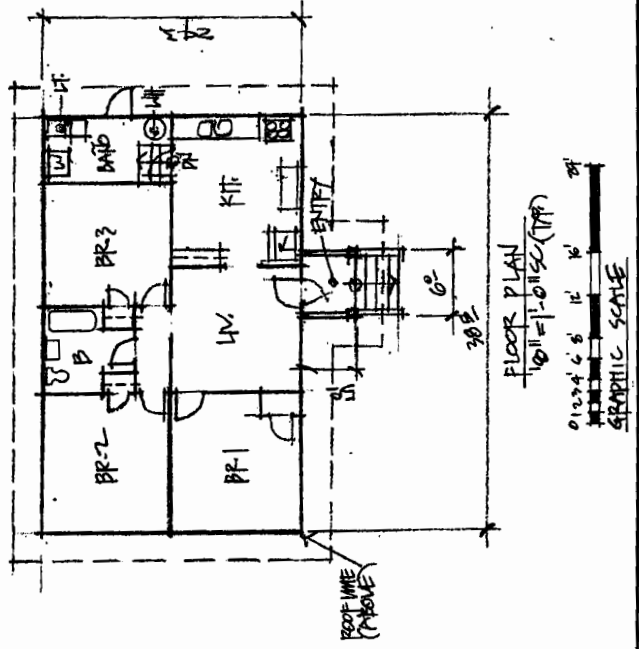
REVISIONS	BY

Date	Scale	AS SHOWN
Drawn	DT	
Job No.	100	856
Sheet		
Of		Sheets



0 2 4 6 8 10 12 14 16
 GRAPHIC SCALE

FLOOR PLAN - 8'50''

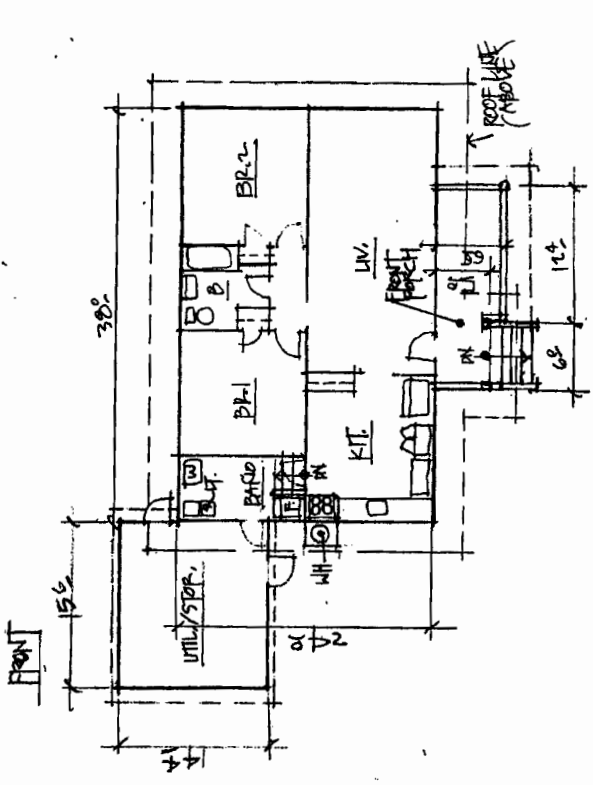
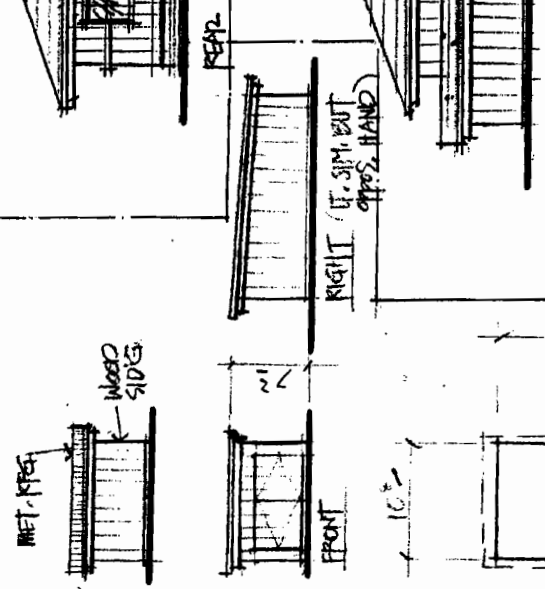
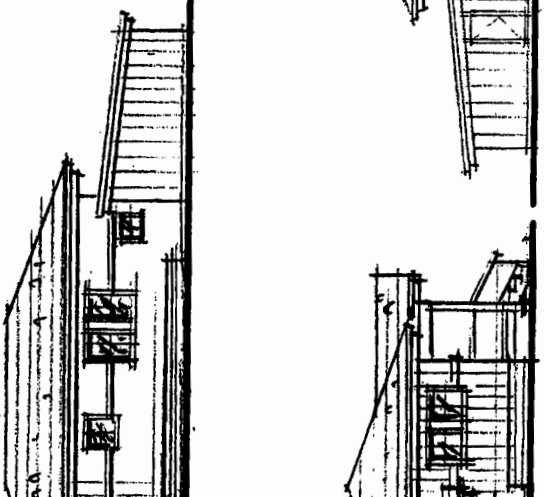
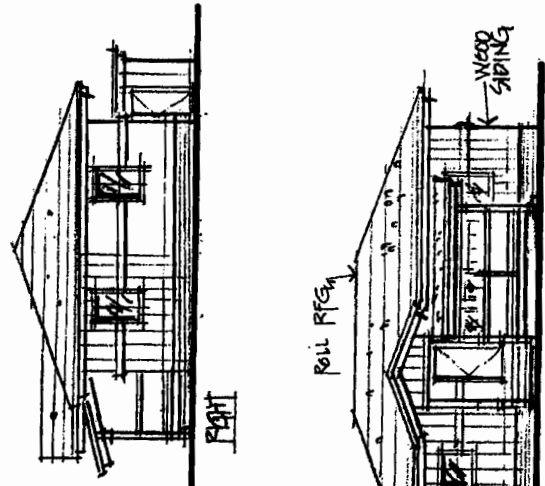


REVISIONS	BY

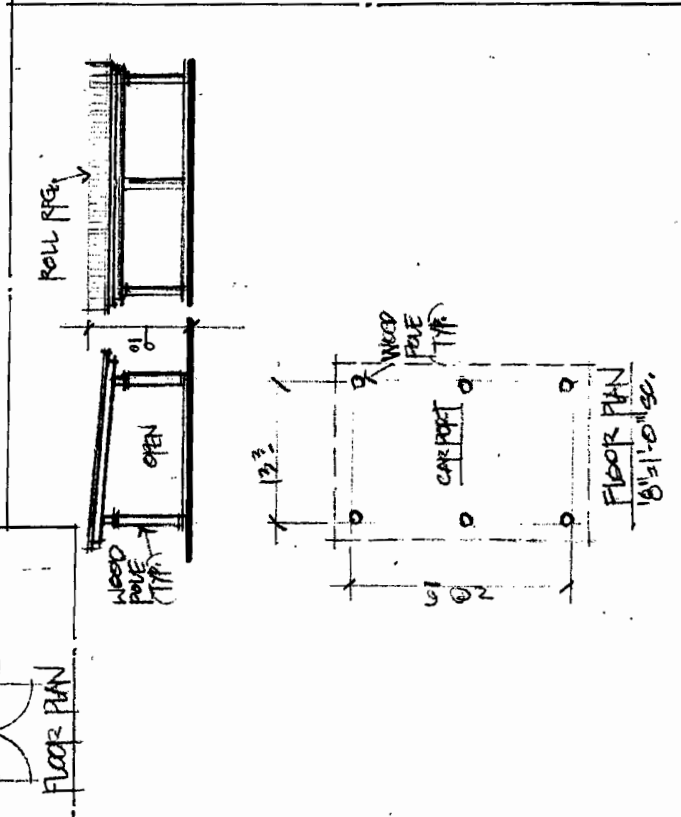
Date	Scale	AS SHOWN
Drawn	BY	
Job No		
Sheet		
Of		
Sheets		

