



DEPARTMENT OF
HOUSING AND HUMAN CONCERNS
COUNTY OF MAUI

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Deputy Director

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December 28, 2006

Ms. Genevieve Salmonson, Director
Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu, Hawaii 96813

Dear Ms. Salmonson:

SUBJECT: FINDING OF NO SIGNIFICANT IMPACT (FONSI) FOR
PROPOSED KULA AFFORDABLE SENIOR HOUSING PROJECT,
TMK 2-2-014:021, KULA, MAUI, HAWAII

The County of Maui, Department of Housing and Human Concerns (DHHC) and the State of Hawaii, Department of Transportation (the former approving agency) have agreed that the DHHC has greater oversight for the subject action. Therefore, the DHHC will serve as the approving agency for this project.

In this regard, the DHHC has reviewed the comments received during the 30-day public comment period which began on July 23, 2006, and has determined that the subject project will not have significant environmental effects and has issued a FONSI. Please publish this notice in the next available OEQC Environmental Notice.

We have enclosed a completed OEQC Publication Form and four (4) copies of the Final EA. Please call Mr. Edwin Okubo of our Housing Division at (808) 270-7351 if you have any questions.

Very truly yours,

ALICE L. LEE
Director

ALL:hs

Enclosures

c: Edwin Okubo, Housing Division (w/enclosures)
Michael T. Munekiyo, Munekiyo & Hiraga, Inc. (w/enclosures)
Ron Tsuzuki, State Department of Transportation (w/copy of
Final EA)

OFFICE OF ENVIRONMENTAL
QUALITY CONTROL
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2007-01-23- MA- FEA- KULA AFFORDABLE SENIOR HOUSING PROJECT JAN 23 2007

Final Environmental Assessment

PROPOSED KULA AFFORDABLE SENIOR HOUSING PROJECT (TMK 2-2-014:021)

Prepared for:

Kula Community Federal Credit Union

December 2006

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MUNEKIYO HIRAGA, INC.


Final Environmental Assessment

PROPOSED KULA AFFORDABLE SENIOR HOUSING PROJECT (TMK 2-2-014:021)

Prepared for:

Kula Community Federal Credit Union

December 2006


MUNEKIYO HIRAGA, INC.

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Executive Summary

Project Name: Kula Affordable Senior Housing

Type of Document: Draft Environmental Assessment

Legal Authority: Chapter 343, Hawai'i Revised Statutes

Agency Determination: Anticipated Finding of No Significant Impact

Applicable Environmental Assessment Review "Trigger": Use of State highway right-of-way for intersection improvements

Location: Maui Island
Waiakoa, Kula
TMK 2-2-014:021

Applicant: Kula Community Federal Credit Union
137 Kalepa Place
Kahului, Hawai'i 96732

Approving Agency: County of Maui^a
Department of Housing and Human Concerns
86 Kamehameha Avenue
Kahului, Hawai'i 96732
Contact: Ed Okubo
Telephone: (808) 270-7351

Consultant: Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawai'i 96793
Contact: Michael T. Munekiyo
Telephone: (808) 244-2015

Project Summary: The applicant is proposing to create a senior affordable housing complex on an approximately 1.69-acre parcel in Kula, Maui, Hawai'i. A total of 36 one-bedroom units, a

^aThe County Department of Housing and Human Concerns (DHHC) and the State Department of Transportation (the former approving agency) have agreed that the DHHC has greater oversight for this project. Therefore, the DHHC is now the approving agency for this project.

manager's unit, with laundry room and office, 44 parking spaces, and a 3,500 square foot community building with 750 square feet of office space will be built behind the existing Kula Gym, which is located on the same parcel. Attendant improvements will include grubbing, grading, installation of the access driveway, a retaining wall, subsurface drainage system, septic tanks and seepage pits, and landscaping.

I. PROJECT OVERVIEW

I. PROJECT OVERVIEW

A. PROPERTY LOCATION, EXISTING USE AND LAND OWNERSHIP

Kula Community Federal Credit Union (KCFCU) proposes to create an affordable senior housing project on 1.693 acres of land identified by TMK 2-2-014:021. See **Figure 1**, **Figure 2**, and **Figure 3**. Situated on the southwestern flank of Haleakala, the project site is currently undeveloped and vegetated with eucalyptus, pine trees and weeds at the upper elevation and pasture grass and weeds at the lower elevation. See **Figure 4**. The existing Kula (Waiakoa) Gym, which is leased and maintained by the County of Maui, is located at the eastern extent of the property. The gym will not be altered or physically affected by the proposed senior housing project.

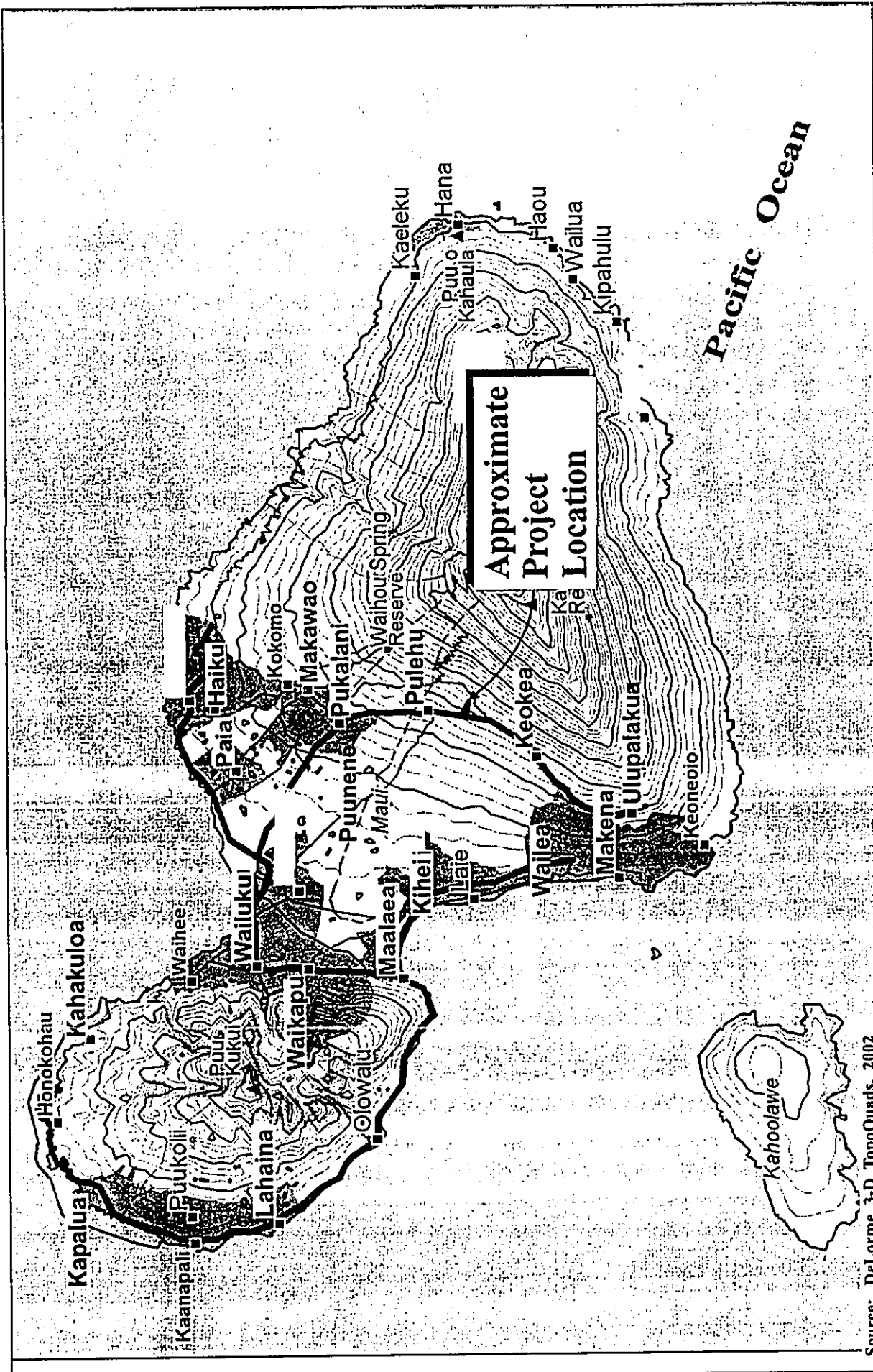
The property is bounded by Lower Kula Road to the east and Kula Highway to the west. Residential uses border the property to the north and south. Along Lower Kula Road, east of the property, are Cafe 808 and Morihara Store. The Kula Elementary School is located across Kula Highway, west of the property.

The land underlying the project site lies within the State "Urban" district and is designated for "Public/Quasi-Public" use by the Makawao-Pukalani-Kula Community Plan. County zoning for the property is "Public/Quasi-Public".

The Kula Community Credit Union is the fee simple owner of the property.

B. PROPOSED ACTION

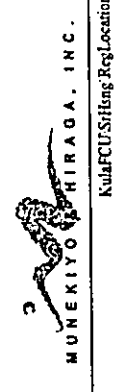
As previously noted, the proposed project will address the need for affordable rental housing in the Upcountry area. It will involve the construction of nine (9) buildings consisting of one-bedroom units for a total of 36 units, a separate building for the manager, laundry facility and office and a 3,500 square foot community building with 750 square feet of office space. See **Figure 5**, **Figure 6**, and **Figure 7**. Each one-bedroom unit will be approximately 686 square feet and include a living room, bathroom, kitchen and porch. The manager's building will consist of an office and laundry facility, with three (3) washers and three (3) dryers on the first floor. The manager's living unit will have one bedroom, a bathroom, a living room, a dining room, kitchen and porch. Two (2) parking stalls will be located beneath each



Source: DeLorme 3-D TopoQuads, 2002

Figure 1 Proposed Kula Affordable Senior Housing Project NOT TO SCALE
 Regional Location Map

Prepared for: Kula Community Federal Credit Union



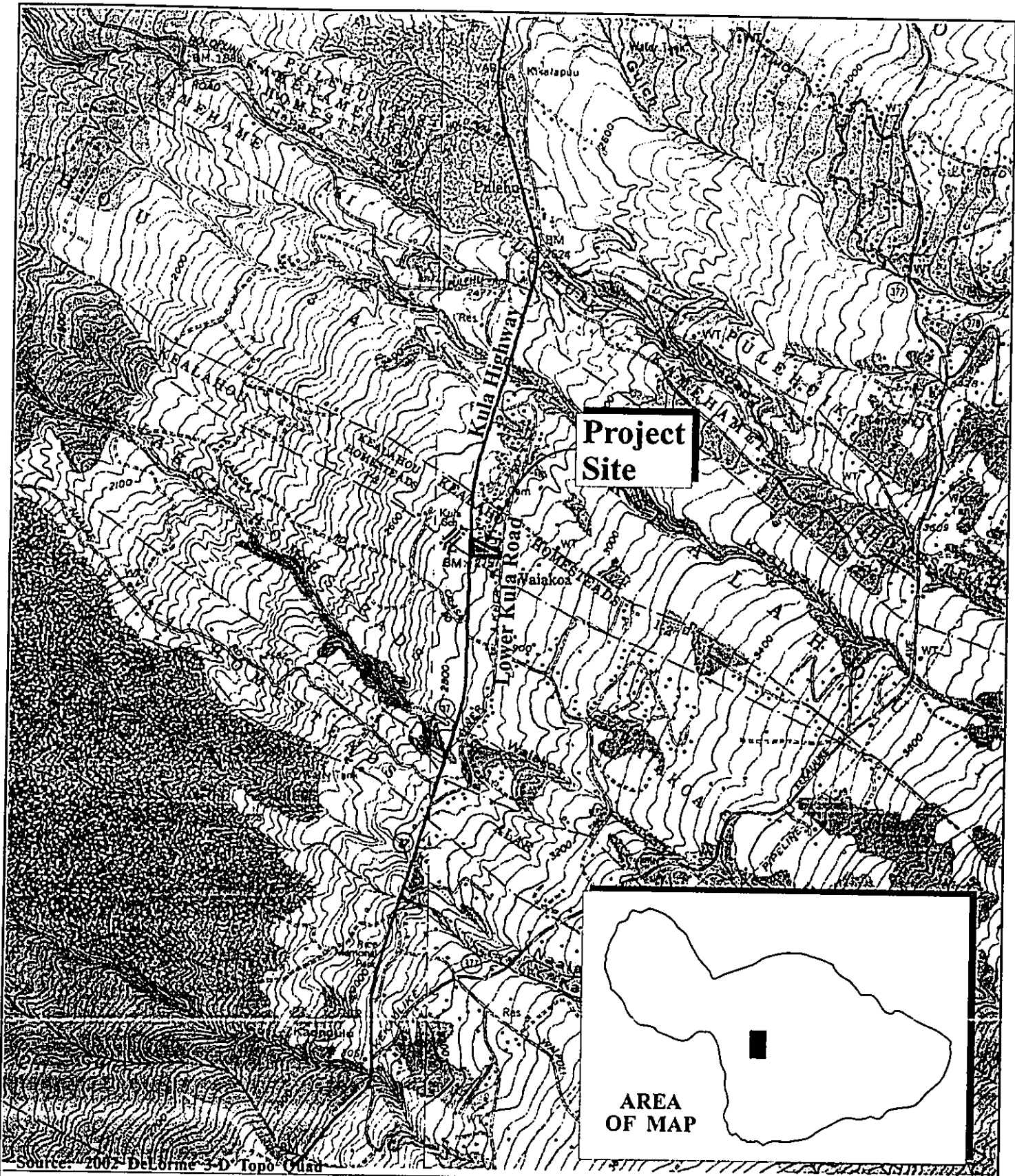


Figure 2 Proposed Kula Affordable Senior Housing Project
Project Location Map



Prepared for: Kula Community Federal Credit Union

MUNEKIYO HIRAGA, INC.

KulaFCU\$rl\$ng\$location

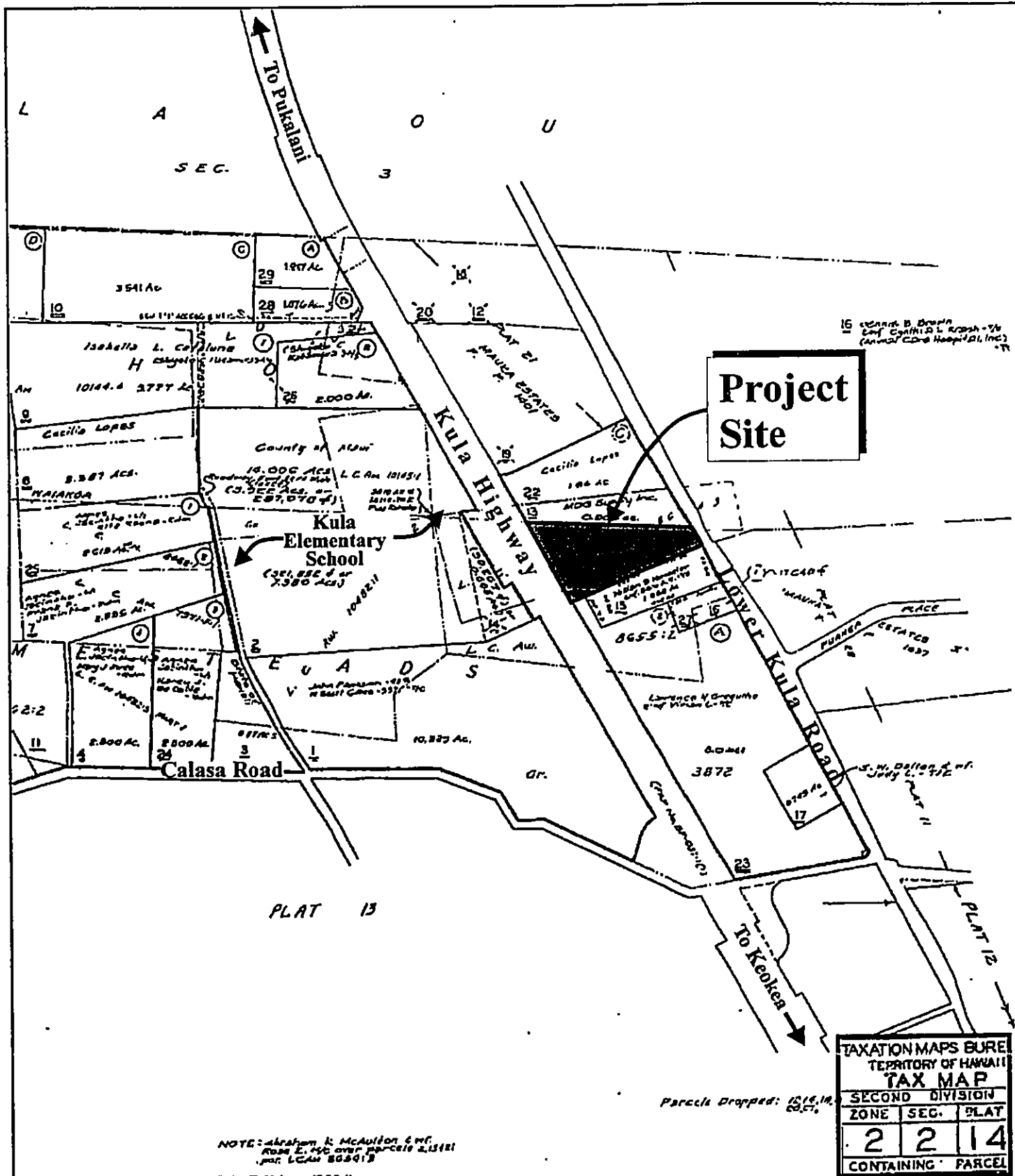
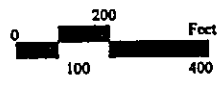


Figure 3 Proposed Kula Affordable Senior Housing Project Site Location Map



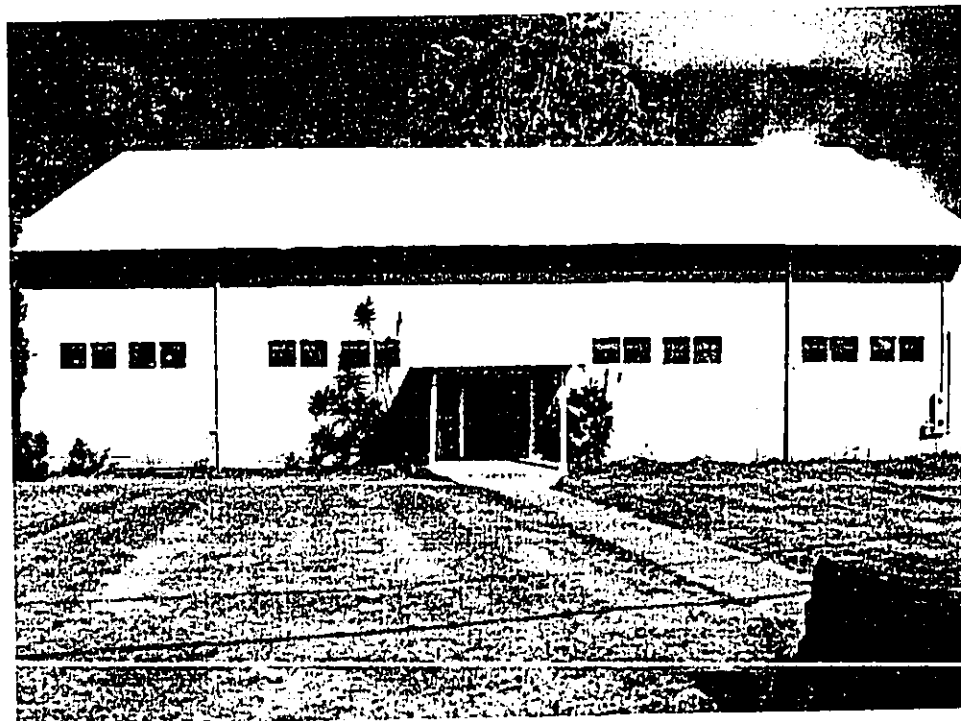
Prepared for: Kula Community Federal Credit Union



KulaFCU\$Hma\$SiteLoca



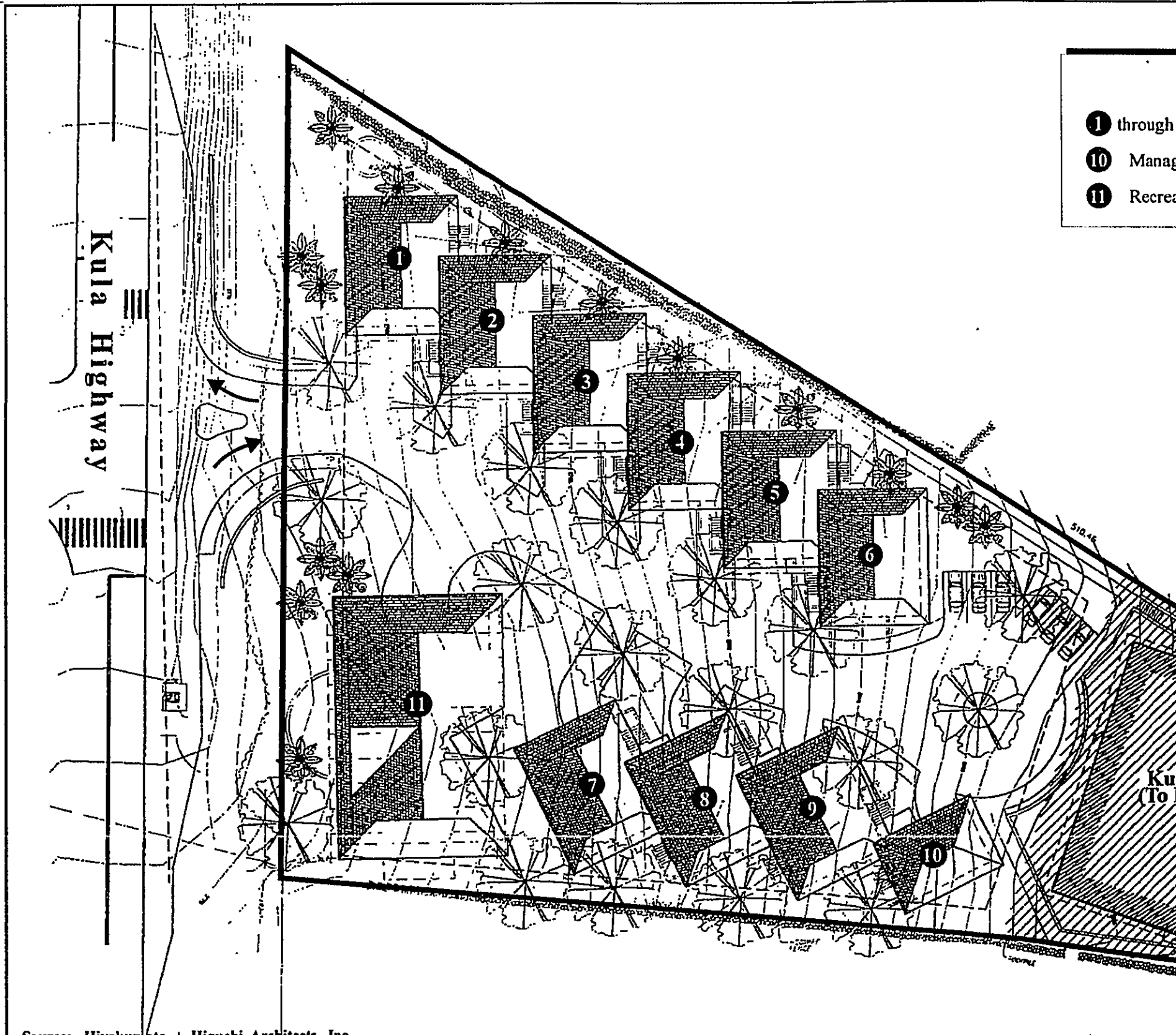
**Front View of Property from Kula
Elementary School Drop-off Exit**



Rear of Property at Kula (Waiakoa) Gymnasium

**Figure 4 Proposed Kula Affordable Senior
Housing Project
Site Photos**

NOT TO SCALE



Source: Hiyakumoto + Higuchi Architects, Inc.

Figure 5

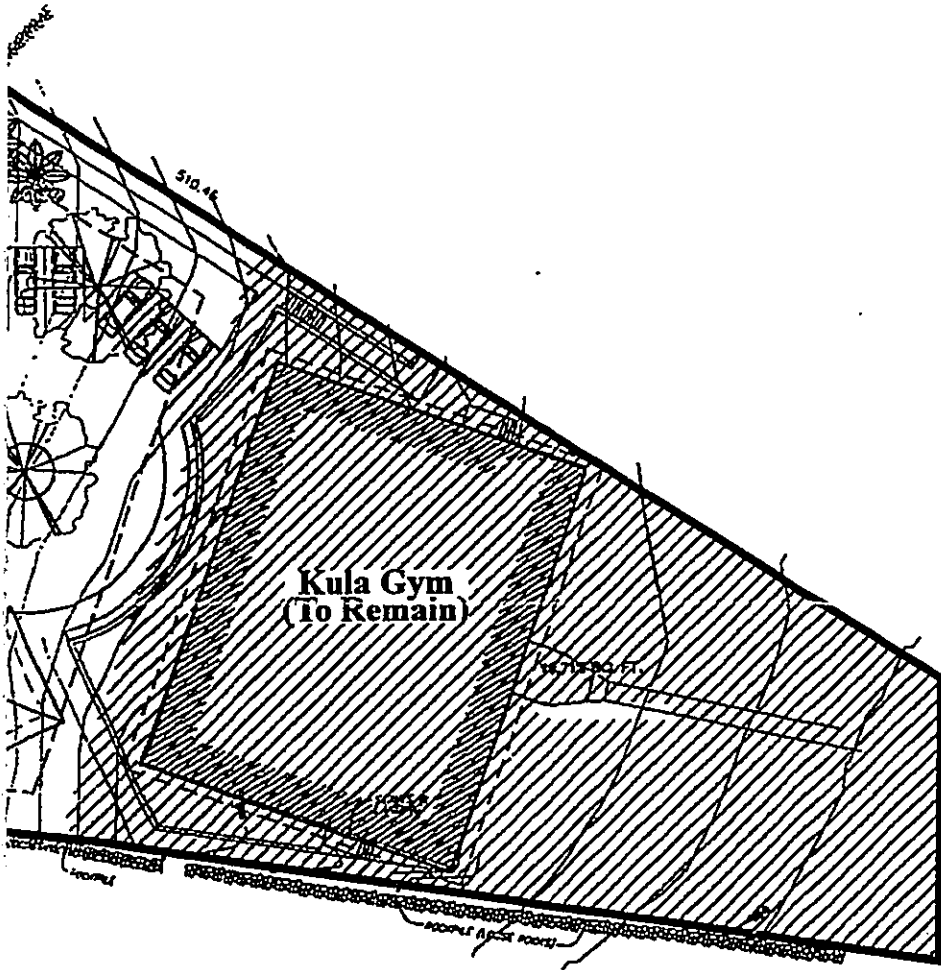
Proposed Kula Affordable Senior Housing Project Conceptual Site Plan



Prepared for: Kula Community Federal Credit Union

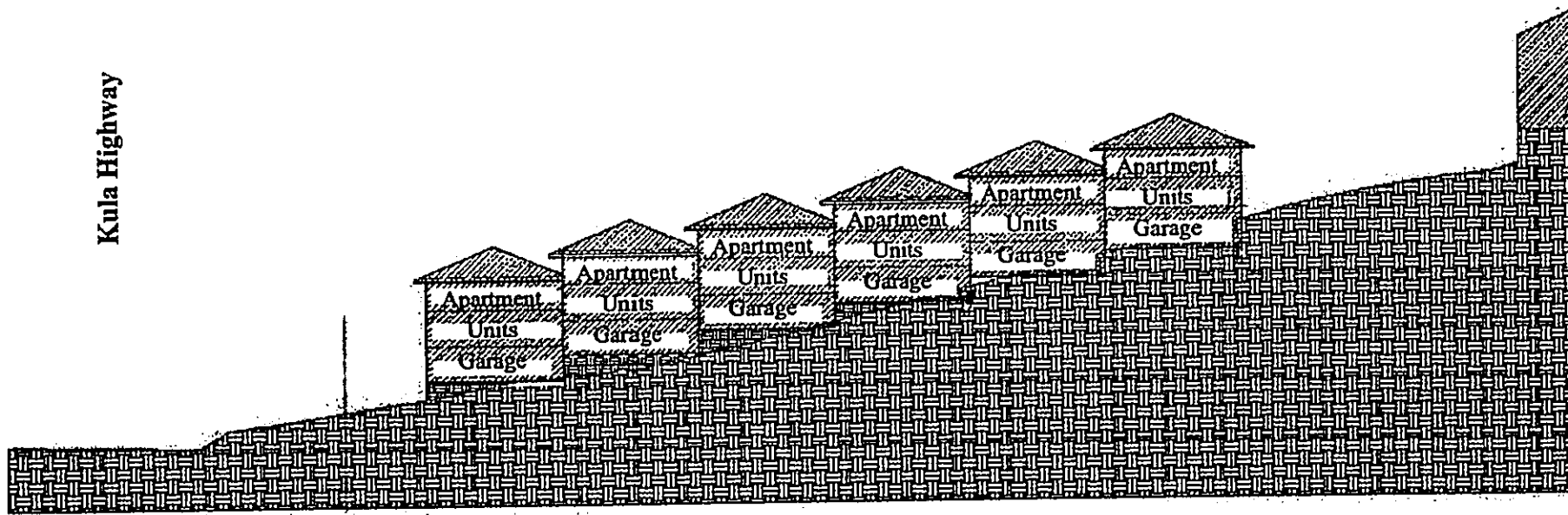
KEY

- ① through ⑨ Apartment Buildings (36 Units Total)
- ⑩ Manager's Unit, Laundry, and Office
- ⑪ Recreation Building



using Project

NOT TO SCALE



Site Longitudinal Section

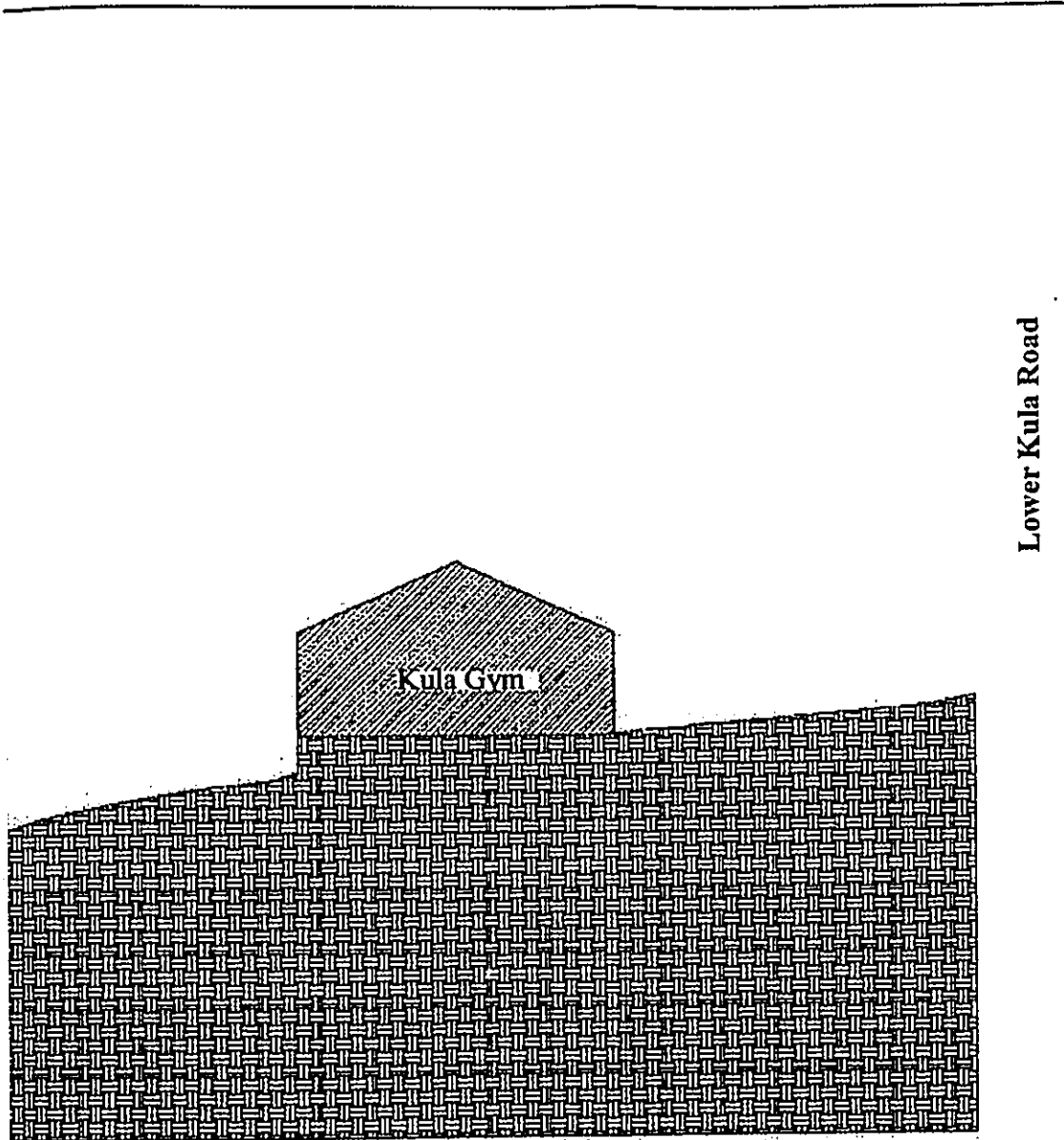
Source: Hiyakumoto + Higuchi Architects, Inc.

Figure 6

**Proposed Kula Affordable Senior Housing Project
Exterior Elevation**



Prepared for: Kula Community Federal Credit Union

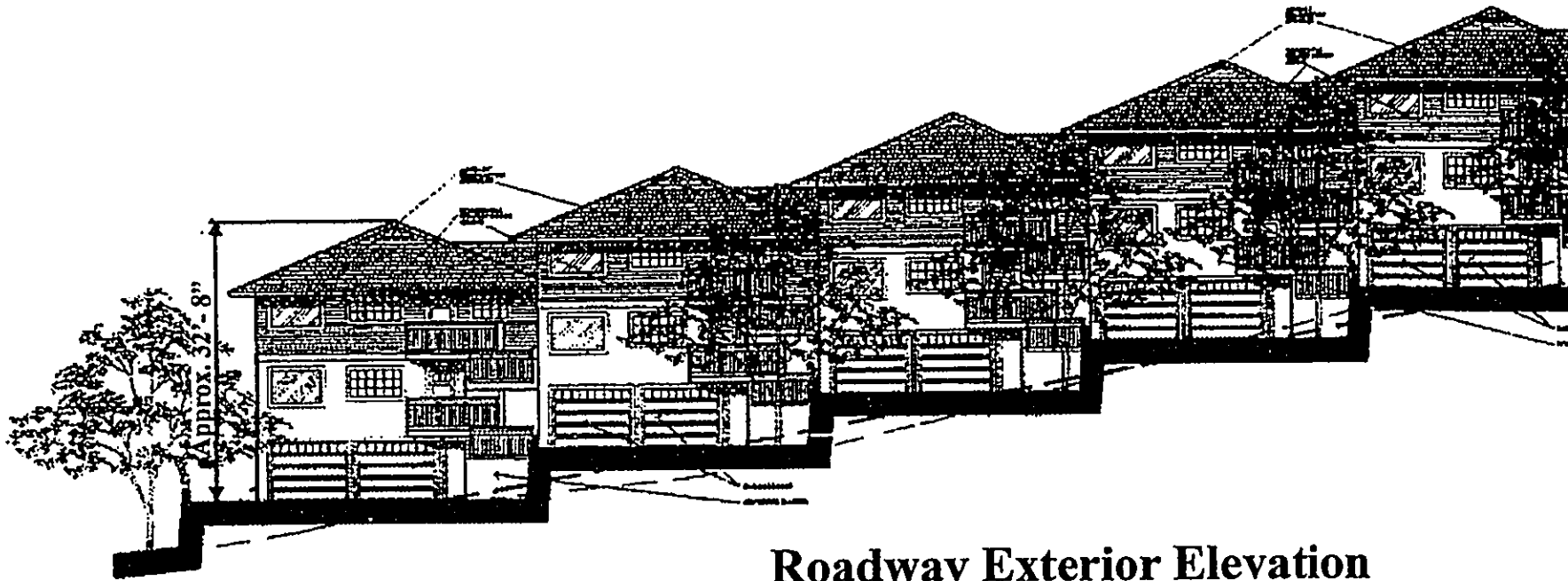


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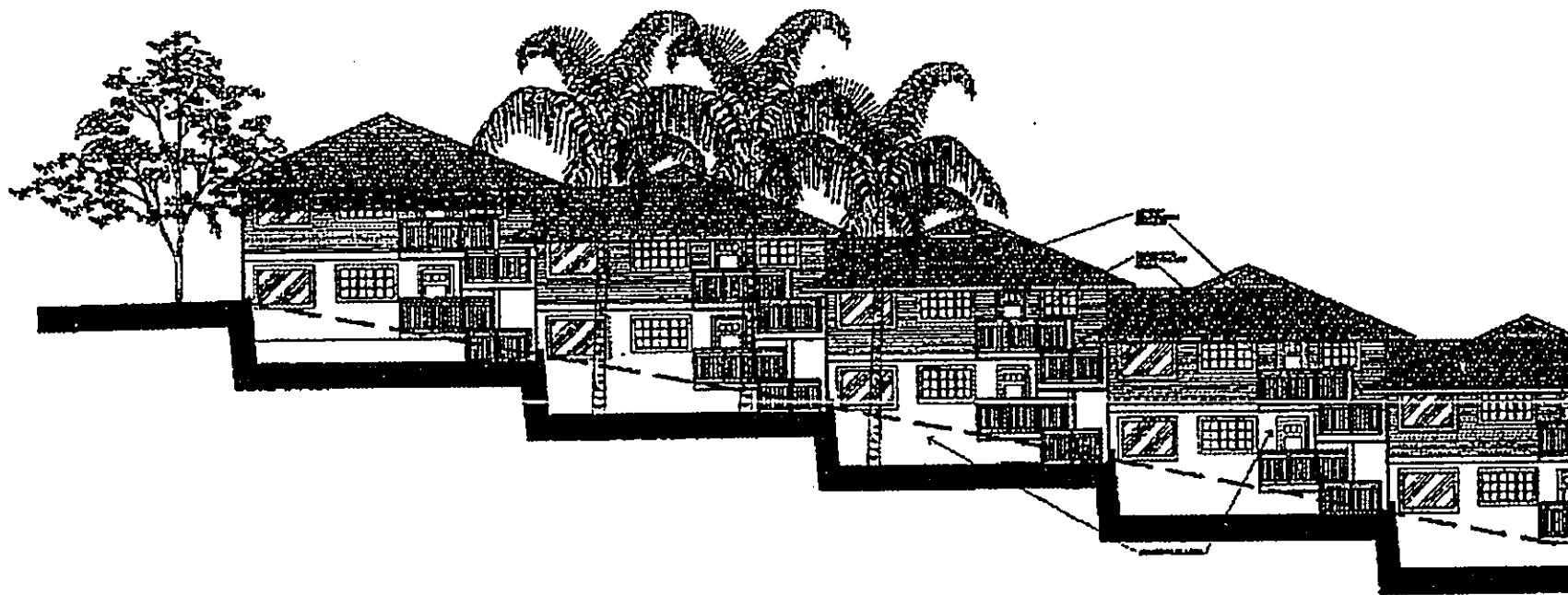
Housing Project

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Roadway Exterior Elevation



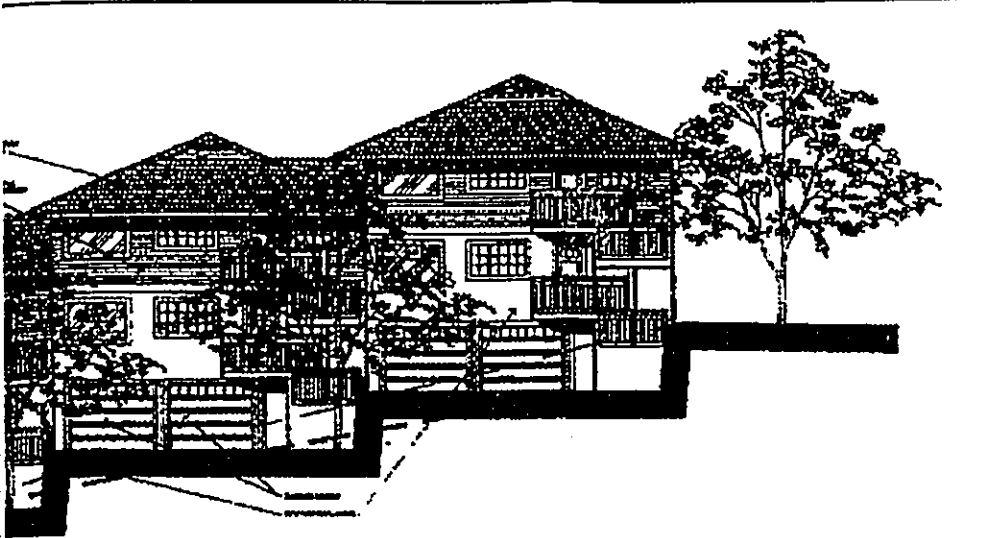
Pasture Side Exterior Elevation

Source: Hiyakumoto + Higuchi Architects, Inc.

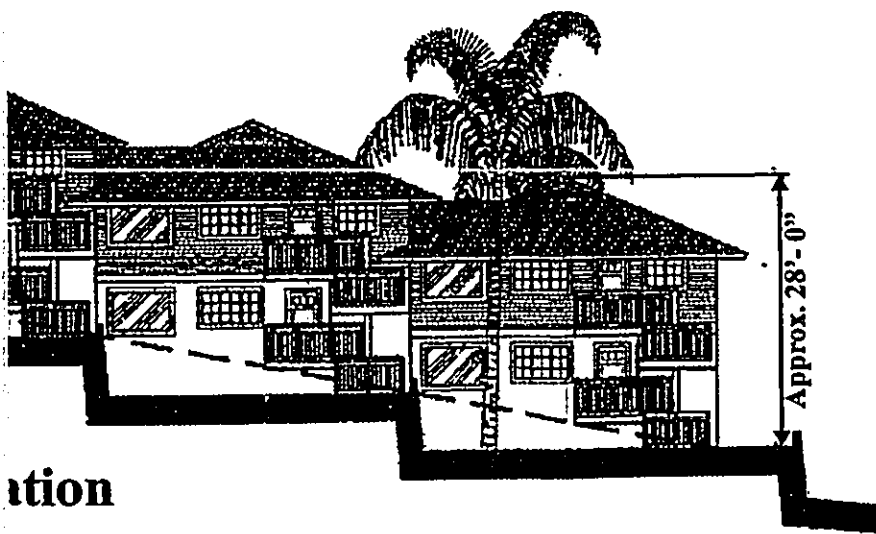
Figure 7

Proposed Kula Affordable Senior Housing Project
Exterior Elevation

Prepared for: Kula Community Federal Credit Union



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using Project

NOT TO SCALE


MUNEKIYO HIRAGA, INC.

building and there will be additional parking beneath the community center. There will be six (6) guest parking stalls located near the gym. A total of 44 paved stalls will be provided. Vehicular access will be off of Kula Highway.

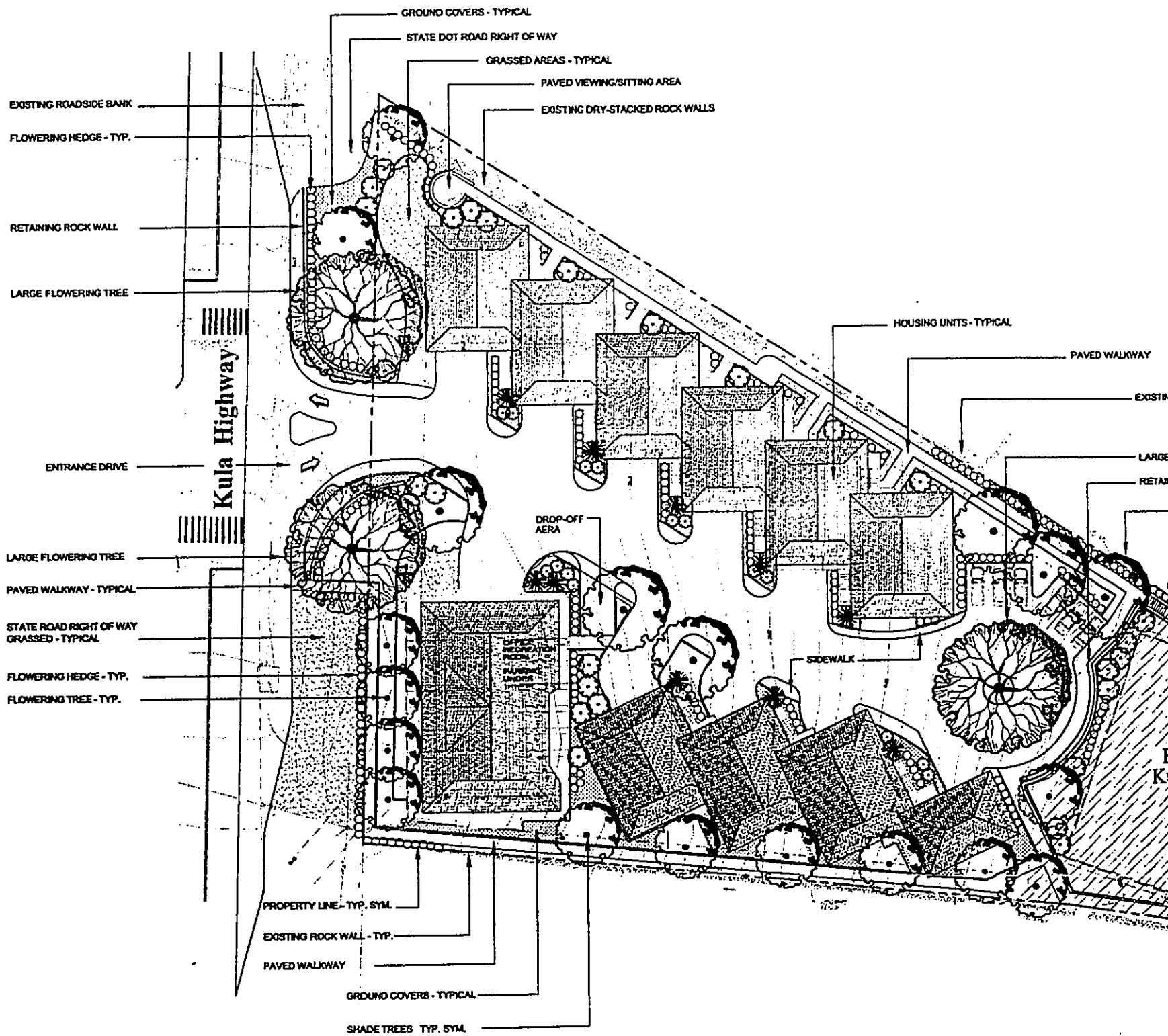
In addition, site improvements, such as grubbing, grading, installation of the access driveway, a retaining wall, subsurface drainage system, septic tanks and seepage pits are also planned. There will also be landscaping. See Figure 8. The applicant intends to retain the ahupua'a walls that bound the property to the north and south, as well as the Kula Gym, which sits on the property to the east and is currently leased by the County of Maui.

The units are planned to be marketed as affordable rental units, with rent estimated at \$1,100.00 per month to those who are capable of living independently. To qualify for residency, tenants will have a household income that does not exceed 90 to 100 percent of Maui County's median income, as established by the U.S. Department of Housing and Urban Development (HUD). According to HUD, Maui County's median income for 2005 is \$65,700.00. Priority consideration will be given to members of the Credit Union or those who reside within the Credit Union service area, which comprises a 12-mile radius from the Kula Post Office.

The estimated cost of the proposed project is approximately \$10.8 million. Construction is anticipated to commence upon receipt of all applicable permits and is expected to take about one (1) year.

C. PROJECT NEED

As of November 2005, there were approximately 567 affordable independent-living elderly housing units on the island of Maui. Hale Mahaolu operates 467 of the units, distributed among six (6) facilities, including three (3) in the Kahului area and one (1) each in Makawao, Lahaina and Waiehu. In addition, the State of Hawai'i Housing and Community Development Corporation of Hawai'i owns and manages the 42-unit Piilani Elderly Housing Project, which is located in Lahaina, Maui. The Hale Mahaolu facilities are all operating at full capacity. The average length of time on a wait list for the Hale Mahaolu facility in Makawao is approximately five (5) years. The average length of time for a wait list candidate usually ranges between two (2) to three (3) years, depending on the individual facility and the type of unit desired.