REVISIONS	BY

Date	AS SHOWN
Scale	DT
Drawn	Job NEW 450
Sheet	Sheet
Of	Sheets



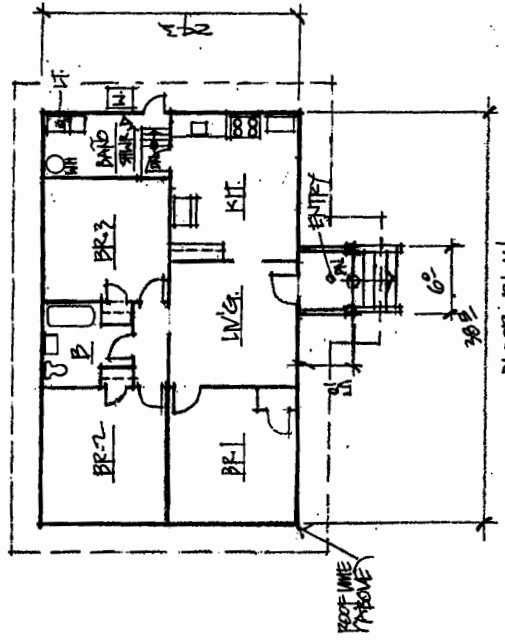
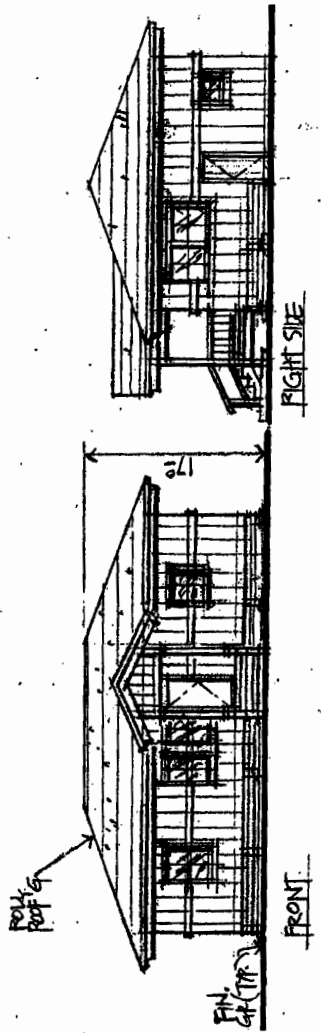
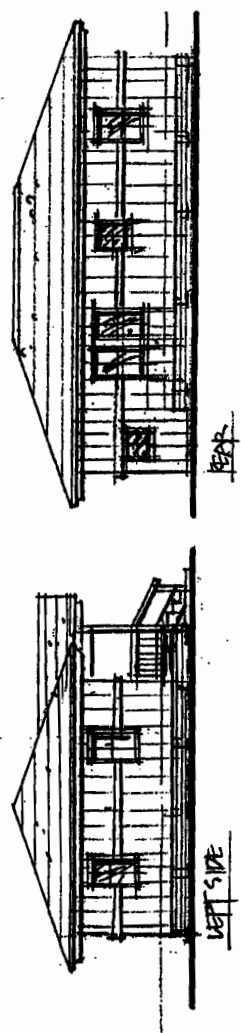
FLOOR PLAN - 1/8" SCALE



FLOOR PLAN

REVISIONS	BY

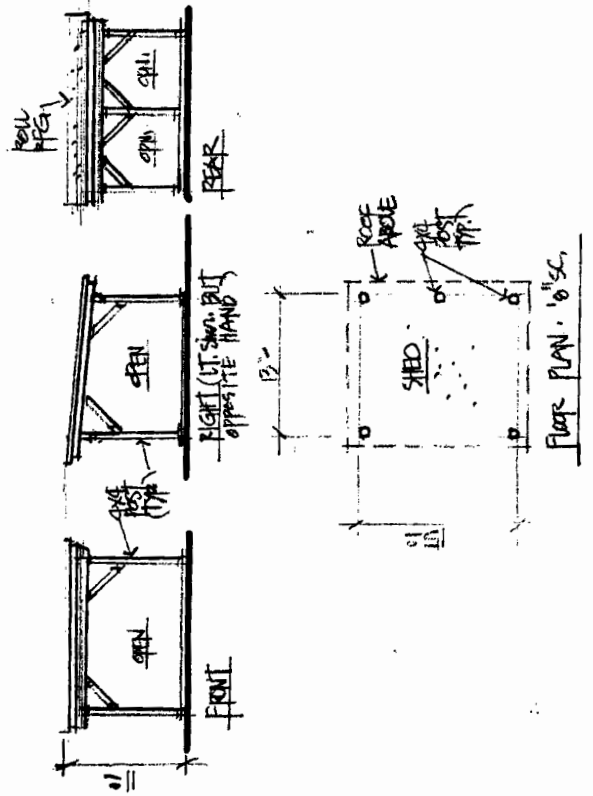
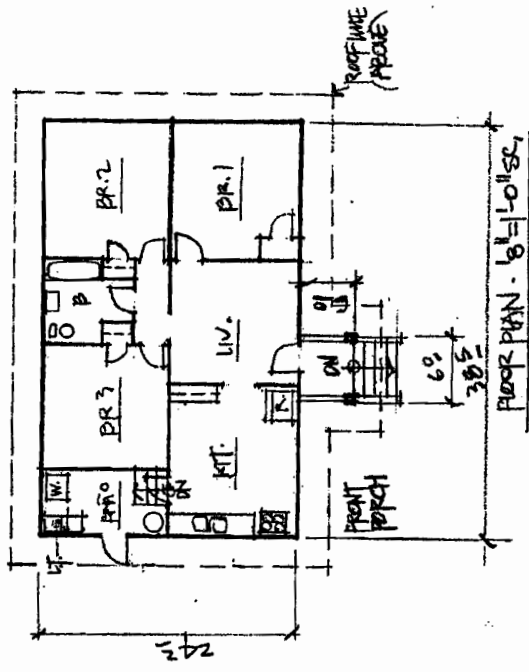
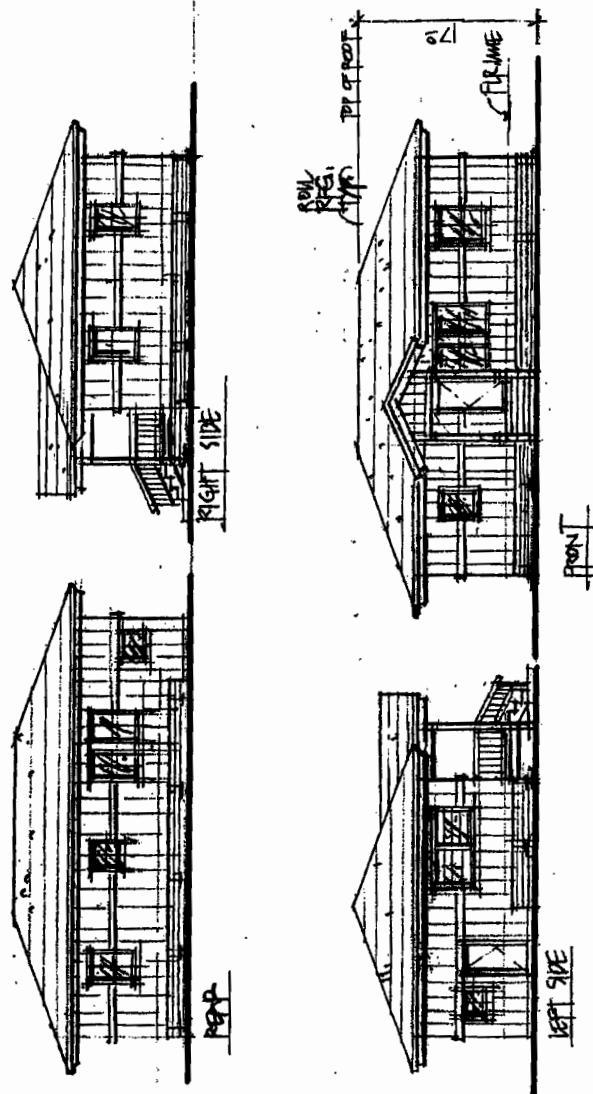
Date	
Scale	
Drawn	
Job	HEX 459
Sheet	
Of	
Sheets	



FLOOR PLAN
 1/8" = 1'-0" (1/8")
 0 6 12 18'
 GRAPHIC SCALE

REVISIONS	BY

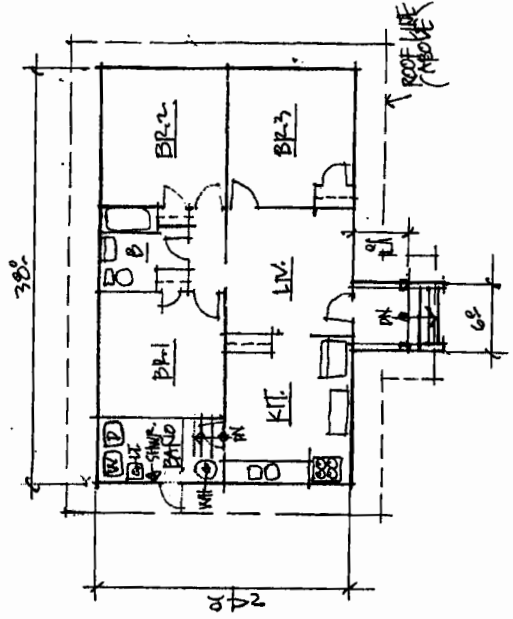
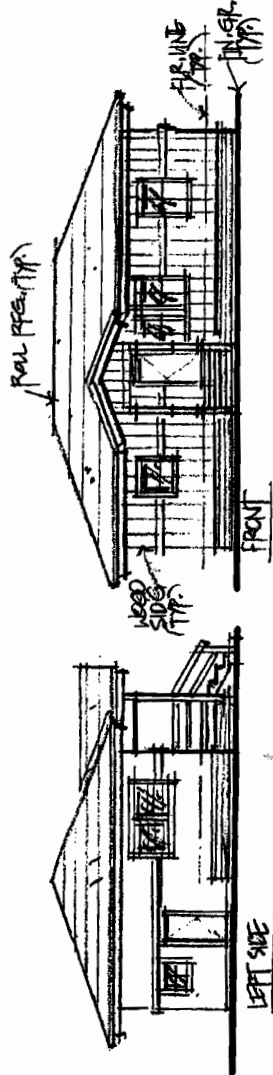
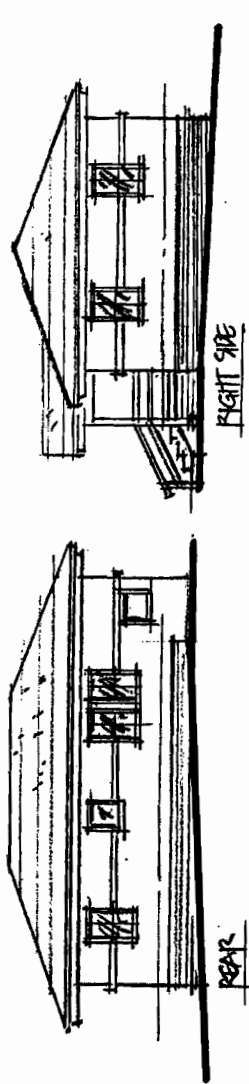
Date	Scale	Drawn	Job	Sheet	Of	Sheets
			CV 468			63



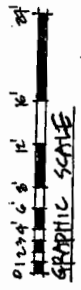
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
 GRAPHIC SCALE

REVISIONS	BY

Date	Scale AS SHOWN	Drawn DT	Job DV 469	Sheet	Of	Sheets

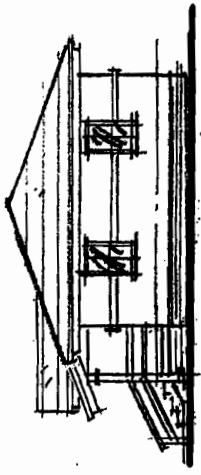


FLOOR PLAN - 1/8" SCALE

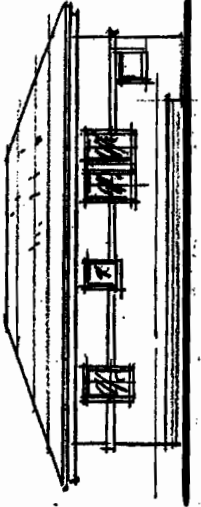


REVISIONS	BY

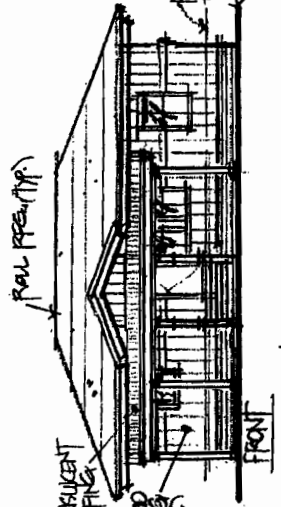
Date	AS SHOWN
Scale	DT
Drawn	NEW
Job	10
Sheet	
CI	Sheets



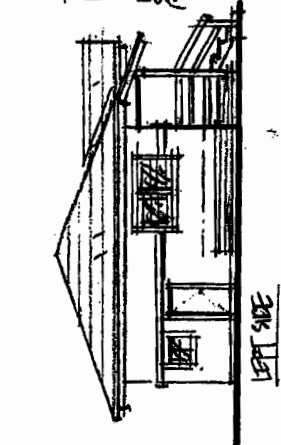
REAR



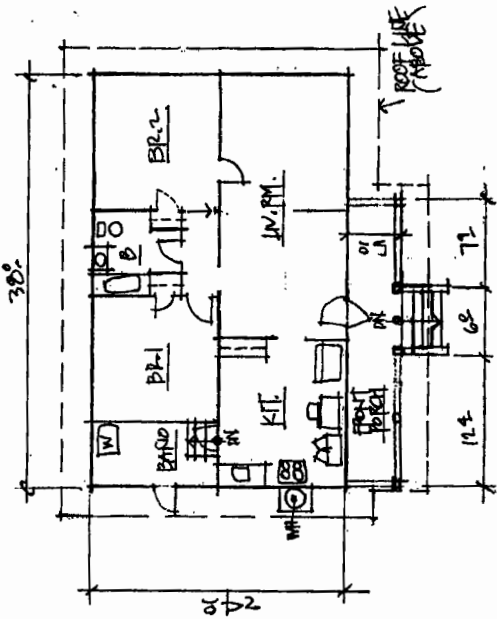
LEFT SIDE



FRONT



RIGHT SIDE

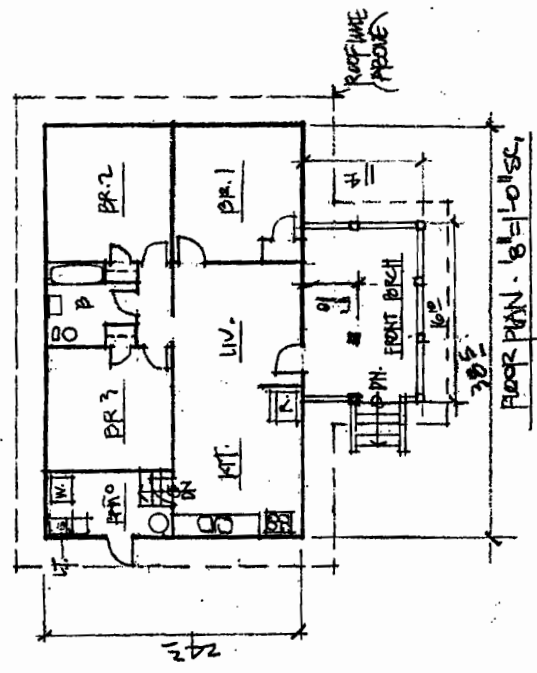
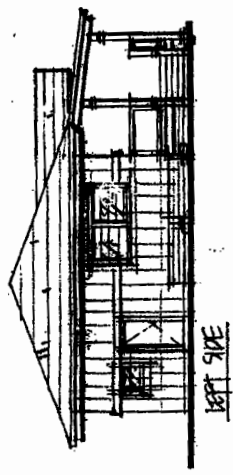
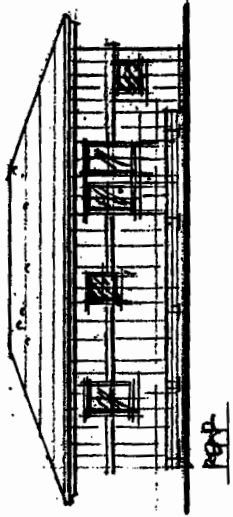
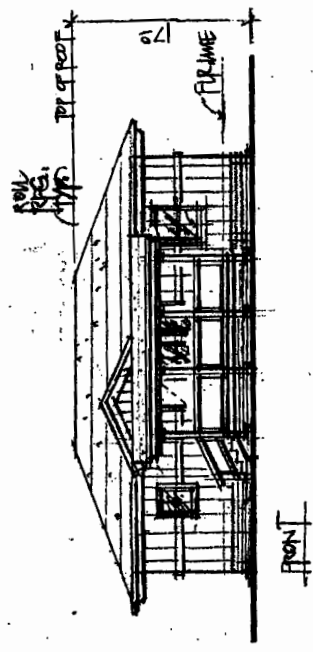
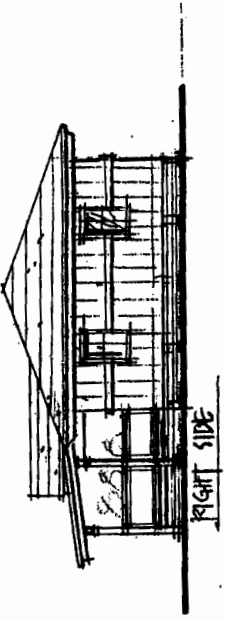