Source: Hiyakumoto + Higuchi Architects, Inc./Russel Gushi

Figure 8

Proposed Kula Affordable Senior Housing Project
Schematic Landscaping Plan

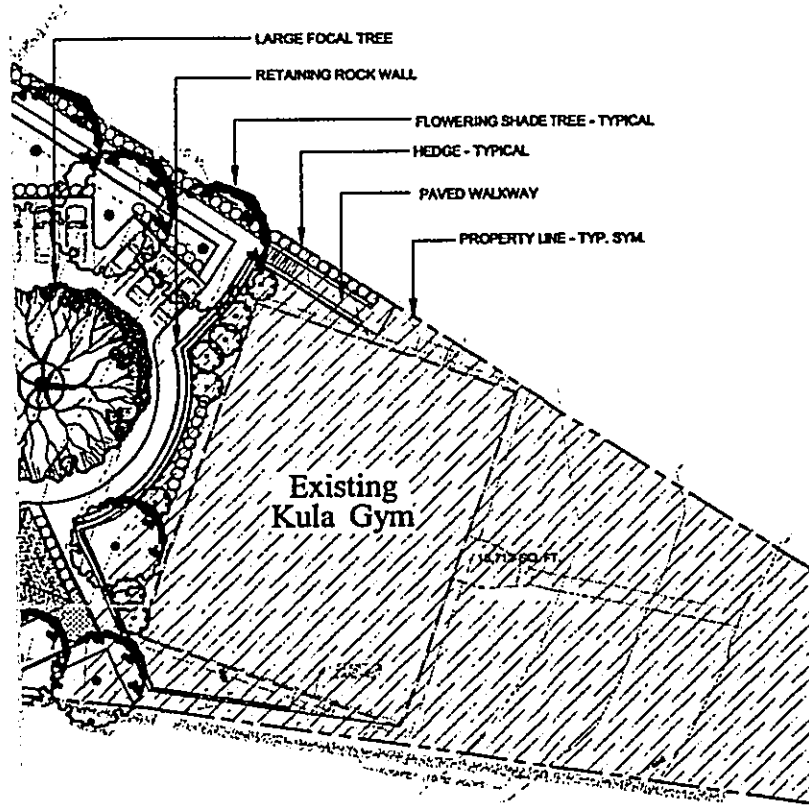


Prepared for: Kula Community Federal Credit Union

TYPICAL

PAVED WALKWAY

EXISTING DRY STACK ROCK WALL - TYPICAL



ousing Project

NOT TO SCALE


MUNEKIYO HIRAGA, INC.

Other senior housing projects on Maui include the Lokenani Hale project in Wailuku consisting of 61 units, which opened in December 2005 and the Hale Mahaolu Ehiku project in Kihei, which will consist of 111 units. The first phase of the Ehiku project will consist of 21 units and is expected to open in January 2007.

Available data from the U. S. Census 2000 and the County of Maui Office of Economic Development indicate the following:

- The County of Maui's total population in 2000 was 128,094. Of the island's total population, there were 14,629 residents ages 65 and older, which accounted for 11 percent of the total population. In the 60 to 64 year age group, there were 4,807 residents;
- In 2000, approximately 36 percent (3,125) of 8,675 elderly householders (65 year and older) reported income of less than \$25,000.00 per year, near HUD's current Very-Low Income level of \$23,750.00; and
- In 2000, approximately 22 percent (1,924) of elderly householders (65 years and older) were renting living units.

The population of the cohort ages 65 years and older is expected to increase to 17,427 by the year 2010 and 20,249 by the year 2020 (SMS, 2002).

Given current and projected demographics, the demand for elderly affordable units will continue to increase. Currently, no senior housing projects are being planned for the Upcountry area. This proposed project will help to alleviate demand for such housing.

D. REGULATORY CONTEXT

The County of Maui's Department of Housing and Human Concerns has certified the proposed Kula Affordable Senior Housing project as meeting the criteria for a Section 201H, Hawai'i Revised Statutes (HRS) project. Section 201H, HRS promotes the delivery of affordable housing by allowing the exemption of endorsed projects from:

...all statutes, ordinances, charter provisions, and rules of any governmental agency relating to planning, zoning, construction standards for subdivisions, development and improvement of land, and the construction of units thereon.

As such, a Section 201H application will be filed with the Maui County Council to seek exemptions from the Community Plan Amendment and Change in Zoning processes, as well

as other County requirements to support the timely implementation of the project, without compromising public health, safety or welfare considerations. See proposed exemptions in Appendix "A".

**II. DESCRIPTION OF THE
EXISTING
ENVIRONMENT, IMPACTS
AND MITIGATION
MEASURES**

II. DESCRIPTION OF THE EXISTING ENVIRONMENT, IMPACTS AND MITIGATION MEASURES

A. PHYSICAL SETTING

1. Surrounding Land Uses

a. Existing Conditions

The project site is located in the Waiakoa, Kula region on the western slope of Haleakala. The Kula area is characterized by a combination of rural and agricultural uses. The produce and flowers grown in Kula are exported to domestic, mainland and international markets.

The project site is surrounded by residential uses to the immediate north and south. A restaurant, Café 808, lies due north of the Kula Gym. Kula Elementary School is located west of the property, across Kula Highway. Lower Kula Road and Morihara Store lie east of the property. The Animal Care and Wellness Center and a glass-blowing operation lie south of the gym.

The Kula Fire Station and Kula Park are located southwest of the project area, along Kula Highway. The Kula Community Center is about 0.25 mile away and the Kula Hospital lies south of the property, approximately 7.5 miles from the proposed project area.

b. Impacts and Mitigation

The use of the property for a proposed affordable senior housing project would be functionally compatible with surrounding uses. The project site's proximity to Cafe 808 and Morihara Store would not only be advantageous to residents who would not need to travel far for meals or goods, but it would be beneficial to the businesses that would receive their patronage.

2. Climate, Topography and Soil Characteristics

a. Existing Conditions

Kula's climate is typical of most mountainous areas in Hawai'i, with conditions varying by altitude and wind direction. Low land areas are generally typified by arid to semi-tropical climate, while higher elevations are characterized by more temperate conditions.

The Kula region is relatively dry, with rainfall of 20 to 30 inches per year. Generally, temperatures range from low 50 degrees Fahrenheit during the winter, to mid-80 degrees Fahrenheit during the summer. Maui is cooled by northeast tradewinds most of the year. These winds are constant during the spring and summer months. During the winter months, the island is often affected by Kona weather conditions, ranging from strong southerly winds with heavy rains, to calm, humid, or rainy weather.

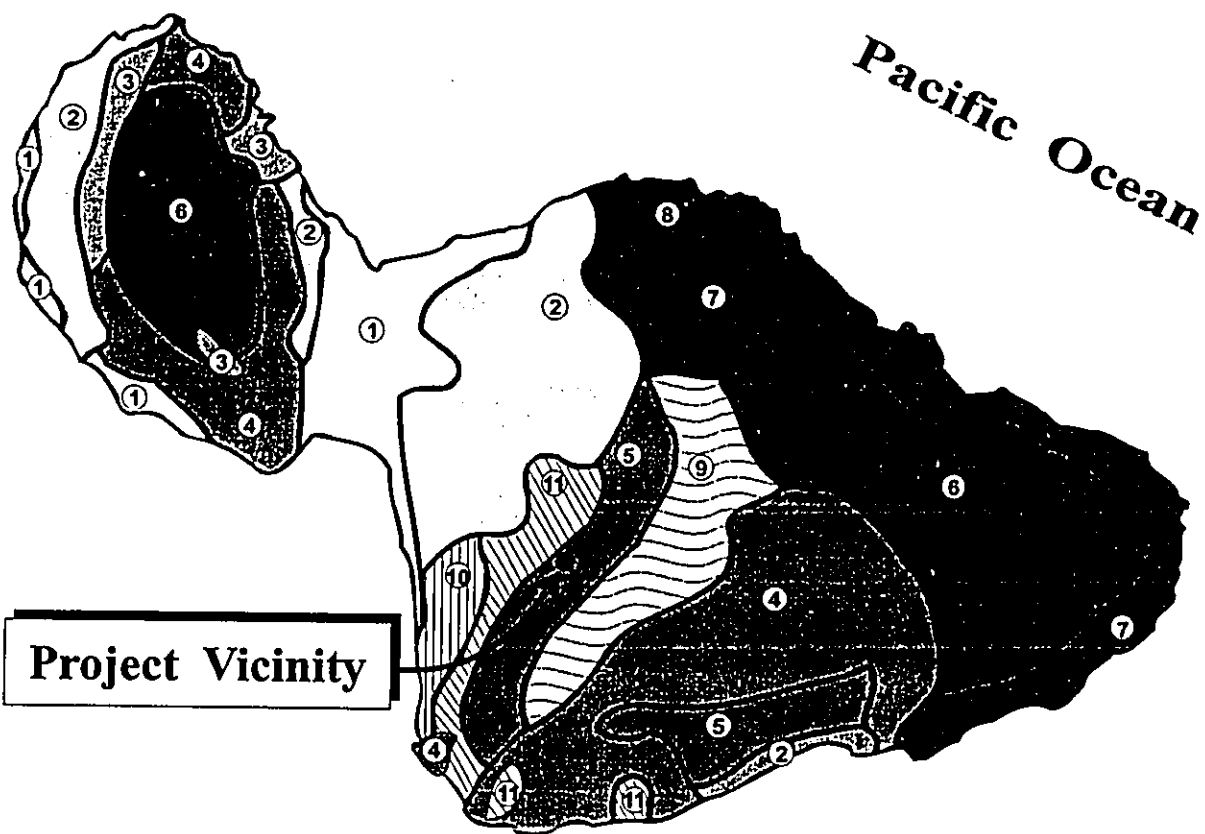
Located on the southwestern flank of Haleakala, the project site slopes away from Lower Kula Road in a northwesterly direction at an average grade of approximately 20 percent. Elevation at the site ranges from 2,769 to 2,844 feet above mean sea level (amsl). See Appendix "B".

Underlying the site and surrounding lands is soil belonging to the Puu Pa-Kula-Pane association. See Figure 9. The Puu Pa-Kula-Pane soil association is found on the intermediate and high uplands, and consists of deep, gently sloping to steep, well-drained soils that have a medium or moderately textured subsoil. This association is used for orchards, pastures, truck crops, and wildlife habitat. The soil consists of Kula Cobbly Loam with 12 to 20 percent slopes (KxaD). See Figure 10. The surface layer of the soil is dark reddish-brown loam and subsoil is dark-reddish brown loam, silt loam and silty clay loam that has subangular, blocky structure. While the surface soil is slightly acid, the subsoil is slightly acid to neutral. There is medium runoff and moderate hazard of erosion.

A soils investigation was conducted at the proposed project site by Island Geotechnical Engineering, Inc. See Appendix "C". Seven (7) test pits were excavated 2.33 to 9.5 feet below the existing grade to assess subsurface conditions. The test pits revealed the site is covered with one to 5.5 feet of

LEGEND

- | | |
|---|---|
| <ul style="list-style-type: none"> ① Puhiu-Ewa-Jaucas association ② Waiakoa-Keahua-Molokai association ③ Honolua-Olelo association ④ Rock land-Rough mountainous land association ⑤ Puu Pa-Kula-Pane association ⑥ Hydrandepts-Tropaquods association | <ul style="list-style-type: none"> ⑦ Hana-Makaalae-Kailua association ⑧ Pauwela-Haiku association ⑨ Laumaia-Kaipoi-Olinda association ⑩ Keawakapu-Makena association ⑪ Kamaole-Oanapuka association |
|---|---|



Source: USDA, Soil Conservation Service

Figure 9 Proposed Kula Affordable Senior Housing Project
Soil Association Map

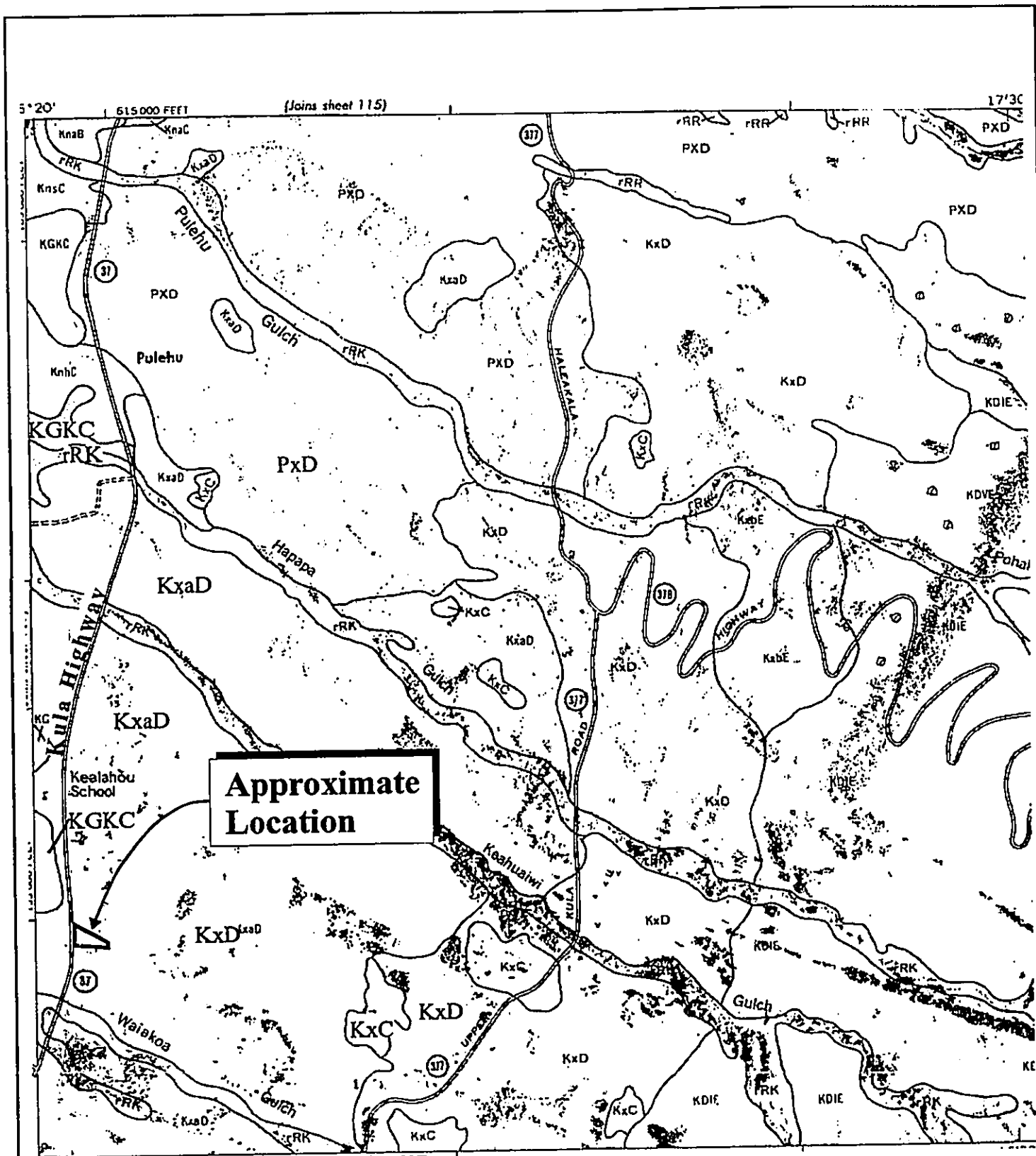
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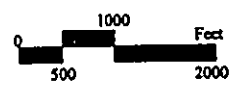
MUNEKIYO HIRAGA, INC.

KulaFCUS/HiragaSOILS



Source: USDA, Soil Conservation Service

Figure 10 Proposed Kula Affordable Senior Housing Project Soil Classifications Map



Prepared for: Kula Community Federal Credit Union

MUNEKIYO HIRAGA, INC.

KulaFCU/Sr/Hang/Soils/Class

very soft to very stiff silt and sandy silt underlain by moderately dense to very dense granular soils, such as gravel and cobbles. In 6 of the 7 pits, at the 9.5 foot depth level, basalt rock was discovered and could not be penetrated. No groundwater was encountered in the test pits.

b. **Impact and Mitigation**

Given the property's topography, grading will be required for installation of building pads and compliance with criteria established by the Americans With Disabilities Act. To achieve an average finished slope of 13 percent of the driveway, with 12 percent in front of the building, 18 percent between driveway approaches and 6 percent at the turnaround, a cut as deep as 28 feet will be required. Refer to **Appendix "B"**. The grading will require the installation of retaining walls behind the Kula gym and along the northern and southern property boundaries.

Based on the findings and observations of subsurface soil conditions, Island Geotechnical Engineering, Inc. concluded that the proposed structures can be supported on spread or continuous footings. Refer to **Appendix "C"**. It was recommended that onsite silt soils be removed to a depth of 1.5 feet below existing grade, following clearing and grubbing of the site in building areas. After removal of the silt, building pads should be proof-rolled with a sheepsfoot roller weighing not less than 15,000 pounds, to compact soft soils until a firm or unyielding surface has been achieved, as determined by the project geotechnical engineer. Should soft soils encountered during proofrolling not be capable of being compacted, it was recommended that they be removed and replaced with properly compacted structural fill material. It was also suggested that the removed silt be used to fill in parking lots or landscaped areas. Should excavation below the 9.5 foot depth, through the basalt rock, be required, it was stated that it will likely involve removal via heavy equipment or hoerammimg.

The proposed project is not anticipated to have any substantial adverse impact on climate, topography or soil conditions. To prevent soil erosion during site work, the applicant will implement Best Management Practices, such as construction of drainage basins prior to mass grading for use as temporary sediment catchments; installation of a dust control fence, silt fence, gravel bag berms or other sediment-trapping devices downstream; diversion of

storm runoff from graded areas through use of sand bag berms or lined temporary swales; and paving and grassing of exposed areas and permanently landscaping as soon as grading is completed. To minimize soil erosion, the contractor will be required to submit a soil erosion control plan prior to issuance of a grubbing and grading permit. Because the graded area is expected to be larger than 1.0 acre, the applicant will obtain a National Pollutant Discharge Elimination System (NPDES) General Permit Coverage Authorizing Discharges of Storm Water, prior to commencement of construction activity, as required. The applicant will adhere to Island Geotechnical Engineering, Inc.'s recommendations during construction activity.

3. Flood and Tsunami Hazards

a. Existing Conditions

According to the Federal Emergency Management Agency's Flood Insurance Rate Maps for the area, the project site is situated in Zone C, an area of minimal flooding. See Figure 11. The property is located upland, away from tsunami inundation areas.

b. Impact and Mitigation

The use of the subject property for an affordable senior housing project should not pose a flood. As will be discussed in Section "D" of this chapter, post-development drainage mitigation measures will be implemented to ensure that adjacent and downstream properties will not be adversely affected by the proposed action. Because the project site is located upland, there are no threats to the surrounding area from coastal wave action.

4. Flora and Fauna

a. Existing Conditions

The property is grassed and has been overrun by scrub vegetation, consisting of weeds, eucalyptus and pine trees. The grass is typical of pasture land. There are no known rare, threatened or endangered species of plants on the property.

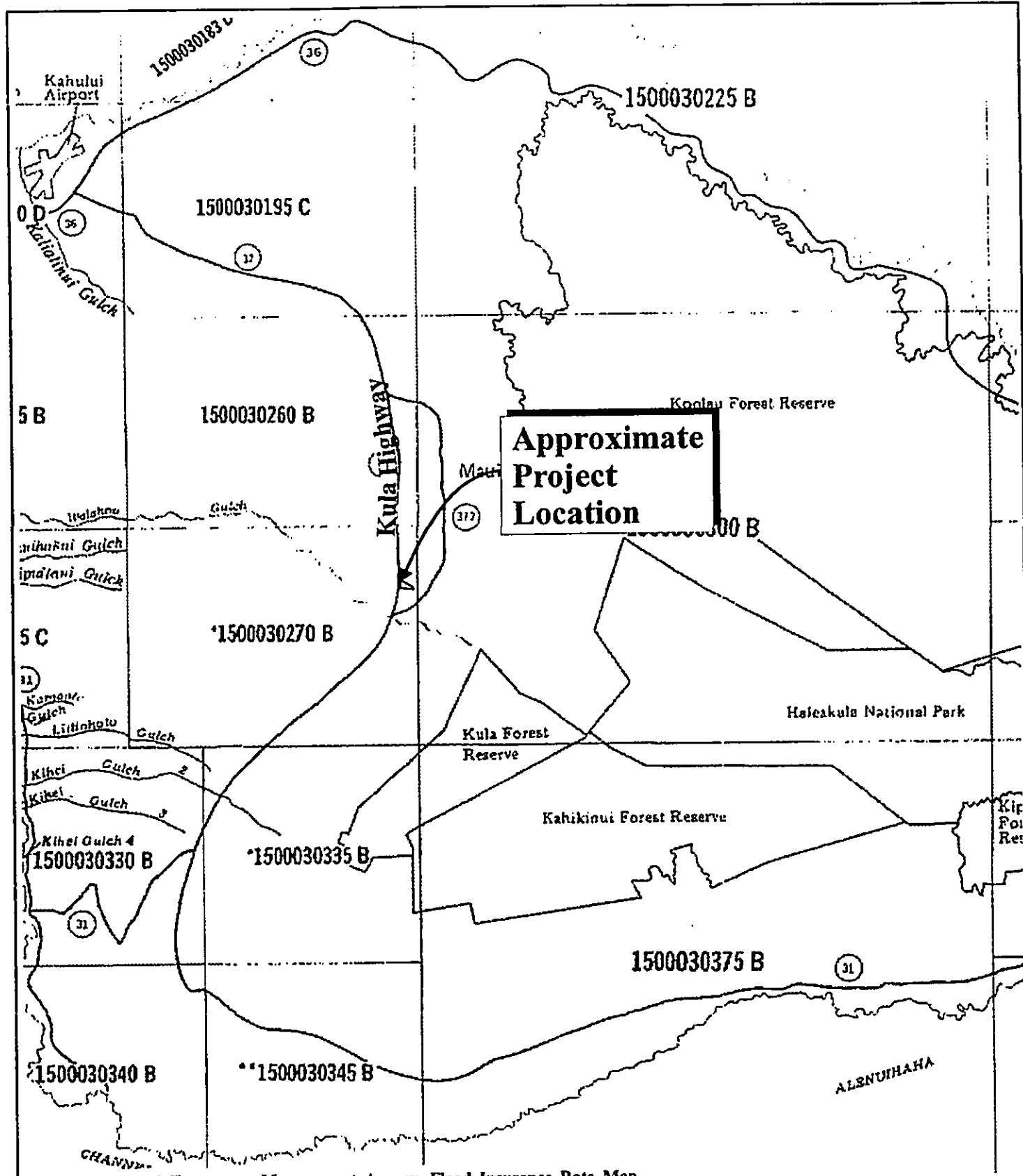


Figure 11 Proposed Kula Affordable Senior
Housing Project
Flood Zone Designation Map

NOT TO SCALE



Prepared for: Kula Community Federal Credit Union

MUNEKIYO HIRAGA, INC.

KulaFCUSrHsg\FloodZone

Typical of the Upcounty region, animal life in the area include cats, dogs, rats and mongoose. Avifauna include the mynah bird, francolins and the short-eared owl, known as pueo. There are no known rare or endangered species of fauna or avifauna in the vicinity of the project site.

b. Impact and Mitigation

There are no known rare, threatened or endangered species of plants on the property. Further, there are no known rare or endangered species of fauna or avifauna in the vicinity of the project site. Accordingly, the proposed development is not anticipated to have an adverse impact on the natural environment.

5. Archaeological Resources

a. Existing Conditions

An Archaeological Inventory Survey of the project site was conducted by Xamanek Researches, LLC. See **Appendix "D"**. The inventory survey included historic background research and settlement pattern research, a complete pedestrian survey of the project area, subsurface testing and reporting.

Two (2) cultural resources were documented during this survey. One of them, Site 5800, consists of ten (10) features, six (6) of which are possible pre-contact features and four (4) of which are post-contact ones. The pre-contact features include a probable ahupua'a wall and five (5) agricultural terraces. They are believed to have possibly been utilized and/or modified during the post-contact period for private and commercial agricultural purposes. The post-contact features are a boundary rock wall, historic habitation terrace and two (2) planting terraces. The other cultural resource, Site 5824, is the Waiakoa Gymnasium, which was built in the late 1930s and is still in use.

According to significance criteria of the Rules Governing Procedures for Historic Preservation Review (DLNR 1996; Chapter 275), both Site 5800 and Site 5824 could be considered significant because of their potential to yield information about the prehistory and history of Hawai'i. The gym facility,

Site 5824, could also be deemed significant under another criteria, relating to cultural value, due to its importance to the community. Refer to Appendix "D".

b. **Impact and Mitigation**

Despite the existence of the two (2) sites, no further work, such as data recovery, was recommended due to the thorough documentation on Site 5800, the fact that the parcel was impacted in the past five (5) to ten (10) years by bulldozing of large wattle trees, a lack of indigenous Hawaiian cultural materials on the surface and in most subsurface tests, and the small size of the post-contact and pre-contact agricultural features onsite as compared to other areas. Preservation of the rock walls that bound the property to the north and south was recommended. It should be noted that the applicant will retain the gym and intends to renew its lease for use with the County of Maui, Department of Parks and Recreation. Precautionary monitoring was recommended in case subsurface features and/or human remains are identified onsite. An archaeological monitoring plan will be prepared and submitted to the State Historic Preservation Division for approval. Should any archaeological or cultural materials or cultural materials be encountered during construction activities, all work in the vicinity of the find will cease and the State Historic Preservation Division will be contacted to establish appropriate mitigation measures in accordance with Chapter 6E, Hawai'i Revised Statutes.

6. **Cultural Impact Assessment**

Historic Context

During the pre-contact and early contact periods, Kula was primarily an area for farming. Dryland taro patches grew in elevations up to 3,000 feet. Farmers were reliant on growth of sweet potatoes and when crops failed due to caterpillars, blight, frost or sun, people in Makawao and Kula suffered from famine.

The arrival of whalers in the 1840s stimulated great demand for Irish and sweet potatoes. Potatoes were taken to Lahaina and sold aboard ships. The California gold rush also resulted in great demand from prospectors for potatoes, other vegetables, sugar, molasses and coffee. Farmers were doing so well that many Hawaiians were

going into business for themselves, shipping their goods to San Francisco. Maui fields were referred to as "Nu Caliponi" or "New California." When prices dropped, Hawaiians lost interest in growing potatoes.

In the 1840s, many Chinese from Honolulu, Kohala and China moved to the region and acquired land by lease or deed from Caucasian ranchers or Hawaiian homesteaders for farming. The Territorial government leased the land to ranchers who then subleased to the Chinese. In addition to Irish potatoes, they planted corn, beans, onions, Chinese cabbage, round cabbage, sweet potatoes, wheat and other grains, and cotton. Farmers often bartered their farm produce for payment on leases, in lieu of monetary transactions. Bartering was a common practice. In the Kula area, there were three (3) stores that often bartered for goods on other islands.

During the mid-19th century, the Chinese population grew. Kula consisted of Chinese and English schools, Christian churches, a Chinese society, gambling houses, opium dens, general stores, farms and cattle ranches. Keokea was often referred to as "Chinatown" and many would travel to the area on Sundays and holidays from the outlying areas of Kanaio, Ulupalakua and Waiakoa.

In the 1880s, large sections of crown land in lower Kula were leased for grazing for the booming cattle industry. Around the end of World War I, the Territorial government released a large amount of land to the public for purchase. Homestead lands were available to all American citizens at least 21 years old. As a result of the policy, the Chinese population began to decline. In addition to loss of land to parceling, the Chinese population left the area due to severe drought that devastated crops and livestock, soil depletion due to years of harvesting and tilling and a lack of educational opportunities.

Since the late twentieth century, most of the land in the Waiakoa, Kula area served as farm land (Rosendahl, 1989).

Cultural Perspectives

To assess the cultural impact associated with the proposed project, two (2) interviews were conducted with individuals familiar with the area and long-time residents. A summary of the interviews conducted with Natsue Kametani, Moses Moki Medeiros and Stanley H. Raymond are presented below.

Natsue Kametani

The interview was conducted via telephone conversation on October 13, 2005 and at Mrs. Kametani's residence on Kamehameiki Road on October 21, 2005.

Natsue Kametani, formerly Natsue Yokoyama was born in Waiakoa, Maui in 1922 and has resided in the area all of her life. Her father, Jutaro Yokoyama migrated from Japan in 1911. He worked in a store in Hana and later became owner of his own store, Yokoyama Sho-ten, which was located off of Lower Kula Road, in front of the family residence. The store specialized in staple goods, such as rice, canned goods and large opihi or abalone. He later became a farmer, growing pineapple near the residence, which was located at the corner of Lower Kula Road, where the road intersects Kula Highway. Her family leased the land from the Von Tempsky family, which owned much of the land in Kula. Her mother, Matsuno Monden Yokoyama, who came to the islands as a picture bride, helped out at the store.

Mrs. Kametani recalled that the Waiakoa region stretched from Omaopio Gulch to Kekaulike Avenue. Back then, the region consisted of many farmers who used hand plows drawn by horses to tend to their corn, bean, potato and cabbage crops. There was no electricity in the area. Light was provided by kerosene lanterns. She remembered many families living in the area, most notably Frank Tavares, who was the manager of Maui Dry Goods, the Lopes and Fernandez families, of which the patriarch served as the sole policeman in the area. The Lopes and Fernandez families formerly lived next to the Kula Community Center. The man who checked water meters and lines, Joe "Pipe" Medeiros, lived off Naalae Road. She also recalled the Ushijima, Otani, Nishiyama, Moreshige, Hashimoto and Haramoto families, among others.

Growing up, Mrs. Kametani, her brother and three sisters attended the Kealahou School, which was located where the Haleakala-Waldorf School is today. A large number of students attended the school, which she recalled as having approximately 200 children. She recalled running down the gulch that separates her former residence to the old school. There were two large ranches, owned and operated by Haleakala Ranch and the Von Tempsky family. In the old days, ranchers would round up cows with their dogs and lead them on dirt roads to the next pasture. The building that currently houses the Café 808 restaurant off Lower Kula Road formerly housed the Maui Dry Goods store. Beside the Café 808, there was a barber shop in the location of the Waiakoa (Kula) Gymnasium. Once the Waiakoa Gymnasium was constructed, it was actively used, with basketball and volleyball games. Morihara Store was formerly a meat market with a post office next door. Gerald Tavares' father was the butcher and she remembered buying stew meat at \$0.10 per pound. An Okinawan lady, who lived on Pulehuiki Road, would travel by donkey from house to house to peddle tofu and okara. Mrs. Kametani also recalled the Catholic Church, which some say resembles a wedding cake, had a red rather than pink roof. The church steeple was so tall that many would use it as a landmark to guide their

way from the Central Maui area to the Waiakoa region. Within the project area, she recalled that Calasa Service Station was actively used. In the location of the First Assembly of God Church, there was the Calasa Theatre, which showed movies before the advent of the television. Tom Store was located at what is now the University of Hawai'i Institute for Astronomy. There were about four stores in the region, two of them were run by Chinese immigrants. While the Keokea region consisted mostly of Chinese, the Waiakoa region consisted of mostly Portuguese and Japanese. The Japanese residents would attend obon festivities held at the Buddhist church on Upper Kula Road. A Japanese school was operated out of the Kula Community Center.

Because automobiles were scarce, people often traveled by horse and buggy to nearby areas, such as Keokea. They would travel to the Haiku region by horse-drawn wagon. Because her father was a merchant, he owned a Model T car that he would use to pick up and drop off goods at the Kahului Harbor. Mrs. Kametani remembered having to drive down the old, winding dirt road to drop off produce. Because he had a means of transportation, her father would often offer to travel to buy goods for people from various locations and transport it back for them. She recalls a tight-knit community where families knew each other, openly cooperated with each other and trusted each other.

Mrs. Kametani said her husband, Isao, who was a few years older, grew up in the same area. Her in-laws formerly lived on a parcel below what is now known as Café 808. They leased land from the Lopes family and farmed kidney beans and pineapple. She remembers her in-laws using the hand plow to clear their fields. Later, they moved to Pulehu, where they continued to farm pineapple. The Lopes family also lived below Café 808 and they leased their lot to the Kametani family. She recalls the Ahupua'a wall bordering the property to the north. After World War II, at the Waiakoa (Kula) gymnasium, the proposed site of the Kula affordable senior housing project, Mrs. Kametani recalled there being a clinic where a registered nurse associated with the Board of Health would check babies. Besides the clinic, she did not recall any noteworthy activities occurring at the locale. Her daughter Grace was in the first graduating class of what is now known as Kula Elementary School. She remembered the children crossing the street after school, traveling through the proposed project site to the Waiakoa (Kula) Gymnasium and Morihara Store.

Should the proposed project proceed, she did not feel there would be an impact to the land. She did not think there would be any impact on any particular culture. She said she would embrace the concept of an affordable senior housing complex being built in the proposed location. The location is ideal because the store and restaurant are nearby.

Moses Moki Medeiros

The interview was conducted at Mr. Medeiros' residence on Naalae Road in Waiakoa, Kula on October 27, 2005.

Moses Moki Medeiros was born in Waiakoa, Maui in 1923 and has resided in the area most of his life. His great grandfather, migrated from Spain in the late 1800s and his great grandmother migrated from Portugal on the same boat. His father owned about 40 acres of land, stretching from a small portion of Naalae and Lower Kula Road, north of Kula Highway, further south on Naalae Road. All of his neighbors are relatives, with his nephew living right next door and a nephew and his wife residing in his childhood home at the corner of Naalae Road and Kula Highway. His childhood home is visible from his property. While Mr. Medeiros' mother was born and raised in Paia, his father was raised by the Copp family. Joe Medeiros worked for the County of Maui as a water tender. Because of his occupation, which called for the monitoring of water meters and pipes, he was nicknamed Joe "Pipe." One of Mr. Medeiros' brothers has since retained the nickname and is also referred to as Joe "Pipe." Medeiros' mother was a homemaker who raised four children, three boys and two girls, and taught at the Keokea School during World War II.

Growing up, Moses recalled the area consisted of mostly Japanese. A class picture taken when he completed ninth grade, the highest grade level at the time offered at Kealahou School, confirms his recollection. The school principal was Joaquin Vincent and there were about 40 children per grade level for a total attendance of more than 200 children. While there were ranchers, the Waiakoa area consisted mostly of farmers. The Otani family rented land from his father and grew beans, potatoes and corn. The land where his house currently sits was once a corn field. Because automobiles were scarce, he would walk to Kealahou School everyday, which was located at the existing Haleakala-Waldorf School site. He remembered walking by the barbershop, which was formerly located at the site of the Waiakoa (Kula) Gymnasium. The Maui Dry Goods store was located at the site of the current Café 808. The Moniz-Tavares meat market, was located at the existing Morihara Store site. When the Waiakoa Gymnasium was constructed, the barbershop moved across the street, next to the existing Morihara Store. After World War II, a registered nurse would check babies in a room in the gymnasium once a month.

Moses watched his first movie, a silent Japanese picture, in Ulupalakua. He recalled the theatre manager providing the sound for the pictures. When the Calasa Theatre was converted to the Calasa Service Station, he watched movies at the Fong Theatre. Later, the Calasa Theatre opened in the area of the existing Prayer House. There was a pool hall near the existing Morihara Store, where he would often play pool with friends. His aunt Virginia lived on the land where the Kula Community Federal Credit Union was later located, next to the existing Morihara store.

Most of the time, his family would have get-togethers. Moki received his nickname from his nearby relatives, the Fernandez family. It was given to him because it was the closest Hawaiian name to "Moses." The Fernandez family had a house in Makena, near the beach, and every summer they would go swimming. Besides that, he said he always spent time trying to be a cowboy. During his lifetime, he raised cattle in a pasture located south on Naalae Road and the higher elevations of Haleakala. To this day, he still practices roping in his yard and occasionally spends time at the Thompson Ranch. He attends all of the rodeos held in Makawao.

Medeiros said his good friend was Tatsu Kuwahara, whom he met in the third grade. He and Kuwahara were inseparable. They even stood next to each other when they took class photos. He said that Kuwahara was a mechanic, so he always had a car. In fact, he met his wife, Rose Bruchal, originally of Paia, while driving around Kula Hospital with Kuwahara after World War II. At the time, Medeiros was only 24 and Bruchal was 21 years old. She worked in the kitchen at the hospital. In 1948, they were married. The Medeiros' had four children. Because of the children, they would often stay home on weekends, spending time with friends, playing poker and eating and drink coffee often through the following morning. They would have family picnics at beaches in Makena. For 37 years, Mr. Medeiros worked for the Mutual Telephone Company, which later became Hawaiian Telephone Company in Wailuku. For about 17 years, the Medeiros family lived in Paukukalo before moving back up to the Medeiros family land in Waiakoa. Mr. Medeiros retired at age 55.

Medeiros said that he recalled that near the gymnasium and the proposed Kula affordable senior housing project site, Mr. Castro started to build a cesspool. He kept digging until he hit a lava tube. There were no cultural practices that occurred on or near the subject property. Mr. Medeiros does not foresee any problems with the existing area. With the cost of housing being so high, he said he would welcome a housing project for the elderly. He said he believes he has had a good life, living in Waiakoa, and believes that anyone else who moves there would probably feel the same.

Stanley H. Raymond

The interview was conducted at Mr. Raymond's residence in Pukalani on October 28, 2005.

Stanley H. Raymond, born in 1923. He is a descendant of the Copp family, who have lived in Kula, off of Copp Road for almost 100 years. Mr. Raymond's grandmother, Louisa Baker Copp, was born and raised in Hilo, Hawai'i, but later moved to Waiakoa, Kula. She was of Hawaiian, Tahitian and Caucasian ancestry. She married George Copp, who was of English and Hawaiian ancestry. They owned 54 acres of land, stretching from Upper Kula Road to Kepa Road. Copp Road was named after Grandpa Copp. It was once a cattle trail. One of their daughters, Mr. Raymond's mother, married Mr. Raymond's father, who hailed from Cambridge, Massachusetts.

They both worked at Kapa'a (Kaua'i) Keokea and Kealahou School. Although Mr. Raymond does not reside in Kula, his two (2) sons, their wives and children reside on the Copp family property.

Mr. Raymond recalls summers at his grandmother's home involving farm work and house painting. Sometimes the family would leave the area to spend time at the family property at Kuau.

He said the Café 808 restaurant was formerly a Maui Dry Goods and Grocery Company store. Across the street, where Morihara store is located, was the Tavares meat market and Kula Post Office, with the only female postmaster, Virginia "Gigi" Medeiros, Moses Medeiros' aunt. He does not recall anything of cultural significance occurring near or at the proposed project site. Pasture grass covered the area south of Lower Kula Road.

Mr. Raymond taught at Lahainaluna High School and later worked for Pioneer Mill. His work would take him to Lihue, Kauai, Oahu and back to Maui. He retired from HC&S.

Mr. Raymond believes there are no cultural concerns related to the development plans for the property. He believes the project site is ideal because of its location, which is cool, peaceful and in proximity to a restaurant, Morihara Store and the Kula Park, across the street. The location near Kula School is also ideal because the youth could walk through the proposed project site to the gymnasium or stores. He believes that seniors would enjoy seeing and conversing with the children. As a former school teacher, he said he could envision involvement of the elderly in school programs, where such interaction would prove beneficial to both seniors and the youth, who could learn from each other. He suggested the idea of involving the elderly in the school programs, perhaps by allowing youth to perform volunteer work, or allowing the elderly to read to the children.

a. **Impact and Mitigation**

Based on the findings and recommendations of the archaeological report and accounts presented by the three (3) interviewees, the proposed action is not anticipated to have an adverse effect on cultural practices.

7. **Air and Noise Quality**

a. **Existing Conditions**

There are no point sources of airborne emission in the immediate vicinity of the project site. The air in the Kula region is of good quality, with existing airborne pollutants attributable to automobile exhaust from the region's roadways. Other sources of airborne pollutants typically include dust and equipment emissions resulting from agricultural activities and smoke generated from sugar cane harvesting operations occurring in the Central Maui plain. These sources are intermittent and the generated particulates are quickly dispersed by the prevailing tradewinds.

Noise generated in the vicinity of the subject property may be attributed to natural (e.g. wind) conditions, traffic along Kula Highway, agricultural-related activity involving the intermittent operation of equipment, such as tractors, and trucks, and activity from the Waiakoa (Kula) Gymnasium.

b. **Impact and Mitigation**

Airborne particulates, including dust, may be generated during site preparation and construction. To minimize dust generation, dust fences, sprinklers and/or water wagons will be utilized during site preparation and construction. As soon as grading is complete, exposed areas will also be paved, grassed or permanently landscaped.

Ambient noise conditions will be temporarily affected by construction activities. Material-transport vehicles and power tools are anticipated to be the dominant noise-generating source during construction. As with air emissions, construction noise will be minimized through use of applicable BMPs. Construction work will be limited to daylight work hours.

Once operational, the proposed affordable senior residential project should not have an adverse impact on air or noise quality in the vicinity.

8. **Scenic and Open Space Resources**

a. **Existing Conditions**

Situated on the slopes of Haleakala, Kula provides expansive scenic views of the Central Maui isthmus, off-shore islands, and the West Maui Mountains. From clearings throughout the project site, Maui's central isthmus and the northern and southern shorelines of Maui can be seen makai (northwest and southwest, respectively) of the project area. Mauka of the site, beyond the gym, Haleakala is visible. The West Maui Mountains and South Maui region are evident makai of the site. Further west, the islands of Lanai and Kaho'olawe are visible.

b. **Impact and Mitigation**

The proposed housing project involves site-related grading and associated improvements. The project will be constructed with two (2) floors above a garage and will stand at 32-feet, 8-inches. However, the buildings will be located behind and downslope of the Kula Gym and is not expected to be visible from Lower Kula Road. Architectural and landscape designs, as well as grade differentials, will help to mitigate views of the site from Kula Highway. Therefore, the proposed development should not have an impact on scenic view, open space resources or adversely affect the visual character of the surrounding area.

B. **SOCIO-ECONOMIC ENVIRONMENT**

1. **Existing Conditions**

a. **Community Character**

From a regional standpoint, the project site is part of the Makawao-Pukalani-Kula Community Plan region. The region includes a diverse range of physical and socio-economic environments. With its temperate climate, fertile soil, and sweeping views, Kula has grown steadily over the past few years. The area has attracted more residents and there has been a decrease in small farm activity.

b. Population

The population of Maui County has exhibited relatively strong growth over the past decade with the 2000 population of 128,241, reflecting a 27.6 percent increase over the 1990 population of 100,504. Growth in the County is expected to continue, with resident population projections for the years 2010 and 2020, estimated to be 151,269 and 175,136, respectively (SMS, June 2002).

Just as the County's population continues to grow, the resident population of the Kula region has also increased.

The 2000 population of the Makawao-Pukalani-Kula region was 21,571. The population is projected to increase to 25,237 by the year 2010 and 28,974 by the year 2020 (SMS, June 2002).

c. Economy

Maui's economy is heavily dependent upon the visitor industry. The Kula region, with its fertile soil and cool climate conditions, has resulted in successful produce and flower generation for export to domestic and international markets. The vast lands of pasture grass has also enabled cattle ranching and alternative ranching activities, such as sheep and llama herding, which contribute to the economy.

2. Impacts and Mitigation Measures

Given the size and scope of the proposed action, impact on population is expected to be minimal. The applicant intends the units to be rented to Maui residents, who either already have an affiliation with the Credit Union and/or reside in the Credit Union's service area, within 12 miles of the project area. The proposed development will yield temporary economic benefit, associated with generation of construction-related job opportunities and expenditures. In the long term, the proposed development is anticipated to help the community meet existing market demand for senior housing. No long-term adverse impact to the population or economy is anticipated should the proposed project proceed.

C. PUBLIC SERVICES

1. Existing Conditions

Police

The County of Maui's Police Department is headquartered in Wailuku. The Maui Police Department (MPD) consists of several patrol, investigative and administrative divisions. The Wailuku or Central station, which serves the Haiku, Paia, Makawao, Pukalani and Kula regions is situated approximately 18.0 miles northwest of the project site. A police substation is located in Pukalani, about 5.3 miles northwest of the project site. A new police community service center will be located in the Kulamalu Town Center, approximately 1.0 mile northwest of the project site.

Fire

Fire prevention, suppression and protection services are provided by the County Department of Fire Control. The Kula Station, which serves the region, is located off Kula Highway, less than a quarter mile southwest of the subject property. The Makawao and Paia fire stations lend additional firefighting support to the Kula region and are situated approximately 7.0 miles and 7.5 miles away from the project site, respectively.

Medical Services

Maui Memorial Medical Center, the only major medical facility on the island, is approximately 19.0 miles to the northeast of the project sites. Licensed for 196 beds, this facility provides acute, emergency, general, and obstetric care services. Several medical and dental care facilities are located in Makawao and Pukalani to serve Upcountry residents.

Kula Hospital is situated about 3.0 miles southwest of the project site. The hospital serves as a long-term care facility, that provides Alzheimers and dementia care services. An out-patient clinic for the area's residents operates from 8:00 a.m. to 4:30 p.m. on weekdays.

Solid Waste Disposal

Residential solid waste collection and disposal is provided once weekly by the County's Department of Public Works and Environmental Management's (DPWEM) Solid Waste Division. Solid waste generated in the Upcountry region is transported to the Central Maui Landfill off Pulehu Road, approximately 8.0 miles northwest of the project sites. Other than the Hana Landfill, the Central Maui Landfill is the only disposal site on the island of Maui which accepts County-hauled residential waste, commercially-hauled commercial waste, and self-hauled waste.

Privately owned facilities, such as the Maui Demolition and Construction Landfill and the Pohakulepo Concrete Recycling Facility, accept solid waste and concrete from demolition and construction activities. These facilities are located at Maalaea, northwest of the subject property, near Honoapiilani Highway's junction with North Kihei Road and Kuihelani Highway. A privately operated green waste recycling facility, Campaign Recycle Maui, is situated near Waikapu and a County-operated facility is present at the Central Maui Landfill.

Education

The State Department of Education (DOE) operates three (3) public schools in Kula, Maui. They are: King Kekaulike High School for grades 9 to 12, Kalama Intermediate School for grades 6 to 8, and Kula Elementary School for grades K to 5. The State Department of Education capacity, enrollment and projected enrollment for the schools are as follows in Table 1.

Table 1

ENROLLMENT ESTIMATES FOR KULA SCHOOLS			
School	Capacity for 2004-2005 School Year	Enrollment 2004-2005 School Year	Projected Enrollment 2009-2010
King Kekaulike High School (Grades 9 to 12)	1,339	1,380	1,174
Kalama Intermediate School (Grades 6 to 8)	1,118	1,014	941
Kula Elementary School (Grades K to 5)	565	412	433

Source: State of Hawai'i, Department of Education.

There is an elementary, middle and high school primarily for persons of native Hawaiian ancestry, operated by Kamehameha Schools, located approximately eight (8) miles north of the subject property at Kulamalu . The school opened in 1999 and served only grades K through 9 until 2003. Now serving grades K through 12, the Kamehameha School has an enrollment capacity of 1,100 students.

The region is also served by privately operated facilities, such as St. Joseph School (Grades K to 6), Haleakala Waldorf School (Grades K to 8), and Seabury Hall (Grades 6 to 12).

Recreational Facilities

As previously stated, the Waiakoa (Kula) Gymnasium, a facility that occupies 1.7 acres of land, is located on the same parcel as the proposed project. The County of Maui leases it from the applicant. The lease is expected to expire in 2008 and the applicant intends to renew the lease. Kula Park is located southwest of the project site, across Kula Highway and adjacent to Kula Elementary School. The park consists of the new 10.3-acre Kula Ball Field, two (2) soccer fields, playground equipment, two (2) picnic tables, a restroom and two (2) parking areas. Other neighborhood parks and facilities in close proximity include the Kula Community Center off Lower Kula Road, about a quarter-mile northeast of the project area. The Kula Community Center is an approximate 2,800 square foot building on seven (7) acres of land. The center has a stage, barbecue grill and restrooms. There is a

community police office onsite. Macrame and folk dance classes are offered there. The center hosts weekly bingo games, Alcoholic Anonymous meetings and senior nutrition classes. Recreational facilities on the property include two (2) tennis courts and a gateball court. The gateball court has a field house and a storage shed. Harold Rice Park is located approximately 1.3 miles southwest of the project site. The 3.8-acre park contains a paved parking lot with 18 parking stalls, a restroom facility, picnic tables and a barbecue grill. Access to the Rice Park is located off of Lower Kula Road. Located about 4.2 miles southeast of project area is Keokea Park, which encompasses approximately 6.7 acres and includes a picnic pavilion with tables and barbecue grills, a playground area, a softball backstop, a portable backstop, two (2) storage sheds, a restroom facility and two (2) parking areas with a total of twelve (12) spaces.