FLOOR PLAN - 1/8" SCALE



REVISIONS	BY

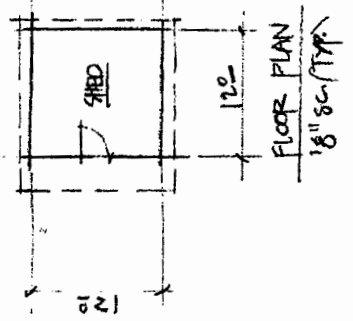
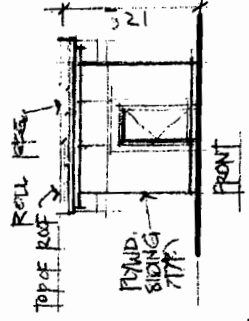
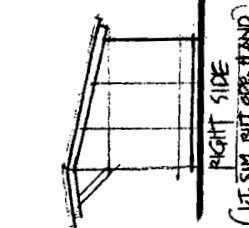
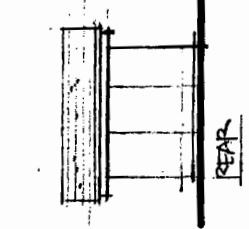
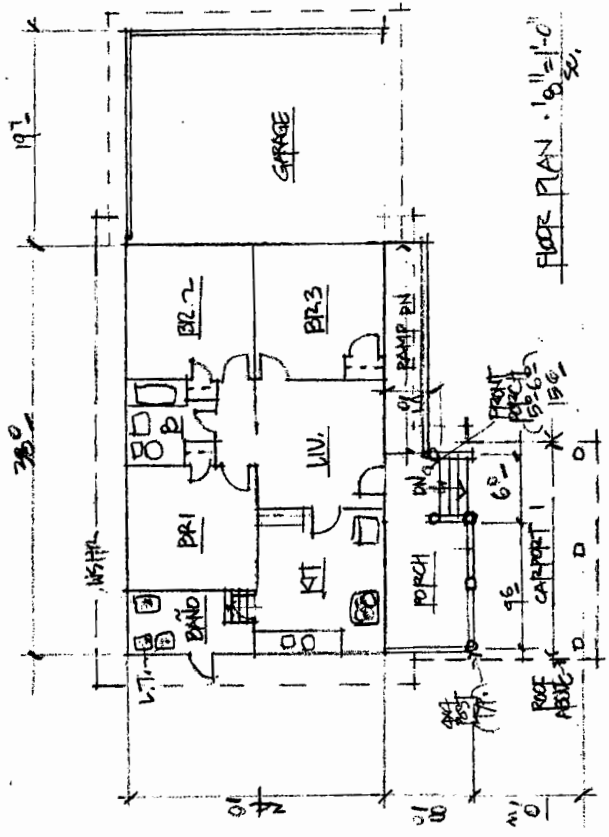
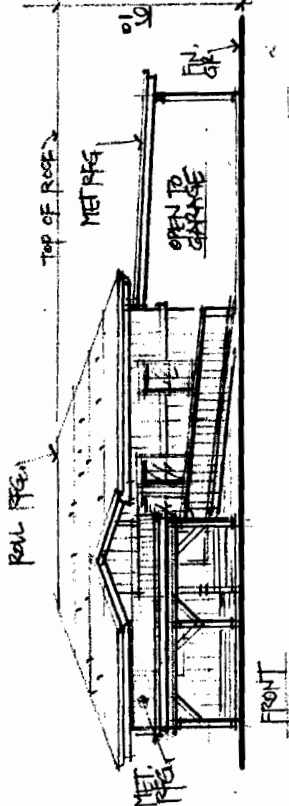
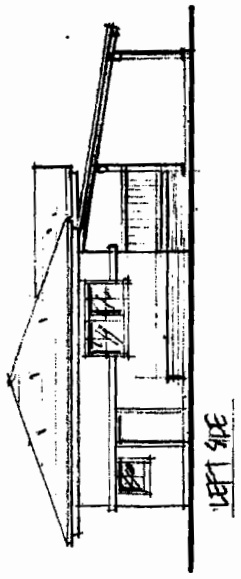
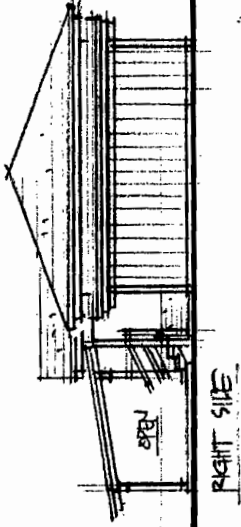
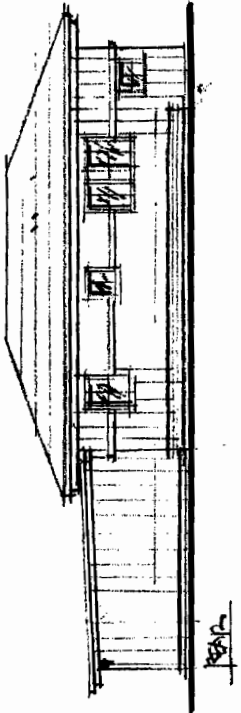
Date	Scale	Drawn	Job No. 47	Sheet	Of	Sheet



GRAPHIC SCALE
0 5 10 15 20'

REVISIONS	BY

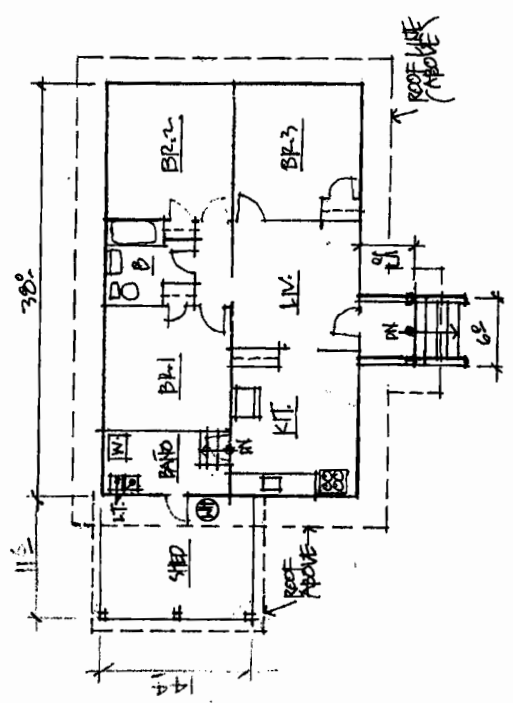
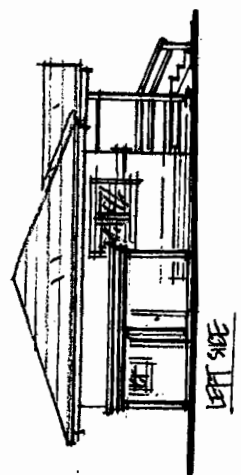
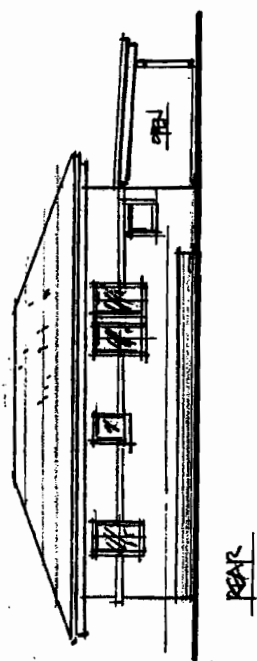
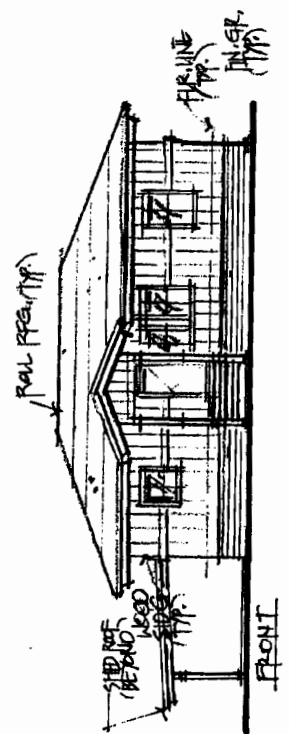
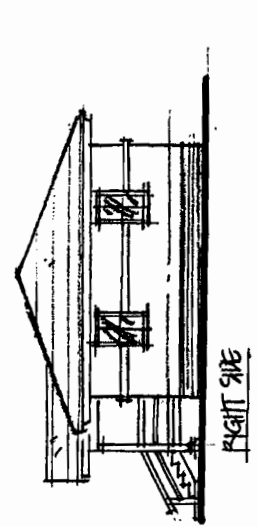
Date	
Scale	
Drawn	
Job	NEW 473
Sheet	
Of	
Sheets	