Situated along the higher elevations of Haleakala, Polipoli State Park, and Haleakala National Park offers camping, hiking, and sight-seeing opportunities.

2. Impact and Mitigation

The proposed action should not call for an extension of service area for police, fire and emergency medical services. Vegetative waste from the project site will be disposed for composting purposes. Other construction waste materials will be either recycled or disposed at an approved construction waste facility. In the long term, solid waste generated by the project will be collected by a private refuse collector for disposal at the Central Maui Landfill and is not expected to affect County services or infrastructure capacities for solid waste. The senior residents will not place additional demand upon educational services, nor are they anticipated to place significant demand for County recreational facilities. It should be noted that the applicant will be seeking an exemption from Section 18.16.320 of the Maui County Code, Parks and Playgrounds, to allow the project to proceed without dedication of park land or cash in-lieu.

D. INFRASTRUCTURE

1. Roadways

a. Existing Conditions

Access to the project site will be available off of Kula Highway, a two-lane, two-way arterial State highway that connects the Pukalani area with the Ulupalakua area. Kula Highway is generally oriented in the north-south direction and begins in Pukalani at the Five Trees Junction of Old Haleakala Highway and Haleakala Highway. In the vicinity of the project site, Kula Highway has a posted speed limit of 45 miles per hour, but during school hours, there is a 20 mile per hour speed limit.

Also located in the project vicinity are Lower Kula Road and Copp Road. Lower Kula Road is a two-lane, County collector road that runs parallel to Kula Highway in a north-south direction, mauka and east of Waiakoa Gymnasium. Its northern and southern terminus intersect Kula Highway. Copp Road is a two-lane, two-way County road that runs in an east-west direction, connecting Lower Kula Road with Kula Highway.

In front of the project site, the right-of-way width off Kula Highway is about 75 feet. There is about 45 feet of land between the end of the property line and the existing edge of pavement.

A Traffic Impact Assessment Report was prepared by Wilson Okamoto & Associates, dated December, 2005. See **Appendix "C"**.

A field investigation was conducted on May 31, 2005 and June 1, 2005. The investigation involved manual count surveys of turning movement during the morning peak period of 6:00 a.m. to 8:00 a.m. and afternoon peak period of 3:00 p.m. and 6:00 p.m. at the intersections as follows:

- Kula Highway and Lower Kula Road (North)
- Kula Highway and School Entrance Driveway
- Kula Highway and School Exit Driveway

- Kula Highway and Lower Kula Road (South)

To verify peak traffic periods, 24-hour mechanical traffic counts were collected off Kula Highway within the project vicinity. The highway analysis was consistent with procedures established in the "Highway Capacity Manual" (Transportation Research Board, 2000) and the "Highway Capacity Software," developed by the Federal Highway Administration. The analysis was based on 'Level of Service' (LOS), a quantitative and qualitative assessment of traffic operation, with LOS "A," representing ideal traffic operating conditions and LOS "F," representing unacceptable or congested traffic conditions. The existing LOS was recorded as follows:

- a. Southbound at the intersection of Kula Highway and Lower Kula Road (North), traffic operates at LOS "A" in the morning and afternoon peak hours. Westbound, traffic operates at LOS "C" in the morning and LOS "B" in the afternoon.
- b. Eastbound at the intersection of Kula Highway and the Kula Elementary School exit driveway, traffic operates at LOS "C" in the morning and LOS "B" in the afternoon peak hour.
- c. Southbound, at the intersection of Kula Highway and Lower Kula Road (South), traffic operates at LOS "A" during the morning and afternoon peak hours. Westbound, traffic operates at LOS "B" during both peak hours.

b. **Impact and Mitigation**

Access to the project site will be available off of Kula Highway, via a 40-foot wide access opening for a 24-foot wide driveway that terminates in a cul-de-sac with a radius of 30 feet. Access off of Lower Kula Road, a two-lane, County collector road that runs parallel to Kula Highway in a north-south direction, mauka and east of Waiakoa Gymnasium, has been considered, however, it has been determined to be infeasible, given the presence of the Kula gym, which the applicant intends to retain at the eastern border of the property, and the existence of ahupua'a walls that border the property to the north and south, which must be preserved.

Access is envisioned to be limited to right-turn in and right-turn out movement only. To ensure that there is no left-turn entry, the driveway will be located directly across from Kula Elementary School's drop-off exit and will be designed with plastic bollards. Drivers wishing to access the project area on Kula Highway, traveling from Pukalani, would be expected to make a left turn onto Lower Kula Road and then a right turn on Copp Road to return to Kula Highway north of the property, in order to execute the right-turn in movement into the project area.

As previously stated, there is about 45 feet of land between the end of the property line and the existing edge of pavement. The applicant plans on improving the area and dedicating it to the State. Highway improvements will include the creation of a deceleration lane for traffic making a right turn into the housing project and a tapered exit lane for traffic traveling out of the project area. The project's civil engineer has determined that the tapered exit lane configuration shown in Figure 6 of the Preliminary Civil Engineering report provides for appropriate merging conditions. Refer to **Appendix "B"**. The applicant is coordinating with the State of Hawai'i, Department of Transportation, Highways Division to obtain access rights.

An analysis of the changes in traffic volumes at the study intersections concluded that during the weekday morning peak hour, traffic volumes at all intersections will remain the same. This is primarily due to the fact that tenants will be often rely on group transportation services, such as those offered by Maui Economic Opportunity.

Traffic was also assessed during the after school hour of 1:45 p.m. to 2:45 p.m. using supplemental data collected at this time of day. See Appendix "F". The analysis indicates that the traffic conditions during the after school hour reflects a more favorable condition than the 3:30 p.m. to 4:30 p.m. peak hour. In other words, traffic conditions during the 3:30 p.m. to 4:30 p.m. hour represents the worst-case scenario with respect to traffic operating conditions. This result is attributable to the lower traffic volume traveling along Kula Highway during the after school hour.

2. **Pedestrian Access**

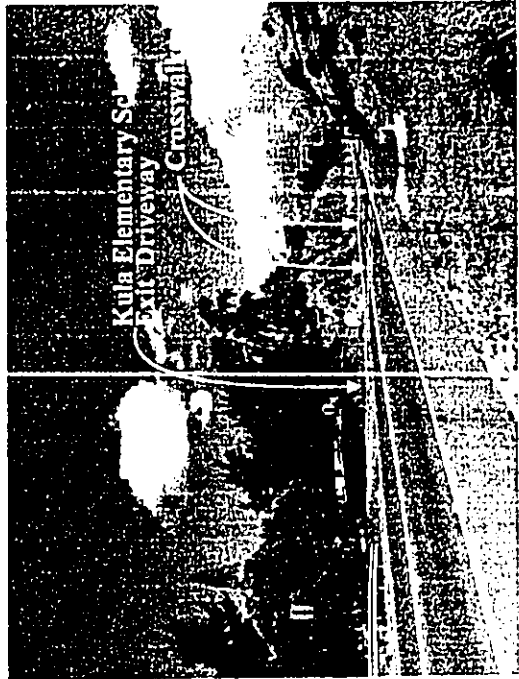
a. **Existing Conditions**

The majority of students enrolled at the Kula Elementary School are dropped off and picked up at school via automobile. Student bus transportation is also provided for those students living more than a mile away from the school. There are some students who walk to and from school and who utilize existing crosswalks at the intersection of the Kula Elementary School's exit driveway and Kula Highway. There are two (2) crosswalks on Kula Highway, on either side of the exit driveway. See **Figure 12**. Posted speed limit signs in the vicinity of the school driveways advise motorists of a 20 mph school speed limit between 7:00 a.m. and 6:00 p.m. There are separate flashing red signals on Kula Highway to the north and south of the school to warn drivers that a school is located ahead and that vehicle speeds should be reduced to 20 mph.

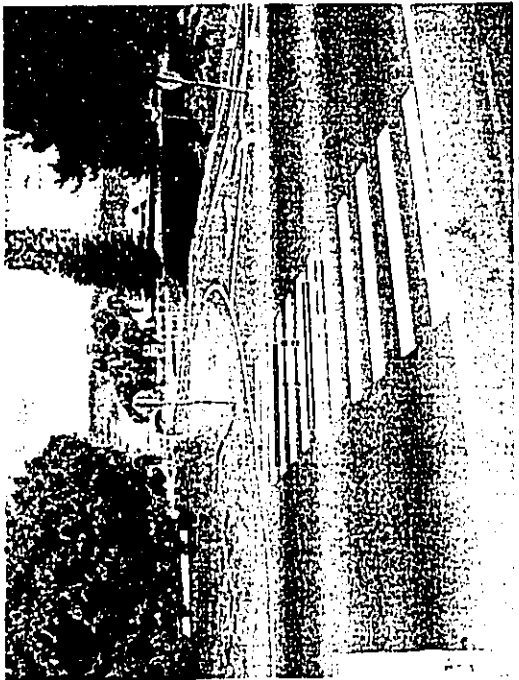
Some students who walk to and from school traverse through the proposed senior housing project site to get to Lower Kula Road or the Kula Gym which is located at the mauka-most extent of the proposed project site. Refer to **Figure 4**. The path to Lower Kula Road/Kula Gym is a foot-worn path extending along the southern property line of the property. See **Figure 13**.

b. **Impact and Mitigation**

The proposed project will involve the installation of a deceleration lane for vehicles turning right off of Kula Highway into the project site. A tapered exit lane will also be provided to facilitate vehicles exiting the highway from the project site (i.e., for right turning movements out of the project site). The two (2) existing crosswalks at Kula Highway will be extended across the deceleration and tapered exit lanes into and out of the project site. A new improved paved path from Kula Highway to the Kula Gym will be provided as part of the project. See **Figure 14**. This improved path will create safer passage through the property than the existing unimproved foot path.



Overall View of Kula Elementary School Exit Driveway and Crosswalks



Kula Elementary School Exit Driveway and South Crosswalk



Kula Elementary School Exit Driveway and North Crosswalk



View Along Kula Highway South of Kula Elementary School

Figure 12 Proposed Kula Affordable Senior Housing Project



NOT TO SCALE

Photographs In Vicinity of School Crosswalks

Prepared for: Kula Community Federal Credit Union

MUNEKIYO & HIRAGA, INC.

KulaFCU/SHingSitePhotoCrosswalks

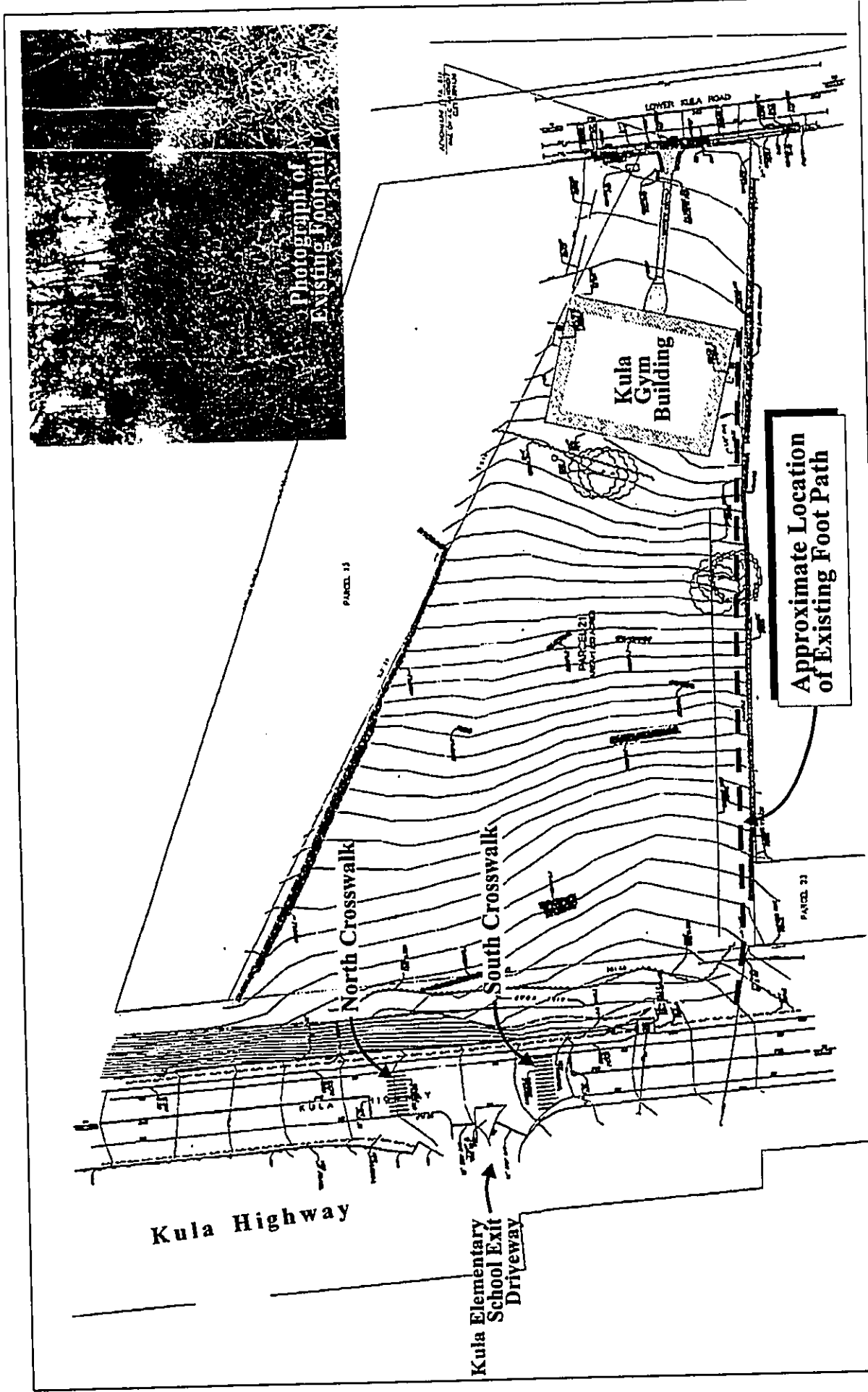


Figure 13 Proposed Kula Affordable Senior Housing Project
Existing Pedestrian Connection to Kula Gym

NOT TO SCALE



Prepared for: Kula Community Federal Credit Union

MUNEKIYO & HIRAGA, INC.

KulaFCUS/Hiring/ExistingPedestrianConnect

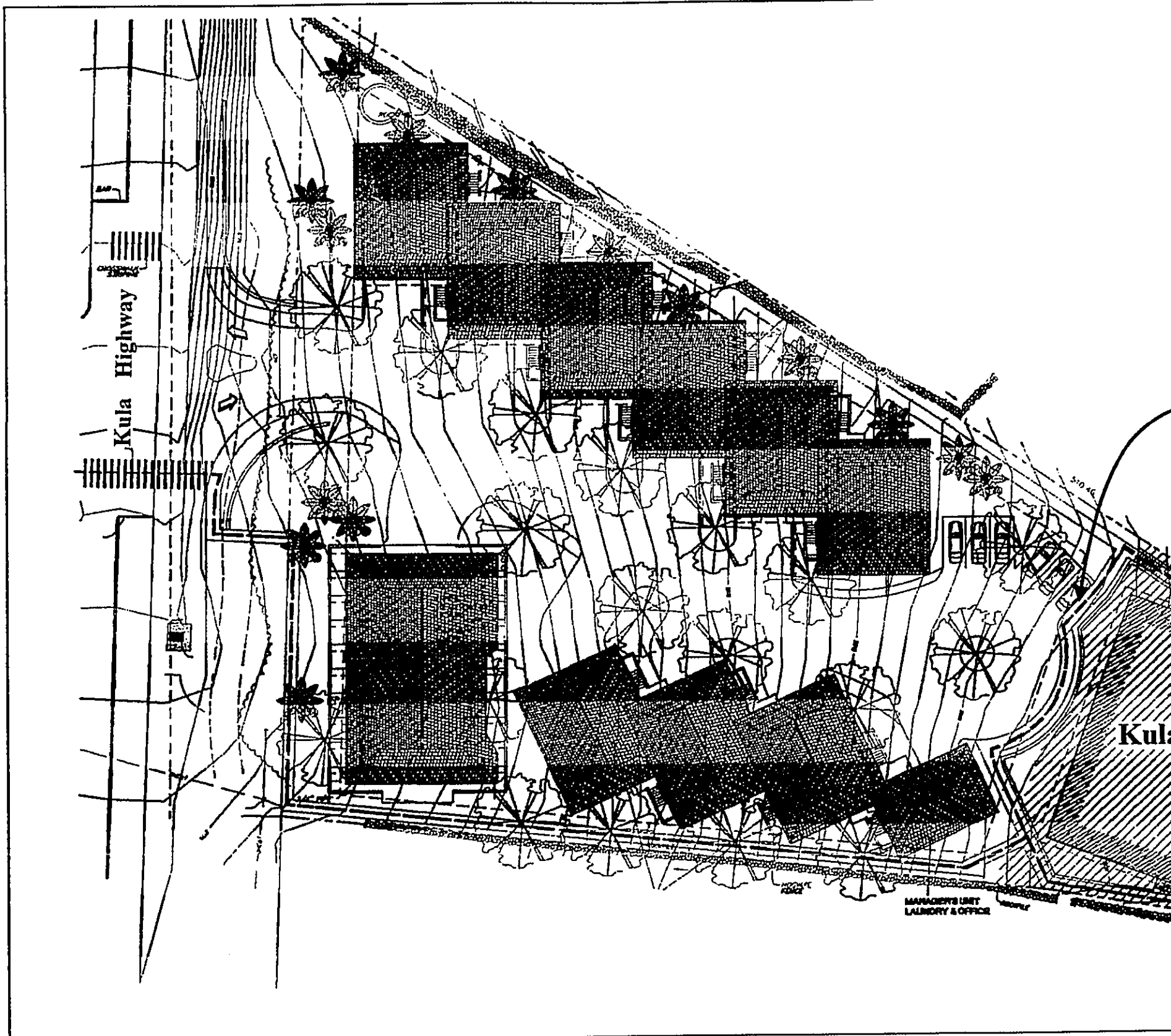
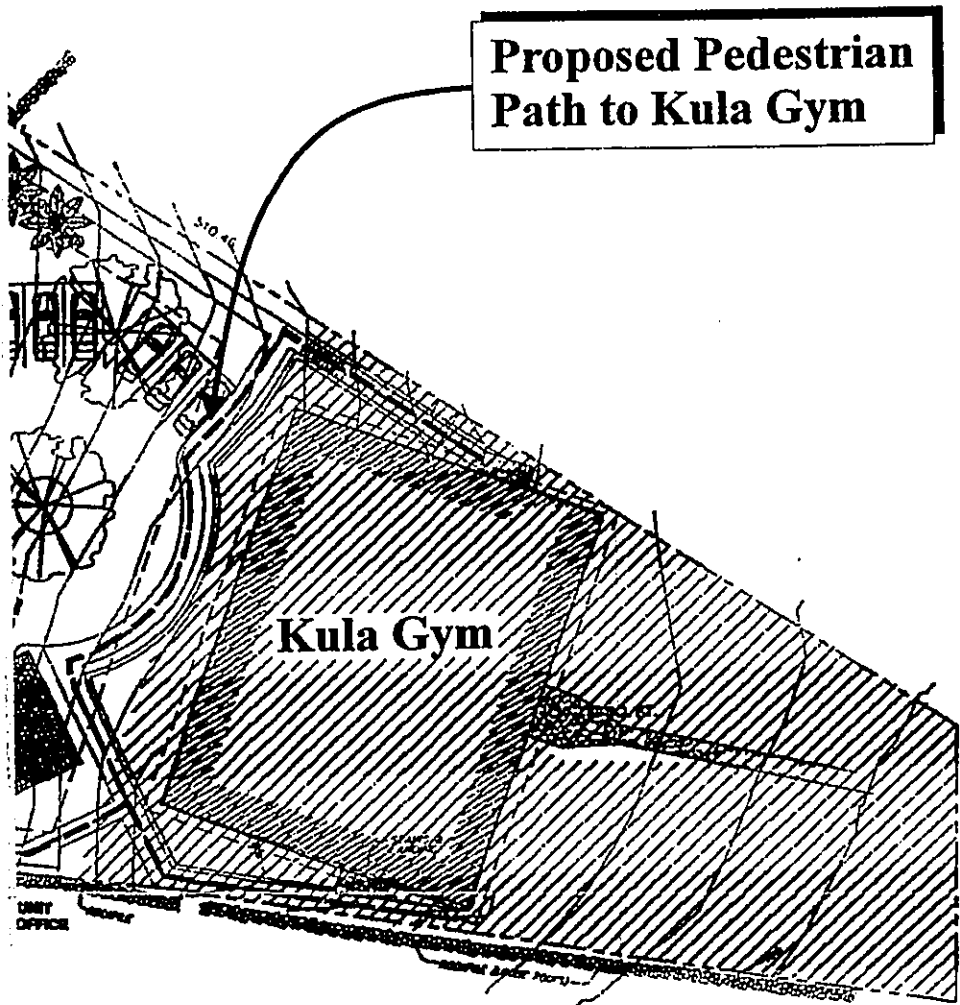


Figure 14

Proposed Kula Affordable Senior Housing Project
Proposed Pedestrian Access to Kula Gym



Prepared for: Kula Community Federal Credit Union



**Proposed Pedestrian
Path to Kula Gym**

Kula Gym

**Housing Project
Kula Gym**

NOT TO SCALE



A pedestrian crossing assessment was conducted for crossing conditions at the Kula Highway crosswalks before and after school. According to data collected during the before school and after school hours of 6:45 a.m. and 7:45 a.m., and 1:45 p.m. and 2:45 p.m., respectively, there were adequate gap times between vehicle platoons to allow for safe pedestrian crossing of Kula Highway. Refer to Appendix "F". Field observations indicated that pedestrians either had sufficient time to cross or vehicles along the highway stopped to allow them to cross.

Pedestrian activity from the senior housing project along Kula Highway is not anticipated to be significant as pedestrian destination areas for senior residents, including the Kula Community Center, County tennis courts and gate ball court, Café 808, Morihara Store, and the Kula Gym are all along Lower Kula Road. As previously noted, paved pedestrian access from the project site to Lower Kula Road will be provided as part of the project improvements.

In summary, the proposed action is not anticipated to change pedestrian use patterns along Kula Highway and will not create adverse pedestrian safety conditions.

3. Water

a. Existing Conditions

Water service to the Makawao-Pukalani-Kula Community Plan region is provided by the County Department of Water Supply (DWS). The Kula system consists of an upper and lower system, with the upper system located at the 4,000 foot elevation, and the lower system originating at the 3,000 foot elevation. The Lower Kula System serves the Omaopio, Olinda, and lower Kula communities, while the Upper Kula System serves the remaining communities. The upper system collects water from Haipuaena, Puohakamoa, and Waiakamoi Streams, while the lower system diverts water from the Haipuaena, Puokakamoa, Waiakamoi, and Honomanu Streams.

The DWS operates a water treatment plant at Olinda with a capacity of 1.7 million gallons per day (MGD). Major storage reservoirs supporting the Upper Kula System include a 10 million gallon (MG) upper Waiakamoi

dam/reservoir, a lower Waiakamoi concrete dam, two (2) 15 MG Waiakamoi concrete tanks, and a 3 MG Olinda steel tank. The recently constructed Kahakapao Reservoirs, consisting of two (2) 50 MG reservoirs in the vicinity of the Waiakamoi Reservoirs, also provide additional storage capacity for the upper system. During dry periods, the Kula system is supplemented by water pumped from the Makawao system.

A 5/8-inch water meter currently serves the parcel. It connects to the existing 12-inch waterline on Lower Kula Road. The 12-inch waterline, installed about two (2) years ago is served by the County of Maui, Department of Water Supply. There is a fire hydrant, about 70 feet south of the entrance to the Kula gym.

b. Impact and Mitigation

Domestic and irrigation water will be provided via a 1.5-inch water meter with a capacity of 100 gpm. The proposed project will generate an average consumption of approximately 20,720 gallons per day, with peak demand estimated at 62,160 gallons per day. See **Appendix "D"**. The 5/8-inch water meter that is connected to the existing 12-inch waterline on Lower Kula Road will remain to serve the gym. Fire sprinklers will be installed in each unit.

Water requirements will be coordinated with the Department of Water Supply to ensure that adequate supply is available at the time of development. In addition, calculations for domestic, irrigation and fire protection use will be submitted to the Department of Water Supply in connection with the processing of the project's building application.

4. Wastewater

a. Existing Conditions

Wastewater in the Kula region is treated, processed and filtered through cesspools or septic tanks. The County of Maui does not serve the area. The Kula Gymnasium is currently served by a septic tank system.

b. Impact and Mitigation

The proposed project will require that each building have an individual wastewater system, consisting of a septic tank and two (2) seepage pits. There will be a total of twelve (12) systems. The proposed project is estimated to generate approximately 8,870 gallons per day (gpd) of wastewater. Each septic tank will be of reinforced concrete construction and have a volume of 1,250 gallons. They will require periodic inspection and may require pumping between once per year and as long as once each four or five years. The seepage pits will be approximately 16 to 18 feet deep, with an 8 foot diameter and precast concrete perforated liners.

5. Drainage

a. Existing Conditions

Presently, there are no drainage facilities onsite, however, at the southwest corner, in front of the project site, there is an existing grated drop inlet on Kula Highway. Runoff from the site flows in a westerly direction from Lower Kula Road to Kula Highway. Runoff from the site either sheet flows into the highway, where it is collected by the existing grated drop inlet and conveyed across the highway through a 24-inch culvert or it flows into the highway and is collected by a paved swale that discharges into an existing 24-inch highway culvert crossing about 650 feet north of the project site. Present 10-year storm runoff from the site is 2.0 cfs.

b. Impact and Mitigation

The proposed project will require the introduction of impervious surface, such as pavement, roofing and concrete walkways. Thus, there will be increased runoff. At full build-out, it is estimated the 10-year runoff rate will be 6.5 cfs, an increase of 4.5 cfs.

To mitigate the increased runoff, the applicant will make onsite drainage improvements, which will remain privately owned. The proposed drainage system will consist of subsurface retention basins sized to retain the 50-year, one-hour storm runoff volume increase that will be generated by the proposed project. The retention basins will consist of 35 lineal feet and 60 lineal feet of perforated pipes enveloped with crushed rocks. The drainage systems will

also include the installation of grated inlets to collect runoff, non-perforated pipes to convey runoff to the retention basins and drainage manholes. Despite the increased runoff, applicant will comply with Chapter 4, the onsite drainage improvements will comply with Chapter 4, Rules for the Design of Storm Drainage Facilities in the County of Maui. Thus, there should be no significant adverse effect on adjoining or downstream properties.

6. **Electrical and Telephone Services**

a. **Existing Conditions**

Electrical and telephone services for the Kula region are provided by Maui Electric Company, Ltd. and Hawaiian Telecom, respectively. The Kula Gym is served by a utility pole located on Lower Kula Road. An electrical pole is currently located in front of the property at the southwest corner of the property line.

b. **Impact and Mitigation**

The project area will be fed from subsurface electrical lines that will run below the driveway into the property and connect to an existing overhead utility pole along Kula Highway. Each unit will have a separate electrical meter. There will be a common area meter for street lights and the laundry room. The community building and office spaces will be served by a separate electrical meter.

Because the Kula Gym is served by a separate utility pole along Lower Kula Road, the proposed project will have no effect on existing service to the gym. The project electrical engineer will be coordinating with Maui Electric Company to ensure that the project will meet electrical requirements. The proposed project is not anticipated to adversely affect electrical or communication systems.

**III. RELATIONSHIP TO
GOVERNMENTAL PLANS,
POLICIES AND
CONTROLS**

III. RELATIONSHIP TO GOVERNMENTAL PLANS, POLICIES AND CONTROLS

A. STATE LAND USE DISTRICTS

The State Land Use Law, Chapter 205, Hawaii Revised Statutes (HRS) is intended to preserve, protect, and encourage the development of land in the State for uses that best suit the public health and welfare for Hawaii's people. All lands in the State are classified into four (4) land use districts by the State Land Use Commission: "Urban," "Agricultural," "Conservation," and "Rural."

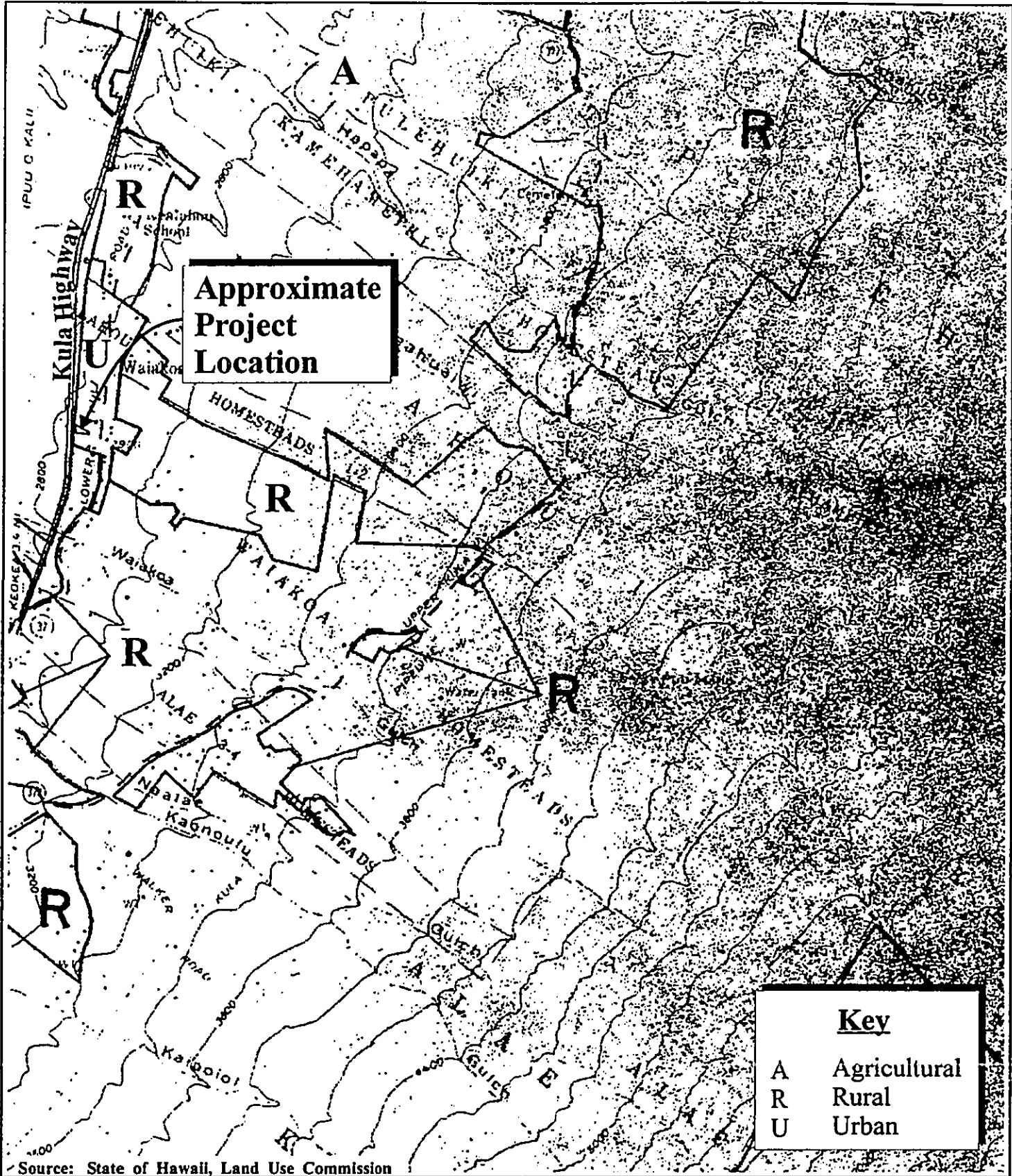
The subject property is situated within the State "Urban" district. See Figure 15. Under Statute, "Urban" districts shall include activities or uses as provided by ordinances or regulations of the county within which the urban district is situated.

B. MAUI COUNTY GENERAL PLAN

The Maui County General Plan (1990 Update) sets forth broad objectives and policies to help guide long-range development of the County. As stated in the Maui County charter:

The general plan shall indicate desired population and physical development patterns for each island and region within the county; shall address the unique problems and needs of each island and region; shall explain opportunities and the social, economic, and environmental consequences related to potential developments; and shall set forth the desired sequence, patterns and characteristics of future developments. The general plan shall identify objectives to be achieved, and priorities, policies, and implementing actions to be pursued with respect to population density; land use maps, land use regulations, transportation systems, public and community facility locations, water and sewage systems, visitor destinations, urban design, and other matters related to development.

The proposed project coincides with the following General Plan objectives and policies as follows:



Source: State of Hawaii, Land Use Commission

Figure 15 Proposed Kula Affordable Senior Housing Project
 State Land Use District Classifications

NOT TO SCALE



Prepared for: Kula Community Federal Credit Union

MUNEKIYO HIRAGA, INC.

KulaFCU/SrHsg/SLUD

Land Use

Objective: To use the land within the County for the social and economic benefit of all the County's residents.

Policies:

Encourage land use methods that will provide a continuous balanced inventory of housing types in all price ranges.

Encourage programs to stabilize affordable land and housing prices

Economic Activity

Objective: Utilize an equitable growth management program which will guide the economic well-being of the community.

Policies:

Encourage the adoption of a resource allocation program which gives a high priority to affordable residential projects.

Housing and Urban Design

Objective: To provide a choice of attractive, sanitary and affordable homes for all our residents.

Policies:

Encourage the construction of housing in a variety of price ranges and geographic locations.

Streamline or "fast-track" the governmental review process for affordable single-family and multi-family housing projects.

Ensure that each community plan region contains its fair share of affordable housing.

Objective: Provide affordable housing to be fulfilled by a broad cross-section of housing types.

Policies:

Encourage the establishment of additional senior citizen housing in various locations.

Objective: To encourage developments which reflect the character and the culture of Maui County's people.

Policies:

Encourage community design which establishes a cohesive identity.

C. MAKAWAO-PUKALANI-KULA COMMUNITY PLAN

The project site is located within the Makawao-Pukalani-Kula Community Plan region, one (1) of nine (9) community plan regions established in the County of Maui. Planning for each region is guided by the respective community plans, which are designed to implement the Maui County General Plan. Each community plan contains recommendations and standards which guide the sequencing, patterns and characteristics of future development in the region.

The Makawao-Pukalani-Kula Community Plan was adopted by the County of Maui through Ordinance No. 2510 which took effect on July 23, 1996.

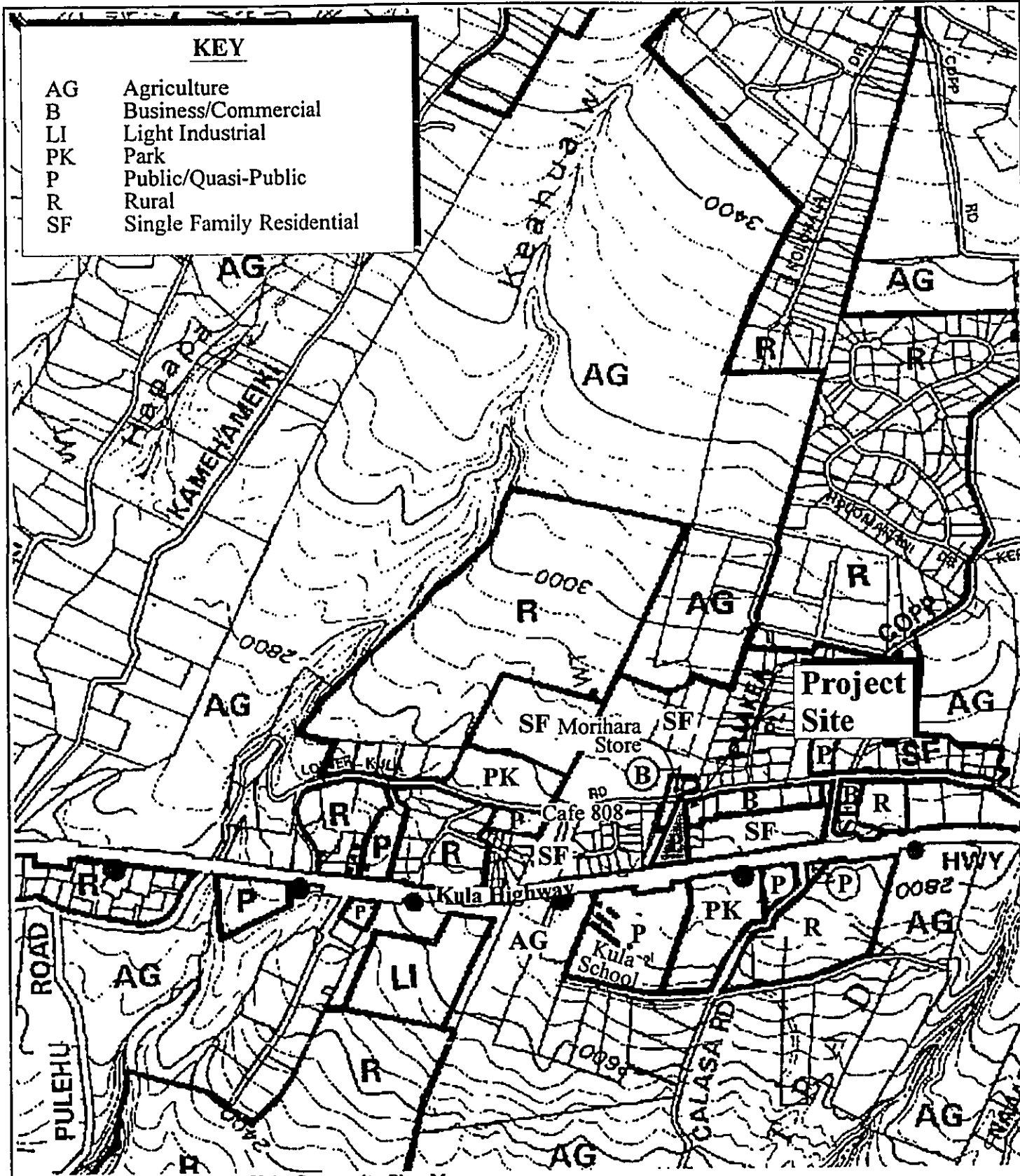
Land use guidelines are set forth by the Makawao-Pukalani-Kula Community Plan Land Use Map. See Figure 16. The subject property is designated "Public/Quasi-Public" by the Community Plan.

Because the proposed project will be for senior citizens at affordable rental rates, it will be processed in accordance with Section 201H of the Hawai'i Revised Statutes. The applicant will be seeking exemptions from certain regulatory and statutory requirements relating to land use, construction, subdivision, public services and infrastructure and administrative procedures. An exemption from Chapter 2.80B of the Maui County Code, relating to the General Plan and Community Plans, will be included in the Section 201H exemption list.

The proposed project is consistent with the following goals, objectives and policies set forth in the Makawao-Pukalani-Kula community plan.

Land Use

Goal: The maintenance and enhancement of Upcountry's unique and diverse rural land use character with sensitivity to existing land use patterns, natural resource values, and economic and social needs of the region's residents.



Source: Pukalani-Makawao-Kula Community Plan Map

Figure 16 Proposed Kula Affordable Senior Housing Project
Community Plan Land Use Map



Prepared for: Kula Community Federal Credit Union

MUNEKIYO HIRAGA, INC.

KulaFCUSifHmeCPLUD

Objectives and Policies:

- Encourage new residential developments in areas which are contiguous extensions of, or infills within the established residential pattern, and which do not adversely affect agricultural uses.
- Ensure an adequate supply of lands designated for residential use to address the affordable and elderly housing needs of the region's residents.

Housing

Goal: Housing opportunities for the residents of Makawao-Pukalani-Kula, to include all income and age groups, which are affordable, safe, and environmentally and culturally compatible.

Objectives and Policies:

- Provide a mixture of housing types, smaller lot sizes, and coordinated assistance programs aimed at lowering housing costs and expanding housing opportunities.
- Provide independent living and assisted living elderly housing with support facilities and services to meet the needs of the region's elderly residents.

D. COUNTY ZONING

The proposed affordable senior housing site is zoned "Public/Quasi-Public" by Maui County zoning. While the current zoning does not allow for the proposed residential use, the Section 201H application, which will be filed with the Maui County Council, will include an exemption from the County's Title 19 zoning provisions which would allow for the proposed project.

E. HAWAII COASTAL ZONE MANAGEMENT PROGRAM

The Hawai'i Coastal Zone Management Program (HCZMP), as formalized in Chapter 205A, HRS, establishes objectives and policies for the preservation, protection and restoration of natural resources of Hawai'i's coastal zone. The subject property is not within the County of Maui's Special Management Area.

As set forth in Chapter 205A, HRS, this section addresses the project's relationship to applicable coastal zone management considerations.

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 non-point 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, HRS.

Response: The project site is located upland, miles away from the coastline. As such, the proposed action is not expected to impact coastal recreational opportunities or affect existing public access to the shoreline.

2. **Historical/Cultural 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 archeological 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.

Response: The proposed project is not anticipated to have an adverse effect on historical or cultural resources. An archaeological inventory survey was performed for the project area. Refer to **Appendix "D"**. Two (2) cultural resources, Site 5800, consisting of ten (10) features, and Site 5824, which is the Waiakoa Gymnasium, were documented. Due to the fact that the parcel was previously impacted and the lack of cultural materials on the surface, no further archaeological work was recommended. However, precautionary monitoring was recommended due to the possible existence of subsurface features and/or human remains onsite. In the event that any subsurface archaeological resources are found during construction activities, all work will cease and the State Historic Preservation Division will be contacted immediately to determine appropriate mitigation measures.

3. **Scenic and Open Space Resources**

Objectives: 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.

Response: The proposed affordable senior housing project will be designed to ensure visual compatibility with the surrounding land uses. The project will call for the construction of two-story buildings that will “step down” to coincide with the site’s downward sloping topographic condition. The buildings will not be visible off of Lower Kula Road, as they will be located behind and down-slope of the Kula Gym. Because the project site will be located amidst urban development, along Kula Highway and will not fall within a coastal scenic or open space view corridor, there should be no adverse impact on scenic or open space resources.

4. Coastal Ecosystem

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.

Response: The proposed action is not expected to adversely impact coastal ecosystems. Runoff will be retained in subsurface retention basins or drainage manholes. Drainage system improvements will be designed in accordance with applicable regulatory standards to ensure that there is no adverse effect on downstream properties.

In addition, appropriate erosion control measures and Best Management Practices will be implemented to minimize the effects of stormwater runoff during construction of the project and to ensure that coastal ecosystems are not adversely impacted.

5. **Economic Use**

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 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.

Response: The proposed project will be a positive contribution to the local economy through the generation of affordable housing for seniors to help address current

demand and creation of construction-related job opportunities. Surrounding businesses, such as Cafe 808 and Morihara Store, will benefit from the patronage of the residents. The proposed project is consistent with the objective and policies for economic use.

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 pollution hazards;
- c. Ensure that developments comply with requirements of the Federal Flood Insurance Program; and
- d. Prevent coastal flooding from inland projects.

Response: The project site falls within Zone C, an area of minimal flooding. Drainage improvements will be designed in accordance with the Drainage Standards of the County of Maui to ensure that the project will not adversely affect downstream properties from the effects of flooding and erosion.

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 of 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.

Response: This Environmental Assessment has been prepared for public review in compliance with Chapter 343, HRS, and Chapter 200 of Title 11, Administrative Rules, *Environmental Impact Statement Rules*.

The proposed project will be processed as a Section 201H, HRS project. Public review will be provided through Council meetings on the proposal.

On November 17, 2005, the applicant presented the project to the Kula Community Association (KCA) for the residents' review and comment. Subsequent meetings with the KCA's Planning Committee and Board were also held. The applicant plans on keeping the Board and its general membership informed as the project progresses through the planning process.

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.

Response: An opportunity for agency and public review will be provided as part of the notification review and comment process required for the Environmental Assessment, Chapter 343, HRS, and through the Section 201H, HRS review process. As noted above, the applicant is undertaking ongoing coordination with the Kula Community Association. The County's objective of public awareness, education and

participation is being addressed through these efforts.

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.

Response: The project site is located upland, away from the shoreline and is not anticipated to impact shoreline processes.

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

- c. Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources.

Response: As previously stated, the project is located inland, away from the ocean and is, therefore, not anticipated to have an impact on marine or coastal resources.

**IV. SUMMARY OF
ADVERSE
ENVIRONMENTAL
EFFECTS WHICH
CANNOT BE AVOIDED**

IV. SUMMARY OF ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED

The proposed development will have a limited, unavoidable construction-related impact on the environment, as described in Chapter II, Potential Impacts and Mitigation Measures.

Potential effects include noise-generated impact associated with site preparation and construction activities. In addition, there may be a temporary impact on air quality from dust generation and discharge of exhaust from construction equipment. It should be noted, however, that the impact will be minimal and mitigated through the use of BMPs.

No significant, long-term adverse environmental impacts are anticipated as a result of the proposal.

V. ALTERNATIVES TO THE PROPOSED ACTION

V. ALTERNATIVES TO THE PROPOSED ACTION

As previously stated, as of January 2004 there is an extensive wait list for Hale Mahaolu facilities. Other senior housing projects, such as the Central Maui Senior Housing, Lokenani Hale in Wailuku, and Hale Mahaolu Ehiku in Kihei, also are being proposed or implemented, however, none will be located Upcountry. Thus, the "no action" alternative is not a viable option for addressing the housing needs of the elderly in this region.

Given cost of housing in Hawai'i and considering the low, long-term lease rents proposed, the project will not only narrow the gap created by the shortage of affordable housing units on Maui; but, *more importantly, it will provide senior citizens with a new independent living opportunity.*

A. DESIGN ALTERNATIVES

The physical condition of the property was assessed to ensure that programmatic requirements for senior living can be met. Slope conditions of the property, for example, required building placements which optimize vehicular access and parking while providing for viable pedestrian movement. Additionally, the applicant wishes to continue its lease of the Kula Gym to the County of Maui to maintain this neighborhood recreational facility. The gym's location precludes access from Lower Kula Road, thus resulting in the need for access off of Kula Highway. From a site planning perspective, the proposed design is the optimal choice. No other alternative uses for the property were considered by the applicant, as the need for affordable senior housing units remains a significant community need.

**VI. IRREVERSIBLE AND
IRRETRIEVABLE
COMMITMENTS OF
RESOURCES**

VI. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

The proposed action will not call for a substantial commitment of public services or facilities. Development of the proposed project will involve a commitment of energy, labor, fiscal and material resources. The use of these resources, when weighed against the expected benefit to be derived from the project, is not considered an adverse commitment.

VII. FINDINGS AND CONCLUSIONS

VII. FINDINGS AND CONCLUSIONS

The "Significance Criteria", Section 12 of the Administrative Rules, Title 11, Chapter 200, "Environmental Impact Statement Rules", were reviewed and analyzed to determine whether the proposed project will have significant impacts to the environment. The following analysis is provided:

1. **No Irrevocable Commitment to Loss or Destruction of any Natural or Cultural Resource Would Occur as a Result of the Proposed Project**

The proposed action will not result in any adverse environmental impacts. There are no known, rare, threatened or endangered species of flora, fauna, avifauna or important habitats located within the project sites.

An Archaeological Inventory Report was prepared for the project by Xamanek Researches, LLC. Refer to **Appendix "D"**. In terms of archaeology, the ground surface has been previously disturbed in the past five (5) to ten (10) years, evidenced by limited clearing of wattle trees. The ground disturbance, lack of cultural materials found through subsurface tests and the small size of features onsite have eliminated the need for further archaeological work. However, subsurface features and/or human remains onsite may possibly exist. Thus, precautionary archaeological monitoring has been recommended.

Should archaeological features, cultural artifacts or human burials be located during construction activities, work in the area of the find shall be promptly halted and the find protected from further disturbance. The SHPD will be immediately contacted to determine the significance of the find and establish appropriate mitigative measures, if necessary.

2. **The Proposed Action Would Not Curtail the Range of Beneficial Uses of the Environment**

The proposed action and the commitment of land resources would not curtail the range of beneficial uses of the environment. The proposed use for senior housing is compatible with surrounding rural uses.

3. **The Proposed Action Does Not Conflict with the State's Long-term Environmental Policies or Goals or Guidelines as Expressed in Chapter 344, Hawai'i Revised Statutes**

The State's Environmental Policy and Guidelines are set forth in Chapter 344, Hawai'i Revised Statutes. The proposed action is consistent with the policies and guidelines.

4. **The Economic or Social Welfare of the Community or State Would Not be Substantially Affected**

The proposed action will have a beneficial effect on the local economy during construction. In the long term, the proposed project will support the local economy through the contribution of salaries, wages, and benefits, as well as through the purchases of goods and services from local merchants and service providers. The project will be a social welfare benefit to the Upcountry area.

5. **The Proposed Action Does Not Affect Public Health**

No adverse impact to public health or welfare is anticipated as a result of the proposed action. The proposed 201H exemptions will not compromise public health or welfare.