YARD WITH CHAIN LINK FENCE

REVISIONS	BY

Date	
Scale	
Drawn	
Job No.	1001 474
Sheet	
DT	Sheets

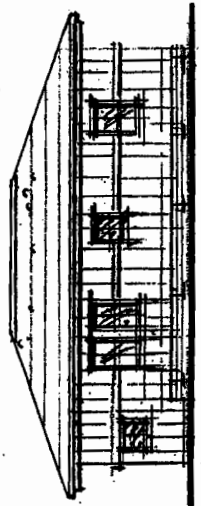


FLOOR PLAN 1/8" = 1'-0" S.C.M.P.

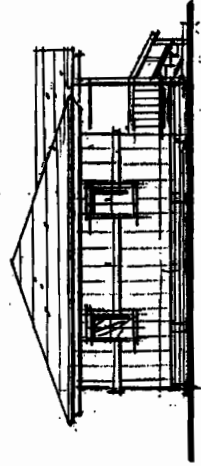


REVISIONS	BY

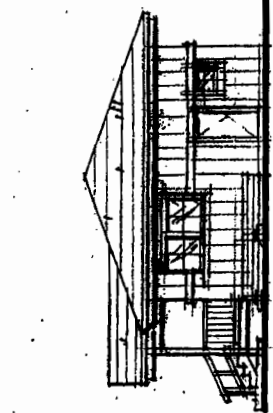
Date	
Scale	
Drawn	
Job	HEX 479
Sheet	
Of	Sheets



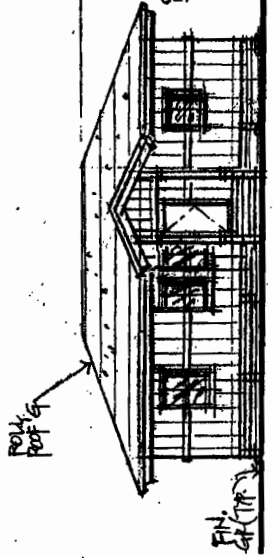
BACK



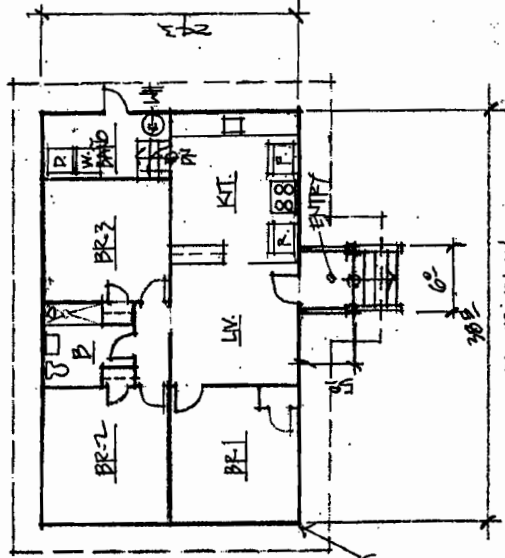
LEFT SIDE



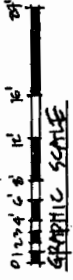
RIGHT SIDE



FRONT



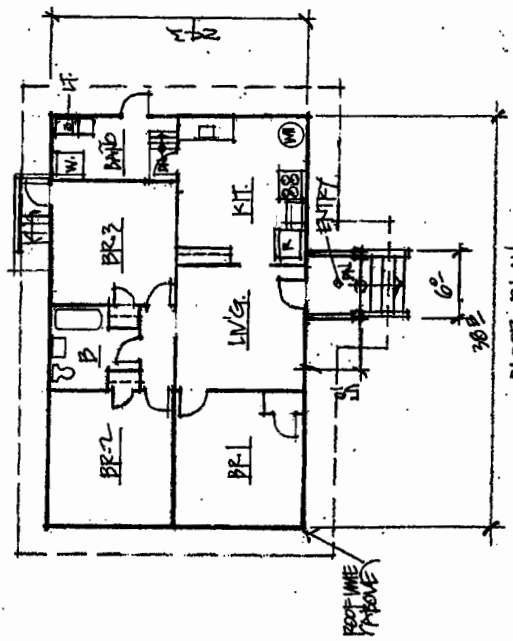
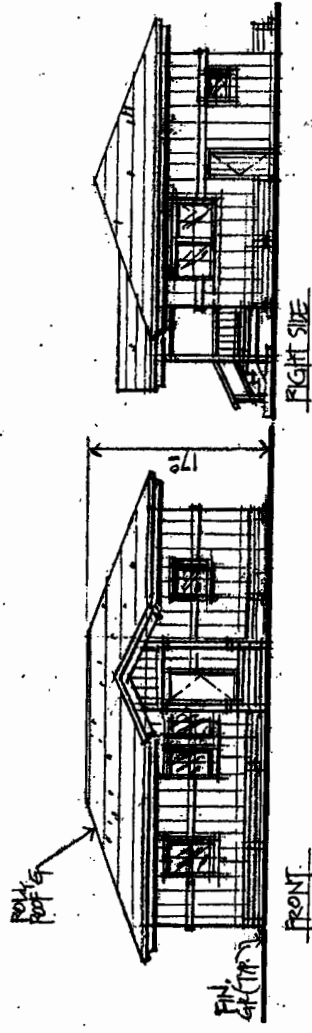
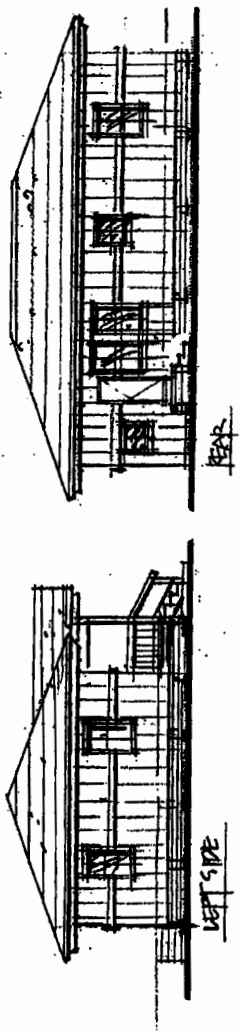
FLOOR PLAN
1/8" = 1'-0" SC. (1/8")