6. **No Substantial Secondary Impacts, Such as Population Changes or Effects on Public Facilities are Anticipated**

The proposed project is designed to accommodate seniors who are existing residents of Maui. As such, no impact to the local population is anticipated.

The proposed action is not expected to adversely impact existing infrastructure systems and facilities. Best Management Practices (BMP's) and appropriate erosion control measures will be utilized during the construction period. Drainage system improvements will be constructed in accordance with applicable regulatory design standards to ensure that surface runoff will not have an adverse effect on adjacent or downstream properties. The proposed action is not expected to significantly impact public services such as police, fire, and emergency medical operations. No adverse impacts to educational, recreational, and solid waste collection and disposal facilities and resources are anticipated.

7. **No Substantial Degradation of Environmental Quality is Anticipated**

During the construction phase of the project, there will be short-term air quality and noise impact as a result of the project. In the long term, effect on air quality and ambient noise levels should be minimal. The proposed action is not anticipated to significantly affect the open space and scenic character of the area.

No substantial degradation of environmental quality resulting from the action is anticipated.

8. **The Proposed Action Does Not Involve a Commitment to Larger Actions, Nor Would Cumulative Impacts Result in Considerable Effects on the Environment**

The proposed action does not involve a commitment to larger actions. In addition, the proposed project is not anticipated to produce impacts that would cumulatively result in an adverse effect on the environment.

9. **No Rare, Threatened or Endangered Species or Their Habitats Would be Adversely Affected by the Proposed Action**

There are no rare, threatened or endangered species of flora, fauna, avifauna or important habitats that will be adversely affected by the project.

10. **Air Quality, Water Quality or Ambient Noise Levels Would Not be Detrimentially Affected by the Proposed Project**

Construction activities will have an impact on air quality and noise; however, it will be minimal and temporary. Dust control measures, such as regular watering and sprinkling, will be implemented to minimize wind-blown emissions. Noise impact will be mitigated through limitation on construction to daylight work hours. Utilizing approved BMPs, water quality should not be affected.

In the long term, the proposed action is not anticipated to have a significant impact on air and water quality or ambient noise levels.

11. **The Proposed Project Would Not Affect Environmentally Sensitive Areas, Such as Flood Plains, Tsunami Zones, Erosion-prone Areas, Geologically Hazardous Lands, Estuaries, Fresh Waters or Coastal Waters**

The project site is not located within and would not affect environmentally sensitive

areas. The project site is not subject to flooding or tsunami inundation. Soils of the project sites are not erosion-prone. There are no geologically hazardous lands, estuaries, or coastal waters within or adjacent to the project sites.

12. **The Proposed Action Would Not Substantially Affect Scenic Vistas and Viewplanes Identified in County or State Plans or Studies**

The proposed development will not block scenic vistas or viewplanes. The project will not affect scenic corridors, coastal scenic or open space resources.

13. **The Proposed Action Would Not Require Substantial Energy Consumption**

The proposed action will involve the short-term commitment of fuel for equipment, vehicles, and machinery during construction activities. However, this use is not anticipated to result in a substantial consumption of energy resources. In the long term, the project will create an additional demand for electricity. However, this demand will not be substantially or excessively more than the energy consumed throughout the region.

Based on the foregoing findings, the proposed action will not result in any significant adverse impact on the environment.

**VIII. LIST OF PERMITS
AND APPROVALS**

VIII. LIST OF PERMITS AND APPROVALS

The following permits and approvals will be required prior to the implementation of the project:

State of Hawai'i

1. NPDES Permit
2. Community noise permit, as required

County of Maui

1. Section 201H, approval by Maui County Council
2. Grading permit
3. Building permit

**IX. AGENCIES
CONSULTED DURING THE
PREPARATION OF THE
DRAFT ENVIRONMENTAL
ASSESSMENT; LETTERS
RECEIVED AND
RESPONSES TO
SUBSTANTIVE
COMMENTS**

OCT 17 2005

United States Department of Agriculture



 NRCS Natural Resources
Conservation Service

210 Ima Kala Street, Suite #209, Wailuku, HI 96793-2100

Our People...Our Islands...In Harmony

October 14, 2005

Mr. Michael T. Munekiyo, Project Manager
Munekiyo & Hiraga
305 High Street, Suite 104
Wailuku, Hawaii 96793

Subject: Proposed Affordable Senior Housing Project
Kula, Maui, Hawaii
TMK (2) 2-2-14:21

Dear Mr. Munekiyo,

Design parking lot/driveways which will direct and capture storm water run off to landscape areas.

Maintenance of temporary erosion control measures should be maintained and grubbing materials needs to be discarded correctly to reduce the impact of run off to the ocean

Native plants and groundcovers are highly recommended for this area to reduce water usage. Landscaping should be incorporated and coordinated with construction activities so that vegetated areas will be planted and irrigated as soon as possible.

Thank you for the opportunity to comment.

Sincerely,

Ranae Ganske-Cerizo
District Conservationist



MICHAEL T. MUNEKIYO
GWEN DHASHI HIRAGA
MITSURU "MICH" HIRANO

KARLYNN KAWAHARA

January 31, 2006

Ms. Ranae Ganske-Cerizo
District Conservationist
United States Department of Agriculture
Natural Resources Conservation Service
210 Imi Kala Street, Suite #209
Wailuku, Hawaii 96793

SUBJECT: Proposed Senior Housing Project at TMK 2-2-014:021, Kula, Maui

Dear Ms. Ganske-Cerizo:

Thank you for your letter dated October 7, 2005, commenting on the proposed affordable senior housing project in Kula. In response to your comments, we would like to note the following:

1. Grading and grubbing will be addressed in the Environmental Assessment. I will forward your letter to the project architect and civil engineer to ensure erosion control.
2. The civil engineer has prepared a Preliminary Drainage Report which discuss the expected increase in runoff from the proposed project and includes mitigation. The drainage report will be included in the Environmental Assessment, along with Best Management Practices.
3. The suggestions on use of native plants and groundcovers to reduce water usage, as well as landscaping will be considered and forwarded to the landscape architect for review and possible incorporation into plans.

Ms. Ranae Ganske-Cerizo
January 31, 2006
Page 2

Thank you again for your input. A copy of the Draft Environmental Assessment will be provided to your office for review and comment. In the meantime, if there are any questions in regards to this proposal, please do not hesitate to call me at 244-2015.

Very truly yours,



Tara Nakashima, Planner

TN:yp

cc: Elmer Cravalho, Kula Community Federal Credit Union
Gerald Hiyakumoto, Hiyakumoto + Higuchi Architects
Kirk Tanaka, R. T. Tanaka Engineers

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REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
U. S. ARMY ENGINEER DISTRICT, HONOLULU
FT. SHAFTER, HAWAII 96858-5440

OCT 13 2005

October 11, 2005

Regulatory Branch

File No. POH-2005-556

Ms. Tara K. Nakashima, Planner
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Ms. Nakashima:

This responds to your letter dated October 3, 2005 concerning preparation of a Draft Environmental Assessment (DEA) for Proposed Affordable Senior Housing Project at Kula, Maui, Hawaii (TMK 2-2-2-14: 21). We have reviewed the materials submitted with respect to the Corps' authority to issue Department of the Army (DA) permits pursuant to Section 10 of the Rivers and Harbors Act of 1899 (33 USC 403) and Section 404 of the Clean Water Act (33 USC 1344).

Based on the information you provided, it appears the project would not involve any discharge of dredge or fill material into waters of the United States, including wetlands. Based on this understanding, I have tentatively determined that a DA permit is not required. A final determination of permit requirements can be provided when project plans are developed and delineated with respect to any such water bodies that may be present. Please send us a copy of the DEA when it is available.

If you have any questions regarding this preliminary jurisdictional determination, please contact Mr. Peter Galloway by phone at 808-468-8416, by fax at 808-438-0460, or by electronic mail at peter.c.galloway@usace.army.mil. Please reference the above file number regarding this project in future correspondence.

Sincerely,

George P. Young, P.E.
Chief, Regulatory Branch

LINDA LINGLE
GOVERNOR

OCT 20 2005

PATRICIA HAMAMOTO
SUPERINTENDENT



STATE OF HAWAII
DEPARTMENT OF EDUCATION
P.O. BOX 2360
HONOLULU, HAWAII 96804

OFFICE OF THE SUPERINTENDENT

October 21, 2005

Ms. Tara K. Nakashima, Planner
Munekiyo & Hiraga Inc.
305 High Street, Suite 104
Wailuku, Hawai'i 96793

Dear Ms. Nakashima:

SUBJECT: Early Consultation for Senior Housing Project, Kula, Maui, TMK: 2-2-14:21

The Department of Education (DOE) is concerned about the potential traffic impacts of locating a senior housing project across Kula Highway from Kula Elementary School. In your written description, there is already enough concern about the project's traffic impact to limit access to right-turn in and right-turn out only, so the DOE will carefully study the traffic impact analysis. We would be concerned that by limiting access there might be a chance that more people might use the school drop-off area to make their approach into the housing. We hope the traffic study will take into account all possible permutations of traffic, as well as the number of student pedestrians expected to cross Kula Highway at the start and end of the school day.

Thank you for the opportunity to offer our preliminary concerns. If you have any questions, please call Rae Loui, Assistant Superintendent of the Office of Business Services, at 586-3444 or Heidi Meeker of the Facilities Development Branch at 733-4862.

Very truly yours,

A handwritten signature in cursive script, appearing to read "Patricia Hamamoto".

Patricia Hamamoto
Superintendent

PH:ly

Attachment

cc: Rae Loui, Asst. Supt., Office of Business Services
Ken Nomura, CAS, Baldwin/King Kekaulike/Maui High Complex Areas

AN AFFIRMATIVE ACTION AND EQUAL OPPORTUNITY EMPLOYER

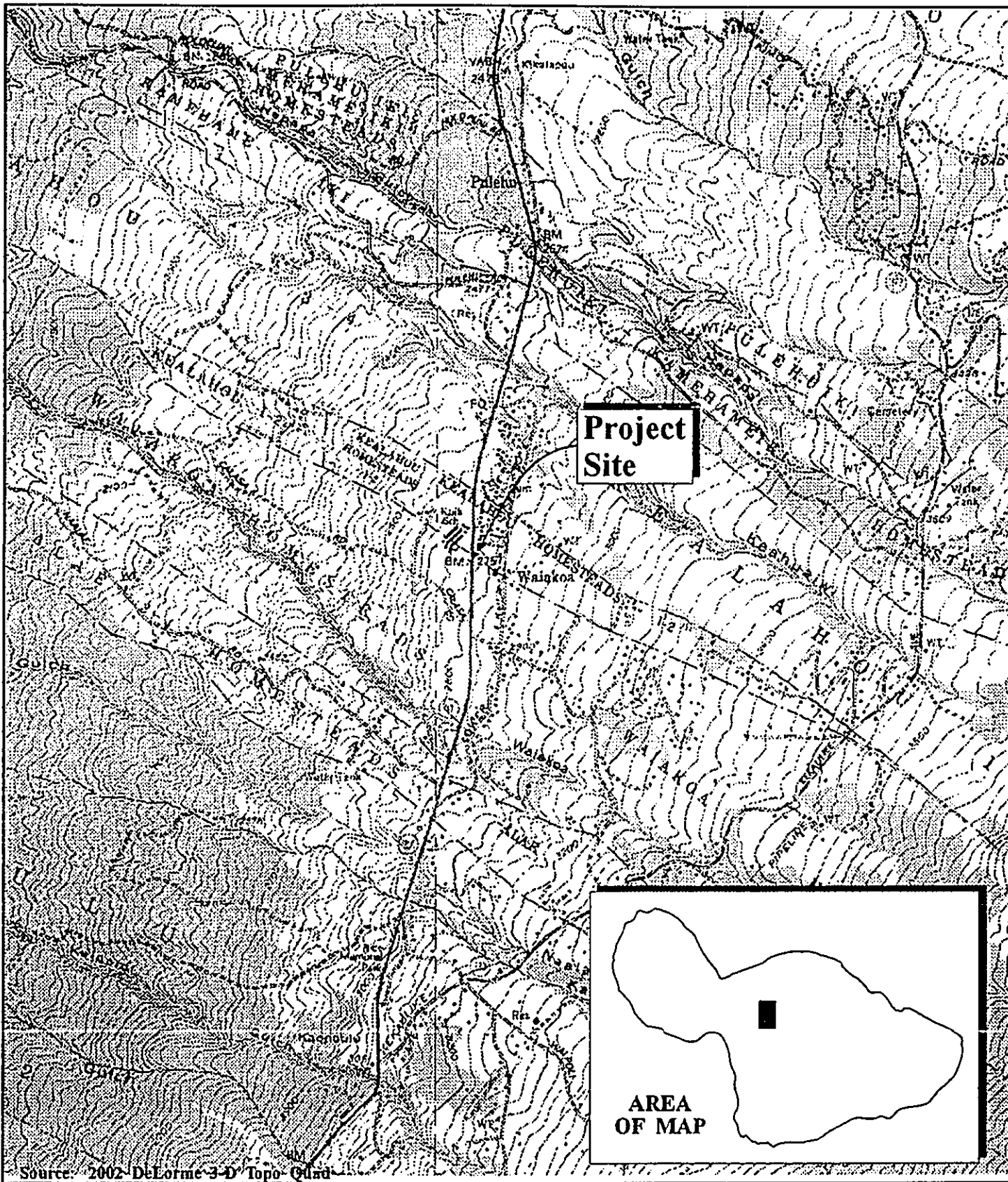
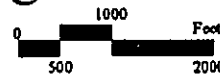
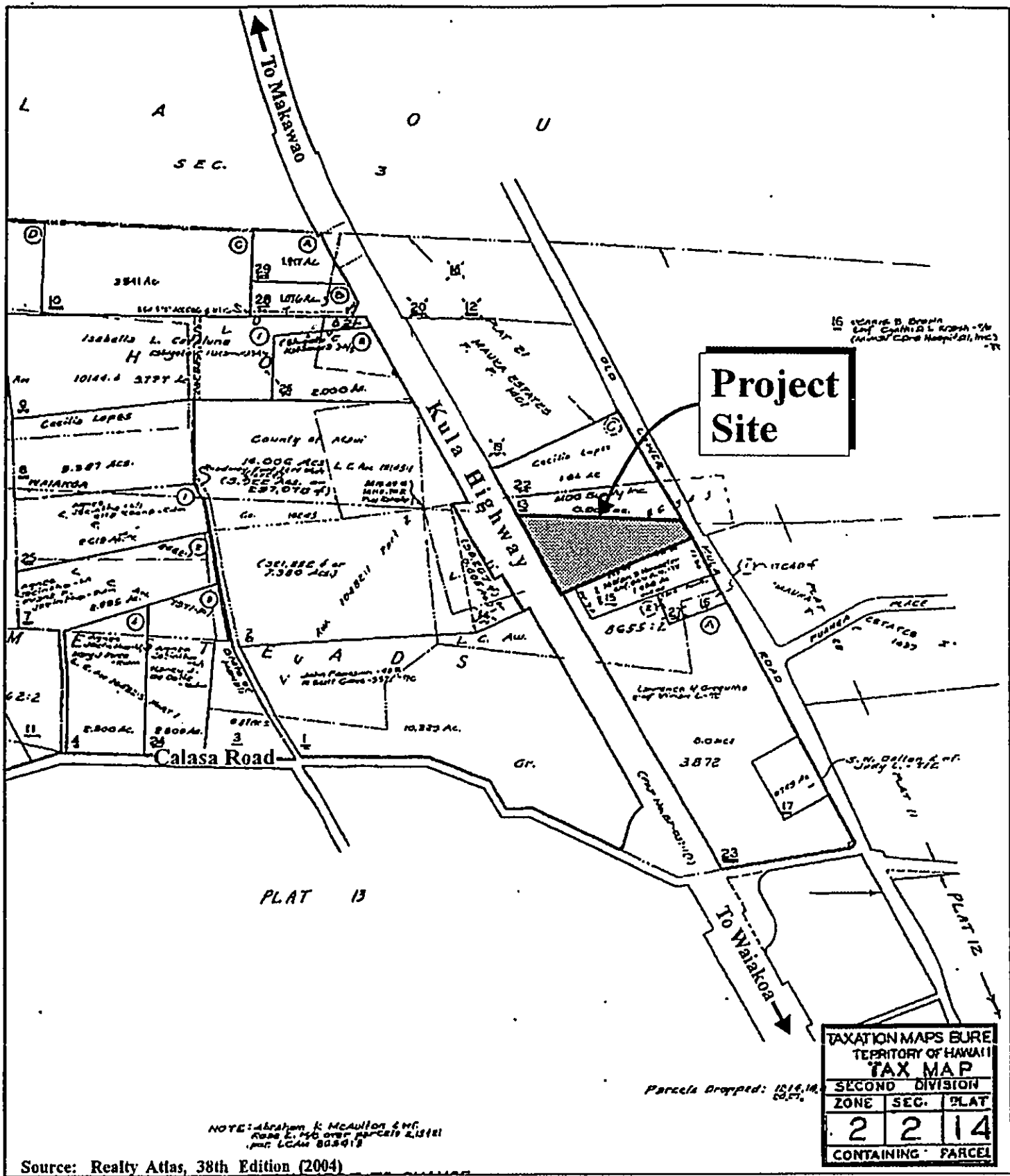


Figure 1 Proposed Affordable Senior Housing
Subdivision at Kula
Regional Location Map



Prepared for: Kula Community Federal Credit Union

MUNEKIYO & HIRAGA, INC.



**Figure 2 Proposed Affordable Senior Housing
Subdivision at Kula
Site Location Map**



Prepared for: Kula Community Federal Credit Union



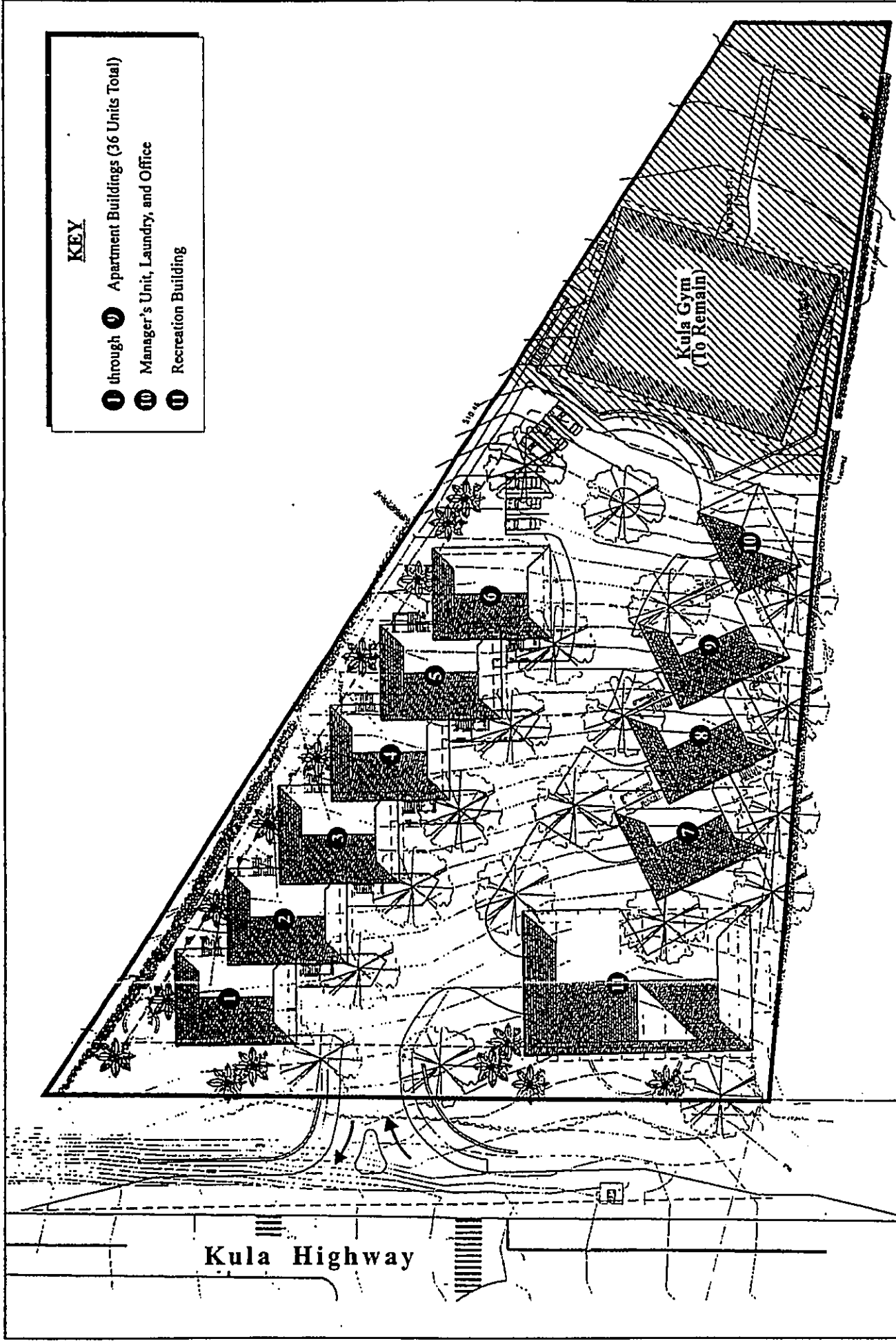


Figure 3 Proposed Affordable Senior Housing Subdivision at Kula
Conceptual Site Plan





MICHAEL T. MUNEKIYO
GWEN OHASHI HIRAGA
MITSURU "MICH" HIRANO

KARLYNN KAWAHARA

January 31, 2006

Patricia Hamamoto, Supervisor
State of Hawaii
Department of Education
P. O. Box 2360
Honolulu, Hawaii 96804

SUBJECT: Proposed Senior Housing Project at TMK 2-2-014:021, Kula, Hawaii

Dear Ms. Hamamoto:

Thank you for your letter dated October 21, 2005, commenting on the proposed affordable senior housing project in Kula. In response to your comments, we would like to note the following:

A traffic impact analysis has been prepared by the traffic engineer and will be included in the Environmental Assessment. Also, a sight distance analysis is being prepared by the project engineer. Your letter will be forwarded to them for their consideration in preparation of their studies.

Thank you again for your input. A copy of the Draft Environmental Assessment will be provided to your office for review and comment. In the meantime, if there are any questions in regards to this proposal, please do not hesitate to call me at 244-2015.

Very truly yours,

Tara K. Nakashima, Planner

TKN:lfm

cc: Elmer Cravalho, Kula Community Federal Credit Union
Gerald Hiyakumoto, Hiyakumoto + Higuchi Architects, Inc.
Kirk Tanaka, R.T. Tanaka Engineers
Cathy Leong, Wilson Okamoto Corporation

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environment
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OCT 18 2005

LINDA LINGLE
GOVERNOR OF HAWAII



CHIYOME L. FUKINO, M.D.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
P.O. BOX 3378
HONOLULU, HAWAII 96801-3378

In reply, please refer to:
EMD / CWB

10056PKP.05

October 12, 2005

Ms. Tara K. Nakashima
Planner
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Ms. Nakashima:

**Subject: Proposed Affordable Senior Housing Project at TMK: (2) 2-2-014:021
Kula, Maui, Hawaii**

The Department of Health (DOH), Clean Water Branch (CWB), acknowledges receipt of the subject document, dated October 3, 2005. The CWB has reviewed the limited information contained in the subject document and offers the following comments:

1. The Army Corps of Engineers should be contacted at (808) 438-9258 for this project. Pursuant to Federal Water Pollution Control Act (commonly known as the "Clean Water Act" (CWA) Paragraph 401(a)(1), a Section 401 Water Quality Certification (WQC) is required for "[a]ny applicant for Federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may result in any discharge into the navigable waters..." (emphasis added). The term "discharge" is defined in CWA, Subsections 502(16), 502(12), and 502(6); Title 40, Code of Federal Regulations (CFR), Section 122.2; and Hawaii Administrative Rules (HAR), Chapter 11-54.
2. In accordance with HAR, Sections 11-55-04 and 11-55-34.05, the Director of Health may require the submittal of an individual permit application or a Notice of Intent (NOI) for general permit coverage authorized under the National Pollutant Discharge Elimination System (NPDES).
 - a. An application for an NPDES individual permit is to be submitted at least 180 days before the commencement of the respective activities. The NPDES application forms may also be picked up at our office or downloaded from our website at <http://www.hawaii.gov/health/environmental/water/cleanwater/forms/indiv-index.html>.

Ms. Tara K. Nakashima
October 12, 2005
Page 2

- b. An NOI to be covered by an NPDES general permit is to be submitted at least 30 days before the commencement of the respective activity. A separate NOI is needed for coverage under each NPDES general permit. The NOI forms may be picked up at our office or downloaded from our website at:
<http://www.hawaii.gov/health/environmental/water/cleanwater/forms/genl-index.html>
 - i. Storm water associated with industrial activities, as defined in Title 40, CFR, Sections 122.26(b)(14)(i) through 122.26(b)(14)(ix) and 122.26(b)(14)(xi). [HAR, Chapter 11-55, Appendix B]
 - ii. Construction activities, including clearing, grading, and excavation, that result in the disturbance of equal to or greater than one (1) acre of total land area. The total land area includes a contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under a larger common plan of development or sale. **An NPDES permit is required before the commencement of the construction activities.** [HAR, Chapter 11-55, Appendix C]
 - iii. Discharges of treated effluent from leaking underground storage tank remedial activities. [HAR, Chapter 11-55, Appendix D]
 - iv. Discharges of once through cooling water less than one (1) million gallons per day. [HAR, Chapter 11-55, Appendix E]
 - v. Discharges of hydrotesting water. [HAR, Chapter 11-55, Appendix F]
 - vi. Discharges of construction dewatering effluent. [HAR, Chapter 11-55, Appendix G]
 - vii. Discharges of treated effluent from petroleum bulk stations and terminals. [HAR, Chapter 11-55, Appendix H]
 - viii. Discharges of treated effluent from well drilling activities. [HAR, Chapter 11-55, Appendix I]
 - ix. Discharges of treated effluent from recycled water distribution systems. [HAR, Chapter 11-55, Appendix J]
 - x. Discharges of storm water from a small municipal separate storm sewer system. [HAR, Chapter 11-55, Appendix K]
 - xi. Discharges of circulation water from decorative ponds or tanks. [HAR, Chapter 11-55, Appendix L]
3. In accordance with HAR, Section 11-55-38, the applicant for an NPDES permit is required to either submit a copy of the new NOI or NPDES permit application to the State Department of Land and Natural Resources, State Historic Preservation Division (SHPD), or demonstrate to

Ms. Tara K. Nakashima
October 12, 2005
Page 3

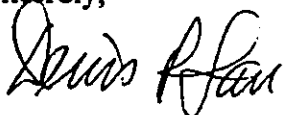
the satisfaction of the DOH that the project, activity, or site covered by the NOI or application has been or is being reviewed by SHPD. If applicable, please submit a copy of the request for review by SHPD or SHPD's determination letter for the project.

4. Any discharges related to project construction or operation activities, with or without a Section 401 WQC or NPDES permit coverage, shall comply with the applicable State Water Quality Standards as specified in HAR, Chapter 11-54.

The Hawaii Revised Statutes, Subsection 342D-50(a), requires that "[n]o person, including any public body, shall discharge any water pollutants into state waters, or cause or allow any water pollutant to enter state waters except in compliance with this chapter, rules adopted pursuant to this Chapter, or a permit or variance issued by the director."

If you have any questions, please contact Mr. Alec Wong, Supervisor of the Engineering Section, CWB, at (808) 586-4309.

Sincerely,



DENIS R. LAU, P.E., CHIEF
Clean Water Branch

KP:np



MICHAEL T. MUNEKIYO
GWEN OHASHI HIRAGA
MITSURU "MICH" HIRANO

KARLYNN KAWAHARA

January 31, 2006

Dennis R. Lau, P.E., Chief
Clean Water Branch
State of Hawaii
Department of Health
P. O. Box 3378
Honolulu, HI 96801-3378

SUBJECT: Proposed Senior Housing Project at TMK 2-2-014:021, Kula, Maui

Dear Mr. Lau:

Thank you for your letter dated October 12, 2005, commenting on the proposed affordable senior housing project in Kula. In response to your comments, we would like to note the following:

1. The Army Corps of Engineers has been consulted and has determined that a Department of the Army Permit will not be required.
2. The Department of Water Supply will comply with the requirements of Hawaii Administrative Rules (HAR) Sections 11-55-04 and 11-55-34.05, relating to the National Pollutant Discharge Elimination System, as applicable.
3. An archaeological assessment report will be prepared and submitted to the State Historic Preservation Division (SHPD) for review. As required by HAR, Section 11-55-38, appropriate coordination and documentation will be secured from SHPD.
4. Project construction and operations will comply with HAR, Chapter 11-54, as applicable.
5. The Kula Community Federal Credit Union acknowledges and understands the requirements of Hawaii Revised Statutes, Subsection 342D-50(a).

environment
planning

Dennis R. Lau, P.E., Chief
January 31, 2006
Page 2

Thank you again for your input. A copy of the Draft Environmental Assessment will be provided to your office for review and comment. In the meantime, if there are any questions in regards to this proposal, please do not hesitate to call me at 244-2015.

Very truly yours,



Tara K. Nakashima, Planner

TKN:yp

cc: Elmer Cravalho, Kula Community Federal Credit Union
Gerald Hiyakumoto, Hiyakumoto + Higuchi Architects, Inc.
Kirk Tanaka, R. T. Tanaka Engineers

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LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF HEALTH
MAUI DISTRICT HEALTH OFFICE
54 HIGH STREET
WAILUKU, MAUI, HAWAII 96793-2102

OCT 13 2005

CHIYOME L. FUKINO, M. D.
DIRECTOR OF HEALTH

LORRIN W. PANG, M. D., M. P. H.
DISTRICT HEALTH OFFICER

October 12, 2005

Ms. Tara K. Nakashima
Planner
Munekiyo & Hiraga, Inc.
305 South High Street, Suite 104
Wailuku, Hawai'i 96793

Dear Ms. Nakashima:

Subject: **Senior Housing Project**
TMK: (2) 2-2-14: 21

Thank you for the opportunity to participate in the early consultation process for the proposed housing project. The following comments are offered:

1. The noise created during the construction phase of the project may exceed the maximum allowable levels as set forth in Hawaii Administrative Rules (HAR), Chapter 11-46, "Community Noise Control". A noise permit may be required and should be obtained before the commencement of work.
2. HAR, Chapter 11-46 sets maximum allowable sound levels from stationary equipment such as compressors and HVAC equipment. The attenuation of noise from these sources may depend on the location and placement of these types of equipment. This should be taken into consideration during the planning, design, and construction of the building and installation of these types of equipment.
3. National Pollutant Discharge Elimination System (NPDES) permit coverage is required for this project. The Clean Water Branch should be contacted at 808 586-4309.

Ms. Tara K. Nakashima
October 12, 2005
Page 2

4. Wastewater disposal is a concern. Limitations imposed by HAR, Chapter 11-62, may have an impact on the project. Wastewater disposal options should be an integral part of the planning process for this project.

Should you have any questions, please call me at 808 984-8230.

Sincerely,



Herbert S. Matsubayashi
District Environmental Health Program Chief

c: WWB
CWB
NRIAQ



MICHAEL T. MUNEKIYO
GWEN OHASHI HIRAGA
MITSURU "MICH" HIRANO

KARLYNN KAWAHARA

January 31, 2006

Herbert S. Matsubayashi, Chief
District Environmental Health Program
State of Hawaii
Department of Health
54 High Street
Wailuku, Hawaii 96793

SUBJECT: Proposed Senior Housing Project at TMK 2-2-014:021, Kula, Maui

Dear Mr. Matsubayashi:

Thank you for your letter dated October 12, 2005, commenting on the proposed affordable senior housing project in Kula. In response to your comments, we would like to note the following:

1. As may be required, a noise permit will be secured, pursuant to Hawaii Administrative Rules (HAR), Chapter 11-46, "Community Noise Control".
2. The applicant will comply with HAR, Chapter 11-46, which sets maximum allowable sound levels from stationary equipment during project construction. Noise generating equipment will be placed in locations that will minimize noise effect on the surrounding area.
3. The applicant will obtain a permit to comply with the requirements of HAR, Sections 11-55-04 and 11-55-34.05, related to the National Pollutant Discharge Elimination System, as applicable.
4. A septic system will be built onsite, in accordance with HAR, Chapter 11-62, to mitigate any concern on wastewater disposal.

environment
planning

Herbert S. Matsubayashi, Chief
January 31, 2006
Page 2

Thank you again for your input. A copy of the Draft Environmental Assessment will be provided to your office for review and comment. In the meantime, if there are any questions in regards to this proposal, please do not hesitate to call me at 244-2015.

Very truly yours,



Tara Nakashima, Planner

TN:yp

cc: Elmer Cravalho, Kula Community Federal Credit Union
Gerald Hiyakumoto, Hiyakumoto + Higuchi Architects

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LINDA LINGLE
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

NOV 09 2005

RODNEY K. HARAGA
DIRECTOR

Deputy Directors
BRUCE Y. MATSUI
BARRY FUKUNAGA
BRENNON T. MORIOKA
BRIAN H. SEKIGUCHI

IN REPLY REFER TO:

STP 8.1946

November 4, 2005

Ms. Tara K. Nakashima
Planner
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Ms. Nakashima:

Subject: Early Consultation – Affordable Senior Housing Project
Kula Community Federal Credit Union
TMK: (2) 2-2-14: 21

Thank you for your advance consultation for the subject proposed housing project.

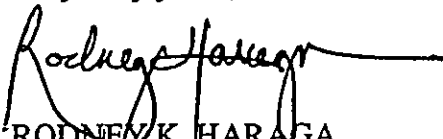
A traffic assessment report and a request for the new proposed driveway should be included in your forthcoming environmental assessment and submitted to our Department for our Highways Division's review and approval.

The traffic report should discuss the impacts the proposed housing project may have on Kula Highway with a review of the combined traffic from activities at the gymnasium, the housing project, and Kula Elementary School. The traffic report should also discuss intersection and pedestrian paths and crossings at and adjacent to the project site.

We will defer further comment on the subject project until we receive your environmental assessment report. To facilitate our review of the report, four (4) copies of the report should be transmitted to our Department.

We appreciate the opportunity to provide our comments.

Very truly yours,


RODNEY K. HARAGA
Director of Transportation



MICHAEL T. MUNEKIYO
GWEN DHASHI HIRAGA
MITSURU "MICH" HIRANO
KARLYNN KAWAHARA

January 31, 2006

Rodney K. Haraga, Director
State of Hawaii
Department of Transportation
869 Punchbowl Street
Honolulu, Hawaii 96813-5097

SUBJECT: Proposed Senior Housing Project at TMK 2-2-014:021, Kula, Maui

Dear Mr. Haraga:

Thank you for your letter dated November 4, 2005, commenting on the proposed affordable senior housing project in Kula. In response to your comments, we would like to note the following:

1. A traffic impact analysis has been prepared by the traffic engineer and will be included in the Environmental Assessment. Also, a sight distance analysis is being prepared by the project engineer. Your letter will be forwarded to them for consideration for their studies.

Thank you again for your input. A copy of the Draft Environmental Assessment will be provided to your office for review and comment. In the meantime, if there are any questions in regards to this proposal, please do not hesitate to call me at 244-2015.

Very truly yours,

Tara Nakashima, Planner

TN:yp

cc: Elmer Cravalho, Kula Community Federal Credit Union
Gerald Hiyakumoto, Hiyakumoto + Higuchi Architects, Inc.
Kirk Tanaka, R. T. Tanaka Engineer, Inc.
Cathy Leong, Wilson Okamoto Corporation
Fred Cajigal, State of Hawaii, Department of Transportation Maui County Office

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PHONE (808) 594-1888



STATE OF HAWAII
OFFICE OF HAWAIIAN AFFAIRS
711 KAPI'OLANI BOULEVARD, SUITE 500
HONOLULU, HAWAII 96813

OCT 21 2005

FAX (808) 594-1865

HRD05/2071

October 18, 2005

Tara K. Nakashima
Munekiyo and Haraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii, 96793

RE: Proposed Affordable Senior Housing Project, Kula, Maui, TMK (2) 2-2-14: 21.

Dear Ms. Nakashima,

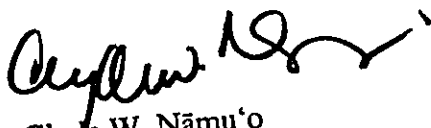
The Office of Hawaiian Affairs (OHA) is in receipt of your October 3, 2005 request for comment on the above listed proposed project, TMK (2) 2-2-14: 21. OHA offers the following comments:

OHA has no comment specific to the above listed pre-consultation request. Please contact Thelma Shimaoka of OHA's Maui office as she is likely to have information pertinent to the project area. Ms. Shimaoka may be able to assist you in contacting individuals and organizations who must be consulted to fulfill the Environmental Assessment requirement pursuant to Chapter 343, Hawaii Revised Statutes.

OHA further requests your assurances that if the project goes forward, should iwi or Native Hawaiian cultural or traditional deposits be found during ground disturbance, work will cease, and the appropriate agencies will be contacted pursuant to applicable law.

Thank you for the opportunity to comment. If you have further questions or concerns, please contact Jesse Yorck at (808) 594-0239 or jessey@oha.org.

Aloha,


Clyde W. Nāmu'o
Administrator

CORRECTION

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

OCT 21 2005

PHONE (808) 594-1888

FAX (808) 594-1865



STATE OF HAWAII
OFFICE OF HAWAIIAN AFFAIRS
711 KAPI'OLANI BOULEVARD, SUITE 500
HONOLULU, HAWAII 96813

HRD05/2071

October 18, 2005

Tara K. Nakashima
Munekiyo and Haraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii, 96793

RE: Proposed Affordable Senior Housing Project, Kula, Maui, TMK (2) 2-2-14: 21.

Dear Ms. Nakashima,


The Office of Hawaiian Affairs (OHA) is in receipt of your October 3, 2005 request for comment on the above listed proposed project, TMK (2) 2-2-14: 21. OHA offers the following comments:

OHA has no comment specific to the above listed pre-consultation request. Please contact Thelma Shimaoka of OHA's Maui office as she is likely to have information pertinent to the project area. Ms. Shimaoka may be able to assist you in contacting individuals and organizations who must be consulted to fulfill the Environmental Assessment requirement pursuant to Chapter 343, Hawaii Revised Statutes.

OHA further requests your assurances that if the project goes forward, should iwi or Native Hawaiian cultural or traditional deposits be found during ground disturbance, work will cease, and the appropriate agencies will be contacted pursuant to applicable law.

Thank you for the opportunity to comment. If you have further questions or concerns, please contact Jesse Yorck at (808) 594-0239 or jessey@oha.org.

Aloha,


Clyde W. Nāmu'o
Administrator



MICHAEL T. MUNEKIYO
GWEN OHASHI HIRAGA
MITSURU "MICH" HIRANO

KARLYNN KAWAHARA

January 31, 2006

Clyde W. Namu'o, Administrator
Office of Hawaiian Affairs
State of Hawaii
711 Kapiolani Blvd., Suite 500
Honolulu, Hawaii 96813

SUBJECT: Proposed Senior Housing Project at TMK 2-2-014:021, Kula, Maui

Dear Mr. Namu'o:

Thank you for your letter dated October 18, 2005, commenting on the Proposed Affordable Senior Housing Project in Kula. In response to your comments, we would like to note the following:

1. A call was placed to Thelma Shimaoka at the Maui Office of Hawaiian Affairs for assistance in preparation of the Draft EA.
2. The project archaeologist has recommended monitoring during ground-breaking activities. Prior to construction, a monitoring plan will be prepared for review and approval by the State Historic Preservation Division to ensure that should anything of historical concern be discovered, work will cease and the appropriate agencies will be consulted.

Thank you again for your input. A copy of the Draft EA will be provided to your office for review and comment. In the meantime, if there are any questions in regards to this proposal, please do not hesitate to call me at 244-2015.

Very truly yours,

Tara K. Nakashima, Planner

TKN:lh

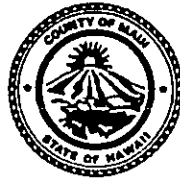
cc: Elmer Cravalho, Kula Community Federal Credit Union
Gerald Hiyakumoto, Hiyakumoto & Higuchi Architects, Inc.
Erik Fredericksen, Xamanek Researches

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environment
planning

305 High Street, Suite 104 Wailuku, Hawaii 96793 ph: (808)244-2015 fax: (808)244-8729 planning@mhinonline.com

ALAN M. ARAKAWA
MAYOR



OCT 07 2005

CARL M. KAUPALOLO
CHIEF

NEAL A. BAL
DEPUTY CHIEF

COUNTY OF MAUI
DEPARTMENT OF FIRE AND PUBLIC SAFETY

200 DAIRY ROAD
KAHULUI, MAUI, HAWAII 96732
(808) 270-7561
FAX (808) 270-7919

October 5, 2005

Tara K. Nakashima, Planner
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Subject: Proposed Affordable Senior Housing Project, Kula, Maui @ TMK (2)2-2-014:021

Dear Tara K. Nakashima,

I have had the opportunity to review the subject matter. At this time, our department does not have any specific comments related to the Senior Housing Project.

Our Department will take a detailed look of the intended project during the permit application process.

Sincerely,

A handwritten signature in black ink, appearing to read "Valeriano F. Martin".

Valeriano F. Martin
Captain
Fire Prevention Bureau



DEPARTMENT OF
HOUSING AND HUMAN CONCERNS
COUNTY OF MAUI

OCT 14 2005

ALAN M. ARAKAWA
Mayor

ALICE L. LEE
Director

HERMAN T. ANDAYA
Deputy Director

200 SOUTH HIGH STREET • WAILUKU, HAWAII 96793 • PHONE (808) 270-7805 • FAX (808) 270-7165

October 7, 2005

Ms. Tara K. Nakashima, Planner
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Ms. Nakashima:

SUBJECT: PROPOSED AFFORDABLE SENIOR HOUSING PROJECT
AT TAX MAP KEY (2) 2-2-14:21,
KULA, MAUI, HAWAII

We have reviewed your October 3, 2005 letter and enclosures regarding the subject project and would like to request that the following information be included in the project's draft environmental assessment:

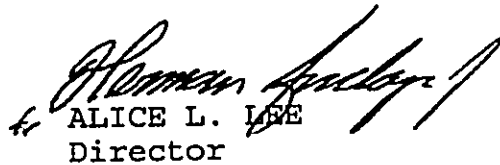
1. The slope at the project site. Also, please indicate as to whether the final grading of the project site will ensure compliance with all federal accessibility standards for persons in wheel chairs.
2. Please indicate the income group to whom the units will be affordable (e.g. 30%, 50%, 80% or 100% of Maui County's median income).
3. Please provide information on the estimated rent for the units and whether the rent will include utilities.
4. Your letter stated that the project is proposed for development pursuant to Section 201G-118, Hawaii Revised Statutes. That being the case, attached is a copy of the Department of Housing and Human Concerns' Section 201G-118, HRS, Application Process (Revised 5/04/04).

TO SUPPORT AND EMPOWER OUR COMMUNITY TO REACH ITS FULLEST POTENTIAL
FOR PERSONAL WELL-BEING AND SELF-RELIANCE.

Ms. Tara K. Nakashima
Page 2
October 7, 2005

Thank you for the opportunity to comment.

Very truly yours,


ALICE L. LEE
Director

ETO:hs

Attachment

c: Housing Administrator w/attachment

(Revised 5/04/04)

SECTION 201G-118, HRS, APPLICATION PROCESS
DEPARTMENT OF HOUSING AND HUMAN CONCERNS
COUNTY OF MAUI

To qualify as a Section 201G-118, HRS, project, a minimum of fifty-one percent (51%) of the proposed units must qualify as affordable housing units.

To qualify as an affordable housing unit, a housing unit must be affordable to persons/families in one or more of the applicable income group(s) shown below, as determined by the Director of Housing and Human Concerns, County of Maui.

Ownership Units

Single-Family Detached (Includes duplexes)	-	120% or less of the County's median income.
Multi-Family Attached	-	110% or less of the County's median income.

Rental Units

Detached/Attached	-	100% or less of the County's median income.
-------------------	---	--

In addition, the final selling price(s) and/or the final rental rate(s) must be approved by the Director of Housing and Human Concerns.

- I. Applicant prepares preliminary Section 201G-118, HRS, application.
- II. Preliminary Section 201G-118, HRS, application shall include but not be limited to the following:
 - A. INTRODUCTION
 1. PROJECT LOCATION, EXISTING USE, AND LAND OWNERSHIP
 2. BACKGROUND
 3. PROJECT NEED
 4. PROPOSED IMPROVEMENTS
 5. REQUESTED WAIVERS AND EXEMPTIONS

B. DESCRIPTION OF THE EXISTING ENVIRONMENT

1. PHYSICAL ENVIRONMENT

- a. Surrounding Land Use
- b. Climate
- c. Flood and Tsunami Zone
- d. Topography and Soils
- e. Flora and Fauna
- f. Archaeological Resources
- g. Air Quality
- h. Noise Characteristics
- i. Visual Resources

2. COMMUNITY SETTING

- a. Regional Setting
- b. Population
- c. Economy
- d. Police and Fire Protection
- e. Medical Facilities
- f. Recreational Facilities
- g. Schools
- h. Solid Waste Disposal

3. INFRASTRUCTURE

- a. Roadway Systems
- b. Water system
- c. Wastewater System
- d. Drainage

- e. Electrical and Telephone Service
- C. POTENTIAL IMPACTS AND MITIGATION MEASURES
 - 1. IMPACTS TO PHYSICAL ENVIRONMENT
 - a. Surrounding Uses
 - b. Flora and Fauna
 - c. Archaeological Resources
 - d. Air Quality
 - e. Noise
 - f. Visual Impact
 - 2. IMPACTS TO COMMUNITY SETTING
 - a. Population and Local Economy
 - b. Housing
 - c. Police, Fire and Medical Services
 - d. Recreational and Social Service
 - e. Solid Waste
 - 3. IMPACTS TO INFRASTRUCTURE
 - a. Roadways
 - b. Water
 - c. Drainage
 - d. Wastewater
 - e. Electrical and Telephone Services
- D. RELATIONSHIP TO LAND USE PLANS, POLICIES AND CONTROLS
 - 1. STATE LAND USE DISTRICTS
 - 2. GENERAL PLAN OF THE COUNTY OF MAUI
 - 3. COMMUNITY PLAN

4. ZONING

E. FINDINGS AND CONCLUSIONS

F. AGENCIES CONTACTED IN THE PREPARATION OF THE PRELIMINARY SECTION 201G-118, HRS, APPLICATION AND COMMENTS RECEIVED

G. COMMENTS RECEIVED DURING PUBLIC REVIEW PERIOD AND APPLICABLE RESPONSES

H. COMMENTS RECEIVED AFTER PUBLIC REVIEW PERIOD

I. APPENDICES - Preliminary Grading and Drainage Report
- Preliminary Building Specifications

J. LIST OF FIGURES

- 1 Regional Location Map
- 2 Site Location Map
- 3 Site Plan
- 4 Exterior Building Elevations
- 5 Unit Floor Plans
- 6 Flood Insurance Rate Map
- 7 Soil Association Map
- 8 Soil Classifications
- 9 State Land Use District Classifications
- 10 Community Plan Land Use Designations

III. Fifteen (15) copies of the preliminary Section 201G-118, HRS, application is submitted to the Director of Housing and Human Concerns, County of Maui.

IV. Director of Housing and Human Concerns transmits preliminary Section 201G-118, HRS, application to the following agencies for review and comment, and requests that comments be submitted within (30) days.

Highways Division (Maui), State Department of
Transportation
Environmental Health Division (Maui), State Department
Of Health
Historic Preservation Division, State Department of
Land and Natural Resources
Department of Public Works and Environmental
Management, County of Maui (3 copies)
Department of Planning, County of Maui
Department of Water Supply, County of Maui (2 copies)
Department of Fire and Public Safety, County of Maui
Department of Parks & Recreation, County of Maui
Department of Police, County of Maui

Department of Transportation, County of Maui
Department of Housing and Human Concerns, County of
Maui (2 copies)

- V. Agency comments are forwarded to the applicant by the Director of Housing and Human Concerns with a request that all issues of concern be addressed or resolved prior to the Section 201G-118, HRS, application being finalized.
- VI. Section 201G-118, HRS, application is finalized and twenty-one (21) copies are submitted to the Director of Housing and Human Concerns.
- VII. Director of Housing and Human Concerns transmits nineteen (19) copies of the final Section 201G-118, HRS, application to the County Council via the Mayor with a recommendation for approval. Also transmitted are two resolutions. One resolution is for approval of the project and the second resolution is for disapproval of the project. The County Council has forty-five (45) days to approve or disapprove the project. If the project is not disapproved by the forty-sixth day, the project is deemed approved.
- VIII. If a district boundary amendment by the State Land Use Commission (LUC) is required, a petition shall be submitted to the LUC by the applicant. The LUC has forty-five (45) days to approve or disapprove the petition. If the petition is not disapproved by the forty-sixth day, the petition is deemed approved.

Note: If the proposed project is subject to Chapter 343, Hawaii Revised Statutes (HRS), the preliminary and final Section 201G-118, HRS, applications shall contain all of the information that is specified for an Environmental Assessment.



MICHAEL T. MUNEKIYO
GWEN OHASHI HIRAGA
MITSURU "MICH" HIRANO

KARLYNN KAWAHARA

January 31, 2006

Alice Lee, Director
County of Maui
Department of Housing
and Human Concerns
200 South High Street
Wailuku, Hawaii 96793

SUBJECT: Proposed Senior Housing Project at TMK 2-2-014:021, Kula, Maui

Dear Ms. Lee:

Thank you for your letter dated October 7, 2005, commenting on the proposed affordable senior housing project in Kula. In response to your comments, we would like to note the following:

1. Site topographic conditions will be addressed in the Environment Assessment. Your letter will be forwarded to the project architect to ensure compliance with requirements of the Americans With Disabilities Act.
2. The applicant would like to rent out each one-bedroom unit for \$1,100.00 per month, which will be aimed toward the population with an income that falls within 90 to 100 percent of Maui County's median income guidelines. The rent will cover the cost of utilities, except for telephone service.
3. The applicant will abide by the Department of Housing and Human Concerns' Section 201G-118, Hawaii Revised Statutes (HRS) guidelines.

Alice Lee, Director
January 31, 2006
Page 2

Thank you again for your input. A copy of the Draft Environmental Assessment will be provided to your office for review and comment. In the meantime, if there are any questions in regards to this proposal, please do not hesitate to call me at 244-2015.

Very truly yours,



Tara Nakashima, Planner

TN:yp

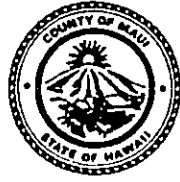
cc: Elmer Cravalho, Kula Community Federal Credit Union
Gerald Hiyakumoto, Hiyakumoto + Higuchi Architects

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ALAN M. ARAKAWA
Mayor

MICHAEL W. FOLEY
Director

WAYNE A. BOTEILHO
Deputy Director



OCT 21 2005

COUNTY OF MAUI
DEPARTMENT OF PLANNING

October 18, 2005

Ms. Tara Nakashima
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Ms. Nakashima:

RE: Preconsultation in Preparation of a Draft Environmental Assessment for the Proposed Affordable Senior Housing Project located at TMK: 2-2-014: 021, Kula, Island of Maui, Hawaii (LTR 2005/2664)

The Maui Planning Department (Department) is in receipt of your request for preconsultation comments on the proposed affordable senior housing project in Kula, Maui. According to your request, the proposed action includes the following elements:

- Construction of 36 rental apartments in nine (9) buildings for seniors;
- An on-site Manager's Unit, including a laundry facility and office space;
- A recreational building;
- A total of 44 on-site parking stalls; and
- Related improvements, including modifications to Kula Highway, grading, utility installation, and landscaping.

As indicated, the project is considered a 100% affordable and is expected to be processed as a Section 201G-118 action through the Maui County Council.

Based on the foregoing, the Department provides the following preconsultation comments:

1. The land use designations for the subject area are as follows:
 - a. Chapter 205, HRS – State Urban District;
 - b. Makawao-Pukalani-Kula Community Plan – Public/Quasi-Public; and
 - c. Title 19, Zoning – P-1, Public/Quasi-Public District.

Ms. Tara Nakashima
October 18, 2005
Page 2

Based on the land use designations, the proposed action will require a Community Plan Amendment and Change in Zoning.

2. Discuss the proposed visual buffer between the project and the Kula Gym. If landscaping is proposed, please include planting plans.
3. Discuss the proposed wastewater improvements.
4. Discuss the proposed lighting plan.
5. If the proposed action is processed as a 201-G action, list the anticipated exemptions to be requested at the time of application.
6. The Department recommends consulting with the Kula Community Association.

Thank you for the opportunity to comment. Please include the Department on the distribution list for the Draft Environmental Assessment. Should you require further clarification, please contact Ms. Kivette Caigoy, Environmental Planner, at 270-7735.

Sincerely,



for

MICHAEL W. FOLEY
Planning Director

MWF:KAC:lar

c: Wayne Boteilho, Deputy Planning Director
Clayton Yoshida, Planning Program Administrator
Kivette Caigoy, Environmental Planner
DHHC
Kula Community Association
General File
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MICHAEL T. MUNEKIYO
GWEN OHASHI HIRAGA
MITSURU "MICH" HIRANO
KARLYNN KAWAHARA

January 31, 2006

Michael W. Foley, Director
Department of Planning
County of Maui
250 South High Street
Wailuku, Hawaii 96793

SUBJECT: Proposed Senior Housing Project at TMK 2-2-014:021, Kula, Maui

Dear Mr. Foley:

Thank you for your letter dated October 18, 2005, commenting on the proposed affordable senior housing project in Kula. In response to your comments, we would like to note the following:

1. The applicant will be seeking land use exemptions through the Section 201 F-118 process to enable project implementations.
2. The project architect will work with a landscape architect to address the visual buffer concern.
3. Proposed wastewater improvements, the lighting plan, and anticipated exemptions will be addressed in the Draft EA and 201G application.
4. The applicant has been in contact with the Kula Community Association (KCA). An informational presentation was given at KCA's general meeting on November 14, 2005. A separate presentation was given on January 24, 2006 to the KCA's Planning Committee.

Michael W. Foley, Director
January 31, 2006
Page 2

Thank you again for your input. A copy of the Draft EA will be provided to your office for review and comment. In the meantime, if there are any questions in regards to this proposal, please do not hesitate to call me at 244-2015.

Very truly yours,



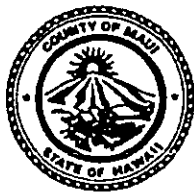
Tara K. Nakashima, Planner

TKN:lh

cc: Elmer Cravalho, Kula Community Federal Credit Union
Gerald Hiyakumoto, Hiyakumoto & Higuchi Architects, Inc.

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ALAN M. ARAKAWA
Mayor



DEPARTMENT OF PARKS AND RECREATION
Planning & Development Division
700 Hali'a Nakoa Street, Unit 2, Wailuku, Hawaii 96793

NOV 02 2005

GLENN T. CORREA
Director

JOHN L. BUCK III
Deputy Director

(808) 270-7931
Fax (808) 270-7162

October 25, 2005

Tara K. Nakashima, Planner
Munekiyo & Hiraga, Inc.
305 High Street
Wailuku, Hawaii 96793

RE: Proposed Affordable Senior Housing Project
TMK: (2) 2-2-014:021

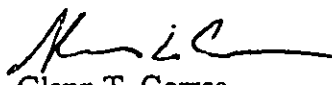
Dear Ms. Nakashima:

Thank you for the opportunity to review and provide early comment on the environmental assessment process for the Proposed Affordable Senior Housing Project in Kula, Maui, Hawaii.

Our only comment at this time is that our department is in the process of converting from the existing cesspool that currently serves the gym to a septic system. Our design engineer will coordinate the location of the new septic system to not interfere with or impact the proposed project.

Should you have any questions, or need of additional information, please call me, or Patrick Matsui, Chief of Parks Planning & Development at 270-7387.

Sincerely,


Glenn T. Correa
Director

c: Patrick Matsui, Chief of Parks Planning & Development
Willard Asato, East Maui Parks District Supervisor



MICHAEL T. MUNEKIYO
GWEN OHASHI HIRAGA
MITSURU "MICH" HIRANO

November 4, 2005

Glenn Correa, Director
Department of Parks and Recreation
County of Maui
700 Hali'a Nakoia Street, Unit 2
Wailuku, Hawaii 96793

SUBJECT: Proposed Senior Housing Project at TMK 2-2-014:021, Kula, Hawaii

Dear Mr. Correa:

Thank you for your letter dated October 25, 2005, commenting on the proposed affordable senior housing project in Kula. In response to your comments, we would like to note the following:

1. At the affordable housing task force meeting, the department's representative had mentioned the conversion of the cesspool behind the Waiakoa Gymnasium to a septic system. A suggestion was made that perhaps the project architect and engineer could coordinate with your department for shared use, if at all possible. In any event, the project architect and engineer will be in contact with your department to ensure smooth transition.

Thank you again for your input. A copy of the Draft EA will be provided to your office for review and comment. In the meantime, if there are any questions in regards to this proposal, please do not hesitate to call me at 244-2015.

Very truly yours,

Tara K. Nakashima, Planner

TKN:lh

cc: Elmer Cravalho, Kula Community Federal Credit Union
Gerald Hiyakumoto, Hiyakumoto + Higuchi Architects, Inc.
Kirk Tanaka, R.T. Tanaka Engineers, Inc.

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ALAN M. ARAKAWA
MAYOR

OUR REFERENCE
YOUR REFERENCE

POLICE DEPARTMENT
COUNTY OF MAUI

55 MAHALANI STREET
WAILUKU, HAWAII 96793
(808) 244-6400
FAX (808) 244-6411

October 10, 2005

OCT 14 2005



THOMAS M. PHILLIPS
CHIEF OF POLICE

KEKUHAUPIO R. AKANA
DEPUTY CHIEF OF POLICE

Ms. Tara K. Nakashima, Planner
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, HI 96793

Dear Ms. Nakashima:

SUBJECT: Proposed Affordable Senior Housing Project at TMK (2) 2-2-14:21
Kula, Hawaii

Thank you for your letter of October 3, 2005, requesting comments on the above subject.

We have reviewed the information submitted for this project and have enclosed a copy of our comments. Thank you for giving us the opportunity to comment on this project.

Very truly yours,

Assistant Chief Sydney Kikuchi
for: Thomas M. Phillips
Chief of Police

c: Michael Foley, Planning Department

Enclosure

COPY

TO : THOMAS PHILLIPS, CHIEF OF POLICE, COUNTY OF MAUI
VIA : MILTON MATSUOKA, CAPTAIN, WAILUKU PATROL 10/10/05
FROM : MITCHELL PELLAZAR, SERGEANT, WAILUKU PATROL
SUBJECT : PROPOSED AFFORDABLE SENIOR HOUSING PROJECT (TAX MAP
KEY (2) 2-2-14:21 KULA, MAUI, HAWAII

This To-From is being submitted as a response for early consultation comments on the above-mentioned project, and are listed as follows:

1. The entry / exit roadway point on Kula Highway has a sufficient line-of-sight distance for safely entering or exiting the project site. However because of this straight-away motorist often travel above the post speed limit in either direction, there may be a higher potential for traffic accidents at this point, due to the slower reaction times of the senior residents that are still able to drive.
2. The rear portion of the Kula Gym is well known for juveniles and young adults to congregate due to its "out of public sight" location for various activities (legal or illegal). Through not specified in this document, planning consideration should be taken to discourage loitering as well as provide the outmost measure of safety for the residents and visitors to the site.

I have no further comments at this time, pending the submission of the Draft Environmental Assessment.

Submitted for your perusal.

Sgt. M. Pellazar
Sgt. Mitchell Pellazar E-8468
Wailuku Patrol - Administrative Sergeant
10/06/05 - 1445 hours

*NO FURTHER COMMENTS
COPYED BY [Signature]
10/06/05*



MICHAEL T. MUNEKIYO
GWEN OHASHI HIRAGA
MITSURU "MICH" HIRANO

KARLYNN KAWAHARA

January 31, 2006

Thomas M. Phillips
Chief of Police
County of Maui
Police Department
55 Mahalani Street
Wailuku, Hawaii 96793

SUBJECT: Proposed Senior Housing Project at TMK 2-2-014:021, Kula, Maui

Dear Chief Phillips:

Thank you for your letter dated October 10, 2005, commenting on the proposed affordable senior housing project in Kula. In response to your comments, we would like to note the following:

1. A traffic impact analysis has been prepared for the project and will be included in the Environmental Assessment. A sight distance analysis will also be prepared to ensure that intersection designs meet applicable standards of the State Department of Transportation.
2. Safety issues will be considered and planning consideration will be given to the issue of loitering behind the Kula gym. A copy of your comment letter is being forwarded to the project architect in this regard.

Thank you again for your input. A copy of the Draft Environmental Assessment will be provided to your office for review and comment. In the meantime, if there are any questions in regards to this proposal, please do not hesitate to call me at 244-2015.

Very truly yours,

Tara Nakashima, Planner

TN:yp

cc: Elmer Cravalho, Kula Community Federal Credit Union
Gerald Hiyakumoto, Hiyakumoto + Higuchi Architects
Kirk Tanaka, R. T. Tanaka Engineers
Cathy Leong, Wilson Okamoto Corporation

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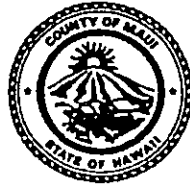
OCT 24 2005

ALAN M. ARAKAWA
Mayor

MILTON M. ARAKAWA, A.I.C.P.
Director

MICHAEL M. MIYAMOTO
Deputy Director

Telephone: (808) 270-7845
Fax: (808) 270-7955



COUNTY OF MAUI
**DEPARTMENT OF PUBLIC WORKS
AND ENVIRONMENTAL MANAGEMENT**
200 SOUTH HIGH STREET, ROOM 322
WAILUKU, MAUI, HAWAII 96793

RALPH NAGAMINE, L.S., P.E.
Development Services Administration

Wastewater Reclamation Division

CARY YAMASHITA, P.E.
Engineering Division

BRIAN HASHIRO, P.E.
Highways Division

TRACY TAKAMINE, P.E.
Solid Waste Division

October 19, 2005

Ms. Tara K Nakashima
MUNEKIYO & HIRAGA, INC.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Ms. Nakashima:

**SUBJECT: EARLY CONSULTATION FOR DRAFT ENVIRONMENTAL
ASSESSMENT
PROPOSED AFFORDABLE SENIOR HOUSING PROJECT
TMK: (2) 2-2-014:021**

We reviewed the subject application and have the following comments:

1. The project may be subject to the provisions of Title 18 (Subdivisions) of the Maui County Code (MCC). Section 18.04.470 (Subdivision), MCC, states, in part:

“ . . . the construction of four or more dwelling units on a lot, parcel, or site shall be subject to the provisions of this title.”

2. The applicant shall comply with all applicable rules and regulations for development of the project which may include, but shall not be limited to Chapter 20.08 (Soil Erosion and Sedimentation Control), MCC, Rules for the Design of Storm Drainage Facilities in the County of Maui; Section 16.26.3304 (Improvements to Public Streets), MCC; Section 16.08 (Driveways), MCC; and Title 18 (Subdivision Ordinance), MCC. Detailed comments and requirements shall be provided at the time full construction plans are submitted for review and approval.

Ms. Tara Nakashima
October 19, 2005
Page 2

3. A road-widening lot may be required for the adjoining half of Lower Kula Road and improved to County standards to include, but not be limited to pavement widening, construction of curb, gutter and sidewalk, street lights and relocation of utilities underground. Said lot shall be dedicated to the County upon completion of the improvements.
4. All structures such as walls, trees, etc., shall be removed or relocated from the road-widening strip if required. The rear boundaries of the road-widening strip shall be clearly marked to determine if said structures have been properly removed and relocated.
5. A detailed and final drainage report and a Best Management Practices (BMP) Plan shall be submitted with the grading plans for review and approval prior to issuance of grading permits. The drainage report shall include hydrologic and hydraulic calculations and the schemes for disposal of runoff waters. It must comply with the provisions of the "Rules and Design of Storm Drainage Facilities in the County of Maui" and must provide verification that the grading and runoff water generated by the project will not have an adverse effect on adjacent and downstream properties. The BMP plan shall show the location and details of structural and non-structural measures to control erosion and sedimentation to the maximum extent practicable.
6. The plans submitted for this project do not adequately show sufficient detail to determine whether the project is compliant with the building and housing codes. We will review the project for building and housing code requirements during the building permit application process.
7. Address solid waste/recycling issues.

Please call Michael Miyamoto at 270-7845 if you have any questions regarding this letter.

Sincerely,


MILTON M. ARAKAWA, A.I.C.P.
Director



MICHAEL T. MUNEKIYO
GWEN OHASHI HIRAGA
MITSURU "MICH" HIRANO

KARLYNN KAWAHARA

January 31, 2006

Milton Arakawa, Director
County of Maui
Department of Public Works and
Environmental Management
200 South High Street, Room 322
Wailuku, Hawaii 96793

SUBJECT: Proposed Senior Housing Project at TMK 2-2-014:021, Kula, Maui

Dear Mr. Arakawa:

Thank you for your letter dated October 18, 2005, commenting on the proposed affordable senior housing project in Kula. In response to your comments, we would like to note the following:

1. The applicant will comply with Title 18, Section 18.04.470 of the Maui County Code (MCC), which states, "...the construction of four or more dwelling units on a lot, parcel, or site shall be subject to the provisions of this title." We note however, that the project will be processed as a Section 210G - 118 action which would allow exemptions from Title 18 provisions. Any exemptions pertaining to Title 18 will be discussed with your department.
2. The applicant will comply with the rules and regulations set forth in Chapter 20.08 (Soil Erosion and Sedimentation Control), Section 16.26.3304 (Improvements to Public Streets, Section 16.08 (Driveways), and Title 18 (Subdivision Ordinance) of the Maui County Code (MCC). This letter is being forwarded to the project architect and project engineer to ensure compliance. As noted above, should exemptions to Maui County Code requirements relating to the foregoing chapters be sought, coordination will be undertaken with the department.
3. The Waiakoa Gymnasium currently lies at the eastern border of the parcel, near Lower Kula Road. The applicant has no plans to improve the gymnasium. Access will be off Kula Highway. Road widening requirements will be coordinated with the department.
4. Structures, including walls, trees, etc., shall be removed from the County right-of-way, as applicable.

Milton Arakawa, Director
January 31, 2006
Page 2

5. A drainage and preliminary engineering report will be included in the Draft EA. Best Management Practices shall be utilized to ensure erosion and runoff control. As previously stated, a copy of this letter is being sent to the project engineer to ensure compliance.
6. Final construction plans will show sufficient detail so as to determine whether it is compliant with building and housing codes. As previously mentioned, project architect will be copied on this letter to ensure the project meets the code requirements during the building permit application process.
7. Solid waste and recycling issues will be addressed in the Draft EA.

Thank you again for your input. A copy of the Draft EA will be provided to your office for review and comment. In the meantime, if there are any questions in regards to this proposal, please do not hesitate to call me at 244-2015.

Very truly yours,



Tara K. Nakashima, Planner

TKN:lh

cc: Elmer Cravalho, Kula Community Federal Credit Union
Gerald Hiyakumoto, Hiyakumoto & Higuchi Architects, Inc.
Kirk Tanaka, R.T. Tanaka Engineers

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OCT 13 2005



October 12, 2005

Ms. Tara K. Nakashima, Planner
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Ms. Nakashima,

Subject: Pre-Consultation for a Proposed Senior Housing Project –
Kula Highway, Kula, Maui, Hawaii
TMK: (2) 2-2-14:21

Thank you for allowing us to comment on the general overview documents for the subject project, which was received on October 4, 2005.

In reviewing our records and the information received, Maui Electric Company (MECO) may be requiring access and electrical easements for our facilities to serve the subject project site. We encourage the customer's electrical consultant to meet with us as soon as practical to verify the project's electrical demand requirements and indicate the desired service location so that service can be provided on a timely basis.

If you have any questions or concerns, please call Ray Okazaki at 871-2340.

Sincerely,

A handwritten signature in cursive script that reads "Neal Shinyama". The ink is dark and the signature is fluid and legible.

Neal Shinyama
Manager, Engineering

NS/ro:lh



MICHAEL T. MUNEKIYO
GWEN OHASHI HIRAGA
MITSURU "MICH" HIRANO

KARLYNN KAWAHARA

January 31, 2006

Neal Shinyama
Engineering Manager
Maui Electric Company, Ltd.
P. O. Box 398
Kahului, Hawaii 96733

SUBJECT: Proposed Senior Housing Project at TMK 2-2-014:021, Kula, Maui

Dear Mr. Shinyama:

Thank you for your letter dated October 12, 2005, commenting on the proposed affordable senior housing project in Kula. In response to your comments, we would like to note that your letter will be forwarded to the project architect, who will coordinate with your office to verify electrical demand and indicate the desired service location for timely service.

Thank you again for your input. A copy of the Draft Environmental Assessment will be provided to your office for review and comment. In the meantime, if there are any questions in regards to this proposal, please do not hesitate to call me at 244-2015.

Very truly yours,

Tara Nakashima, Planner

TN:yp

cc: Elmer Cravalho, Kula Community Federal Credit Union
Gerald Hiyakumoto, Hiyakumoto + Higuchi Architects

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305 High Street, Suite 104 Wailuku, Hawaii 96793 ph: (808)244-2015 fax: (808)244-8729 planning@mhincollie.com

environment
planning
government

KULA COMMUNITY ASSOCIATION**P.O. Box 417**Kula, HI 96790 <http://kulamaui.com>

The vision of the Kula Community Association is to preserve open space, support agriculture, maintain a rural residential atmosphere, and to work together as a community.

The specific purpose of this association is to improve the quality of life for the residents of Kula, to promote civic welfare, and generally to benefit the community of Kula.

November 8, 2005

To: Ms Tara Nakashima, Munekiyo & Hiraga, Inc.

From: Kula Community Association

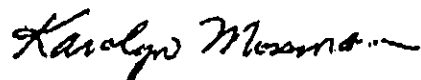
Thank-you very much for including the Kula Community Association in your request for early consultation on the "Proposed Affordable Senior Housing Project". We are very interested and keeping updated on this as the project moves forward.

The Kula Community Association recognizes the need for affordable senior housing in the Kula community and appreciates the efforts being put forth by the Kula Community Federal Credit Union to address this need. We do not, however, have enough details on the specifics of the proposal to be able to provide meaningful input.

The concerns we want to see addressed include traffic, ingress and egress to the facility, signage, lighting, landscaping, etc. In addition, we have concerns about the community's access to the current Kula Gym for use. Overall we desire quality projects which keep the ambiance and rural nature of our community in mind.

Please keep us in the process as the project continues forward. Feel free to contact me at 878-2982 or Dick Mayer at 878-1874 for further input. Again Mahalo for contacting us for comment.

Sincerely,



Karolyn Mossman
President, Kula Community Association

cc: Elmer Cravalho, Kula Community Federal Credit Union



MICHAEL T. MUNEKIYO
GWEN HASHI HIRAGA
MITSURU "MICH" HIRANO

KARLYNN KAWAHARA

January 31, 2006

Karolyn Mossman, President
Kula Community Association
P. O. Box 417
Kula, Hawaii 96790

SUBJECT: Proposed Senior Housing Project at TMK 2-2-014:021, Kula, Hawaii

Dear Ms. Mossman:

Thank you for your letter dated November 8, 2005, commenting on the proposed affordable senior housing project in Kula. In response to your comments, we would like to note the following:

1. Traffic ingress and egress will be addressed in the Draft EA. Signage, lighting and landscaping will also be covered.
2. The proposed project's relationship to Kula Gymnasium, as well as the larger surrounding community has been considered for site planning and architectural design.

Thank you again for your input. A copy of the Draft Environmental Assessment will be provided to your office for review and comment. In the meantime, if there are any questions in regards to this proposal, please do not hesitate to call me at 244-2015.

Very truly yours,

Tara K. Nakashima, Planner

TKN:lfm

cc: Elmer Cravalho, Kula Community Federal Credit Union
Gerald Hiyakumoto, Hiyakumoto + Higuchi Architects, Inc.
Cathy Leong, Wilson Okamoto Corporation

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environment
planning

305 High Street, Suite 104 Wailuku, Hawaii 96793 ph: (808)244-2015 fax: (808)244-8729 planning@mhinonline.com

LINDA LINGLE
GOVERNOR



NOV 23 2005
PATRICIA HAMAMOTO
SUPERINTENDENT

STATE OF HAWAII
DEPARTMENT OF EDUCATION
KULA ELEMENTARY SCHOOL
5000 KULA HIGHWAY
KULA, MAUI, HAWAII 96790

November 18, 2005

Tara Nakashima
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, HI 96793

Dear Tara:

This is in response to your letter dated October 3, 2005. We welcome development in the area but are concerned about traffic. Presently, in the morning from 7:30 until 7:50 and in the afternoon from 2:00 – 2:15, traffic is backed up on the Kula School Campus. With another feeder road across the street, we feel that traffic will be backed up even longer. Can the access be on the upper road?

If you have any questions, please feel free to call me at 876-7610.

Sincerely,

A handwritten signature in black ink, appearing to read "R. Yamafuji".

Rene J. Yamafuji
Principal



MICHAEL T. MUNEKIYO
GWEN OHASHI HIRAGA
MITSURU "MICH" HIRANO
KARLYNN KAWAHARA

January 31, 2006

Rene Yamafuji, Principal
Kula Elementary School
5000 Kula Highway
Kula, Maui, Hawaii 96790

SUBJECT: Proposed Senior Housing Project at TMK 2-2-014:021, Kula, Maui

Dear Ms. Yamafuji:

Thank you for your letter dated November 18, 2005, commenting on the proposed affordable senior housing project in Kula. We understand your concerns regarding access off Kula Highway. In response to your comments, we would like to note the following:

1. Preliminarily, access to the project site from Kula Highway is envisioned to be limited to right-turn in movement and right-turn out movement only. The applicant has considered access off of Lower Kula Road, however, since there are items of historical concern on the property (i.e. the Waiakoa Gymnasium and Ahupua'a walls that border the property to the north and south), it was determined that access from Lower Kula Road is not a feasible alternative.
2. We have consulted with the Department of Transportation highways division and they have expressed the same concern on allowing for access off of Kula Highway. They requested a traffic impact and sight distance analysis. Subsequently, a traffic impact analysis was conducted by the traffic engineer. Their analysis was based on 'Level of Service' (LOS) which is a quantitative and qualitative assessment of traffic operation, with LOS "A", representing ideal traffic operating conditions and LOS "F", representing unacceptable or congested traffic conditions. During the a.m. peak hour, 7:00 a.m. to 8:00 a.m., the traffic study noted operations of LOS "C". The p.m. pick-up hour of 2:00 p.m. to 2:15 p.m. was not analyzed; however, the analysis did involve a study of the p.m. peak hours of 3:30 p.m. to 4:30 p.m. and 4:00 p.m. to 5:00 p.m. and noted operations of LOS "B". Once the project is constructed, the traffic operating conditions are expected to remain the same, primarily due to the age of the residents (which will be ages 62 and older) and their reduced reliance on the automobile.

Rene Yamafuji
January 31, 2006
Page 2

3. A sight distance analysis is being prepared by the project engineer. Your letter will be forwarded to them for their consideration in preparation of their studies.

The applicant will continue coordination with the Department of Transportation to ensure that appropriate traffic mitigation measures are considered through the project design phase of work. In the meantime, a copy of the Draft Environmental Assessment will be provided to your office for review and comment. If there are any questions in regards to this proposal, please do not hesitate to call me at 244-2015.

Very truly yours,



Tara K. Nakashima, Planner

TKN:lh

cc: Elmer Cravalho, Kula Community Federal Credit Union
Gerald Hiyakumoto, Hiyakumoto & Higuchi Architects
Kirk Tanaka, R.T. Tanaka Engineers
Cathy Leong, Wilson Okamoto Corporation

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LINDA LINGLE
GOVERNOR OF HAWAII

CHIYOME L. FUKINO, M.D.
DIRECTOR OF HEALTH



STATE OF HAWAII
EXECUTIVE OFFICE ON AGING
NO. 1 CAPITOL DISTRICT
250 SOUTH HOTEL STREET, SUITE 406
HONOLULU, HAWAII 96813-2831

November 7, 2005

NOV 09 2005

PAT SASAKI
EXECUTIVE DIRECTOR

Telephone
(808) 586-0100

Fax
(808) 586-0185

Ms. Tara K. Nakashima
Munckiyo & Hiraga Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Ms. Nakashima:

Thank you for requesting our comments regarding the proposed senior housing project in Kula. We have shared your request with the Maui County Office on Aging for their comments as well.

Our general concerns for senior housing development include the following:

- Proximity and/or access to food, medical, recreational and other retail services.
- Structural designs that accommodate disabled persons.
- Management responsibilities that include disaster prevention or response provisions for residents and procedures to assist residents who may need long term care assistance and/or do not have family or friends to rely on.
- Acceptance and support of the project from surrounding community or neighborhood.

Please call me at (808) 586-0100 if you have any questions. Mahalo e aloha!

Sincerely,

A handwritten signature in black ink, appearing to read "Pat Sasaki".

Pat Sasaki
Executive Director

PS:pm



MICHAEL T. MUNEKIYO
GWEN OMASHI HIRAGA
MITSURU "MICH" HIRANO

KARLYNN KAWAHARA

January 31, 2006

Pat Sasaki, Executive Director
State of Hawaii Executive Office on Aging
No. 1 Capitol District
250 South Hotel Street, Suite 406
Honolulu, Hawaii 96813-2831

SUBJECT: Proposed Senior Housing Project at TMK 2-2-014:021, Kula, Maui

Dear Ms. Sasaki:

Thank you for your letter dated November 7, 2005, commenting on the proposed affordable senior housing project in Kula. In response to your comments, we would like to note the following:

1. The proposed project site just south and adjacent to Café 808, a local restaurant. Across the street of Café 808 is Morihara Store, a small mom-and-pop type market. The property is also located in close proximity to the Kula Community Center, where Kaunoa Senior Services operates a congregate lunch program.
2. The proposed project will be located in close proximity to the Kula Hospital, which has a medical clinic and offers 24-hour Alzheimer's and dementia care services. It is also located across less than a mile from the Kula Fire Station.
3. The proposed project site is across from the Kula Park, where the tenants could walk on one of two field areas. In addition, the park is located less than a mile away from Rice Park, where tenants could picnic. The property is located behind the Waiakoa (Kula) Gymnasium, which is open to the public. It is also in close proximity to the Kula Community Center.
4. There will be a community center onsite for senior programs.
5. The project architect has designed the project with consideration for disabled persons. Two (2) units have been designated Americans With Disabilities Act (ADA) units, with interior design and access features intended for disabled tenants.
6. Management responsibilities will address disaster prevention and response.

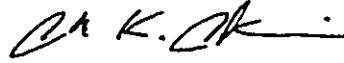
environment
planning

Pat Sasaki, Executive Director
January 31, 2006
Page 2

7. The concept of the proposed project was presented to the Kula community at the November Kula Community Association (KCA) meeting. An update on the status of the project was given to KCA's Planning Committee on January 24, 2006. Follow-up coordination with community residents will be undertaken, as appropriate.

Thank you again for your input. A copy of the Draft Environmental Assessment will be provided to your office for review and comment. In the meantime, if there are any questions in regards to this proposal, please do not hesitate to call me at 244-2015.

Very truly yours,



Tara Nakashima, Planner

TN:yp

cc: Elmer Cravalho, Kula Community Federal Credit Union
Gerald Hiyakumoto, Hiyakumoto + Higuchi Architects, Inc.

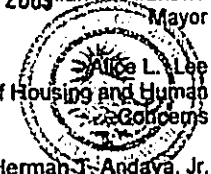
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Nutrition Program 270-7306
Leisure Program 270-7308
Assisted Transportation 270-7310
Senior Companion 270-7310
Meals on Wheels 270-7321
RSVP 270-7986
FAX 270-8034



COUNTY OF MAUI
DEPARTMENT OF HOUSING & HUMAN CONCERNS
401 Alakapa Place
Pā'ia, Maui, Hawai'i 96779

NOV 07 2005



Ian M. Arakawa
Mayor
Alice L. Lee
Director of Housing and Human Concerns
Herman T. Andaya, Jr.
Deputy Director

November 2, 2005

Ms. Tara K. Nakashima
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Ms. Nakashima;

Subject: Senior Housing Project (TMK: 2-2-14:21)
Kula, Maui, Hawaii

Please be advised that we are in support of the subject project. The project would serve an important need for senior housing in the Kula area.

The subject project is adjacent to the Kula Community Center where we operate one of our sixteen congregate lunch programs on Maui and residents of the senior housing will be encouraged by our office to participate in the congregate lunch program. Please be further assured that qualified residents will also be encouraged to take advantage of our Assisted Transportation and Meals-on-Wheels Programs.

Please call me if you have any questions.

Sincerely,

Robin Tanaka
Senior Services Administrator

DEC 12 2005

**CORE
LEADERSHIP TEAM**

Caregiver Representative

Central Maui
Regional Representative

Hale Mahaolu

Hale Makua

Hospice Maui

West Maui
Regional Representatives

Maui Adult Day Care

East Maui
Regional Representative

Maui Community College

Maui County Mayor's Office

Maui County Office on Aging

Maui Economic Opportunity

Maui Memorial Medical
Center

North Maui
Regional Representative

Maui District Health Office

Rural Development Project

South Maui
Regional Representative

Upcountry Maui
Regional Representative

**RESOURCE
PARTNERS**

Hale Mahaolu

Hale Makua

Honpa Hongwanji Mission
of Hawaii

Kapiolani Community
College

Maui Foundation

State Executive Office
on Aging

The Robert Wood Johnson
Foundation

Hawaii Business Research
Library

Holy Innocence Church

West Maui Community
Voices Project



November 30, 2005

Michael T. Munekiyo
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, HI 96793

Dear Mr. Munekiyo,

I am writing to convey to you that the Maui Long Term Care Partnership at its November 29, 2005 meeting voted to offer our strong support for the proposal by the Kula Community Federal Credit Union to construct an affordable senior housing project below the Kula Gym.

The Partnership is an island-wide coalition of over 100 partners who have worked together to develop and implement a strategic plan for long-term care and supportive services. The Partnership includes six regional teams that are working to strengthen the infrastructure in their own communities, including affordable senior housing and community based long-term care services. We have developed a strategic plan for long term care for the island of Maui and among our goals include:

"Aging with Aloha"

Our Vision: Maui is a place where the spirit of aloha (love) and ohana (family) is the essence of our kupuna (elder) friendly isle.

Our Mission is to establish and sustain a comprehensive, coordinated home and community-based model of services for all that will foster quality of life and death with dignity.

Among our planned outcomes we are working toward the idea that:

- The majority of older adults will live at home for as long as possible; and
- There will be more long-term care and support services available in the community that is more affordable and accessible to older adults and their families.

"Leading Action for Change"

Maui Long Term Care
PARTNERSHIP

808.871.7749 • 472 Kaulana Street • Kahului, Maui, HI • 96732 • ritab@mauigateway.com

Michael T. Munekiyo
Page 2

The Partnership's Core Leadership believes that the Kula Project supports the Maui Long Term Care Partnerships vision and goals. We wish the Kula Community Federal Credit Union well in their endeavors to provide 36 affordable rental units to the senior citizens of Upcountry Maui.

Sincerely,



Tony Krieg, Chair
Maui Long Term Care Partnership



HALE MAKUA
A Tradition of Caring

The logo is symbolic of our warm, personal health services. The sun never sets within this community trust, where a half-century ago, the people of our island home breathed into our walls and people a special spirit of care which has become the tradition of Hale Makua.

November 4, 2005

Tara K. Nakashima, Planner
Munekiyo & Hiraga
305 South High Street, Suite 104
Wailuku HI 96793

Dear Ms. Nakashima:

I am writing to strongly support the proposal by the Kula Community Federal Credit Union to construct an affordable senior housing project below the Kula Gym in Kula. The construction of 36 affordable rental apartments for seniors will help to provide a protected area to support independent living for seniors in the Upcountry Area.

The elderly population in Maui County is expanding rapidly. Maui needs projects like this so that frail and vulnerable seniors can live independently and keep active. Many studies have shown that senior housing linked to supportive services and transportation are a major factor in preventing premature institutionalization in nursing facilities and care homes.

	Population > 75			
	1990	2000	2010	2020
Makawao-Pukalani-Kula	622	1007	1253	1489

Source: Maui County Community Plan Update Program: Socio-Economic Forecast, Phase I Report, Final Version, June 14, 2002 (Prepared for Planning Department, County of Maui, by SMS)

As the population estimates in the above table indicate, the frail and vulnerable population age 75 and over is growing rapidly. There is currently only one senior housing project Upcountry. It is operated by Hale Mahaolu, is full and has a waiting list.

Again, I believe that this project will fill an urgent need in the community.

Sincerely,


Tony Krieg
C.E.O.

472 Kaulana Street

Kahului, Maui, HI 96732-2090

(808) 877-2761

Fax (808) 871-9262

Our Mission:

Excellence in Healthcare in Our Home and Yours

halemakua.com

**X. LETTERS RECEIVED
DURING THE DRAFT
ENVIRONMENTAL
ASSESSMENT PUBLIC
COMMENT PERIOD AND
RESPONSES TO
SUBSTANTIVE
COMMENTS**

X. LETTERS RECEIVED DURING THE DRAFT ENVIRONMENTAL ASSESSMENT PUBLIC COMMENT PERIOD AND RESPONSES TO SUBSTANTIVE COMMENTS

A Draft Environmental Assessment for the subject project was filed and published in the Office of Environmental Quality Control's, The Environmental Notice on July 23, 2006.

Comments on the Draft EA were received during the 30-day public comment period. Comments, as well as responses to substantive comments, are included in this chapter.

United States Department of Agriculture



Natural Resources Conservation Service
210 Iml Kala St. Ste 209
Wailuku, HI 96793
808-244-3100

July 28, 2006

Mr. Michael Munekiyo, Project Manager=
Munekiyo & Hiraga, Inc.
305 High Street Suite 104
Wailuku, Hawaii 96793

Dear Mr. Munekiyo,

SUBJECT: Draft Environmental Assessment for the Proposed Kula Affordable Senior Housing Project (TMK 2-2-014:021)

During the projects detailed design phase consider directing surface runoff from parking lots and driveways toward landscaped areas.

Schedule inspections of temporary drainage and erosion control features during construction of the project to ensure the integrity and function of the Best Management Practices.

Thank you for the opportunity to comment.

Sincerely,

A handwritten signature in black ink, appearing to read "Ranae F. Ganske-Cerizo".

Ranae F. Ganske-Cerizo
District Conservationist

cc: Antonie Wurster, State Department of Transportation, Highway Division Planning Branch



MICHAEL T. MUNEKIYO
GWEN OHASHI HIRAGA
MITSURU "MICH" HIRANO

KARLYNN KAWAHARA

December 12, 2006

Ranae Ganske-Cerizo, District Conservationist
U. S. Department of Agriculture
Natural Resources Conservation Service
210 Imi Kala Street, Suite 209
Wailuku, Hawaii 96793-2100

SUBJECT: Draft Environmental Assessment for the Proposed Kula Senior Housing Project at TMK 2-2-014:021, Kula, Maui

Dear Ms. Ganske-Cerizo:

Thank you for your letter dated July 28, 2006, commenting on the Draft Environmental Assessment for the proposed Kula Affordable Senior Housing Project. In response to your comments, we would like to note the following:

1. The project engineer will consider drainage improvements that will direct storm water runoff from parking lots and driveways toward landscaped areas, as applicable.
2. The project contractor will be responsible for adherence to Best Management Practices, which will include scheduled inspections of temporary drainage and erosion control features.

Thank you again for your feedback. Should you have further comments or questions, please call me at 244-2015.

Very truly yours,

Michael T. Munekiyo, A. I. C. P.
Project Manager

MTM:yp

cc: Elmer Cravalho, Kula Community Federal Credit Union
Gerald Hiyakumoto, Hiyakumoto + Higuchi Architects, Inc.
Kirk Tanaka, R.T. Tanaka Engineers, Inc.

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305 High Street, Suite 104, Wailuku, Hawaii 96793, ph: (808)244-2015, fax: (808)244-8729, planning@mhinconline.com

environment
planning
government

LINDA LINGLE
GOVERNOR

AUG 22 2006
PATRICIA HAMAMOTO
SUPERINTENDENT



STATE OF HAWAII
DEPARTMENT OF EDUCATION
P.O. BOX 2360
HONOLULU, HAWAII 96804

OFFICE OF THE SUPERINTENDENT

August 17, 2006

Mr. Michael Munekiyo, Project Manager
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Munekiyo:

Subject: Draft Environmental Assessment for the Kula Senior Housing Project,
Kula, Maui, TMK: 2-2-14:21

The Department of Education has reviewed the Draft Environmental Assessment (DEA) for the senior housing proposed for Kula, Maui. We note that the DEA's traffic study recommends, and the DEA's roadway mitigation section states that the proposed project's driveway will be located directly across from Kula Elementary School's exit driveway. We also note there will be a tapered exit lane to facilitate vehicles exiting the project and that the two existing crosswalks will extend across the project's acceleration and exit lanes. We believe these improvements are necessary and will mitigate the potential problem of cars exiting the project going north on Kula Highway at the same time cars exiting the school are turning left and also proceeding north on the highway.

Thank you for the opportunity to offer our preliminary concerns. If you have any questions, please call Heidi Meeker of the Facilities Development Branch at 733-4862.

Very truly yours,

A handwritten signature in cursive script that reads "Patricia Hamamoto".

Patricia Hamamoto
Superintendent

PH:jmb

cc: Randolph Moore, Acting Assistant Superintendent, OBS
Duane Kashiwai, Public Works Manager, FDB
Ken Nomura, CAS, Baldwin/Kekaulike/Maui Complex Areas
Antonie Wurster, Highways Division, DOT

AN AFFIRMATIVE ACTION AND EQUAL OPPORTUNITY EMPLOYER

LINDA LINGLE
GOVERNOR

AUG 24 2006

PATRICIA HAMAMOTO
SUPERINTENDENT



STATE OF HAWAII
DEPARTMENT OF EDUCATION
KULA ELEMENTARY SCHOOL
5000 KULA HIGHWAY
KULA, MAUI, HAWAII 96790

August 21, 2006

Michael Munekiyo, Project Manager
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, HI 96793

Dear Mr. Munekiyo

Thank you for the latest evaluation of the Senior Project. I continue to have concerns about traffic and the driveway of this project. It is set directly across the exit of the campus and will add confusion as well as additional "back up" on the campus as cars try to exit.

As the project gets underway, there is a second concern about dust and noise. Being so close to the School, how will that affect the students in the classrooms? We do not have air conditioning for the classrooms. The windows must be opened to allow air to circulate and cool the air. The fifth grade classrooms and the computer lab are in the building closest to the project. Dust and noise will have a negative affect on students and their achievement.

Please consider these two concerns as you continue with this project. If you have any questions, feel free to contact me at 876-7610.

Sincerely,

A handwritten signature in black ink, appearing to read "Rene J. Yamafuji".

Rene J. Yamafuji
Principal

AN AFFIRMATIVE ACTION AND EQUAL OPPORTUNITY EMPLOYER



MICHAEL T. MUNEKIYO
GWEN HIRAGA
MITSURU "MICH" HIRANO

KARLYNN KAWAHARA

December 12, 2006

Rene Yamafuji, Principal
Kula Elementary School
5000 Kula Highway
Kula, Hawaii 96790

SUBJECT: Draft Environmental Assessment for Proposed Senior Housing Project at TMK 2-2-014:021, Kula, Maui

Dear Ms. Yamafuji:

Thank you for your letter dated August 21, 2006, commenting on the proposed affordable senior housing project in Kula. In response to your comments, we would like to note the following:

1. The applicant understands your concerns with regard to the location of the accessway across the campus exit and possible creation of confusion and additional "back up" of cars exiting campus. To minimize traffic impacts arising from the driveway alignments, there is proposed a channelized island that will enable right-turn in, right-turn out movement only for traffic entering and exiting the senior housing project. The island will be delineated with markers and be designed to clearly define acceptable vehicle movement patterns.
2. The project contractor will coordinate construction activities with the school. In addition, the contractor will be required to implement Best Management Practices, to ensure that dust and noise generated from construction are minimized.

In general, the Kula Community Federal Credit Union looks forward to working closely with the Kula Elementary School, to ensure that the project can be implemented with full considerations of the school concerns.

Rene Yamafuji, Principal
December 12, 2006
Page 2

Thank you again for your feedback. Should there be any other questions or concerns in regards to this proposal, please do not hesitate to call me at 244-2015.

Very truly yours,



Michael T. Munekiyo, A. I. C. P.
Project Manager

MTM:yp

cc: Elmer Cravalho, Kula Community Federal Credit Union
Gerald Hiyakumoto, Hiyakumoto + Higuchi Architects, Inc.
Kirk Tanaka, R.T. Tanaka Engineers, Inc.
Cathy Leong, Wilson Okamoto & Associates

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LINDA LINGLE
GOVERNOR OF HAWAII

CHIYOME L. FUKINO, M.D.
DIRECTOR OF HEALTH



STATE OF HAWAII
EXECUTIVE OFFICE ON AGING
NO. 1 CAPITOL DISTRICT
250 SOUTH HOTEL STREET, SUITE 406
HONOLULU, HAWAII 96813-2831

AUG 24 2006

PAT SASAKI
EXECUTIVE DIRECTOR

Telephone
(808) 586-0100

Fax
(808) 586-0185

August 21, 2006

Mr. Michael Munekiyo, Project Manager
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Munekiyo:

Subject: Draft Environmental Assessment for the Proposed Kula Affordable Senior Housing Project (TMK 2-2-014:021).

Thank you for giving us the opportunity to comment on your Draft Environmental Assessment for the Proposed Kula Affordable Senior Housing Project (TMK 2-2-014:021). While the Executive Office on Aging (EOA) supports affordable housing for seniors, our general comments for this project are:

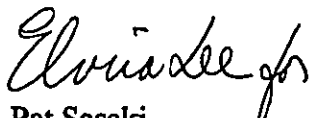
1. The structural design of placing parking spaces beneath the units may have an impact on who would be able to live in the project. The design eliminates many elderly who can live independently and who would not require the use of the two planned ADA apartments, but would have difficulty walking up and down stairs, depending on the slope. In addition, as residents grow older or become a little frailer due to medical conditions, they will have to move out or remain homebound in their units, because the steps may become more difficult for them to negotiate.
2. Since affordability is being defined as 90% to 100% of Maui's median income of \$62,350, many seniors served by the Older Americans Act of 1964, as Amended (OAA) would not qualify or be able to meet the rent of \$1,100 per month. The target population of the OAA would have an annual income of \$11,270 for one person or \$15,180 for two persons.

In conclusion, EOA recognizes that this project was meant to serve well elderly with an income range much higher than poverty level, as defined by the Department of Health and Human Services. EOA supports this project. On the other hand, EOA would like to

Mr. Michael Munekiyo
August 21, 2006
Page 2

encourage the public and private sectors to develop projects for the elderly, who are more vulnerable and have less housing options due to limited income.

Sincerely,



Pat Sasaki
Executive Director

EL:ta

cc: Antonie Wurster



MICHAEL T. MUNEKIYO
GWEN CHASEE HIRAGA
MITSURU "MICH" HIRANO
KARLYNN KAWAHARA

December 12, 2006

Pat Sasaki, Executive Director
State of Hawaii
Executive Office on Aging
No. 1 Capitol District
250 South Hotel Street, Suite 406
Honolulu, Hawaii 96813-2831

SUBJECT: Draft Environmental Assessment for Proposed Senior Housing Project at TMK 2-2-014:021, Kula, Maui

Dear Ms. Sasaki:

Thank you for your letter dated August 21, 2006, commenting on the proposed affordable senior housing project in Kula. In response to your comments, we would like to note the following:

1. The applicant understands your concern with regard to structural design. Due to site topographic constraints, the placement of parking beneath the units and the need for stairs was deemed a necessary design criteria.
2. Given the fact that the project is being solely funded by the Kula Community Federal Credit Union (KCFCU), the rent needed to be preliminarily set at \$1,100.00 per month. KCFCU believes that there is a segment of the senior community fitting the income profile which can benefit from the project.

Pat Sasaki, Executive Director
December 12, 2006
Page 2

Thank you again for your feedback. Should there be any other questions or concerns in regards to this proposal, please do not hesitate to call me at (808) 244-2015.

Very truly yours,



Michael T. Munekiyo, A. I. C. P.
Project Manager

MTM:yp

cc: Elmer Cravalho, Kula Community Federal Credit Union
Gerald Hiyakumoto, Hiyakumoto + Higuchi Architects, Inc.
Kirk Tanaka, R.T. Tanaka Engineers, Inc.

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AUG 30 2006

PHONE (808) 594-1888

FAX (808) 594-1865



STATE OF HAWAII
OFFICE OF HAWAIIAN AFFAIRS
711 KAPI'OLANI BOULEVARD, SUITE 500
HONOLULU, HAWAII 96813

HRD06/2071B

August 22, 2006

Michael Munekiyo
Munekiyo and Haraga, Inc.
305 High Street, Suite 104
Wailuku, HI 96793

RE: Draft Environmental Assessment for the Proposed Kula Affordable Senior Housing Project, Kula, Maui, TMK 2-2-014: 021.