GRAPHIC SCALE

REVISIONS	BY

Date	
Scale	
Drawn	
Job	NEW 400
Sheet	
Of	Sheets



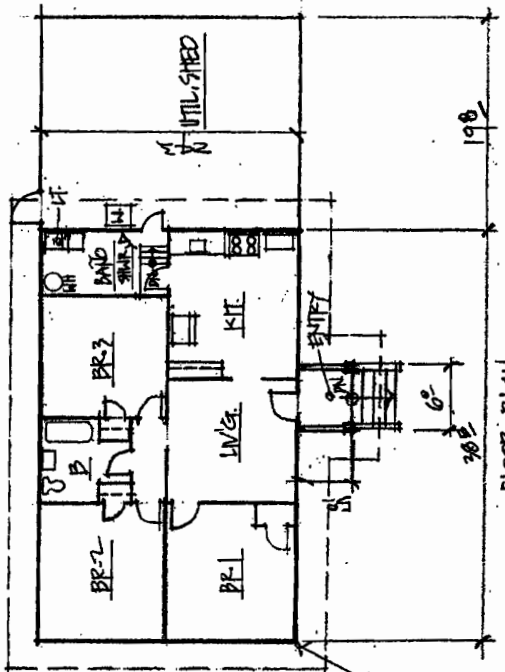
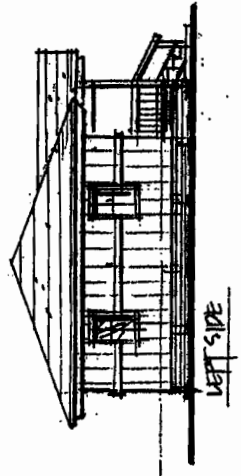
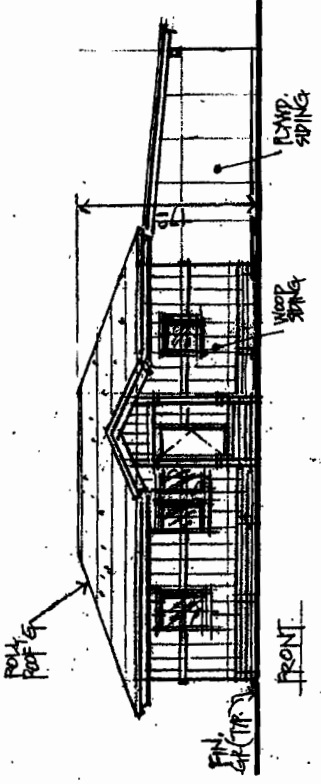
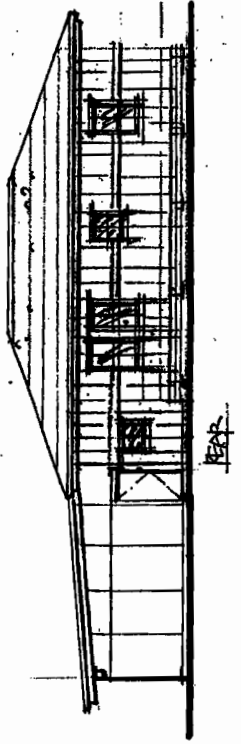
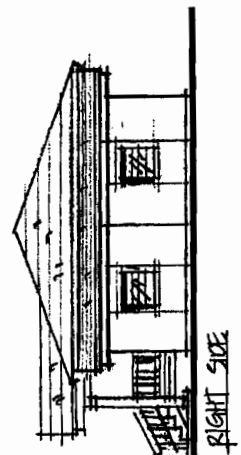
FLOOR PLAN
 1/8" = 1'-0" (1/8")
 GRAPHIC SCALE
 0 6 12 18'

SHED NOT SHOWN, ABANDONED & IN POOR CONDITION.

SHEET NOT SHOWN; POOR CONDITION & ABANDONED!

REVISIONS	BY

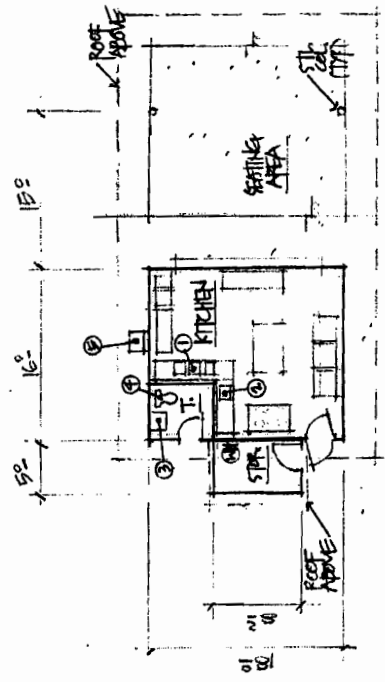
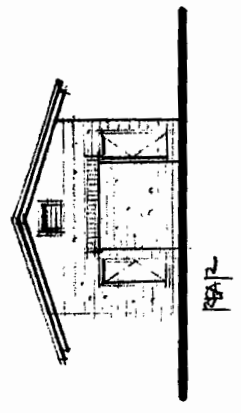
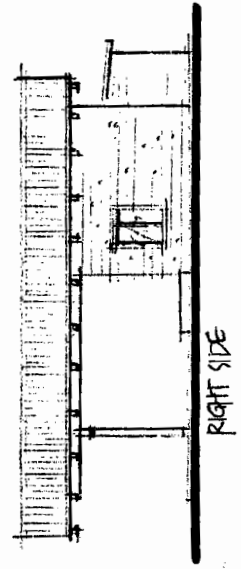
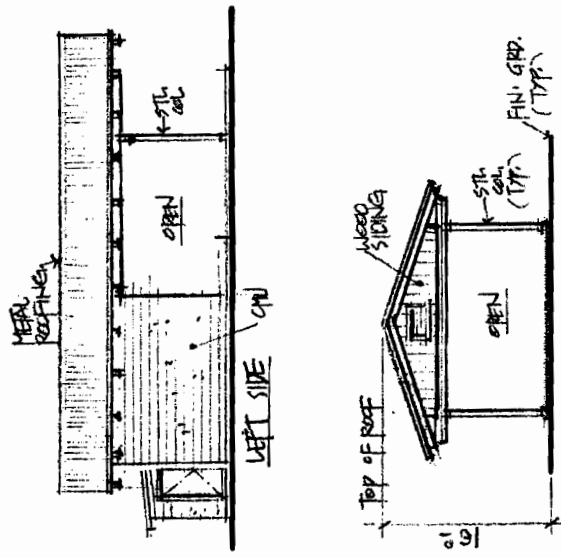
Date	Scale	Drawn	Job	Sheet	Of
			NEW 405		



FLOOR PLAN
 1/8" = 1'-0" (TR)
 0 1" 2" 3" 4" 5" 6"
 GRAPHIC SCALE

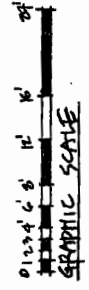
REVISIONS	BY

Date 3/14/07
 Scale AS SHOWN
 Drawn BY
 Job KVA/MAV
 Sheet
 Of Sheets



FLOOR PLAN - 1/8" = 1'-0" SC

- ① 3-COMPARTMENT SINK
- ② HAND SINK
- ③ LAVATORY
- ④ WATER CLOSET
- ⑤ UTILITY SINK



REVISIONS	BY

3/15/07

Date

Scale AS SHOWN

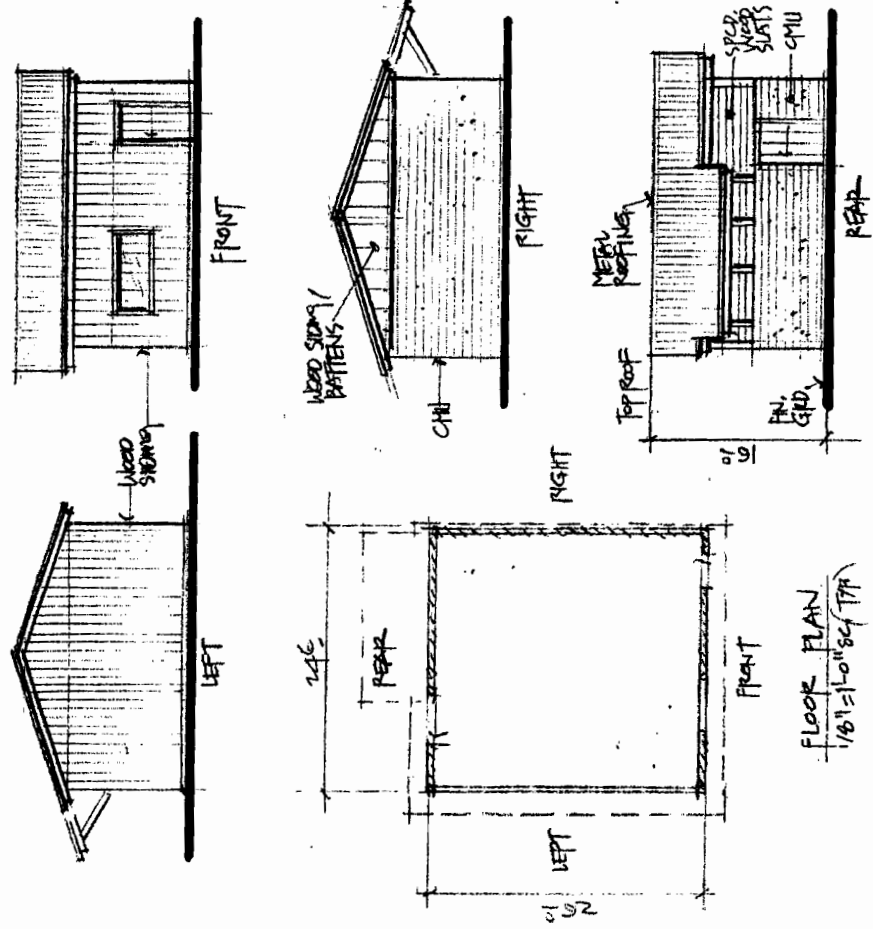
Drawn D.Y.