Dear Mr. Munekiyo,

The Office of Hawaiian Affairs (OHA) is in receipt of your July 20, 2006 submission and offers the following comments:

Our staff has concurred with the proposed site-preservation measures and the intention to have an on-site archaeological monitor present during all ground-disturbing activities.

Thank you for the opportunity to comment. If you have further questions or concerns, please contact Jesse Yorck, Native Rights Policy Advocate, at (808) 594-0239 or jessey@oha.org.

Aloha,

A handwritten signature in black ink, appearing to read "Clyde W. Nāmu'o".

Clyde W. Nāmu'o
Administrator

CC: Thelma Shimaoka
OHA Community Affairs Coordinator (Maui)
140 Hoohana St., Ste. 206
Kahului, HI 96732

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF HEALTH
MAUI DISTRICT HEALTH OFFICE
54 HIGH STREET
WAILUKU, MAUI, HAWAII 96793-2102

AUG 23 2006

CHIYOME L. FUKINO, M. D.
DIRECTOR OF HEALTH

LORRIN W. PANG, M. D., M. P. H.
DISTRICT HEALTH OFFICER

August 22, 2006

Mr. Michael Munekiyo
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawai'i 96793

Dear Mr. Munekiyo:

Subject: **Draft Environmental Assessment for the Proposed Kula
Affordable Senior Housing Project
TMK: (2) 2-2-14: 021**

Thank you for the opportunity to comment on the proposed Kula Affordable Senior Housing Project. We have no further comments other than the comments previously submitted on October 12, 2005. It is strongly recommended that the Standard Comments found at the Department's website: www.state.hi.us/health/environmental/env-planning/landuse/landuse.html be reviewed, and any comments specifically applicable to this project should be adhered to.

Should you have any questions, please call me at 808 984-8230.

Sincerely,

A handwritten signature in black ink, appearing to read "H. Matsubayashi".

Herbert S. Matsubayashi
District Environmental Health Program Chief

LINDA LINGLE
GOVERNOR OF HAWAII



AUG 23 2006

GENEVIEVE SALMONSON
DIRECTOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
235 SOUTH BERETANIA STREET
SUITE 702
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185
FACSIMILE (808) 586-4186
E-mail: oeqc@health.state.hi.us

August 22, 2006

Brennon Morioka
Department of Transportation
869 Punchbowl Street
Honolulu, HI 96813

Attn: Antonie Wurster

Dear Mr. Morioka:

Subject: Draft environmental assessment (EA), Kula Affordable Senior Housing

We have the following comments to offer:

Funding: In the final EA disclose amounts or percentages of funding from all sources (state, county, federal and private).

Landscaping: In the final EA discuss proposed landscaping. We recommend the use of native Hawaiian trees and plants.

Roadway improvements: There is no mention of sidewalks or footpaths. These encourage walking to and between the housing complex, the school, the store and café, and Kula Gym. Will any be installed? If not, why not?

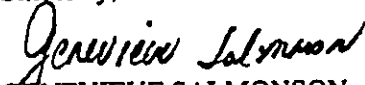
Construction impacts: "Hoerammung" is mentioned as a method of soil excavation. Describe this in greater detail in the final EA. If hoerammung produces excessive noise, we recommend prior notification to those on neighboring properties.

Historic and archeological resources: Your independent study concluded that no further work is warranted. In the final EA attach documentation from the Historic Preservation Division of DLNR showing its concurrence with this conclusion.

Public safety: In its preconsultation letter, the Maui Police Department noted that loitering at the school was a problem. What provision will you make to reduce or eliminate loitering and thereby ensure the safety of the housing complex residents?

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

Sincerely,


GENEVIEVE SALMONSON
Director

c: Michael Munekiyo



MICHAEL T. MUNEKIYO
GWEN OHASHI HIRAGA
MITSURU "MICH" HIRANO

KARLYNN KAWAHARA

December 12, 2006

Genevieve Salmonson, Director
State of Hawaii
Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu, Hawaii 96813

SUBJECT: Draft Environmental Assessment for Proposed Senior Housing Project at TMK 2-2-014:021, Kula, Maui

Dear Ms. Salmonson:

Thank you for your letter dated August 22, 2006, commenting on the proposed affordable senior housing project in Kula. In response to your comments, we would like to note the following:

1. The proposed senior housing project is being funded solely by the Kula Community Federal Credit Union. No other State, County or Federal funding will be involved.
2. The Final EA will include a schematic landscape planting plan. Native Hawaiian trees and plants will be utilized, where possible.
3. A discussion of an existing footpath and proposed paved pathway through the project area is discussed in Section II.D., "Pedestrian Access", of the Draft Environmental Assessment.
4. "Hoe-ramming" is a temporary construction activity which may be employed should large rock masses be encountered. Should this or any other construction method generating excessive noise or vibration be used, the contractor will coordinate with neighboring properties.
5. The State Historic Preservation Division (SHPD), has concluded its review of the project's archaeological inventory survey. See attached Exhibit "A". The SHPD concurs that archaeological monitoring during site work is appropriate.
6. There will be a manager onsite to monitor and report loitering activities. As may be required, coordination with the Maui Police Department will be undertaken to

Genevieve Salmonson, Director
December 12, 2006
Page 2

communicate patterns of loitering and nuisance activities in the vicinity of the project.

Thank you again for your feedback. Should there be any other questions or concerns in regards to this proposal, please do not hesitate to call me at (808) 244-2015.

Very truly yours,



Michael T. Munekiyo, A. I. C. P.
Project Manager

MTM:yp

Enclosure

cc: Elmer Cravalho, Kula Community Federal Credit Union (w/enclosure)
Gerald Hiyakumoto, Hiyakumoto + Higuchi Architects, Inc. (w/enclosure)
Kirk Tanaka, R.T. Tanaka Engineers, Inc. (w/enclosure)

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DOCUMENT CAPTURED AS RECEIVED

LINDA LINCLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
STATE HISTORIC PRESERVATION DIVISION
601 KAMOKILA BOULEVARD, ROOM 555
KAPOLELE, HAWAII 96707

PETER L. YOUNG
CHAIRMAN
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCES MANAGEMENT
ROBERT K. MARUDA
DEPUTY DIRECTOR - LAND
DEAN HAKAMA
ACTING DEPUTY DIRECTOR - WATER
AGRICULTURE
NATIVE AFFAIRS DIVISION
BUREAU OF CONSERVATION
COMMISSION ON WATER RESOURCES MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RECREATION DEPARTMENT
BUREAU OF CONSERVATION
FORESTRY AND WILDLIFE
NATIVE AFFAIRS DIVISION
LAND/LAW/ISLAND SERVICES COMMISSION
LAND
STATE HAWAII

June 5, 2006

Mr. Erik Fredericksen
P.O. Box 880131
Pukalani, Hawai'i 96788

LOG NO: 2006.1664
DOC NO: 0605JP27
Archaeology

Dear Mr. Fredericksen:

**SUBJECT: Chapter 6E-42 Historic Preservation Review --
Archaeological Inventory Survey for the Kula Community Credit Union Parcel
Waiakoa Ahupua'a, Makawao District, Island of Maui
TMK (2) 2-2-014:021**

Thank you for the opportunity to review this report which our staff received on February 23, 2006 (Madsen and Fredericksen 2006, *An Archaeological Inventory Survey of a 1.69 Acre Parcel in Waiakoa Ahupua'a, Kula, Makawao District, Island of Maui [TMK (2) 2-2-14:21]...Xamanek Researches ma*). The report has been prepared on behalf of Mr. Elmer Cravalho, Chairman of the Kula Community Federal Credit Union.

The background section acceptably establishes the ahupua'a settlement pattern and predicts the likely site pattern in the project area. The historical information summarizes the history of the post-Contact period land uses. The summary of previous archaeological work in the area provides a baseline for the current work. The subject parcel is located in an area known to contain archaeological sites representing both pre-Contact activities, as well as post-Contact activities related to agriculture and ranching.

The survey has adequately covered the project area documenting two (2) archaeological sites consisting of eleven (11) features. State Inventory of Historic Places (SIHP) 50-50-11-5800 consists of a complex of ten (10) features, six (6) of which are interpreted as pre-Contact including a division/boundary wall differentiating Waiakoa Ahupua'a, and Kealahou 1-2 Ahupua'a, and five (5) agricultural terraces. Five (5) features are interpreted as post-Contact including a boundary rock wall, a historic habitation/use terrace, and two (2) planting terraces. The second archaeological site consists of the Old Kula Gymnasium (SIHP 50-50-11-5824), across from the Kula Elementary School. The building was constructed in 1939, and is still utilized as a gathering place for the community and sports activities.

We concur that both sites are significant under Criterion "D" for the information content, and that they have been acceptably documented. We also agree that SIHP 50-50-11-5800 Feature A (Ahupua'a Boundary Wall) and SIHP 50-50-11-5801 (Kula Gymnasium) are also significant under Criterion "E", representing traditional cultural value. The ahupua'a boundary wall represents a traditional Hawaiian periphery between two ahupua'a, and the Kula Gymnasium is valuable to the Kula Community as a gathering spot.


EXHIBIT "A"

Erik Fredericksen
Page 2

The proposed project includes the construction of a manager's residence and thirty-six (36) one bedroom apartments, which are designed to provide housing below market rental value rates for senior citizens. The undertaking will not necessitate demolition of the gymnasium that will likely continue to serve as a gathering spot for the community. The boundary walls extend into adjacent parcels along the north and south borders of the subject parcel. In order to preclude damage to the boundary walls and any possible damage to undocumented subsurface historic properties, we agree that archaeological monitoring is warranted during all ground altering activities.

We find this report to be acceptable. We will await submittal of an archaeological monitoring plan. As always, if you disagree with our comments or have questions, please contact Dr. Melissa Kirkendall of the State Historic Preservation Division, Maui Section, at (808) 243-5169 as soon as possible to resolve these concerns.

Aloha,


Melanie Chinen, Administrator
State Historic Preservation Division

JP:mk:kl

- o: Bert Ratto, DPWEM, County of Maui
- Michael Foley, Director, Dept. of Planning, 250 S. High Street, Wailuku, HI 96793
- Maui Cultural Resources Commission, Dept. of Planning, 250 S. High Street, Wailuku, HI 96793

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF HEALTH
P.O. BOX 3378
HONOLULU, HAWAII 96801-3378

SEP 08 2006

CHIYOME L. FUKINO, M.D.
DIRECTOR OF HEALTH

In reply, please refer to:
EMD / CWB

08121PKP.06

August 31, 2006

Mr. Michael Munekiyo
Project Manager
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Munekiyo:

**Subject: Draft Environmental Assessment for the
Proposed Kula Affordable Senior Housing Project**

The Department of Health, Clean Water Branch (CWB), acknowledges receipt of the subject document and has no further comments regarding this project at this time.

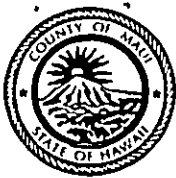
If you have any questions, please contact Ms. Kris Poentis, Engineering Section of the CWB, at (808) 586-4309.

Sincerely,

A handwritten signature in black ink, appearing to read "Denis R. Lau".

DENIS R. LAU, P.E., CHIEF
Clean Water Branch

KP:np



DEPARTMENT OF
HOUSING AND HUMAN CONCERNS
COUNTY OF MAUI

JUL 31 2006

ALAN M. ARAKAWA
Mayor

ALICE L. LEE
Director

HERMAN T. ANDAYA
Deputy Director

200 SOUTH HIGH STREET • WAILUKU, HAWAII 96793 • PHONE (808) 270-7805 • FAX (808) 270-7165

July 25, 2006

Mr. Michael Munekiyo
Project Manager
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Munekiyo:

**Subject: Proposed Kula Affordable Senior Housing
Project (TMK 2-2-014:21)**

We have reviewed the Draft Environmental Assessment (DEA) for the subject project and would like to offer the following comments:

1. Page 6, paragraph three - The estimated rent is shown as \$1,100.00 per month. Please specify that the estimated rent includes utilities, as stated in Ms. Tara Nakashima's January 31, 2006 letter to me.
2. Page 6, paragraph three - The 2005 HUD median family income for the County of Maui is shown as \$62,350.00. Please replace this with the 2006 HUD median family income for the County of Maui which is \$65,700.00.
3. The DEA did not show that it was also serving as the, Project's Preliminary Section 201G-118, HRS, application. Therefore, please be advised that our department will be requiring that a Preliminary Section 201G-118, HRS, application for the project be prepared for our distribution to the appropriate agencies for their review and comment.

In the future, if the DEA is also identified as the project's Preliminary Section 201G-118, HRS, application and the transmittal letter clearly states that comments are being requested for both purposes, it will not be necessary for our department to make a separate distribution of the project's Preliminary Section 201G-118, HRS, application.

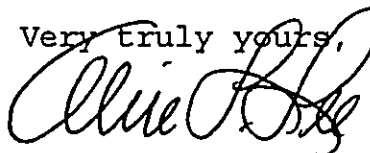
TO SUPPORT AND EMPOWER OUR COMMUNITY TO REACH ITS FULLEST POTENTIAL
FOR PERSONAL WELL-BEING AND SELF-RELIANCE.

Mr. Michael Munekiyo
Page 2
July 25, 2006

4. With the enactment of Act 180, SLH 2006, consideration should be given to explaining how it affected Chapter 201G, HRS, and what the new section number is for what was Section 201G-118, HRS.

Thank you for the opportunity to comment.

Very truly yours,



ALICE L. LEE
Director

ETO:bp

c: Edwin Okubo
Antonie Wurster



MICHAEL T. MUNEKIYO
GWEN OHASHI HIRAGA
MITSURU "MICH" HIRANO

KARLYNN KAWAHARA

December 12, 2006

Alice Lee, Director
County of Maui
Department of Housing
and Human Concerns
200 South High Street
Wailuku, Hawaii 96793

SUBJECT: Draft Environmental Assessment for Proposed Senior Housing Project at TMK 2-2-014:021, Kula, Maui

Dear Ms. Lee:

Thank you for your letter dated July 25, 2006, commenting on the proposed affordable senior housing project in Kula. In response to your comments, we would like to note the following:

1. The estimated rent for each one bedroom unit will be \$1,100.00 per month, which includes the cost of all utilities, except for telephone service.
2. In the Final Environmental Assessment, the 2005 HUD median family income of \$62,350.00 for the County of Maui will be replaced with the 2006 HUD median family income of \$65,700.00.
3. The applicant will file a separate Preliminary Section 201H, Hawaii Revised Statutes (HRS) application for your department's distribution to agencies for review and comment.
4. In the Final Environmental Assessment, references to "201G, HRS" will be changed to "201H, HRS", as a result of the enactment of Act 180, SLH 2006.

Alice Lee, Director
December 12, 2006
Page 2

Thank you again for your feedback. Should there be any other questions or concerns in regards to this proposal, please do not hesitate to call me at 244-2015.

Very truly yours,



Michael T. Munekiyo, A. I. C. P.
Project Manager

MTM:yp

cc: Elmer Cravalho, Kula Community Federal Credit Union
Gerald Hiyakumoto, Hiyakumoto + Higuchi Architects, Inc.

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AUG 16 2006

Council Chair
G. Riki Hokama

Vice-Chair
Robert Carroll

Council Members
Michelle Anderson
Jo Anne Johnson
Dain P. Kane
Danny A. Mateo
Michael J. Molina
Joseph Pontanilla
Charmaine Tavares



COUNTY COUNCIL
COUNTY OF MAUI
200 S. HIGH STREET
WAILUKU, MAUI, HAWAII 96793
www.co.maui.hi.us/council/

Director of Council Services
Ken Fukuoka

August 14, 2006

Mr. Michael T. Munekiyo
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Munekiyo:

**SUBJECT: PROPOSED KULA AFFORDABLE SENIOR HOUSING
PROJECT (TMK 2-2-014:021)**

Thank you for the opportunity to review the Draft Environmental Assessment (EA) for the proposed Kula Affordable Senior Housing Project (TMK 2-2-014:021). After review of the document, I would like to recommend that a copy of Draft EA be forwarded to:

Mr. Ken Nomura
Complex Area Superintendent
(Central/Upcountry Maui)
Department of Education
54 High Street, 4th Floor
Wailuku, Hawaii 96793

Although a copy was sent to the Superintendent for the Department of Education, I feel that a copy should also be sent to our district school office for comment.

Should you have any questions, please call me at 270-5501.

Sincerely,

A handwritten signature in cursive script, appearing to read "Joseph Pontanilla".

JOSEPH PONTANILLA
Council Member

cc: Antonie Wurster, State Department of Transportation



MICHAEL T. MUNEKIYO
GWEN DHASHI HIRAGA
MITSURU "MICH" HIRANO

KARLYNN KAWAHARA

December 12, 2006

Honorable Joseph Pontanilla
Maui County Council
200 South High Street
Wailuku, Hawaii 96793

SUBJECT: Draft Environmental Assessment for the Proposed Kula Senior Housing Project at TMK 2-2-014:021, Kula, Maui

Dear Councilmember Pontanilla:

Thank you for your letter dated August 14, 2006, commenting on the Draft Environmental Assessment for the proposed Kula Affordable Senior Housing Project. In response to your comments, we would like to note that a copy of the Draft Environmental Assessment was mailed to the Mr. Ken Nomura, Superintendent for the Department of Education Central/Upcountry Maui area on August 24, 2006. Comments received by Mr. Nomura will be incorporated in the Final Environmental Assessment.

Thank you again for your feedback. Should you have further comments or questions, please call me at 244-2015.

Very truly yours,

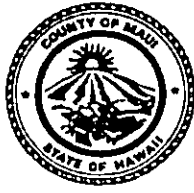
Michael T. Munekiyo, A. I. C. P.
Project Manager

TM:yp

cc: Elmer Cravalho, Kula Community Federal Credit Union
Gerald Hiyakumoto, Hiyakumoto + Higuchi Architects, Inc.
Kirk Tanaka, R.T. Tanaka Engineers, Inc.

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ALAN M. ARAKAWA
Mayor



DEPARTMENT OF PARKS & RECREATION
700 Hali'a Nakoa Street, Unit 2, Wailuku, Hawaii 96793

AUG 23 2006

GLENN T. CORREA
Director

JOHN L. BUCK III
Deputy Director

(808) 270-7230
Fax (808) 270-7934

August 15, 2006

Michael Munekiyo, Project Manager
Munekiyo & Hiraga, Inc.
305 High Street - Suite 104
Wailuku, Hawaii 96793

**RE: Draft Environmental Assessment for the
Proposed Kula Affordable Senior Housing Project
TMK: (2) 2-2-014:021**

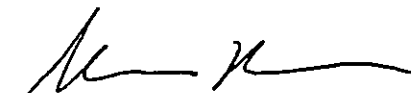
Dear Mr. Munekiyo:

Thank you for the opportunity to review and comment on the draft environmental assessment for the Proposed Kula Affordable Senior Housing Project in Kula, Maui, Hawaii.

At this time we have no further comment to offer than that given in the early consultation process concerning coordination of the conversion of the Waiakoa Gymnasium to a septic system and the construction of the proposed project.

Should you have any questions, or need of additional information, please call me, or Patrick Matsui, Chief of Parks Planning & Development at 270-7387.

Sincerely,

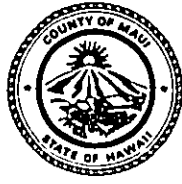

Glenn T. Correa
Director

c: Antonie Wurster, State of Hawaii, Department of Transportation
Patrick Matsui, Chief of Parks Planning & Development
Willard Asato, East Maui Parks District Supervisor

ALAN M. ARAKAWA
Mayor

MICHAEL W. FOLEY
Director

DON COUCH
Deputy Director



AUG 23 2006

COUNTY OF MAUI
DEPARTMENT OF PLANNING

August 21, 2006

Mr. Michael Munekiyo
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Munekiyo:

RE: Comments On The Draft Environmental Assessment For The Proposed Kula Affordable Senior Housing Project Located At TMK: (2) 2-2-014:021, Waiakoa, Kula, Island Of Maui, Hawaii (EAC 2006/0026) (LTR 2005/2664)

The Maui Planning Department (Department) is in receipt of your request for comments on the Draft Environmental Assessment (EA) for the proposed affordable senior housing project in Kula, Maui. According to your request, the proposed action includes the following:

- Construction of 36 rental apartments in nine (9) buildings for seniors;
- An on-site Manager's Unit, including a laundry facility and office space;
- A recreational building;
- A total of 44 on-site parking stalls; and
- Related improvements, including modifications to Kula Highway, grading, utility installation, and landscaping.

As indicated, the project is considered 100% affordable and is expected to be processed as a Section 201G-118 action through the Maui County Council.

Based on the foregoing, the Department provides the following comments on the Draft EA:

1. The accessway to the project site will be limited to right-turn in and right-turn out movements. The route for those vehicles traveling from the Pukalani area to the project site will be indirect and potentially unknown to visitors or individuals unfamiliar with

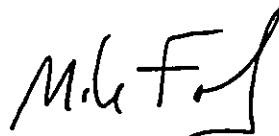
Mr. Michael Munekiyo
August 21, 2006
Page 2

the upcountry area. As a result, use of the drop-off zone for Kula Elementary School or illegal traffic movements on Kula Highway are likely to occur. The Police Department's preconsultation comments indicate this area of the Kula Highway often experiences increased speeds and there may be a higher potential for traffic accidents. Based on the foregoing, the Department recommends considering alternatives for access to the project area;

2. Chapter VIII, List of Permits and Approvals, should clarify that the Section 201G approval will exempt the proposed action from the permits listed in Appendix A;
3. In response to the Department's letter dated October 18, 2005, the applicant met with the Kula community Association (KCA) on November 14, 2006. Please include summary notes of the meeting which should include all comments both positive and negative; and
4. Discuss and include a copy of the proposed lighting plan and landscape planting plan, which shows the buffer between the proposed action and the Kula Gym.

Thank you for the opportunity to comment. Should you require further clarification, please contact Ms. Kivette Caigoy, Environmental Planner, at 270-7735.

Sincerely,



MICHAEL W. FOLEY
Planning Director

MWF:KAC:bv

c: Donald G. Couch, Deputy Planning Director
Clayton I. Yoshida, AICP, Planning Program Administrator
Kivette A. Caigoy, Environmental Planner
OEQC
DHHC
Mr. Antonie Wurster, SDOT
Kula Community Association
General File
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MICHAEL T. MUNEKIYO
GWEN OHASHI HIRAGA
MITSURU "MICH" HIRANO

KARLYNN KAWAHARA

December 12, 2006

Michael W. Foley, Director
County of Maui
Department of Planning
250 South High Street
Wailuku, Hawaii 96793

SUBJECT: Proposed Senior Housing Project at TMK 2-2-014:021, Kula, Maui

Dear Mr. Foley:

Thank you for your letter dated August 21, 2006, commenting on the proposed affordable senior housing project in Kula. In response to your comments, we would like to note the following:

1. In order to avoid the time delay and cost associated with creation of access off of Kula Highway, the applicant investigated the possibility of alternate access to the site from Lower Kula Road. However, landownership and site constraints (e.g., a`hupua`a walls) made access from Lower Kula Road problematic. The applicant has coordinated with the State Department of Transportation on the proposed accessway location, which represents the most viable alternative for site access.
2. Exemptions to be sought via the Section 201H, Hawaii Revised Statutes, request are listed in Appendix "A" of the EA document. Construction-related permits listed in Chapter VIII are not included in the exemption list.
3. As stated in the October 18, 2005 response to the Department, an informal presentation was given on November 14, 2006 at the Kula Community Association's general meeting to introduce residents to the project. Due to time constraints on presentations, no notes were taken at the meeting. However, a copy of the minutes taken by the Kula Community Association secretary and e-mail regarding approval of the minutes have been obtained. See attached Exhibit "A" and Exhibit "B". More formal presentations were also held for the Kula Community Association Planning Committee members on January 24, 2006 and for the Board on February 6, 2006. Notes were taken at the meetings and are presented in the attached Exhibit "C" and Exhibit "D".

Michael W. Foley, Director
December 12, 2006
Page 2

4. The physical separation between the senior housing project and the Kula Gym is delineated by a retaining wall. From the top of the retaining wall to the Kula Gym structure, there is a landscaping strip which will be maintained. A schematic landscape plan will be included in the Final EA. Additionally, although a lighting plan has not yet been developed, it is the intent of the Kula Community Federal Credit Union to develop a comprehensive set of lighting criteria which provides for resident safety and security, while minimizing "spillage" into the surrounding environs. Poles lights along the driveway will be fully shielded. Other lighting components will include soffit lighting which will provide safety illumination in the parking areas below the units, as well as at unit entry areas. Motion sensing lighting may be provided in the "back" areas of units, to provide for security..

Thank you again for your feedback. Should there be any additional questions or concerns, please call me at 244-2015.

Very truly yours,



Michael T. Munekiyo, A. I. C. P.
Project Manager

MTM:yp

Enclosures

cc: Elmer Cravalho, Kula Community Federal Credit Union (w/enclosures)
Gerald Hiyakumoto, Hiyakumoto + Higuchi Architects, Inc. (w/enclosures)
Kirk Tanaka, R.T. Tanaka Engineers, Inc. (w/enclosures)
Cathy Leong, Wilson Okamoto & Associates (w/enclosures)

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KULA COMMUNITY ASSOCIATION

P.O. Box 417 - Kula, HI 96790

<http://kulamaui.com>

The vision of the Kula Community Association is to preserve open space, support agriculture, maintain a rural residential atmosphere, and to work together as a community.

The specific purpose of this association is to improve the quality of life for the residents of Kula, to promote civic welfare and generally to benefit the community of Kula.

General Meeting Minutes

Thursday, November 17, 2005

Call to Order: President, Karolyn Mossman at 7:05pm at the Kula Community Center, called the meeting to order.

Attendees: Approximately 80 people were present.

Secretary's Report: The minutes of the August 2005 General Meeting were distributed. It was moved, seconded and passed to accept the minutes as distributed.

Treasurer's Report: Treasurer, John Wilson, presented the treasurer's report. It was moved, seconded and passed to file the report subject to audit.

Committee Reports:

Planning – Dick Mayer, Committee Chair, presented the Board's position on vacation rentals. He also stated application forms were available for those who may be interested in applying for County Committee positions.

Health/Safety – Elliot Krash, Committee Chair, reported on committee efforts on three subjects, 1) Pukalani Pool Heater replacement (Steve Goldstein presented an update on action taken and current results. He urged audience members to sign a petition to the County.); 2) Kula Emergency Room (John Schaumburg Kula Hospital Administrator, gave a report on the first two weeks operation of the emergency room with 25 cases. The emergency room is open 24 hours, 7 days a week with signage directing people to the room. He can be contacted with questions at 878-1221; and 3) Bike Tours relative to several concerns expressed to the committee. Elliott stated members of the committee had met with member of the community on items such as increased unsupervised tours, lack of proper road usage, and sanitation. Data was being collected on number of tours and accidents and follow up with County and Tour operators would follow. She asked that anyone who was interested to participate. Council member Chamain Tavares pointed out the County Council Public Works committee chaired by Joe Pontinalla had this issue on their next meeting agenda. The PW committee will be meeting Monday, November 28th.

Nominating – Alan Kaufman, Committee Chair, presented the slate of officers and board members for the coming year. A motion to close the nominations was made, seconded and passed. The slate (including new members Harlan Hughes and Tim Tolmachoff) was approved by acclamation.

Program: Celebrating Kula's and Upcountry-Maui's Diversity

1. Haleakala National Park – Marilyn Parris, our new Park Superintendent

Superintendent Parris stated the Park needs community support and expressed her appreciation for the chance to meet and discuss Park issues with our community. She was excited about being in Hawaii and briefly summarized her Park Service career. She stated Haleakala National Park has a great staff and she was looking forward to working with both the staff and the community. Marilyn then enumerated two major planning issues she will be immediately addressing: the Air Tour Management Plan currently in draft form and moving ahead to a final review and a review of commercial services in the Park. With over 2 million visitors annually concentrated at the summit and Kipahulu, the congested and visitor experience needs to be addressed. Missing is the understanding of the sacred time and place represented in the Park and the need to interpret this experience. She has initiated a commercial review plan to determine what capacity to allow for in the Park. An example is the traffic gridlock at the summit at sunrise. There is and will be a need to limit access and spread the traffic throughout the day. Marilyn then answered several questions from the audience.

2. Kula's Hawaiian Church History – Jimmy Aarona, Our Kula Postmaster

Jimmy described the history, as he knows it, of the Hawaii Congregational Church in Keokea near St. John's Episcopal Church. Now known as the Haleakala Hawaiian Church (since approx. 1944), most of the church records have disappeared. Originally based on the Calvinist missionary beliefs brought to Hawaii in 1820, the church was organized in

EXHIBIT "A"

1840 and the building was completed in 1853 on property owned by the Hawaii Congregational Church. The building was 35 feet by 70 feet with 26-inch walls with-out a steeple. The bell was located in a separate structure and was brought to Hawaii in 1850. Roof of the building was blown off in the major storm of January 1980. Pews were taken a church in Kanaio. Services are now held in the structure on the last Sunday of each month under auspices of the Hawaiian Evangelical Association and led by a leader such as him, known as Kahuu, which is a shorted form of the Hawaiian for 'leader of sheep'. He requested any photos or records the community may have to assist in establishing a history of the church.

3. Holy Ghost Church History – Catherine Morreira and Elizabeth Varano

Catherine Morreira described how the Holy Ghost Church has impacted her life. Her family moved to Kula in 1938 and she walked one mile to school (now known as Haleakala Waldorf School). She mentioned the JPO (all boys) who helped the students on Wednesday to travel to the church for catechism lessons. She has been a choir member for 60+ years. She remembers when first attending church, the men and boys sat on the left side of the aisle and the women and girls sat on the right. She doesn't remember when families began sitting together. Holy Ghost Feast was the event of the year with the church feeding approximately 2000 people with member preparing lau lau, poi and potatoes. There was bingo and a bazaar. Tickets were \$.25 and number on ticket matched an item in the bazaar. The Kula Gym was used for many programs, talent shows, skits, testing of gas masks, and dances. She helped her sister-in-law clean the gym every Saturday.

Elizabeth Varano was born in 1932, the same year Calasa Store was opened by her uncle, Mr. Charles Calasa, the original owner. There was Tavares Store, now Morihara Store as well. The Church sponsored dances at the Kula Gym; however, she had to be careful, since her brother would tell her father if she danced too many times with the same boy. She helped bake bread for over 30 years and her father would bring ladies from Ulupalakua for make lau lau for feast. She remembered Manuel Cravalho. Elmer's father was the math teacher at Keokea School and if she couldn't solve her homework, her father told her to go see Uncle Charlie.

4. Senior Housing Proposal – Elmer Cravalho, President, Kula Community Federal Credit Union and Consultants Mike Munekiyo (planner) and Gerald Hiyakumoto (architect)

Mike Munekiyo introduced the project with a brief description of the site and the proposed building. He turned over the review to Gerald Hiyakumoto, who described the 36 apartments with four to a unit and a 3000 sq. ft. community center with office building. There were a total of 44 parking stalls (20 under the raised community center building). Five percent accessibility requirements would be met by top two ground floor units located at top of drive extending up the hill to just below present Kula Gym. Questions were raised on ability of senior to walk for needs given the site limitations. Gerald mentioned traffic would be directed on a right turn in and right turn out restricted basis and that for mobility all apartments users would have to drive.

Elmer Cravalho stated the Kula Community Federal Credit Union brought the Kula Gym property (were the Credit Union had started in a shack behind the gym) to do their share for affordable housing. The parcel was designated public, quasi-public for land use and they were still deciding on whether to proceed with zoning and land use designation changes or following the fast track 201g section approach. The housing units are rental only and he expects it to be 9 months to a year before they are in a position to go out for bid. Units were estimated to be available in about two years. Further down the road, the possibility of developing a 10 acre parcel for first time home owners was being considered with a right of buy back for ten years and possible rent to buy scenarios.

5. Malama Kula Award –

Alan Kaufman, Past President of the Kula Community Association and current Board member, described the work begun by David T. Fleming and continued by his granddaughter, Martha Vockrodt Moran to preserve an endangered native Hawaiian tree by propagating one of the last trees to produce seedlings now being replanted back into the dry land forest. In recognition of her effort in preserving this tree and in honoring the purpose of the Kula Community Association, he then presented the Malama Kula Award to Martha.

Martha responded to the award by presenting a brief history of the arboretum and her sharing of the work worldwide on a web site.

6. Neighbors Helping Upcountry Senior Neighbors – Gerri Shapiro, Volunteer

Gerri Shapiro stated that the Long Term Care Partnership identified that many people want to spend as long as possible in their own homes. As people grow older they may need assistance to stay in their own homes. Recognizing this, the Neighbor helping Neighbor Program was created and she is now bringing it to upcountry. There were flyers on the table and she can be contacted at 250-1212. Also, she introduced Rosemary Robbins as an Upcountry Coordinator the Long Term Care Partnership.

Adjournment: The meeting was adjourned at 9:15.

Tara Nakashima

From: Flammerfamily@aol.com
Sent: Wednesday, August 30, 2006 3:56 PM
To: Tara Nakashima
Subject: Re: Nov. 05 KCA General Meeting minutes

Tara,

Attached are the Nov. 2005 Kula Community Assn. General meeting minutes. I read through them, and I did, as our secretary, take them. Below is an excerpt from our next general meeting showing that the Nov. minutes were reviewed and approved by the membership in attendance:

Kula Community Association

P.O. Box 417
Kula, Hawaii 96790
<http://kulamaui.com>

*The vision of the Kula Community Association is to preserve open space, support agriculture, maintain a rural residential atmosphere, and to work together as a community.
The specific purpose of this association is to improve the quality of life for the residents of Kula, to promote civic welfare and generally benefit the community of Kula.*

General Meeting Minutes

Thursday, February 17, 2005

Call to order

The meeting was called to order by Dick Mayer, Vice-President at 7:03 p.m. at the Kula Community Center.

Attendees

Approximately 125 people were present at 7:30 p.m.

Secretary's Report

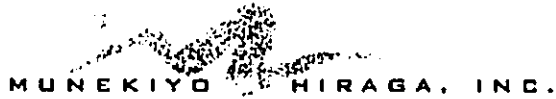
Alan Kaufman presented the minutes from the November general meeting and they were approved unanimously by the audience.

Good luck,

Gina Flammer,
Secretary, Kula Community Association

08/30/2006

EXHIBIT "B"



January 31, 2006

MEETING MEMORANDUM

Date: January 24, 2006

Participants: Kula Community Association Planning Committee
Gerald Hiyakumoto, Hiyakumoto + Higuchi Architects, Inc.
Tara Nakashima, Munekiyo & Hiraga, Inc. (MHI)

From: Tara Nakashima, Munekiyo & Hiraga, Inc.
Planner

Subject: Kula Affordable Senior Housing Project

The purpose of the meeting was to provide and update on the status of the project and obtain their feedback on the proposed Kula affordable housing senior project.

Discussion Items:

1. T. Nakashima reintroduced the project to the committee and provided an update on the status of the project since the last presentation before the Kula Community Association. She said that MHI has requested a determination from the Department of Transportation on whether an Environmental Assessment would be required, whether the Department would be the accepting authority and whether the proposed design schematics is acceptable for access permission review and processing.
2. G. Hiyakumoto said the access opening would be set across from the Kula Elementary School drop-off exit. There would be limited right turn-in, right turn-out movement only. The intent is that people would take Lower Kula Road and loop around the project area to Copp Road and then back down Kula Highway to access the site.
3. Members of the planning committee asked if there would be any measure to control project area residents and visitors from using Kula Elementary School drop off lane to turn around and make a left turn into the project site or a left-turn into the project area when coming from the Pukalani direction. G. Hiyakumoto said there would be markers, but that it would be more of a management or enforcement issue.

EXHIBIT "C"

4. Members of the planning committee asked if access off of Lower Kula Road would be possible. G. Hiyakumoto said that it would not be feasible, given the slope of the property. The Credit Union approached the Moriharas about allowing for access through the parking area for Café 808 or purchasing the land on which Café 808 sits, but they were not in a position to allow access, given the current use of the property. Also, more importantly, the Credit Union is retaining the gym. Planning committee members said they can envision visitors, wishing to return to Keokea, using the Kula Elementary School drop-off accessway to turn around. R. Yamafuji (principal of Kula Elementary School) said that such a suggestion may be possible, given that school gates are open during the day. One Kula resident said he can envision people wishing to bypass the traffic making a left-turn into Kula Elementary School every morning possible using the proposed acceleration and deceleration lanes to bypass the back-up.
5. One resident asked if there will be pedestrian access through the site. G. Hiyakumoto said that E. Cravalho expressed his desire for a walkway to allow children to continue to traverse the site to Kula Gym. He said that the walkway would parallel the Keokea property border and then cross through the property near the top to the walkway to the gym. Some area residents said that they would like a sidewalk to be installed along the proposed roadway to the site for pedestrian access rather than where it is currently located. Others, including R. Yamafuji (President of Kula Elementary School) said they prefer that it be located where it is currently being proposed because they would be safer travelling away from the roadway. One resident said he didn't think the seniors would appreciate pedestrian access along the main road because it would allow kids to hang out on the property.
6. William Worcester, the neighboring landowner on the Keokea side of the property, said that he does not think he is ready for a high density housing unit project as is currently being proposed, which requires significant grading.
7. A resident asked about the applicant requirements to reside in the project area. G. Hiyakumoto said that the Credit Union is currently coordinating with Hale Mahaolu for their possible management of the project. T. Nakashima said that the Credit Union plans on giving priority consideration to credit union residents and those residing within the service area limits, which would include Kahului and portions of Kihei.
8. D. Mayer asked how the applicant intends to provide water for the site. G. Hiyakumoto said there is a waterline on Lower Kula Road. There is a 5/8" inch water meter that serves the gym and a 1.5" water meter will be sought. D. Mayer raised the question of why this project would receive water rights over others "in line" for a water meter and asked T. Nakashima to follow up on this matter.
9. To close the presentation, T. Nakashima said that she would like to note that the waitlist for Hale Mahaolu facilities is currently five years and that in Central Maui, it's two to three years. This project is the only one being proposed for the Upcountry area. She proffered that perhaps the proposed project would receive priority water

consideration because of the great community need. One of the residents responded by saying that they have been waiting for a water meter for a long time as well.

10. To close this agenda item, D. Mayer asked R. Yamafuji to coordinate with the DOT, DOE and school bus company, to discuss traffic concerns. Other key issues summarized by committee members were as follows:
 - a. Site conditions (e.g., topography) makes for difficult design; and
 - b. Water allocation and prioritization continues to be of concern.
11. D. Mayer asked about the timeline for the project. T. Nakashima explained that the consultant studies are almost complete and MHI was planning to file the Draft Environmental Assessment in the next few weeks. Once the Draft Environmental Assessment is filed, there is a 30-day review response period; however, MHI normally waits a couple more weeks before filing the final EA. There would be another 30-day review period. The 201G application would then be filed and there would be a 45-day review and action period by the Council. The entire permitting approvals and land use entitlements process would be complete within the next few months.


Tara K. Nakashima, Planner

TKN:lh

cc: Elmer Cravalho, Kula Community Federal Credit Union
Gerald Hiyakumoto, Hiyakumoto + Higuchi Architects, Inc.

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MICHAEL T. MUNEKIYO
GWEN OHASHI HIRAGA
MITSURU "MICH" HIRANO

February 9, 2006

MEETING MEMORANDUM

Date of Meeting: February 6, 2006

From: Michael T. Munekiyo, A.I.C.P.
Project Manager

Subject: Meeting with Kula Community Association Board

Project consultants met with the Kula Community Association Board to discuss their comments on the proposed Affordable Senior Housing Project. Representing the Kula Community Federal Credit Union were Gerald Hiyakumoto (*Hiyakumoto + Higuchi Architects*), Kirk Tanaka (*R.T. Tanaka Engineers*), Pete Pascua and Cathy Leong (*Wilson Okamoto Corporation*), and Tara Nakashima and Mike Munekiyo (*Munekiyo & Hiraga, Inc.*).

Prior to the Board meeting, the project consultants and a few representatives of the Board walked to the intersection of Kula Highway and the Kula School exit driveway. The purpose of the site visit was to receive comments from Board members regarding intersection operational concerns with the proposed Senior Housing driveway. K. Tanaka explained that the driveway for the Senior Housing project will be right turn in and right turn out only. There will be "candlestick" markers (raised plastic cylinders) to physically delineate the restrictions on turning movements. Comments noted by Board members included the following:

1. Vehicle exiting the Senior Housing Project desiring to head toward Ulupalakua will turn right out of the project, then turn into the school to head in the Ulupalakua direction. Project team members noted that the appropriate route for those vehicles wishing to head toward Ulupalakua would be, via Lower Kula Road, then back to Kula Highway, where left turn movements toward Ulupalakua are permitted.
2. Traffic entering the school from the Ulupalakua direction is stopped on Kula Highway, waiting to make the left turn entry. This may create a hazard for vehicles exiting the Senior Housing project because these vehicles will be accelerating and merging into the main traffic stream. K. Tanaka noted that sight distances are good and that drivers should be able to see and appropriately respond to operations at the school entry drive.

EXHIBIT "D"

3. Traffic heading north from the Ulupalakua direction may use the acceleration lane to bypass traffic stopped on Kula Highway, waiting to make the left turn movement into the school.

During the Board meeting, similar concerns with respect to traffic were raised. C. Leong explained that trip generation out of the project during the 7:00 a.m. to 8:00 a.m peak hour is expected to be minimal, about 2 to 3 vehicles during that hour.

Other discussion items raised at the Board meeting included the following:

1. Water availability for the project;
2. Section 201G processing;
3. Section 201G exemptions;
4. Topographic steepness of the site;
5. Community Plan consistency; and
6. Project need.

Information addressing the foregoing items were provided by the consultant team. At the conclusion of the meeting, the Board noted the following:

1. A copy of the traffic report was requested. Munekiyo & Hiraga, Inc. will provide Dick Mayer with a copy.
2. The Board will provide written comments regarding the project to Munekiyo & Hiraga, Inc. M. Munekiyo explained that the process of communication with the Kula Community Association is viewed as ongoing, and therefore, continued dialogue with the association is anticipated.



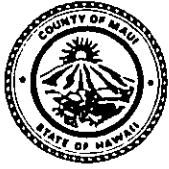
Michael T. Munekiyo, A.I.C.P.
Project Manager

MTM:yp

cc: Elmer Carvalho, Kula Community Federal Credit Union
Gerald Hiyakumoto, Hiyakumoto + Higuchi Architects, Inc.
Kirk Tanaka, R.T. Tanaka Engineers, Inc.
Pete Pascua and Cathy Leong, Wilson Okamoto Corporation

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SEP 11 2006



ALAN M. ARAKAWA
MAYOR

OUR REFERENCE
YOUR REFERENCE

POLICE DEPARTMENT
COUNTY OF MAUI

55 MAHALANI STREET
WAILUKU, HAWAII 96793
(808) 244-6400
FAX (808) 244-6411



THOMAS M. PHILLIPS
CHIEF OF POLICE

GARY A. YABUTA
DEPUTY CHIEF OF POLICE

August 22, 2006

Mr. Michael Munekiyo, Project Manager
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, HI 96793

Dear Mr. Munekiyo:

SUBJECT: Draft Environmental Assessment for the Proposed Kula Affordable Senior Housing Project TMK 2-2-014:021

Thank you for your letter of July 20, 2006, requesting comments on the above subject.

We have reviewed the information submitted for this project and have enclosed our comments and recommendations. Thank you for giving us the opportunity to comment on this project.

Very truly yours,



A handwritten signature in black ink, appearing to read "Sydney Kikuchi".

Assistant Chief Sydney Kikuchi
for: Thomas M. Phillips
Chief of Police

c: Michael Foley, Planning Department
Antonie Wurster, State Dept. of Transportation

Enclosure

COPY

TO : **THOMAS M. PHILLIPS, CHIEF OF POLICE, COUNTY OF MAUI**
VIA : **CHANNELS**  
FROM : **SCOTT Y. MIGITA, ADMINISTRATIVE SERGEANT, WAILUKU PATROL**
SUBJECT : **DRAFT ENVIRONMENTAL ASSESSMENT-KULA AFFORDABLE SENIOR HOUSING PROJECT (TMK #2-2-014:021)**

Sir, this transmittal is being submitted regarding a Draft Environmental Assessment on the Kula Affordable Senior Housing Project (TMK #2-2-014:021) submitted by Munekiyo & Hiraga, Inc. This EA is submitted on behalf of the Kula Community Federal Credit Union regarding the construction of a senior affordable housing complex on a 1.69 acre parcel in Kula.

This proposed development is located across Kula Elementary School along Kula Highway and is owned by the Kula Community Federal Credit Union. Thirty-six, one bedroom units, a manager's unit, laundry room, and office, along with forty-four parking stalls, and a 3,500 square foot social hall is being proposed. This project is located behind the existing Kula Gym, which is located on the same parcel. Lower Kula Road is located to the east of this property, Kula Highway to the west. There are residential uses to the north and south.

Areas of concern from a police perspective relative to the issue of traffic and safety is the turn in and out driveway into the complex. No left turn is allowed from Kula Highway, where vehicles need to continue south on Kula Highway and turn around, heading back northbound in the opposite direction in order to make a right turn into the complex. The concern from a police standpoint would be vehicles making illegal left turns into the complex from Kula Highway, where vehicles traveling in the opposite direction may be traveling at a higher rate of speed, thus creating a potential traffic hazard. One suggestion would be to include a left turn in lane from Kula Highway into the complex, as well as allowing left turns out from the complex with a right merge lane on Kula Highway. This would create a safer intersection for vehicles attempting to make left turns into and out of the complex.

Another area of concern is the issue of adequate security. At the Affordable Housing Review Committee meeting on 07/14/06, the developers related that only an on site residential manager was proposed and no other security personnel would be on site. Due to the combination of a remote rural environment and elderly residents at this location, it may be advantageous to provide additional security personnel for twenty-four hour security.

The issue of parking is whether the forty-four parking stalls will be adequate for both residential and guest on premises, where guest vehicles will not be parking along the shoulder of Kula Highway. According to developers, adequate parking for both residents and guests were ensured.

Page 2

In addition, this proposed development is located in the area of the Kula Community Center, Kula Gym and tennis courts, therefore, the issue of noise resulting from the use of these facilities which may affect this residential area should also be considered and addressed.

Submitted for your information and perusal.

Respectfully submitted,



Scott Y. MIGITA, E-1122

Administrative Sergeant, Wailuku Patrol

08/21/06 at 1300 hours

INGRESS/EGRESS FROM HOUSING
COMPLEX DEFINITELY A CONCERN.

COY WLLHLL ROSTB
08/21/06



MICHAEL T. MUNEKIYO
GWEN OHASHI HIRAGA
MITSURU "MICH" HIRANO

KARLYNN KAWAHARA

December 12, 2006

Thomas M. Phillips, Chief of Police
County of Maui
Police Department
55 Mahalani Street
Wailuku, Hawaii 96793

SUBJECT: Proposed Senior Housing Project at TMK 2-2-014:021, Kula, Maui

Dear Chief Phillips:

Thank you for your letter dated August 22, 2006, commenting on the Draft Environmental Assessment for the proposed affordable senior housing project in Kula. In response to your comments, we would like to note the following:

1. Vehicular ingress and egress patterns were carefully reviewed. The applicant considered a possible left-turn lane into the project site and creation or allowance of left turns out from the complex with a right merge lane on Kula Highway. Discussions were initiated with the State of Hawaii Department of Transportation to ensure safe access into and out of the property. Due to the location of the Kula Elementary School exit driveway and crosswalk locations, in the vicinity of the proposed project access way, left-turn movements were determined to be problematic.

The applicant is also concerned about illegal movements and would like to note that it will cooperate with your department, where possible to ensure safe access into and out of the project area. The site manager will be available to receive information (e.g. license plate numbers, vendor names) from school officials and the public regarding project generated traffic making illegal movements. The applicant is intent on being a good neighbor to the school across the street and the surrounding neighborhood.

2. The applicant recognizes and shares your concern with regard to resident safety and adequate onsite security. As indicated, there will be an onsite resident manager. The manager will be responsible for monitoring security concerns and issues. The need for added security personnel will be assessed if warranted by conditions which compromise resident safety.

Thomas M. Phillips, Chief of Police
December 12, 2006
Page 2

3. Because elderly residents rely less on the automobile and more on public or MEO transportation services, it is anticipated that the 44 parking stalls, with 6 guest stalls, will be adequate to support the project.
4. The applicant understand your concern with regard to noise due to the close proximity of the gym to the project area. Each unit will be air conditioned to allow for closure of windows, should noise become a distraction or nuisance.

Thank you again for your feedback. Should you have any other comments or require additional information, please call me at 244-2015.

Very truly yours,



Michael T. Munekiyo, A. I. C. P.
Project Manager

MTM:yp

cc: Elmer Cravalho, Kula Community Federal Credit Union
Gerald Hiyakumoto, Hiyakumoto + Higuchi Architects, Inc.
Kirk Tanaka, R.T. Tanaka Engineers, Inc.