Job

Sheet

Of Sheets

OLD
LAINNEY
BURG.

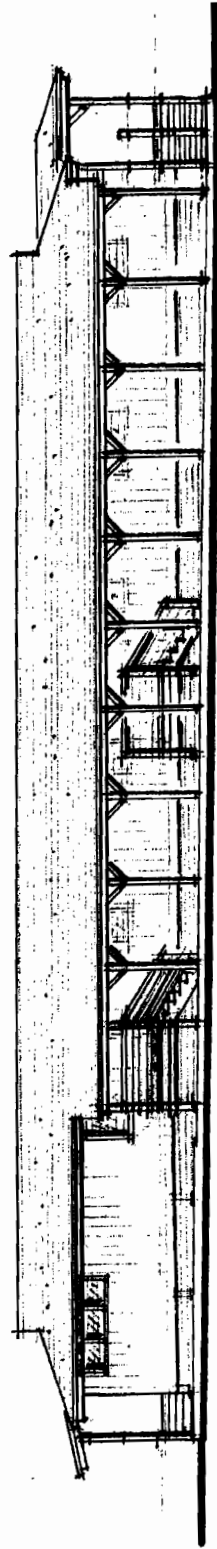


FLOOR PLAN
1/8" = 1'-0" (8x 1/8")

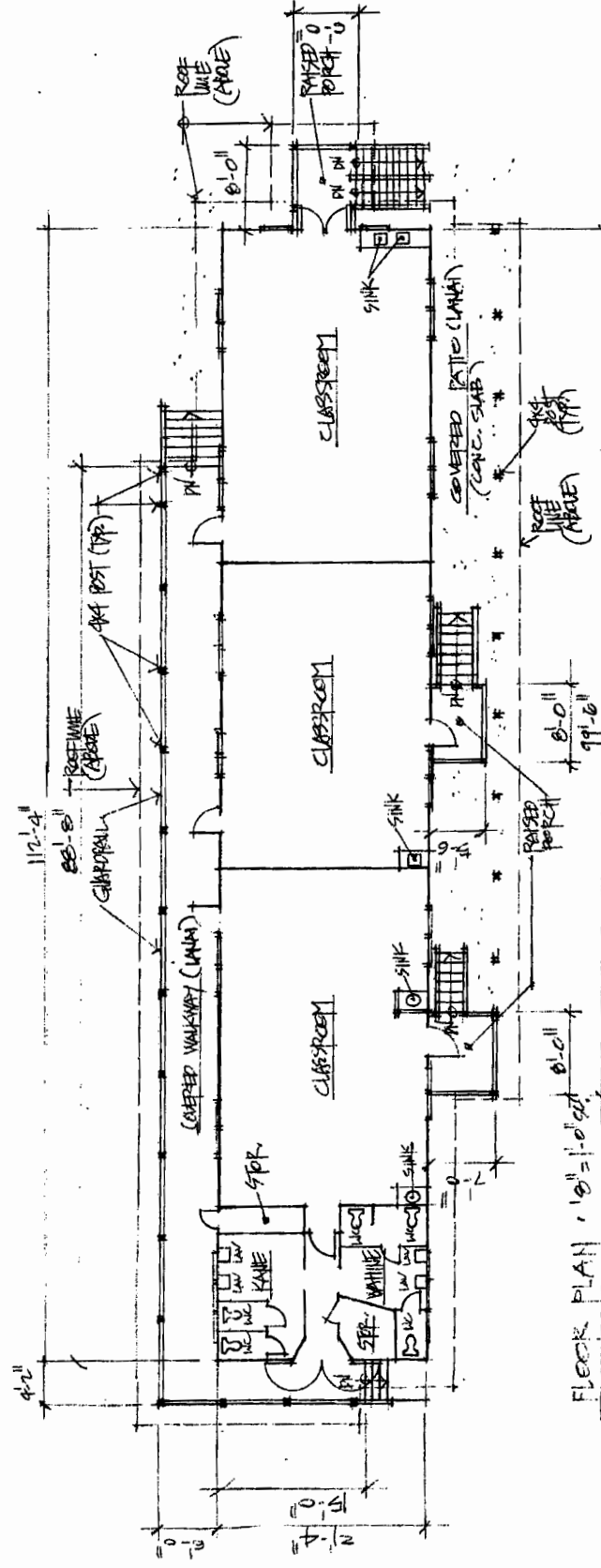


REVISIONS	BY

Date	
Scale	
Drawn	
Job CLASS ROOM	
Sheet	
Of	Sheets



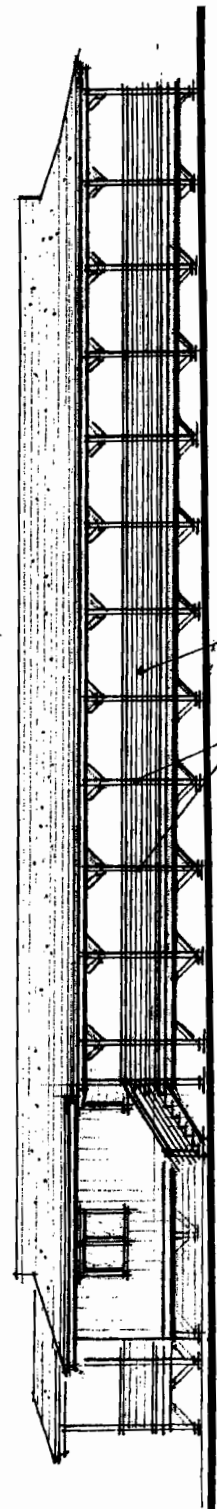
LEFT SIDE



FLOOR PLAN, 1/8" = 1'-0" (SEE)
 GRAPHIC SCALE (IN FEET)
 0 5 10 15 20 25 30

REVISIONS	BY

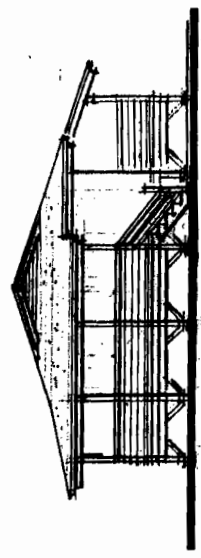
Date	Scale	Drawn	Job	Sheet	Of	Sheets
			CLAS ROOM	15	1	1



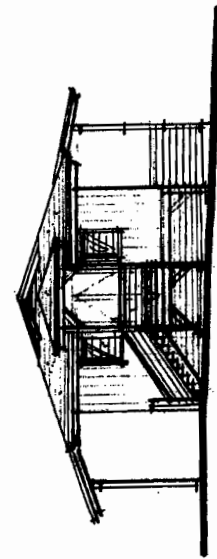
CLAS ROOM

POST

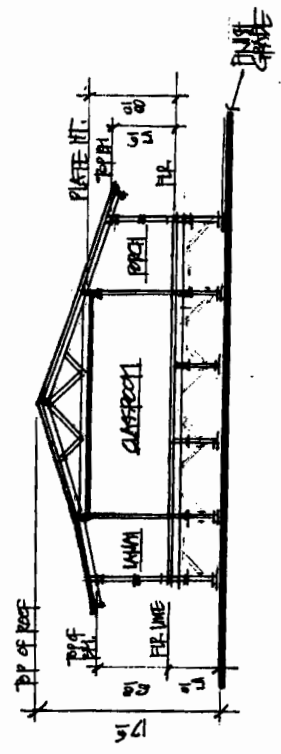
RIGHT SIDE



REAR



FRONT



PP OF ROOF

PLATE HT.

TOP OF BAL.