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ALAN M. ARAKAWA
Mayor

MILTON M. ARAKAWA, A.I.C.P.
Director

MICHAEL M. MIYAMOTO
Deputy Director

Telephone: (808) 270-7845
Fax: (808) 270-7955



COUNTY OF MAUI
**DEPARTMENT OF PUBLIC WORKS
AND ENVIRONMENTAL MANAGEMENT**
200 SOUTH HIGH STREET, ROOM 322
WAILUKU, MAUI, HAWAII 96793

AUG 29 2006
RALPH NAGAMINE, L.S., P.E.
Development Services Administration

DAVID TAYLOR, P.E.
Wastewater Reclamation Division

CARY YAMASHITA, P.E.
Engineering Division

BRIAN HASHIRO, P.E.
Highways Division

TRACY TAKAMINE, P.E.
Solid Waste Division

August 24, 2006

Mr. Michael Munekiyo, A.I.C.P.
MUNEKIYO & HIRAGA, INC.
305 High Street, Suite 104
Wailuku, Maui, Hawaii 96793

Dear Mr. Munekiyo:

**SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT
PROPOSED KULA AFFORDABLE SENIOR HOUSING
PROJECT
TMK: (2) 2-2-014:021**

We reviewed the subject application and have the following comments:

1. A road-widening lot may be required for the adjoining half of Lower Kula Road to provide for future right-of-way and improved to County standards to include, but not be limited to pavement widening, construction of curb, gutter and sidewalk, street lights and relocation of utilities underground. Said lot shall be dedicated to the County upon completion of the improvements.
2. All structures such as walls, trees, etc., shall be removed or relocated from the road-widening strip. The rear boundaries of the road-widening strip shall be clearly marked to determine if said structures have been properly removed and relocated.
3. A verification shall be provided by a Registered Civil Engineer that the grading and runoff water generated by the project will not have an adverse effect on the adjacent and downstream properties.
4. A detailed and final drainage report and a Best Management Practices (BMP) Plan shall be submitted with the grading plans for


Mr. Michael Munekiyo, A.I.C.P.
August 24, 2006
Page 2

review and approval prior to issuance of grading permits. The drainage report shall include hydrologic and hydraulic calculations and the schemes for disposal of runoff waters. It must comply with the provisions of the "Rules and Design of Storm Drainage Facilities in the County of Maui" and must provide verification that the grading and runoff water generated by the project will not have an adverse effect on adjacent and downstream properties. The BMP plan shall show the location and details of structural and non-structural measures to control erosion and sedimentation to the maximum extent practicable.

5. All existing features such as structures, driveways, drainage ways, edge of the pavement, etc. shall be shown on the project plat plan.
6. Non-contact cooling water, condensate, etc. should not drain to the wastewater system.
7. Commercial kitchen facilities within the proposed project shall comply with pre-treatment requirements (including grease interceptors, sample boxes, screens etc.).
8. We would recommend lighting along the proposed paved pedestrian path from the project site to Lower Kula Road. If no street lighting is nearby, we would also recommend a street light either in the vicinity of the point of access at Lower Kula Road or at the Kula gym access road.
9. Address construction waste disposal, recycling, and reuse.

Please call Michael Miyamoto at 270-7845 if you have any questions regarding this letter.

Sincerely,



MILTON M. ARAKAWA, A.I.C.P.
Director

MMA:MMM:da

xc: Antonie Wurster, Department of Transportation, Highways Division, Planning Branch

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MICHAEL T. MUNEKIYO
GWEN OHASHI HIRAGA
MITSURU "MICH" HIRANO

KARLYNN KAWAHARA

December 12, 2006

Milton Arakawa, Director
County of Maui
Department of Public Works
and Environmental Management
200 South High Street, Room 322
Wailuku, Hawaii 96793

SUBJECT: Draft Environmental Assessment for Proposed Senior Housing Project at TMK 2-2-014:021, Kula, Maui

Dear Mr. Arakawa:

Thank you for your letter dated August 24, 2006, commenting on the proposed affordable senior housing project in Kula. In response to your comments, we would like to note the following:

1. The applicant's architect and engineer will coordinate with the Department to clarify and confirm road widening requirements along Lower Kula Road.
2. As applicable, all structures will be removed from the road-widening strip and relocated.
3. The project engineer will prepare a final drainage report with verification that the grading and runoff water generated by the project will not have an adverse effect on adjacent or downstream properties.
4. Prior to issuance of grading permits, the project engineer shall submit a detailed and final drainage report and Best Management Practices (BMP) plan with grading plans for review. The drainage report will include hydrologic and hydraulic calculations and schemes for disposal of runoff waters, to comply with the "*Rules and Design of Storm Drainage Facilities in the County of Maui*" and provide verification that the grading and runoff generated by the proposed project will not have an adverse effect on adjacent and downstream properties. The BMP plan will show the location and details of structural and non-structural measure to control erosion and sedimentation to the extent practicable.

Milton Arakawa, Director
December 12, 2006
Page 2

5. The project plat plan will show existing features such as structures, driveways, drainageways, edge of pavement, etc., as applicable.
6. The applicant and project engineer understand that non-contact cooling water and condensation should not drain to the wastewater system.
7. Commercial kitchen facilities will comply with pre-treatment requirements.
8. Lighting requirements for the project will be reviewed comprehensively to ensure that safety and security needs for residents and pedestrians are addressed, while respecting the need to minimize light "spillage" into the surrounding environs. Because there is no point of access at Lower Kula Road, there are no street lighting improvements being proposed.
9. Solid waste, recycling and reuse has been addressed in Section II.C. of the Draft Environmental Assessment.

Thank you again for your feedback. Should there be any other questions or concerns in regards to this proposal, please do not hesitate to call me at 244-2015.

Very truly yours,



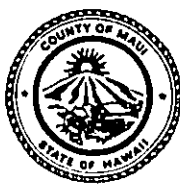
Michael T. Munekiyo, A. I. C. P.
Project Manager

MTM:yp

cc: Elmer Cravalho, Kula Community Federal Credit Union
Gerald Hiyakumoto, Hiyakumoto + Higuchi Architects, Inc.
Kirk Tanaka, R.T. Tanaka Engineers, Inc.

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ALAN M. ARAKAWA
MAYOR



CARL M. KAUPALOLO
CHIEF

NEAL A. BAL
DEPUTY CHIEF

COUNTY OF MAUI
DEPARTMENT OF FIRE AND PUBLIC SAFETY

200 DAIRY ROAD
KAHULUI, MAUI, HAWAII 96732
(808) 270-7561
FAX (808) 270-7919

August 24, 2006

Tara K. Nakashima, Planner
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

**Subject: Draft Environmental Assesment EAC 2006/0026, LTR 2005/2664, Senior Housing
Project, Kula, Maui @ TMK (2)2-2-014:021**

Dear Ms. Nakashima,

I have had the opportunity to review the subject matter. At this time, our department does not have any specific comments related to the Senior Housing Project.

Our Department will take a detailed look of the intended project during the permit application process.

Sincerely,

A handwritten signature in black ink, appearing to read "Val F. Martin".

Valeriano F. Martin
Captain
Fire Prevention Bureau

cc: Antoine Wurster, State of Hawaii DOT, Highways Planning Branch

OCT 12 2006

ALAN M. ARAKAWA
Mayor



GEORGE Y. TENGAN
Director

ERIC H. YAMASHIGE, P.E., L.S.
Deputy Director

DEPARTMENT OF WATER SUPPLY
COUNTY OF MAUI
200 SOUTH HIGH STREET
WAILUKU, MAUI, HAWAII 96793-2155
www.mauiwater.org

October 9, 2006

Mr. Michael Munekiyo
Project Manager
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

VIA FAX AND MAIL

Dear Mr. Munekiyo:

RE: Draft Environmental Assessment for the Proposed Kula Affordable
Senior Housing Project, TMK: 2-2-014:021

Thank you for the opportunity to comment on this Draft Environmental Assessment.

Source Availability and Consumption

The project site is served by the Upcountry/Makawao system. Water for the system comes from the streams of Northeast Maui.

A project of this sort would have an anticipated water consumption of about 20,720 gpd (gallons per day) by system standards.

The area has insufficient water supply developed for fire protection, domestic and irrigation purposes to take on new or additional services without detriment to those already served in the regulated area. The project will not be able to receive new or additional service until sufficient water sources have been identified. We understand that the applicant will be participating in a private funded ground water well. The availability of water will depend on the success of the well.

If an application is submitted with our Engineering Division, the applicant will be placed on the Upcountry Water Service Priority List. The applicant may also proceed to develop their own private water system.

"By Water All Things Find Life"

The Department of Water Supply is an Equal Opportunity provider and employer. To file a complaint of discrimination, write: USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington DC 20250-9410. Or call (202) 720-5964 (voice and TDD)

Printed on recycled paper



Michael Munekiyo

Page 2

October 9, 2006

System Infrastructure

The project area is serviced by a 12-inch waterline fronting the property and a hydrant within proximity of the project site. Storage is inadequate for new or additional services in the area. Extensive infrastructure improvements would have to be made. We suggest that the applicant work with the Department in determining system improvements required to properly service this project.

Should you have any questions, please contact our Water Resources & Planning Division at 244-8550.

Sincerely,



George Y. Tengan,
Director

GYT:ayi

copy: Antonie Wurster, State DOT
Engineering Division
WRPD File
WRPD Reading File



MICHAEL T. MUNEKIYO
GWEN OHASHI HIRAGA
MITSURU "MICH" HIRANO

KARLYNN KAWAHARA

December 22, 2006

George Tengan, Director
County of Maui
Department of Water Supply
200 South High Street
Wailuku, Hawai'i 97693-2155

SUBJECT: Draft Environmental Assessment for Proposed Senior Housing Project at TMK 2-2-014:021, Kula, Maui

Dear Mr. Tengan:


Thank you for your letter of October 9, 2006, commenting on the Draft EA for the proposed Kula Affordable Senior Housing Project. We provide the following information to respond to and clarify items raised in your letter.

1. The applicant believes that water source solutions can be identified through a unified and cooperative strategy for source provision. Such solutions may include private sector-government cooperation in developing new well sources. The applicant has discussed this opportunity with other landowners and will continue its collaboration in this regard. In addition, opportunity to utilize existing sources through review of current water use authorizations and implementation of system efficiency improvements and upgrades should be examined. The applicant will work with the Department and other private sector interests in securing water source needed for this project and the community at large.
2. The project's civil engineer has initiated consultation with the Department's Engineering Division to identify appropriate design solutions for storage and related infrastructure improvements.

George Tengan, Director
December 22, 2006
Page 2

Thank you again for your input. If there are any questions or if additional information is needed, please feel free to call me.

Very truly yours,



Michael A. Munekiyo, A. I. C. P.
Project Manager

MTM:yp

cc: Elmer Cravalho, Kula Community Federal Credit Union
Gerald Hiyakumoto, Hiyakumoto + Higuchi Architects, Inc.
Kirk Tanaka, R.T. Tanaka Engineers, Inc.

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Kula Community Association
P.O. Box 417 - Kula, HI 96790
<http://kulamaui.com>

The vision of the Kula Community Association is to preserve open space, support agriculture, maintain a rural residential atmosphere, and to work together as a community. The specific purpose of this association is to improve the quality of life for the residents of Kula, to promote civic welfare, and generally to benefit the community of Kula.

TO: Mr. Elmer Cravalho, Kula Community Federal Credit Union
TO: Mr. Michael Munekiyo, Project Consultant
TO: Mr. Antonie Wurster, State Dept. Of Transportation
TO: Mr. Ron Tsuzuki, State Dept. Of Transportation

August 22, 2006

RE: Kula Affordable Senior Housing Project (HRS 343 DEA)

Aloha,

Please include the letter below from the Board of the Kula Community Association within the **FINAL** Environmental Assessment of the "Kula Affordable Senior Housing Project " and address the points raised within the letter in the EA analysis and review..

Our Board spent many hours analyzing this project and we would appreciate responses to our concerns. Of specific concern are:

A) **WATER** The uncertainty of the water source for the project (the location and source are NOT explained in the DEA), and the relationship of the project to both the "Upcountry Water Meter list" and the water priorities as specifically laid out in the Makawao-Pukalani-Kula Community Plan;

B) **TRAFFIC** The intersection of the road leading into and out of the project, where it intersects with the Kula Highway exactly opposite the exit from Kula Elementary School; and

C) **SLOPE** The steep slope of the project and its suitability for seniors.

All of these concerns are further described in the letter below.

Mahalo for allowing us to participate in the EA review process,
Dick Mayer, Chairman of the Planning Committee, Kula Community Association Board

CORRECTION

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

Kula Community Association
P.O. Box 417 - Kula, HI 96790
<http://kulamaui.com>

The vision of the Kula Community Association is to preserve open space, support agriculture, maintain a rural residential atmosphere, and to work together as a community. The specific purpose of this association is to improve the quality of life for the residents of Kula, to promote civic welfare, and generally to benefit the community of Kula.

TO: Mr. Elmer Cravalho, Kula Community Federal Credit Union
TO: Mr. Michael Munekiyo, Project Consultant
TO: Mr. Antonie Wurster, State Dept. Of Transportation
TO: Mr. Ron Tsuzuki, State Dept. Of Transportation

August 22, 2006

RE: Kula Affordable Senior Housing Project (HRS 343 DEA)

Aloha,

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Our Board spent many hours analyzing this project and we would appreciate responses to our concerns. Of specific concern are:

A) WATER The uncertainty of the water source for the project (the location and source are NOT explained in the DEA), and the relationship of the project to both the "Upcountry Water Meter list" and the water priorities as specifically laid out in the Makawao-Pukalani-Kula Community Plan;

B) TRAFFIC The intersection of the road leading into and out of the project, where it intersects with the Kula Highway exactly opposite the exit from Kula Elementary School; and

C) SLOPE The steep slope of the project and its suitability for seniors.

All of these concerns are further described in the letter below.

Mahalo for allowing us to participate in the EA review process,

Dick Mayer, Chairman of the Planning Committee, Kula Community Association Board

Kula Community Association
P.O. Box 417 - Kula, HI 96790
<http://kulamaui.com>

P. 1

The vision of the Kula Community Association is to preserve open space, support agriculture, maintain a rural residential atmosphere, and to work together as a community. The specific purpose of this association is to improve the quality of life for the residents of Kula, to promote civic welfare, and generally to benefit the community of Kula.

TO: Mr. Michael Munekiyo, Project Consultant
FROM: Kula Community Association Board

April 11, 2006

RE: Proposed Kula Federal Credit Union "Affordable / Senior Housing"

The Kula Community Association (KCA) Board of Directors has reviewed the Affordable Senior housing project being proposed by the Kula Federal Credit Union (KFCU) on the existing Kula Gymnasium lot in the Waiakoa area of Kula. The Project lies on a steep lot extending downhill from the gym on Lower Kula Road to the Kula Highway (State #37) at its bottom.

On a number of occasions the KCA Board and its Planning Committee met with representatives of this Senior Affordable Housing Project. In addition, the project was presented to the community at the November, 2005 KCA General Meeting. We have also heard from a few community members.

The applicant (KFCU) has indicated that it will be applying for a "201g fast-track" approval, claiming waiver from most County requirements because this project would qualify as an affordable housing project. We further understand that the Council must vote "yes" or "no" within 45 days, with no conditions attached. Therefore, the KCA Board is writing in the hope that the questions and issues which we raise below will be satisfactorily considered before the project reaches the Council.

Although the Upcountry Community Plan makes no special provision for this kind of project, the Kula Community Association Board recognizes the value such a project would have in our community. We acknowledge the need for both senior housing and affordable housing. We desire to have a richly diverse community. This project would provide for some of this balance in the development of Kula as a whole. Many of the projects we have seen being developed in Kula have been "high end" homes; the KCA, while welcoming our new neighbors to our community, values a balanced, economically diverse community.

We also are expecting a large infusion of new homes in the Hawaiian Home Lands subdivisions of Waiohuli and Keokea. We again welcome these neighbors and the richness they will bring to our community.

The KCA Board is most appreciative of the efforts by the Kula Federal Credit Union to make a positive and time consuming effort to provide affordable housing for our senior residents. It has undertaken this project at great expense and with considerable risk; and for this we are most grateful. We are thankful to Mr. Michael Munekiyo, the project consultant, for his presentations and for helping us understand the project.

In the following lines, we have listed the salient features of the project, and our comments and major concerns related to them. We have three major concerns: water, the intersection/traffic, and the slope of the project as well as other issues we wish to raise.

1. This Affordable Senior Housing project is located on the same 1.69 acre lot as the existing Kula gym (operated by the County Parks Department). It fronts the Kula Elementary School's exit onto the Kula Highway. It will have 36 units (686 ft.² each) configured into two long three-story buildings. In addition there will be a central meeting facility and a manager's unit. Because the existing gym is located on the parcel, the lot is zoned as "Public / Quasi-Public" and listed as such on the Community Plan.

KCA BOARD CONCERN: The property is being developed at a very high density level, high for the Waiakoa area.

2. The property is rather steeply sloped from the Kula Highway up to the back of the gym.

KCA BOARD CONCERN: The project has a steep grade and we are concerned about its overall suitability for the senior occupants of the housing units who may have limited mobility. The slope necessitates difficult walking for the senior citizen residents on the property as well as up to the store and back with their groceries.

KCA BOARD CONCERN: There will be rapid water runoff down the road/driveway which will be handled by proposed sub-surface perforated pipes at the bottom of the property. Our concern is that excess water may flow across the state highway onto the school property. We urge extreme care and higher (minimum 50 year rainfall) criteria in the design of the storm catchment system.

3. There may be as many as 72 residents in the 36 units. There will be 44 parking spaces, six on the roadway, 18 under the houses, and 20 under the central meeting facility.

KCA BOARD CONCERN: Additional parking for visitors and for delivery vehicles should be included.

KCA BOARD CONCERN: Emergency/fire/ambulance and public transportation vehicles need to have good access and maneuverability when all the parking spaces are taken in the evening?

4. All of the buildings are designed to be three stories high with staircases.

KCA BOARD CONCERN: Because many residents will have to park below the meeting house, they will have to carry items up the slope to their unit and then up three flights of stairs.

KCA BOARD CONCERN: Since the project is seeking favorable consideration and review due to it's being a needed senior rental housing project, it must have the amenities (elevators, ramps, handrails, etc.) to keep it suitable and viable for senior citizens. Otherwise the project may be turned over in time to other purposes.

5. Water availability continues to be a major concern for the upcountry community. Residents have been waiting for many years for a water meter. A water meter waiting-list has been established for the past 13 years, and that list now has gone over the 1,000 mark.

KCA BOARD CONCERN: The KCA board has yet to be provided information on the source of the water for this project.

KCA BOARD CONCERN: This "201g project" might step ahead of other proposals including those which have a higher priority for water in the current Upcountry Community Plan. Specifically, both "Hawaiian Home Lands" (HHL) and "agriculture" have a higher priority to obtain water. Since the HHL is now in an expansion phase, it must be given its very high priority.

KCA BOARD CONCERN: This project should not jump ahead of other affordable housing on the list.

6. The proposal is to provide for "right-turns only" at the Kula Highway intersection.

KCA BOARD CONCERN Although "right-turns" are generally safer, they may result in a number of other problems: vehicles coming from Pukalani will need to find a way to easily get onto the property and may use Kula Elementary School to do so. Similarly, vehicles leaving the property may take a "right-turn" and then take an immediate left-turn and pass through the school grounds if they are going to go towards Keokea.

KCA BOARD CONCERN: Additional safety problems may result from parents from Keokea and the Hawaiian Home Lands wishing to take their children to school in the morning and slowing down at the school. They will be turning left, just as people leaving the senior project are accelerating onto the Kula Highway.

KCA BOARD CONCERN: The most significant issue relates to the exit road from Kula Elementary School where school buses, children walking up to the gym, and automobiles will be leaving the school grounds onto the increasingly busy Kula Highway.

KCA BOARD CONCERN: The School exit intersection must be made safe for all of the various types of traffic, and especially for children walking across the highway. There may even be a need to build an overhead bridge for pedestrians, located about 150 feet north of the intersection connecting the high-points on either side of the highway.

7. The senior -housing project is located on the same land parcel as the gym. Therefore, the project location raises two potential disturbance issues and a legal matter:

KCA BOARD CONCERN: Noise from the gym, especially in the evening (6pm -10pm), may disturb the senior-housing residents.

KCA BOARD CONCERN: Early in the morning children will be passing through the property from residences above the gym, and again in the afternoons, on the way up from the school to the gym and homes. Although there will be no sidewalks on the property, there will be a pathway, probably on the south side of the property, which will allow children to pass up to the gym. The pathway should be separated from the residences by a fence or an appropriate landscaping barrier.

KCA BOARD CONCERN: The KFCU and consultants have made it very clear that they do NOT wish to remove the County-operated, but not County-owned, gym from their lot. The KCA sincerely appreciates this generosity and requests that a formal long-range agreement be established between the land owner and the County describing the conditions for the use of the gym for the benefit of the community along with its long-term maintenance and liability.

8. The actual detailed design of the facility is probably beyond the interest-level of the Kula Community Association. We appreciate that the developer has assured us that all utilities on this project will be underground.

KCA BOARD CONCERN: We would hope that the design is in harmony with the stores/buildings near the gym and the building massing would be consistent with "Country Town" standards to include landscaping to modify the building's visual impact on the south side.

KCA BOARD CONCERN: We also recommend that all outdoor lighting associated with the project be shielded to prevent light pollution to the night sky, and light trespass to neighboring properties.

KCA BOARD CONCERN: The maximum building height should follow the requirements of the Makawao/Pukalani/Kula Community Plan which limits buildings to 35 ft.

The KCA Board sincerely appreciates the extensive effort by the Kula Federal Credit Union to bring this proposal to our Board at an early stage. We hope that we have been able to give meaningful input. Hopefully the County entity will hold public hearings in the community to gather further input.

Sincerely,

Karolyn Mossman, President KCA

cc. Mayor Alan Arakawa
Maui County Council
Planning Director Michael Foley and the Maui Planning Commission



MICHAEL T. MUNEKIYO
GWEN OHASHI HIRAGA
MITSURU "MICH" HIRANO

KARLYNN KAWAHARA

December 22, 2006

Dick Mayer, Chairperson
Planning Committee
Kula Community Association
1111 Lower Kimo Drive
Kula, Hawaii 96790

SUBJECT: Proposed Senior Housing Project at TMK 2-2-014:021, Kula, Maui

Dear Mr. Mayer:

Thank you for your letters dated August 22, 2006 and April 11, 2006, commenting on the proposed affordable senior housing project in Kula.

We note that the comments referenced in your August 22, 2006 letter are also raised in the April 11, 2006 correspondence. Therefore, the responses provided below are presented to address comments in the order listed in the April 11th letter.

1. During project planning, the applicant considered various unit count scenarios. Based on development feasibility considerations, the proposed amount of units is the minimal amount that can be developed in order to ensure project viability. While the proposed 36 units represents a density higher than that found in the surrounding area, the proposed senior housing project reflects a low intensity use which is compatible with the surrounding environs. For example, traffic trip generation for the project is anticipated to be low and daily activities of the senior residents are not anticipated to generate nuisance impacts related to neighborhood noise, congestion, and pedestrian traffic.
- 2a. Slope conditions of the property influences project design, similar to characteristics encountered at the Kula Elementary School and surrounding developed areas. The project architect and civil engineer have carefully considered the topographic conditions of the site, to develop a workable grading schematic and building layout plan. The design allows for both functional and affordable housing for Maui residents ages 62 and older, who are capable of residing independently at the proposed project.
- 2b. The stormwater retention system will be designed to address the 50-year, 1-hour storm criteria, as required by the Maui County Code. The drainage improvements

305 High Street, Suite 104 • Wailuku, Hawaii 96793 • ph: (808)244-2015 • fax: (808)244-8729 • planning@mhinconline.com

planning
environment
government

will be designed to mitigate impacts to downstream properties, including the Kula Elementary School.

- 3a. Local experience with senior housing projects has shown that elderly residents rely on public or MEO transportation services, with less reliance on the automobile. Therefore, the 44 parking stalls provided are anticipated to meet both resident and visitor needs.
- 3b. The applicant has been coordinating with the Department of Fire and Public Safety to ensure that access and maneuverability requirements are addressed. As a result of the coordination, each building will have fire sprinkler systems to ensure that these life safety systems made available for residents are optimized.
- 4a. Site topographic conditions will require that some residents will have to park below and walk up to their units. The site's slope condition has been considered in the layout and design of the buildings to ensure that livability criteria are addressed to the fullest extent. In this regard, the applicant believes that there are many qualified active and independent seniors who can comfortably reside in the project.
- 4b. Two (2) units at the top of the project site will be fully handicapped accessible. All other units will be adaptable to accommodate handicapped accessible features such as handrails. An objective of the project is to enable residents to live independently as long as possible by providing features which will enhance and support daily living activities. As residents leave the project to seek higher care alternatives over time, new residents will be sought to occupy the vacated units. In this context, the applicant is committed to keeping the project as an affordable senior project in perpetuity. In summary, the applicant envisions a long-term need for affordable housing to that segment of the senior population which can lead an independent lifestyle.
- 5a. The applicant is exploring options for water source capable of supporting the project. This effort includes ongoing coordination with the County of Maui and coordination with other landowners. This collaborative approach to identifying water source solutions is viewed as a benefit to the entire community.
- 5b. The applicant respects the development progress demonstrated by the Department of Hawaiian Home Lands. The proposal for the senior affordable housing project is being done in recognition of the need for new housing inventory for a critical segment of the Maui community. In this regard, the applicant does not view its proposal as being competitive with other worthy community projects. Rather, it is viewed as complementary in addressing holistically, the needs of the community.

It is believed that all segments of the community can work together to find solutions that will benefit residents having the greatest need.

5c. As noted above, the applicant is coordinating with the County and other landowners on solutions to water and related development issues utilizing a cooperative approach, so that all projects having social benefit can be implemented as quickly as possible. The applicant does not believe that the proposal project is competitive with other worthy projects, but instead views the proposed as an opportunity for developing synergistic solutions which will benefit our multi-faceted island community.

6a. Traffic mitigation measures at the Kula Elementary School exit and the project access driveway will include the limitation of turning movements into and out of the senior housing project site to right-turns only. A deceleration lane for traffic entering the site will be provided to allow a separate lane for slowing traffic into the site. A tapered exit lane will provide merging distance for traffic entering the Kula Highway traffic stream from the project site. Design of the project access intersection with Kula Highway will include the provision of markers or delineators to prevent traffic exiting the Kula Elementary School from directly entering the senior housing project site.

Residents and vendors are expected to respect traffic laws, as well as property rights of the school. As such, they will be discouraged from using of the school's driveway as a "short-cut". The site manager will be available to receive information (e.g., license plate numbers; vendor names) from school officials regarding project generated traffic utilizing the school's driveway. The applicant is intent on operating a project which will serve as good neighbor not only to the school, but the surrounding neighborhood.

6b. The design parameters for the tapered exit lane will include appropriate markings and signage to ensure the safe merger with northbound traffic, including traffic entering the school site. It should be noted that trip generation from the project is not anticipated to be significant (e.g., one (1) exiting trips during the morning peak hour).

6c. The applicant's membership includes families whose children attend Kula Elementary School. As such, the applicant is aware of the need to have a safe path for students wishing to get to the Kula Gym. A pedestrian study conducted at the Kula Highway crosswalks indicates that pedestrians can safely negotiate the crossing based on time gaps between vehicle platoons. (The pedestrian analysis will be included in the Final Environmental Assessment.) Additionally, the proposed

senior housing project will provide a sidewalk through the project site (from Kula Highway to the Kula Gym), which will be available for students wishing to access the gym site. The new access walkway to the gym will be superior to and safer than that provided by present conditions.

As discussed above, the proposed design for the driveway intersection will provide for the safest means of entry to and exit from the project site. The applicant recognizes the need to provide for the optimal intersection design for the safety and welfare of the Kula Elementary School students, Maui island residents using Kula Highway, and residents of the project itself.

- 6d. While an overhead bridge is one alternative for the safe crossing of Kula Highway, such an alternative needs to be weighed against utilization potential and viability of other measures, including the provision of crossing guards before and after school. An overhead bridge is not considered viable under pedestrian use conditions expected with the proposed senior housing project.
- 7a. Double wall construction will help to mitigate exterior noise within the units. In addition, each unit will be air conditioned to allow the closure of windows should noise from the gym become a distraction or nuisance. Renters will be made aware of use patterns at the Kula Gym.
- 7b. The project will include a sidewalk from Kula Highway to the Kula Gym along the southern border of the property. The applicant believes that pathway function for students can be achieved without physical separation from the rest of the project. Nonetheless, walkway use by students will be monitored over time. As needed, operational and physical adjustments can be implemented in the future to ensure proper use of the pathway.
- 7c. As indicated, the project does not involve the removal of the Kula Gym from the property. The applicant will coordinate with the County of Maui, Department of Parks and Recreation regarding the long-term use of the Gym as a County-operated facility. Moreover, the applicant recognizes the historic character of the gym and supports its continued use as a community recreation facility.
- 8a. The schematic designs presented to the Kula Community Association reflect a design theme compatible with the surrounding built environment. As final design plans are prepared, building materials, color, architectural enhancements, and landscape treatment will be refined to ensure that aesthetics are appropriately considered in project development.

Dick Mayer, Chairperson
December 22, 2006
Page 5

- 8b. Lighting will be shielded, with optional fixture placement for safety and minimal intrusion into neighboring properties and the night sky.
- 8c. The maximum building height will be approximately 32-feet, 8-inches. This height requirement is due to the cut and fill conditions required on the slopes fo the property. The building heights proposed will not be intrusive from a visual standpoint.

We understand that continued dialogue with the Kula Community Association and Maui residents is needed to ensure that this important project can be implemented with sound community support. We therefore look forward to meeting with the Kula Community Association again in the near future. In the mean time, if there are any questions pertaining to the responses provided, please feel free to contact me.

Very truly yours,



Michael T. Munekiyo, A. I. C. P.
Project Manager

MTM:yp

cc: Elmer Cravalho, Kula Community Federal Credit Union
Gerald Hiyakumoto, Hiyakumoto + Higuchi Architects, Inc.
Kirk Tanaka, R.T. Tanaka Engineers, Inc.

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AUG 10 2008

Maui Electric Company, Ltd. • 210 West Kamehameha Avenue • PO Box 398 • Kahului, Maui, HI 96733-6898 • (808) 871-8461



August 8, 2006

Munekiyo & Hiraga, Inc.
Attn: Michael Munekiyo, Project Manager
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Munekiyo,

Subject: Proposed Kula Affordable Senior Housing Project –
Draft Environmental Assessment
Kula Highway
Kula, Maui, Hawaii
Tax Map Key: (2) 2-2-014:021

Thank you for allowing us to comment on the Proposed Affordable Senior Housing Project -
Draft Environmental Assessment of July 20, 2006.

In reviewing our records and the information received, Maui Electric Company (MECO) will be
requiring access and electrical easements for our facilities to serve the subject project site. We
highly encourage the customer's electrical consultant to submit electrical drawings and a project
time schedule as soon as practical so that service can be provided on a timely basis.

We also suggest that the developer and/or their consultant make contact with Walter Enomoto
of our Demand Side Management (DSM) group at 872-3283 to review potential energy
conservation and efficiency opportunities for their project.

Should you have any questions or concerns, please call Ray Okazaki at 871-2340.

Sincerely,

A handwritten signature in black ink, appearing to read "Neal Shinyama". The signature is written in a cursive, somewhat stylized font.

Neal Shinyama
Manager, Engineering

NS:ro

Cc: Walter Enomoto – MECO DSM
Antonie Wurster – State of Hawaii-Dept. of Transportation

U. S. GOVERNMENT PRINTING OFFICE: 1964

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XI. REFERENCES

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APPENDIX A.

**Proposed Section 201H, HRS
Exemptions**

KULA AFFORDABLE SENIOR HOUSING PROJECT
PROPOSED SECTION 201H, HRS, EXEMPTIONS
FROM THE MAUI COUNTY CODE ("MCC")

- A. EXEMPTION FROM TITLE 2, MCC, ADMINISTRATION AND PERSONNEL
1. An exemption from Chapter 2.80B, MCC, General Plan and Community Plans, shall be granted to permit the project to proceed without obtaining a community plan amendment.
- B. EXEMPTIONS FROM TITLE 12, MCC, STREETS, SIDEWALKS, AND PUBLIC PLACES
1. An exemption from Chapter 12.08, MCC, Driveways, shall be granted to exempt the project from payment of driveway permit and inspection fees.
- C. EXEMPTION FROM TITLE 14, MCC, TRAFFIC IMPACT FEES
1. An exemption shall be granted for traffic impact fees which may, in the future be adopted for the Makawao-Pukulani-Kula region.
- D. EXEMPTIONS FROM TITLE 16, MCC, BUILDINGS AND CONSTRUCTION
1. Exemptions from MCC Chapters 16.04A, Fire Code, 16.18A, Electrical Code, 16.20A, Plumbing Code, and 16.26, Building Code, shall be granted to exempt the project from payment of fire, electrical, plumbing, building and demolition permit fees.
 2. An exemption from Section 16.26.3304, MCC, Improvements to Public Streets, relating to frontage improvements along Lower Kula Road, shall be granted.
- E. EXEMPTIONS FROM TITLE 18, MCC, SUBDIVISIONS
1. Exemptions from Section 18.04.030, MCC, Administration, and Section 18.16.020, MCC, Compliance, shall be granted to exempt the project from obtaining a change in zoning and community plan amendment to enable subdivision approval, as applicable.
 2. An exemption from Section 18.16.320, MCC, Parks and Playgrounds, shall be granted to exempt the project from the County's park dedication and assessment requirements.

3. An exemption from Section 18.20.070, MCC, Sidewalks, relating to frontage improvements along Lower Kula Road, shall be granted.
4. An exemption from Section 18.20.080, MCC, Curbs and Gutters, relating to frontage improvements along Lower Kula Road, shall be granted.

F. EXEMPTIONS FROM TITLE 19, MCC, ZONING

1. An exemption from Chapter 19.31.020, MCC, Public/Quasi-Public, shall be granted to permit the development and use of the parcel for an affordable senior housing project as reflected in Attachment "A". The following zoning standards shall apply:

Height: No building shall exceed three (3) stories or thirty-six (36) feet in height

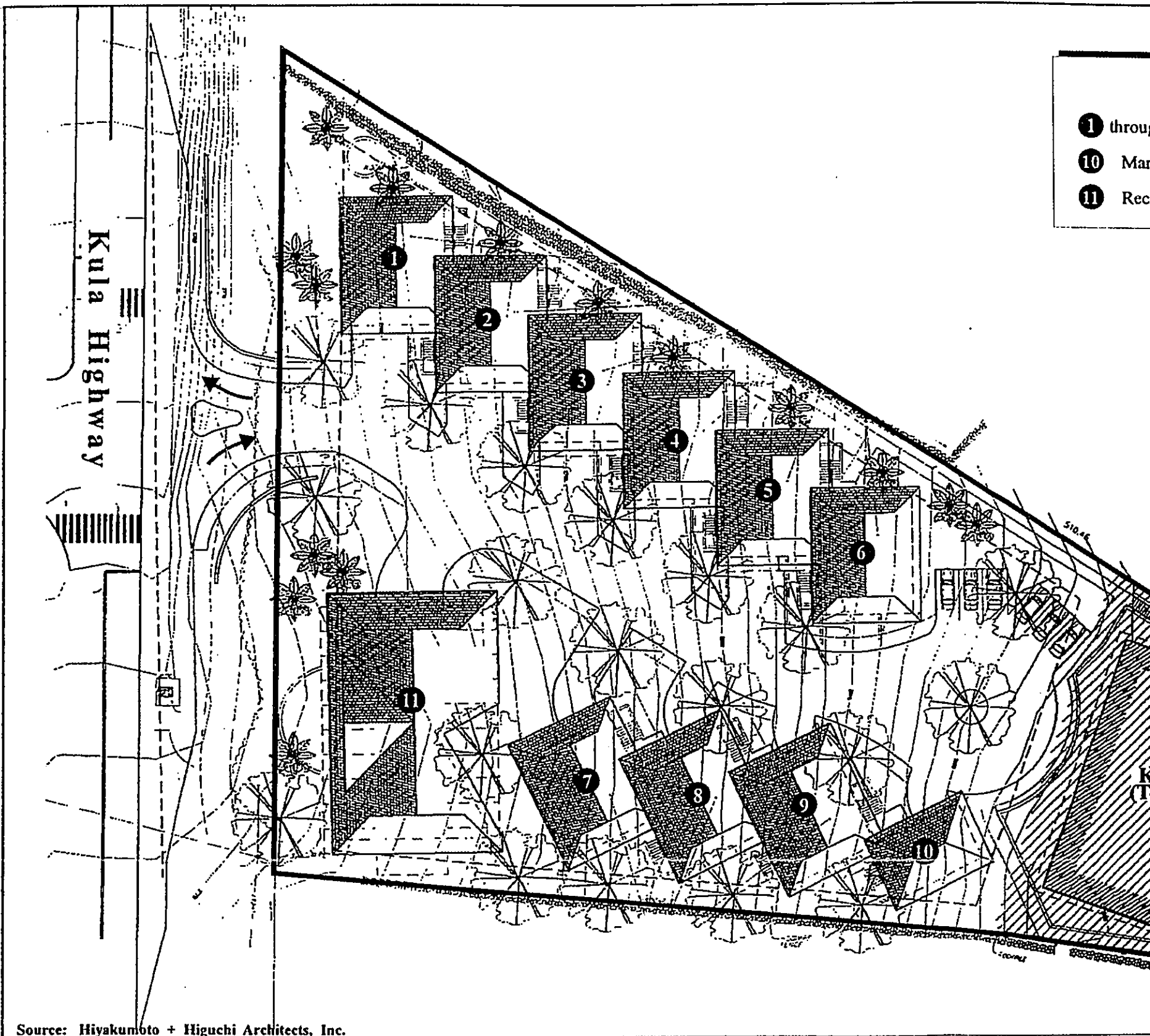
SETBACK:

Front and rear yard	Minimum of 15 feet
Side yard	Minimum of 10 feet

2. An exemption from Chapter 19.36, MCC, Off-Street Parking, shall be granted to permit the provision of 44 paved parking stalls and no loading zone stalls for the entire project.

G. EXEMPTIONS FROM TITLE 20, MCC, ENVIRONMENTAL PROTECTION

2. An exemption from Section 20.08.090, MCC, Grubbing and Grading Permit Fees, shall be granted to exempt the project from payment of grading, grubbing and excavation permit fees, as well as inspection fees.



- ① through ⑥
- ⑩ Mar
- ⑪ Rec

Source: Hiyakumoto + Higuchi Architects, Inc.

Attachment "A"

Proposed Kula Affordable Senior Housing Project

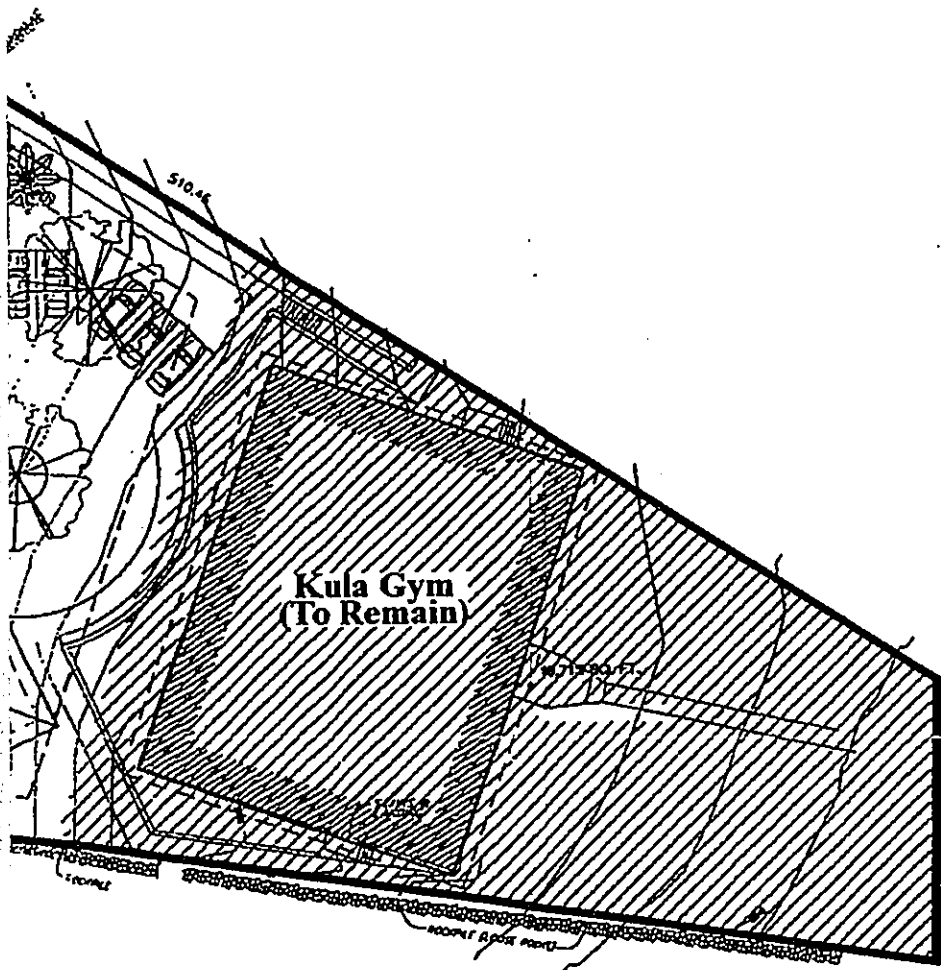
Conceptual Site Plan



Prepared for: Kula Community Federal Credit Union

KEY

- ① through ⑨ Apartment Buildings (36 Units Total)
- ⑩ Manager's Unit, Laundry, and Office
- ⑪ Recreation Building



ising Project

NOT TO SCALE


MUNEKIYO HIRAGA, INC.

APPENDIX B.

**Preliminary Engineering
Report**

PRELIMINARY
CIVIL ENGINEERING REPORT
FOR
KULA AFFORDABLE SENIOR HOUSING PROJECT

KULA, MAUI, HAWAII
TAX MAP KEY: (2) 2-2-14:21

PREPARED FOR:
KULA COMMUNITY FEDERAL CREDIT UNION
137 KALEPA PLACE
KAHULUI, HI 96732

PREPARED BY:



CIVIL & STRUCTURAL ENGINEERING - LAND SURVEYING - CONSTRUCTION MANAGEMENT & INSPECTIONAL SERVICES

871 KOLU STREET, SUITE 201
WAILUKU, MAUI, HAWAII - 96793
JOB 05-069

JANUARY 2006

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XII. EXHIBIT

EXHIBIT A - PRELIMINARY MAP SHOWING PROPOSED ACCESS
PERMITTED FOR PROPOSED KULA AFFORDABLE SENIOR
HOUSING PROJECT

XIII. FIGURES

FIGURE 1 - LOCATION MAP

FIGURE 2 - VICINITY MAP

FIGURE 3 - SOILS MAP

FIGURE 4 - EXISTING TOPOGRAPHY

FIGURE 5 - CONCEPTUAL SITE PLAN

FIGURE 6 - CONCEPTUAL WATER SYSTEM PLAN

FIGURE 7 - CONCEPTUAL GRADING PLAN

FIGURE 8 - CONCEPTUAL DRAINAGE PLAN

FIGURE 9 - CONCEPTUAL IWS PLAN

I. INTRODUCTION:

The purpose of this report is to evaluate the existing site conditions and to address the probable impacts of the proposed Kula Affordable Senior Housing project on roadway, water, sewer and drainage. It will also define the requirements for grading and Best Management Practices to control soil erosion. It will also include preliminary construction cost estimate for site improvements necessary to support the project.

II. PROJECT DESCRIPTION:

The proposed project entails the construction of 36 rental apartment intended for senior citizens. In addition to the rental units, there will be an office and recreation building and a unit for a resident manager.

Related improvements generally include grading, construction of access, water, sewer and drainage systems. The proposed improvements are discussed in their respective sections of this report.

The projected civil construction cost for site development is approximately \$2,630,000. This cost, however, does not include cost of retaining walls that will be constructed at the access road turnaround and along the northern and southern boundaries of the project site. The water development fee is \$34,974 which is based on the installation of a 1½" water meter. Refer to Appendix C.

III. LOCATION AND ACCESS:

The project site is located in Kula, a community that lies on the western slope of Haleakala. It is situated on the eastern side of Kula Highway opposite

Kula Elementary School. Lower Kula Road borders the eastern boundary of the project site. Refer to Figures 1 and 2.

Regional access to the project site is via Haleakala and Kula Highways which link the Kula Community and vicinities to other parts of the island. Locally, it is presently accessed via Lower Kula Road. An in-depth discussion of the existing and future traffic conditions in the area is presented by the project's Traffic Impact Report (TIR).

The proposed project will be accessed by a new driveway off Kula Highway opposite the existing exit driveway of Kula Elementary School. An access permit will be acquired from the Department of Transportation, Highways Division. Conceptually, a 40-foot wide access permitted is being requested as shown on Exhibit A.

The conceptual layout of the proposed driveway and highway improvements is shown on Figure 5. The proposed driveway will be channelized to permit right-turn in and right-turn out traffic movements only. The highway improvements will consist mainly of a deceleration lane for vehicular traffic turning right into the housing project. There will be no left-turn entry into the project from the highway. Other related improvements would include drainage, roadway signing, pavement marking, grading, etc.

IV. EXISTING SOILS AND TOPOGRAPHY:

Soils at the project site are classified as Kula Cobbly Loam, 12 to 20 percent slopes (KxaD) [2]. Refer to Figure 3. This type of soil belongs to Kula Soil Series and is characterized by medium runoff, moderate erosion hazard and

moderately rapid permeability. Kula Soil Series also fall under Hydrologic Soil Group "B" [5] which is described as having moderately low potential runoff and moderately slow to moderately rapid permeability.

The existing topography of the project parcel [TMK: (2) 2-2-14:21] is shown on Figure 4. The parcel has elevations ranging from 2,769 feet at the Kula Highway boundary to 2,844 feet at Lower Kula Road above mean sea level.

The ground slopes down in a westerly direction at about 17 percent; however, the project site behind the Kula Gym building in particular has slopes ranging from about 18 percent to 21 percent.

V. WASTEWATER SYSTEM:

A. Existing:

There is no existing County sewer collection system in the Kula region. Generally, wastewater disposal in the Upcountry area is either via cesspools or via leaching fields with septic tank. The existing Kula Gym is currently served by a cesspool which is planned to be converted into a septic tank system as part of the proposed Senior Housing Project.

B. Projected Wastewater Flows:

The total projected average wastewater flow for the proposed development is about 8,870 gallons per day (gpd). The housing units could generate about 7,200 gpd; recreation and office building about 970 gpd; and, the manager's unit and laundry building about 700 gpd. Determination of estimated wastewater flows are given in Appendix A.

C. Proposed Wastewater System:

An individual wastewater system (IWS) consisting of septic tank and seepage pits is proposed for the project. The IWS will be designed and installed in accordance with the requirements of the State Department of Health's Administrative Rules, Chapter II-62, "Wastewater Systems".

Based on recommendations by Engineering Dynamics Corporation, an IWS consisting of a septic tank and two seepage pits will be provided for each of the nine modules, manager's unit, laundry, and the office recreation building for a total of 12 systems. The individual wastewater system for the nine modules, each with four bedrooms, will have a rated capacity of 800 gallons per day. The manager's unit will be rated for 400 gallons per day and the other two units (laundry and recreation) will be rated for 1,000 gallons per day.

The septic tanks will be of reinforced concrete construction having a volume of 1,250 gallons. The seepage pits will be 8 ft in diameter with precast concrete perforated liners and approximately 16 to 18 feet deep depending of the percolation test data to be provided. The septic tanks will require periodic inspections and depending on the amount of solids accumulations may require pumping between once per year and as long as once each four or five years.

The conceptual IWS layout for each building is shown on Figure 9.

VI. WATER SYSTEM:

A. Existing:

The parcel is currently served by a one (1) 5/8" water meter that connected to the existing 12" waterline on Lower Kula Road. Fire protection is provided by the existing fire hydrant (FH #609) located about 70 feet south of the existing entrance to the Kula Gym. The 12" waterline, which was installed about two (2) years ago, is a County water system and is fed by both the Department of Water Supply's Kealahou and Naalae laterals.

B. Projected Water Requirements:

The proposed project constitutes low rise apartment units (A-1), hence, the fire flow requirements for the project site is 1,500 gallons per minute (gpm) per Department of Water Supply (DWS) guidelines [7]. The proposed project will have 37 residential units and at 560 gpd/unit, the average domestic consumption will be about 20,720 gallons per day. The peak hour domestic demand will be about 62,160 gpd which is three (3) times the average daily demand.