FIR JOIST

175

CLAS ROOM

POUCH

TRUS.

5' 6"

5' 6"

5' 6"

Appendix O

List of Current Kahuku Village Leaseholder Residents

KAHUKU VILLAGE
Letter of Intent

#	Tenant	House #	Camp	Family Size	LOI Status
1	Rogelio Panag	3	NC	4	Yes
2	Myronne Joaquin	10	NC	1	Yes
3	Benjamin Panag	13	NC	3	Yes
4	Kay Afalava	14	NC	8	No
5	Cathleen Kale	22	NC	1	Yes
6	Denise Moniz	25	NC	4	Yes
7	Sherry Martinez	27	NC	3	Yes
8	Kenneth Jr. & Noe Talpin	28	NC	3	No
9	Glenn Maghanooy	37	NC	2	No
10	Janice Villalobos	41	NC	4	Yes
11	Barbara Etagonde	42	NC	3	Yes
12	Hermingildo Mandac	43	NC	2	Yes
13	Eduvejes Mandac	44	NC	5	Yes
14	Jerry Tubal	45	NC	4	No
15	Simplicio Caban	46	NC	2	Yes
16	Alan Nagata	51	NC	1	Yes
17	Lourdes Canamay	52	NC	4	Yes
18	Robert Cartwright, Jr.	54	NC	6	Yes
19	Janet Fulton	55	NC	5	Yes
20	Keawe Rillamas	56	NC	4	Yes
21	Mary Carvalho	57	NC	1	Yes
22	Kennedy Garduque	58	NC	7	Yes
23	Mary Ann Kaina	59	NC	3	Yes
24	Jeff Compoc	60	NC	2	No
25	Robert Trotter	286	MC	4	Yes
26	Albert Pao	287	MC	1	Yes
27	Roberta Conley	289	MC	2	Yes
28	Laura Suzuki	300	HM	1	Yes
29	Allan Tejada	340	HM	4	Yes
30	Herbert Hirotsu	345	HM	1	No
31	John Errett	350	OV	2	No
32	S. Meleana Becicka	351	HM	2	Yes
33	Jaren Emerson Clarke	352	HM	6	Yes
34	Dana Shigemitsu	353	HM	1	No
35	B. Les Laguna	354	HM	2	Yes
36	Edward Canamay	355	NC	6	Yes
37	Hideko Fuse	355	HM	1	No
38	Mildred Sato	355	HM	2	Yes
39	Nanette Vendiola	356	HM	6	Yes
40	Gertrudis Felipe	357	HM	2	Yes
41	Shirley Barnhart	358	HM	2	Yes
42	Guy Eugenio	360	HM	6	Yes
43	Jim & Michelle Camit	361	HM	2	Yes
44	Louis Santiago	362	HM	3	Yes
45	Geraldine Canamay	363	HM	6	Yes

KAHUKU VILLAGE
Letter of Intent

#	Tenant	House #	Camp	Family Size	LOI Status
46	Magdalena Cacal	364	HM	1	Yes
47	Rosita Corpuz	366	HM	4	Yes
48	Anthony Pickard (Beatrice)	367	HM	5	No
49	Victor Daguio	368	NC	2	Yes
50	Joshua Primacio	369	NC	3	No
51	Milton Caulford	370	NC	5	Yes
52	Kaoru Miyoko Matsuda	371	NC	3	Yes
53	Junior Primacio	372	NC	3	No
54	Ernesto Camit	373	NC	4	Yes
55	Michael & Lynne Laguna	374	NC	2	No
56	Donald & Vanessa Cadina	451	OV	6	Yes
57	Emily Keil	453	OV	5	Yes
58	Desiree & Don Heder	454	OV	4	Yes
59	Dwayne Fely	455	OV	3	Yes
60	Richard Llanos	456	OV	7	Yes
61	Pedro Padua	457	OV	4	Yes
62	Diego & Johanna Tumacder	458	NC	2	Yes
63	Agipina & Wayne Aubrey	459	NC	2	Yes
64	Don Graycochea	468	OV	5	No
65	Jeri M.C. Tugman	469	OV	4	Yes
66	Reyna Masoe	470	NC	2	No
67	Wayne Tejada	471	NC	3	Yes
68	Rosalia Daguio	473	NC	3	Yes
69	Angel Adversalo	474	NC	2	No
70	R. Mollia Salanoa	479	NC	5	No
71	Margaret Primacio	480	NC	3	No
72	Stella Muilvai	485	NC	2	No
73	Rainbow School		C		
74	Commercial Lot		C		
	HW - Highway Makai				
	MC - Main Camp				
	OV - Oceanview				
	NC - New Camp				
	C - Commercial				

Appendix P

Resolution 06-032 Supporting
Preservation of Plantation Communities



RESOLUTION

SUPPORTING THE PRESERVATION OF RESIDENTIAL HOMES IN FORMER PLANTATION OWNED HOUSING AREAS AND URGING THE OWNERS OF LAND ON WHICH PRESENT OR FORMER PLANTATIONS ARE LOCATED TO SUBDIVIDE THE LAND AND ALLOW CURRENT TENANTS TO ACQUIRE OWNERSHIP OF THE PROPERTY.

WHEREAS, during Hawaii's plantation era, sugar and pineapple plantations constructed housing and related improvements for their workers; and

WHEREAS, living in these plantation houses became a unique way of life for residents of these communities; and

WHEREAS, some plantation towns, such as those in Kahuku, Waialua, Kunia, and Poamoho, are still occupied and functioning as housing areas for present and retired plantation workers; and

WHEREAS, in recognition of the historic and cultural significance of the plantation era, the city's development plans place an emphasis on preserving resources from that period in Hawaii's history; and

WHEREAS, for example, Section 3.7 of the Central Oahu Sustainable Communities Plan (SCP) provides general policies, planning principles, and guidelines for preservation and maintenance of the plantation villages at Kunia and Poamoho; and

WHEREAS, among the guidelines to implement the policies and planning principles for the Central Oahu Plantation Villages are:

- "Existing historic plantation houses should be rehabilitated as part of an assisted housing program."
- "Rental dwellings should be rehabilitated and converted for sale, giving preference to existing residents to minimize displacement and retain the sense of community."
- "Residential areas should be rehabilitated with an emphasis on affordable home ownership opportunities for existing residents.";

and



RESOLUTION

WHEREAS, similarly, the North Shore SCP provides guidelines for the preservation of the plantation town character of Waialua Country Town and states that "the scale and sense of Waialua as a small rural plantation town should be preserved and enhanced"; and

WHEREAS, however, with the termination of sugar and pineapple plantations due to changing economic times and changes in the ownership of the land on which the plantations are located, residents of the plantation towns, many of whom are on month-to-month tenancies, are faced with the prospect that they may be displaced and their plantation-era homes razed; and

WHEREAS, the Council recognizes the importance of preserving the plantation communities and providing for plantation workers who could be displaced from their homes without the development of affordable housing strategies to enable plantation housing residents to continue residing in their communities; now, therefore,

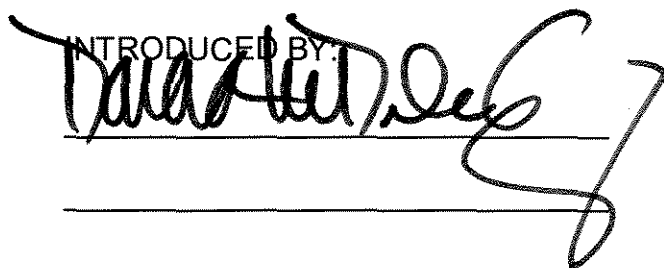
BE IT RESOLVED by the Council of the City and County of Honolulu that the Council hereby expresses its support for the preservation of residential homes in former plantation owned housing areas; and

BE IT FURTHER RESOLVED that the owners of land on which present or former plantations are located are urged to subdivide the land and allow current tenants to acquire ownership of the property; and



RESOLUTION

BE IT FINALLY RESOLVED that copies of this Resolution be transmitted to the George Galbraith Trust, Del Monte Fresh Produce (Hawaii), Inc., Dole Food Co. Hawaii, Castle & Cooke Hawaii, the Estate of James Campbell, Kahuku Villages Association, Inc., and the Poamoho Camp Community Association.

INTRODUCED BY:


DATE OF INTRODUCTION:

JAN 26 2006

Honolulu, Hawaii

Councilmembers

(OCS/012306/ct)