C. Proposed Water System Improvements:

Fire protection, domestic and irrigation services for the proposed project will be connected to the existing 12" waterline on Lower Kula Road.

The proposed fire protection will include a double check detector assembly that would service the buildings' fire sprinkler systems and a fire hydrant at the west end of the project site. The proposed system will

augment the protection currently provided by the existing fire hydrant on Lower Kula Road.

Conceptually, the proposed domestic system will include a new 1½" water meter that has a capacity of 100 gpm. The 1½" water should be sufficient to serve the domestic and irrigation requirements for the proposed project. The existing 5/8" meter will remain to serve the gym. Final size of proposed water meter will be determined during the design development of the project.

Design and installation of water system will be in accordance with the requirement of the DWS. The proposed water system is conceptually laid out on Figure 6.

VII. GRADING:

The conceptual grading plan is shown on Figure 7.

The existing ground is quite steep, having an average slope of about 20% along the centerline of the proposed access. Conceptually, the finished slopes of the proposed access were set at 12% in front of the building driveways; 18% between the driveway approaches; and 6% at the turnaround, resulting in an average slope of about 13%. Based on these slopes, substantial excavation to as deep as 28 feet will occur at the turnaround. As such, retaining walls will be needed along the northern and southern boundaries and behind the Kula Gym building.

VIII. **DRAINAGE:**

A. **General:**

The preliminary Drainage Study, in general, is based on the requirements, formulas, charts and tables of the Rúles of the Design of Storm Drainage Facilities of the County of Maui [1] hereinafter referred to as County Drainage Standards.

B. **Flooding Hazard:**

The site is located within Panel 15003-0270B of the Flood Insurance Rate Map for the County of Maui. This panel was not printed since it contains areas that are all within Flood Zone C. Hence, the occurrence of flooding within the project site is minimal.

C. **Existing Drainage Conditions:**

There is no existing drainage facilities at the project site. There is; however, an existing grated drop inlet (GDI) on Kula Highway at the southwest frontage of the project site. At present, runoff from the site flows in a westerly direction from Lower Kula Road to Kula Highway. Runoff from approximately the southern third portion of the project site sheet flow into the highway to be collected by the existing GDI and then conveyed across the highway by the existing 24" culvert (Figure 4). Runoff from the remainder of the site also flows into the highway to be collected by the existing paved swale that discharges into an existing 24" highway culvert crossing located about 650 feet north of the project site.

D. Storm Runoff Quantities:

Hydrologic calculations are given in Appendix B - Preliminary Drainage Calculations. Based on the County Drainage Standards, the 10-year, 1-hour storm is used for surface runoff rates while the 50-year, 1-hour duration is used for the design of subsurface retention basins.

Based on the preliminary drainage calculations, the proposed project is anticipated to increase the existing 10-year runoff rate of 2.0 cfs to 6.5 cfs and the existing 50-year runoff volume of 4,140 cf to 10,325 cf an increase of about 4.5 cfs and 6,185 cf, respectively. The runoff increases are due mainly to the introduction of impervious surfaces such as pavements, roofs and concrete walkways.

E. Conceptual Drainage Plan:

The conceptual drainage systems are shown on Figure 8. The proposed system will be built onsite and will remain privately owned. Generally, the proposed systems consist of subsurface retention basins that will be sized, at a minimum, to retain the 50-year, 1-hour storm runoff volume increase that will be generated by the proposed project. Storing the volume increases onsite will preclude any significant adverse drainage effects of the proposed project on downstream properties and existing drainage facilities.

Aside from the retention basins, the drainage systems will also include grated inlets to collect runoff; non-perforated pipes to convey runoff to the retention basins; and drain manholes. The retention basins will consist of perforated pipes enveloped with crushed rocks (refer to

Appendix "B" for typical section). Conceptually, the proposed project requires 35 linear foot (lf) of 2-54" and 60 lf of 3-60" perforated pipes with storage capacities of 1,650 lf and 4,980 cf, respectively. The combined capacity of the two basins is 6,630 cf which is greater than the expected volume increase of 6,185 cf resulting in a reduction of the predevelopment runoff volume.

F. Conclusion:

The proposed development will increase the existing storm runoff due to addition of impervious surfaces such as building roofs, pavement and concrete walkways. Despite the increase of runoff, the proposed development is not anticipated to have adverse significant drainage effects on adjacent and downstream properties. The proposed drainage improvements will retain the runoff increases onsite resulting in zero runoff increase to downstream properties. The future retention basins will also have the effect of reducing the potential for sediments contained in the runoff from entering neighboring properties.

IX. BEST MANAGEMENT PRACTICES:

Requirements for the temporary control of soil erosion and dust during site improvement will be outlined on the construction plans. Some of the requirements will be as follows:

1. Control dust by means of water trucks or by installing temporary sprinkler systems or both if necessary.

2. Graded areas shall be thoroughly watered after construction activity has ceased for the day and for weekends and holidays.
3. All exposed areas shall be paved, grassed, or permanently landscaped as soon as finished grading is completed.
4. Storm runoff will be diverted away from graded areas to natural drainageways during construction by means of sand bag berms or lined temporary swales.
5. Time of construction will be minimized.
6. Only areas that are needed for new improvements will be cleared.
7. Early construction of drainage control features.
8. Construction of drainage basins prior to mass grading of project site.
Drainage basins will be temporarily utilized as sediment catchment during construction.
9. Installation of dust control fence surrounding the project site.
10. Installation of silt fence, gravel bag berms or other approved sediment trapping devices at the downstream side of the grading area.
11. Temporary control measures shall be in place and functional prior to construction and shall remain operational throughout the construction period or until permanent controls are in place.

The Contractor will also be required to submit a satisfactory soil erosion control plan to minimize soil erosion prior to an issuance of a grubbing and grading permit. Best Management Practices shall be in compliance with Section 20.08.035 of the Maui County Code (Ord. No. 2684) and "Construction Best

Management Practices (BMPs) for the County of Maui" of the Department of Public Works & Waste Management, May 2001.

The grading area is expected to be larger than 1.0 acre. Hence, NPDES General Permit Coverage Authorizing Discharges of Storm Water associated with construction activities will be obtained from the State Department of Health, Clean Water Branch, prior to any land disturbance at the project site

X. CONSTRUCTION PLAN APPROVALS:

Approval of construction plans for site improvements of the proposed project will be obtained from the Department of Public Works and Environmental Management; Department of Water Supply; Fire Prevention Bureau; State Department of Health, Wastewater and Clean Water Branches; and State Department of Transportation, Highways Division. The various infrastructures will be designed in compliance with the applicable requirements of these governmental agencies.

XI. REFERENCES:

1. Rules for the Design of Storm Drainage Facilities in the County of Maui, Title MC-15, Department of Public Works and Waste Management, County of Maui, Chapter 4.
2. Soil Survey of Islands of Kauai, Oahu, Maui, Molokai and Lanai, State of Hawaii, prepared by U. S. Department of Agriculture, Soil Conservation Service, August 1972.
3. Flood Insurance Rate Maps for the County of Maui, June 1981.
4. Rainfall-Frequency Atlas of the Hawaiian Islands, Technical Paper No. 43, U. S. Department of Commerce, Weather Bureau, 1962.

5. Erosion and Sediment Control Guide for Hawaii, prepared by U. S. Department of Agriculture, Soil Conservation Service, March 1981.
6. Construction Best Management Practices (BMPs) for the County of Maui, Dept. of Public Works and Waste Management, County of Maui, May 2001.
7. Water System Standards, Dept. of Water Supply, County of Maui, 2002.

APPENDIX A

PRELIMINARY WASTEWATER FLOW CALCULATIONS (Reference: State Department of Health's Administrative Rules, Chapter 11-62, "Wastewater Systems")

A. Criteria:

Dwelling:

No. of Persons/Bedroom = 2

Ave. Flow = 100 gals./day (gpd)/person

Laundry:

Ave. Flow = 50 gpd/customer

Recreation:

Ave. Flow = 25 gpd/customer

Workers:

Ave. Flow = 15 gpd/employee

B. Wastewater Flows:

Residential Units (each cluster or module)

No. of Units (Bedrooms) = 4

No. of Persons/Bedroom = 2

Ave. Flow = 100 x 2 x 4
= 800 gpd/cluster

Total = 800 x 9 cluster

= 7,200 gpd

Manager's Residence and Laundry:

Residence:

No. of Unit	= 1
Ave. Flow	= 100 x 2 x 1
	= 200 gpd
Laundry:	
No. of Customers	= 37 (No. of residential units)
37 Customers x 25% Utilization	= 10 Customers
Ave. Flow	= 10 x 50
	= 500 gpd
Total	= 200 + 500
	= 700 gpd

Recreation/Office:

Workers:

No. of Workers	= 3 (assumed)
Ave. Flow	= 3 x 15
	= 45 gpd

Recreation:

No. of Customers	= 74 (No. of Residents)
74 Customers x 50% Utilization	= 37 Customers
Ave. Flow	= 37 x 25
	= 925 gpd
Total	= 45 + 925
	= 970 gpd

Total for Project	= 7,20 + 700 + 970
	= 8,870 gpd

APPENDIX B

PRELIMINARY DRAINAGE CALCULATIONS

GENERAL

I. Reference: Rules for the Design of Storm Drainage Facilities in the County of Maui, November 12, 1995

II. Hydrologic Criteria:

A. 10-Year, 1-Hour: for surface flow runoff rate

1-Hr. Rainfall Value = 2.5"

B. 50-Year, 1-Hour: for storm runoff volumes

1-Hr. Rainfall Value = 2.8"

III. Runoff Quantity:

A. Methodology:

1. Rational Method, $Q = CIA$

Where Q = Flow rate in cubic feet per second (cfs)

C = Runoff Coefficient

I = Rainfall intensity in inches per hour for a duration equal to the time of concentration

A = Drainage Area in Acres (for purposes of Drainage Calculations, site of gym will be excluded since it will not be disturbed)

= 1.693 - 0.339

= 1.354 Acs.

B. Runoff Coefficient, C :

1. Impervious Areas (Roofs, A.C., Conc.) = 0.95

Open Space (Unimproved/Landscaped) = 0.30

C. Runoff Discharge Rate (10-Year)

1. Existing Condition:

C = 0.30
Length = 300 ft.
Slope = 18%
Tc = 12 min. (Ave. Grass)
I = 4.90"
Q₁₀ = 0.30 x 4.90 x 1.354
= 2.0 cfs

2. New Condition:

Area: Impervious = 0.930 Acs.
Lawn/Landscaped = 0.424 Acs.
Total Area = 1.354 Acs.
C_w = $\frac{0.930 \times 0.95 + 0.424 \times 0.30}{1.354}$
= 0.75
Length = 300 ft.
Slope = 12%
Tc = 5 min. (Paved)
I₁₀ = 6.40"
Q₁₀ = 0.75 x 6.40 x 1.354
= 6.5 cfs

3. Increase Due to Development:

= 6.5 - 2.0
= 4.5 cfs

D. Runoff Volume (50-Year Storm):

Runoff volume is equal to the design 1-hr. rainfall depth (I_{50}) times the runoff coefficient (C) times the drainage area (A).

$$V = 1\text{-Hr. Rainfall Depth} \times C \times A$$

1. Existing Conditions:

$$V = \frac{2.8''}{12} \times 0.30 \times 1.354$$

$$= 0.095 \text{ ac. - ft.}$$

$$= 4,140 \text{ cf (Rounded to Nearest 5)}$$

2. New Conditions:

$$V = \frac{2.8''}{12} \times 0.75 \times 1.354$$

$$= 0.237 \text{ ac. - ft.}$$

$$= 10,325 \text{ cf}$$

3. Increase Due to Development

$$= 10,325 - 4,140$$

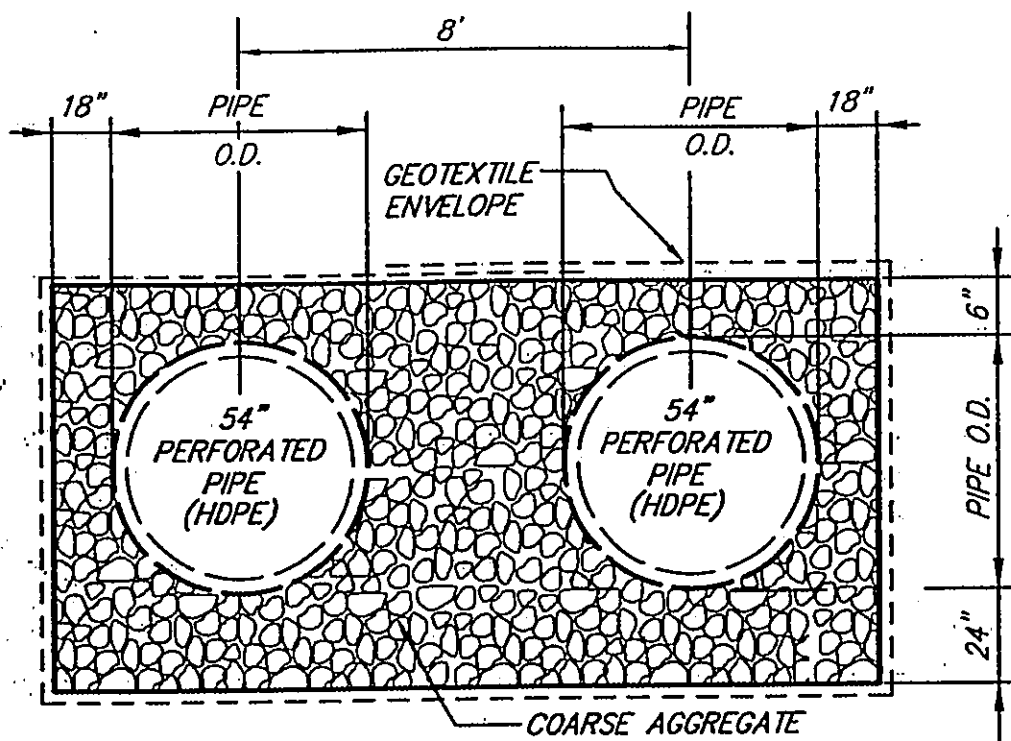
$$= 6,185 \text{ cf (Min. Volume to be retained onsite in order not to increase existing runoff volume)}$$

IV. Subsurface Retention Basin:

In accordance with the County Drainage Standards, the subsurface retention basins shall have a cumulative storage capacity to at least equal to the anticipated 50-year storm volume increase for areas less than 100 acres. However, in determining the storage capacity, soil percolation will not be taken into account and that only 50% of the void volume of the rock envelopes will be included.

A typical section of the proposed subsurface retention basins are shown on the following pages: Conceptually, the proposed project requires 35 linear feet (lf) of 2-54" and 60 lf of 60" perforated pipes with storage capacity of 1,650 cf and 4,980 cf, respectively. The combined capacity is 6,630 cf which is greater than the expected volume increase of 6,185 cf.





DETERMINE HOLDING CAPACITY:

Stone Void Ratio = 40%

Capacity per Linear Foot:

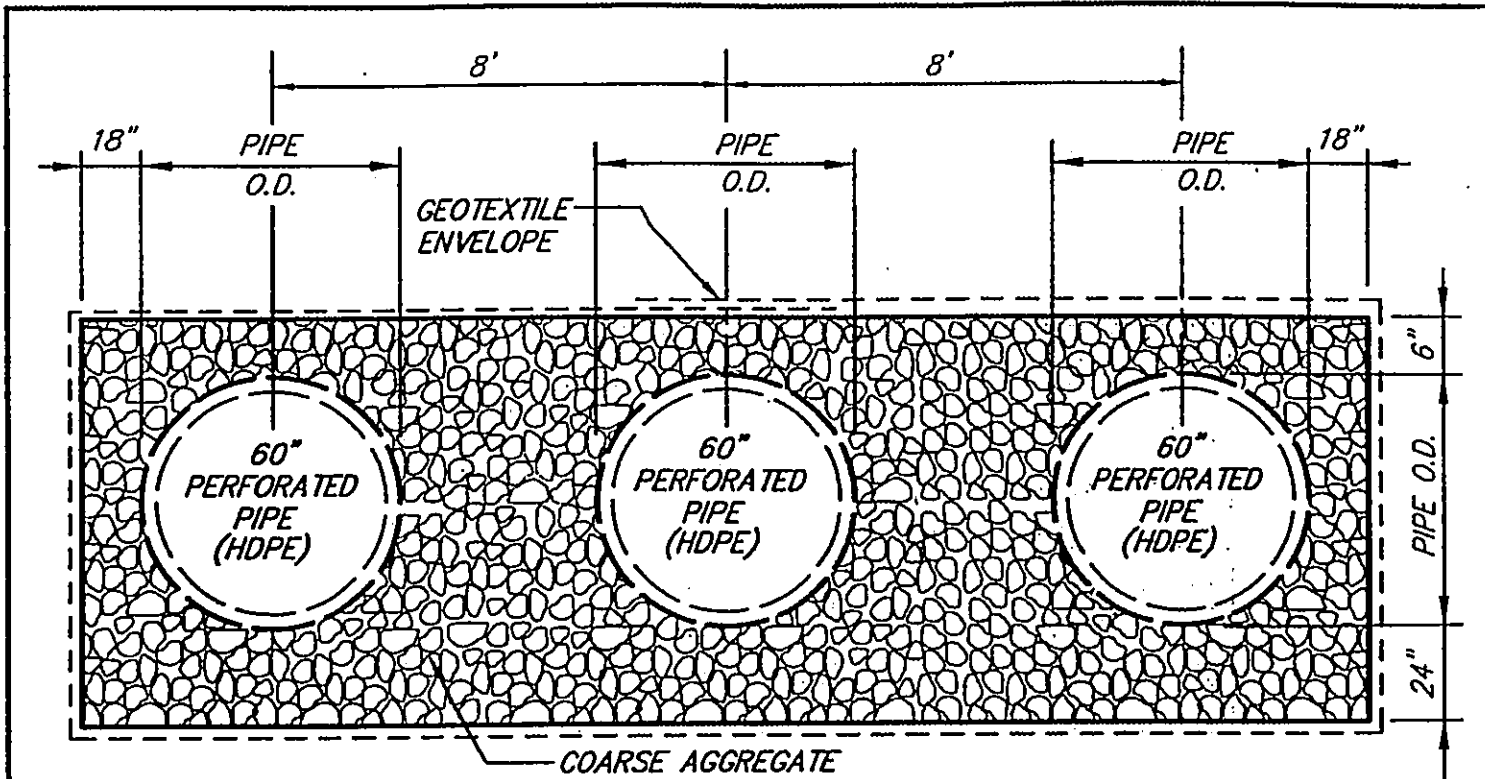
$$\begin{aligned}
 \text{Pipe Capacity} &= 2 \pi R^2 \\
 &= 2 \times 3.1416 \times 2.25^2 \\
 &= 2 \times 15.9 \\
 &= 31.8 \text{ cf}
 \end{aligned}$$

$$\begin{aligned}
 \text{Effective Stone Capacity} &= 50\% \text{ of Void Volume} \\
 &= 0.50 \times (15.5' \times 7' - 31.8) \times 0.40 \\
 &= 0.50 \times 76.7 \times 0.40 \\
 &= 15.3
 \end{aligned}$$

$$\begin{aligned}
 \text{Capacity/LF} &= 31.8 + 15.3 \\
 &= 47.1 \text{ cf}
 \end{aligned}$$

TYPICAL SECTION
SUBSURFACE RETENTION BASIN "A"
(DOUBLE BARREL)
 NOT TO SCALE

c:\12005\05-069\HYAKU_RETENTION_CAPACITY.dwg (Layout)



DETERMINE HOLDING CAPACITY:

Stone Void Ratio = 40%

Capacity per Linear Foot:

$$\begin{aligned}
 \text{Pipe Capacity} &= 3 \pi R^2 \\
 &= 3 \times 3.1416 \times 2.5^2 \\
 &= 3 \times 19.6 \\
 &= 58.8 \text{ cf}
 \end{aligned}$$

$$\begin{aligned}
 \text{Effective Stone Capacity} &= 50\% \text{ of Void Volume} \\
 &= 0.50 \times (24' \times 7.5' - 58.8) \times 0.40 \\
 &= 0.50 \times 121.2 \times 0.40 \\
 &= 24.2 \text{ cf}
 \end{aligned}$$

$$\begin{aligned}
 \text{Capacity/LF} &= 58.8 + 24.2 \\
 &= 83.0 \text{ cf}
 \end{aligned}$$

TYPICAL SECTION
SUBSURFACE RETENTION BASIN "B"
(TRIPLE BARREL)
 NOT TO SCALE

APPENDIX C

**KULA AFFORDABLE SENIOR HOUSING
PRELIMINARY ENGINEER'S ESTIMATE
Civil Construction Cost
Order of Magnitude
January 18, 2006**

Summary:

The projected civil construction cost for the proposed development is listed below.

Cost of retaining walls are not included. Detailed costs are given on the following pages.

General Grading & Paving	=	\$1,825,500
Water System	=	\$173,200
Drainage System	=	\$229,100
Wastewater System	=	<u>\$275,000</u>
Sum of all Items	=	\$2,502,800
Contingency (±5%)	=	<u>\$127,200</u>
Projected Civil Construction Cost	=	\$2,630,000
Water Development Fee	=	\$39,974

Item No.	Description	Approx. Quantity	Unit	Unit Cost	Total
GENERAL GRADING & PAVING:					
1.	Dust, Soil Erosion and Water Pollution Control		L.S.	\$50,000	\$50,000
2.	Traffic Control		L.S.	\$10,000	\$10,000
3.	Archaeological Monitoring		Allow	\$20,000	\$20,000
4.	Clear and Grub	2.0	Acs.	\$5,000	\$10,000
5.	Unclassified Excavation, including Disposal Offsite	29,800	C.Y.	\$50	\$1,490,000
6.	4-Inch Thick x 5-Foot Wide Concrete Walkway	960	L.F.	\$35	\$33,600
7.	4-Inch Thick Reinforced Concrete Driveway	580	S.Y.	\$60	\$34,800
8.	6-Inch Thick PCC Pavement, including 4-Inch Thick Aggregate Base Course	480	S.Y.	\$100	\$48,000
9.	2-Inch Thick A.C. Pavement (Mix V), including 6-Inch Thick Aggregate Base Course	550	S.Y.	\$25	\$13,750
10.	4-Inch Thick A.C. Pavement (Mix IV), including 6-Inch Thick Aggregate Base Course and 12-Inch Thick Aggregate Subbase Course	1,230	S.Y.	\$75	\$92,250
11.	Roadway Striping, Marking and Signing		L.S.	\$10,000	\$10,000
12.	Standard Concrete Curb	655	L. F.	\$20.00	\$13,100
Subtotal General Grading and Paving =					\$1,825,500

WATER SYSTEM:

1.	2" Copper Pipe	460	L.F.	\$50	\$23,000
2.	4" D.I. Pipe, Class 52 w/Polywrap	220	L.F.	\$70	\$15,400
3.	8" D.I. Pipe, Class 52 w/Polywrap	460	L.F.	\$100	\$46,000
4.	Fire Hydrant Assembly (Straight Run), including Concrete Slab	1	EA.	\$5,000	\$5,000

Item No.	Description	Approx. Quantity	Unit	Unit Cost	Total
5.	4" G.V., including SVB, Cover and Concrete Collar	11	EA.	\$700	\$7,700
6.	6" G.V., including SVB, Cover and Concrete Collar	1	EA.	\$800	\$800
7.	8" Tapping Valve, including SVB, Cover and Concrete Collar	1	EA.	\$2,500	\$2,500
8.	Concrete Reaction Block	17	EA.	\$400	\$6,800
9.	Type "C" Single Service Lateral, including 1½" Water Meter Manhole and Connection to Existing 12" Waterline		L.S.	\$10,000	\$10,000
10.	8" Double Check Detector Assembly, including Manhole		L.S.	\$22,500	\$22,500
11.	Connection of New 8" Waterline to Existing 12" Waterline		L.S.	\$17,500	\$17,500
12.	Cutting & Plugging Existing Single Service Lateral at Existing 12" Waterline		L.S.	\$5,000	\$5,000
13.	Connection of Existing Kula Gym Service Line to New 1½" Water Meter		L.S.	\$2,000	\$2,000
14.	Chlorination and Testing		L.S.	\$7,000	\$7,000
15.	DWS Charges		Allow	\$2,000	\$2,000
Subtotal Water System =					\$173,200

DRAINAGE SYSTEM:

1.	12-Inch HDPE Pipe	40	L.F.	\$75	\$3,000
2.	18-Inch HDPE Pipe	190	L.F.	\$95	\$18,050
3.	Subsurface Retention Basin "A" (2-54" Perforated HDPE Pipes w/Rock Envelope)		L.S.	\$43,750	\$43,750
4.	Subsurface Retention Basin "B" (3-60" Perforated HDPE Pipes w/Rock Envelope)		L.S.	\$87,000	\$87,000

Item No.	Description	Approx. Quantity	Unit	Unit Cost	Total
5.	Storm Drain Manhole (Modified Type "C")	2	EA.	\$7,500	\$15,000
6.	Grated Drop Inlet (Pre-Cast)	4	EA.	\$5,000	\$20,000
7.	Grated Drop Inlet (Modified Type 61616)	1	EA.	\$6,500	\$6,500
8.	Grated Drop Inlet (Type 61616)	1	EA.	\$6,000	\$6,000
9.	Concrete Gutter (Type 61614)	120	L.F.	\$40	\$4,800
10.	Concrete Gutter (Type 61616)	400	L.F.	\$50	\$20,000
11.	Extension of 24" RCP, including Demolition of Existing GDI		L.S.	\$5,000	\$5,000
Subtotal Drainage System =					\$229,100

WASTEWATER SYSTEM:

1.	1,250 Gal. Septic Tank	11	EA.	\$10,000	\$110,000
2.	8-Foot Dia. x 20-Foot Deep Seepage Pit	22	EA.	\$7,500	\$165,000
Subtotal Wastewater System =					\$275,000

Sum of All Items = \$2,502,800

Contingency (±5%) = \$127,200

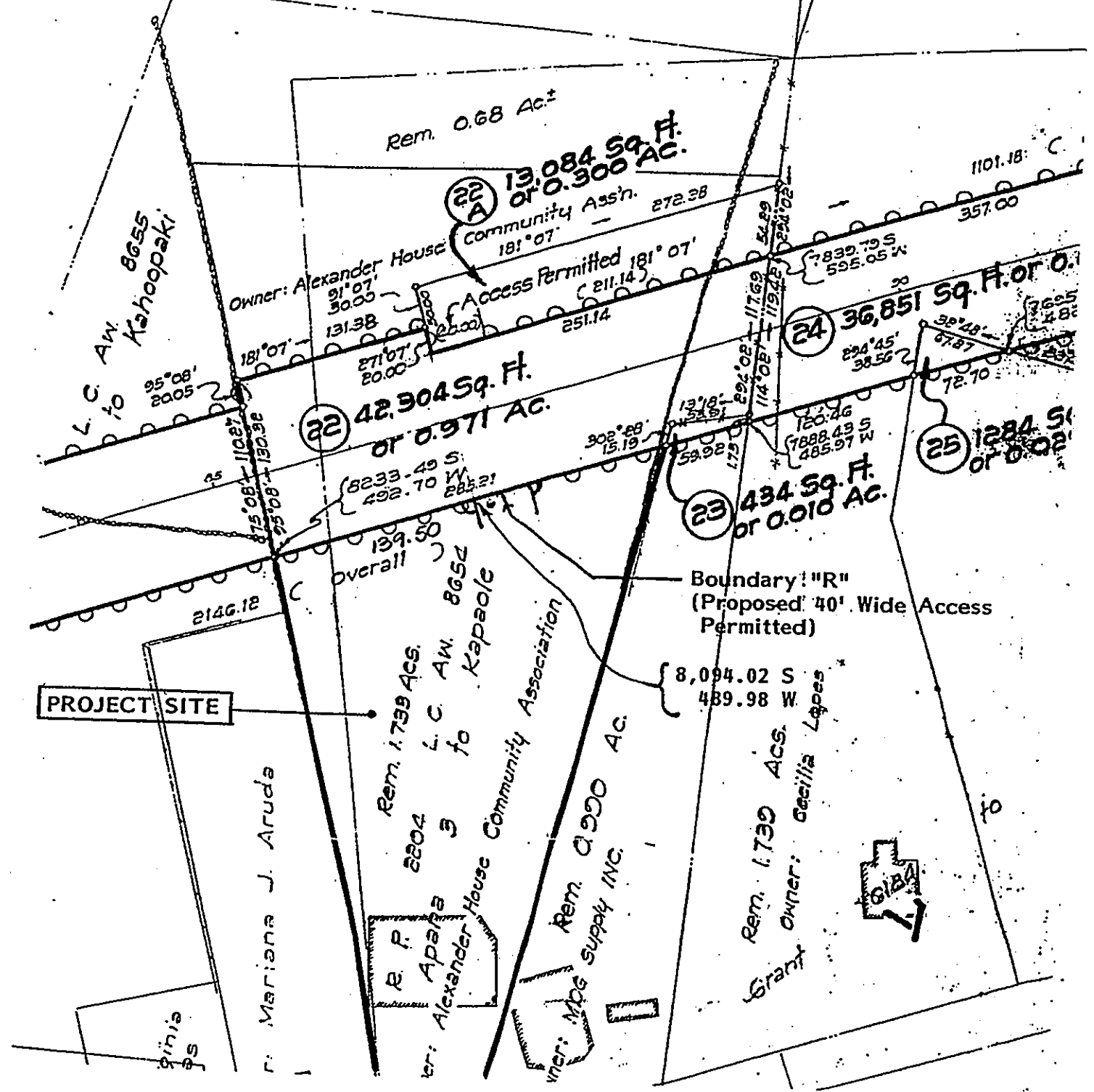
Projected Civil Construction Cost = \$2,630,000

WATER DEVELOPMENT FEE:

Proposed 1½" Water Meter \$34,974

TRUE NORTH
SCALE: 1"=100'

KULA ELEMENTARY SCHOOL



PROJECT SITE

**PRELIMINARY MAP SHOWING
PROPOSED ACCESS PERMITTED
FOR PROPOSED KULA AFFORDABLE
SENIOR HOUSING PROJECT**

EXHIBIT-A

TMK: (2) 2-2-14:71

DESCRIPTION
(PRELIMINARY)

LOWER KULA ROAD

FEDERAL AID PROJECT NO. BF-037-1(1)

BOUNDARY "R"

Being a portion of Royal Patent 2204, Land Commission
Award 8654, Apana 3 to Kapaole

Situated at Waiakoa, Kula, Makawao, Maui, Hawaii

Beginning at the South end of this right-of-way boundary on the
Easterly side of Parcel 22, the coordinates of said beginning
referred to "KIKALAPUU" being 8,094.02 feet South and 489.98 feet
West and running by azimuths measured clockwise from True South:

1. 181° 07' 40.00 feet along Parcel 22 to the North end
of this right-of-way boundary
and having a length of 40.00
feet.

Access shall be permitted into and from Parcel 22 over and
across the above described Boundary "R".

Tax Map Key: (2) 2-2-14:21

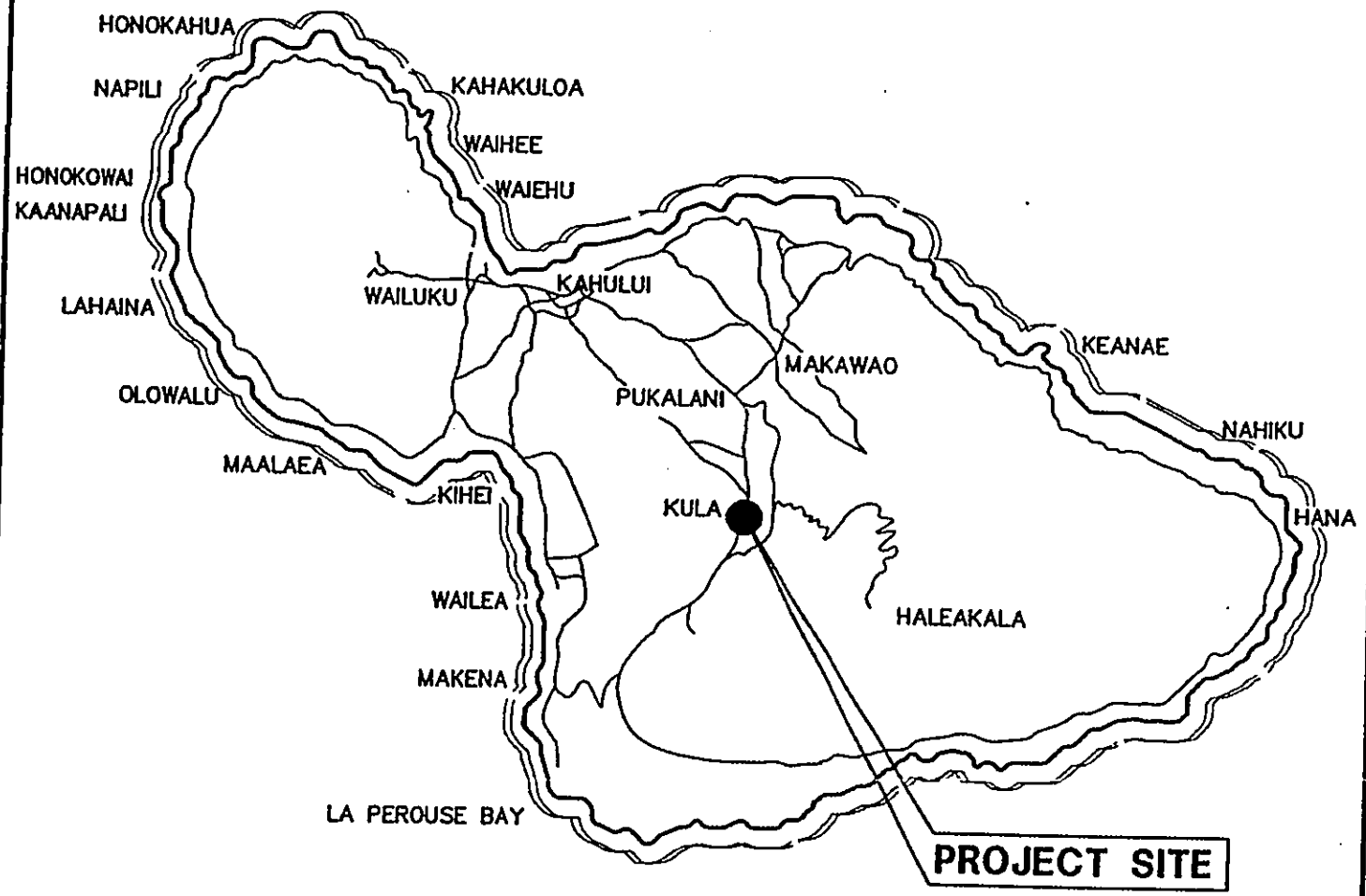
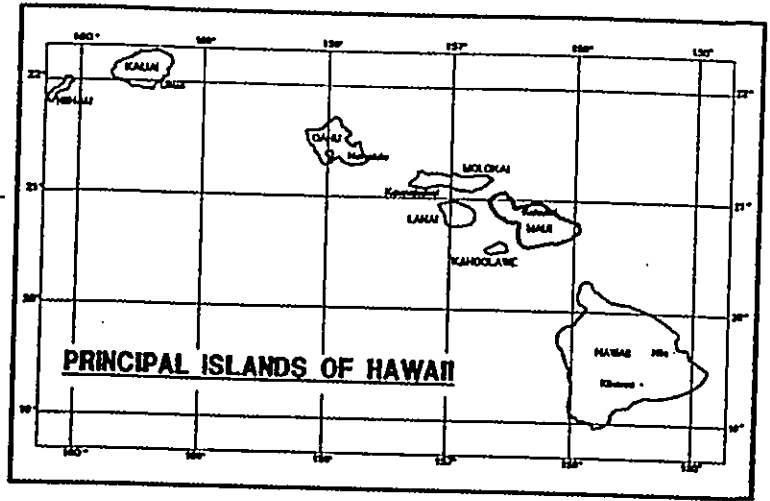
Prepared by R. T. Tanaka Engineers, Inc.
Wailuku, Maui, Hawaii

January 4, 2006

This work was prepared by me or under my supervision.



Kirk T. Tanaka
Licensed Professional Surveyor
Certificate No. 7223-LS
License Expires: April 30, 2006



LOCATION MAP
ISLAND OF MAUI

G:\2005\05-069\HIYAKUJ_Maui-Map.dwg

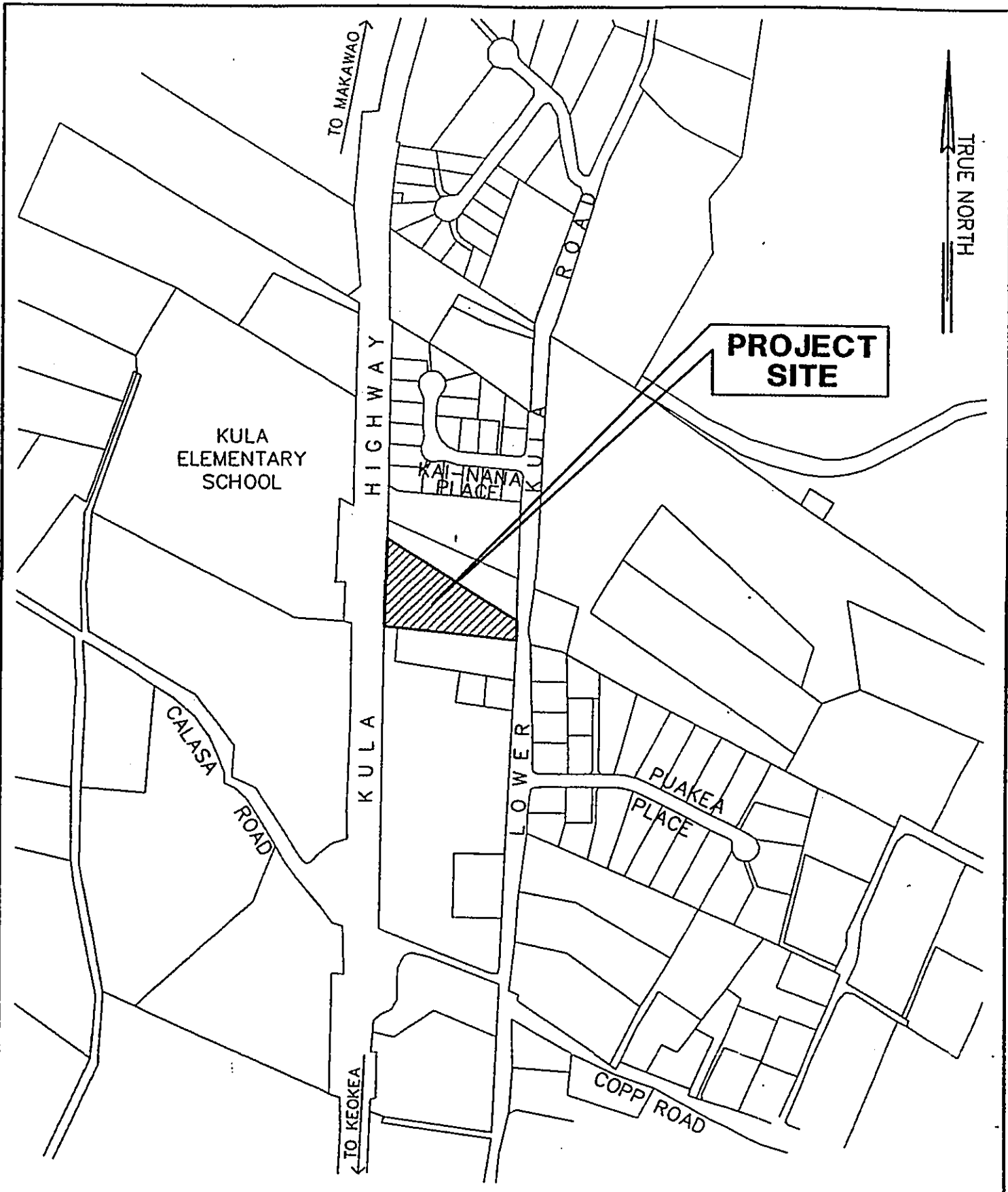
Tax Map Key (2) 2-2-14:21

FIGURE-1

871 KOLU STREET, SUITE 201
WAILUKU, MAUI, HAWAII 96793

R. T. TANAKA ENGINEERS, INC.
LAND SURVEYORS - CIVIL & STRUCTURAL ENGINEERS

JOB NO. 05-069



VICINITY MAP
NOT TO SCALE

U:\2005\05-069\HIYAKU_PLAN.dwg Layout: VICINITY

Tax Map Key (2) 2-2-14:21

FIGURE 2

871 KOLU STREET, SUITE 201
WAILUKU, MAUI, HAWAII 96793

R. T. TANAKA ENGINEERS, INC.
LAND SURVEYORS - CIVIL & STRUCTURAL ENGINEERS

JOB NO. 05-069

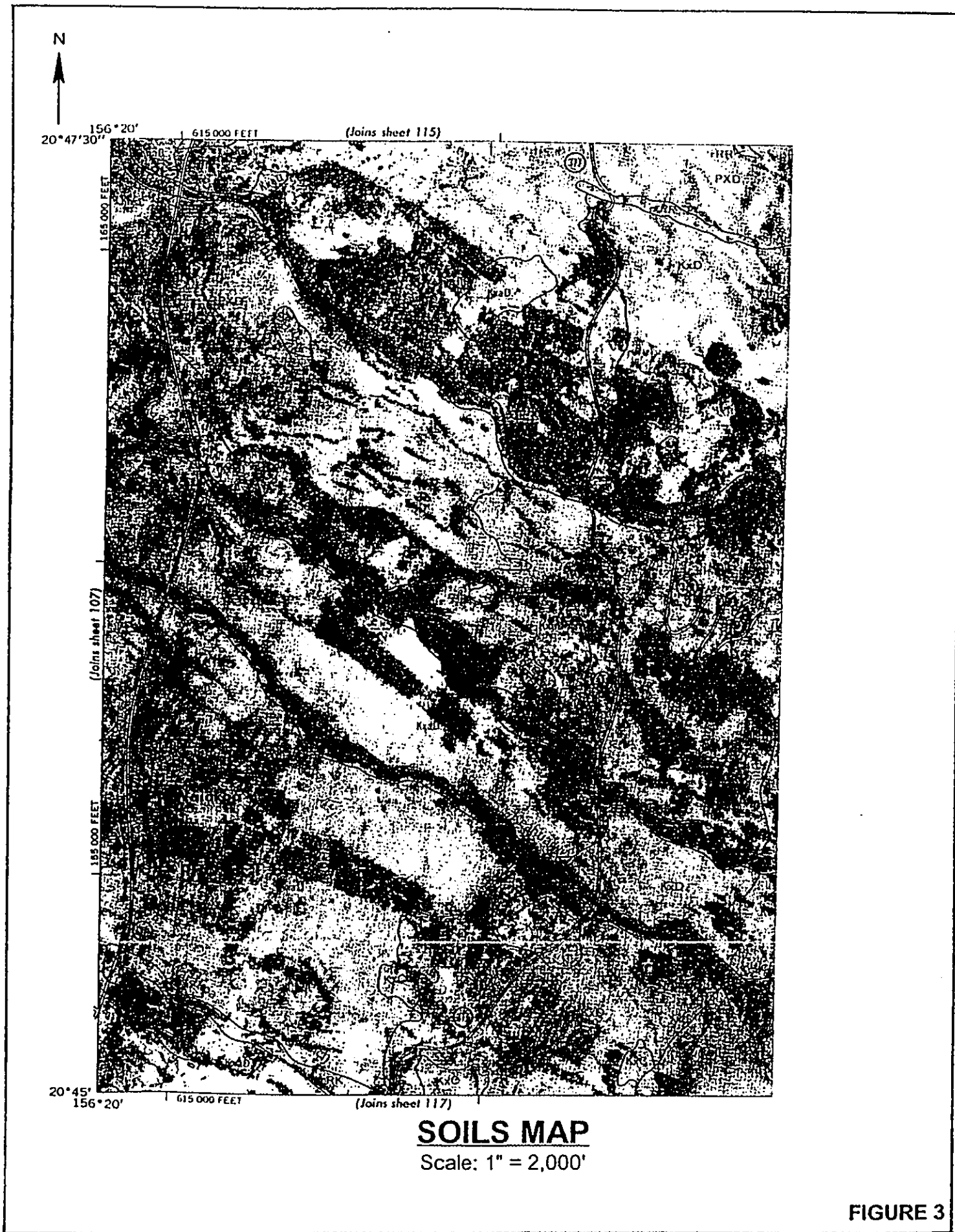


FIGURE 3

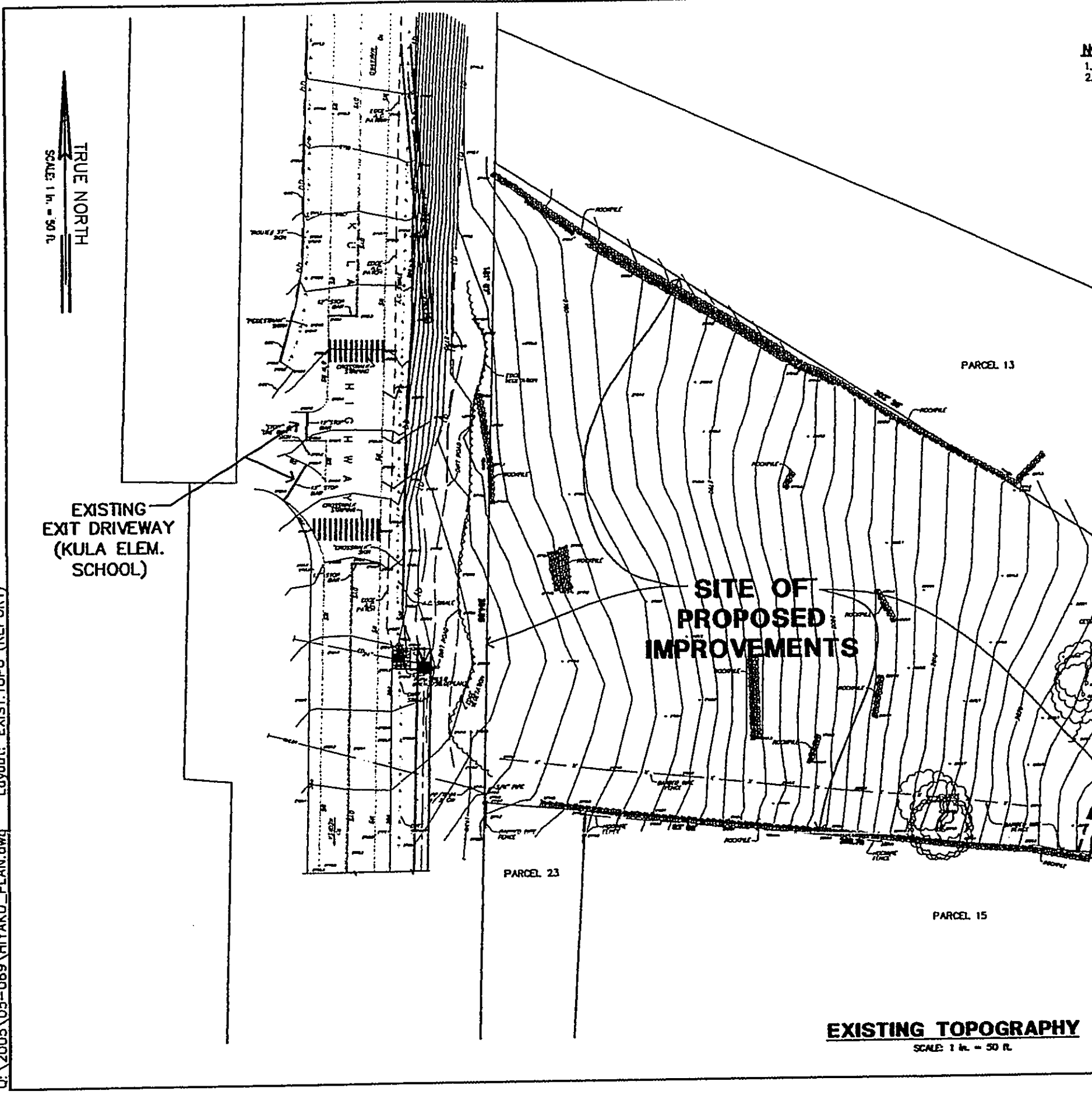
Q:\2005\05-069\HIYAKU_PLAN.dwg Layout: EXIST.TPO (REPORT)

TRUE NORTH
SCALE: 1 in. = 50 ft.

EXISTING EXIT DRIVEWAY
(KULA ELEM. SCHOOL)

SITE OF PROPOSED IMPROVEMENTS

EXISTING TOPOGRAPHY
SCALE: 1 in. = 50 ft.

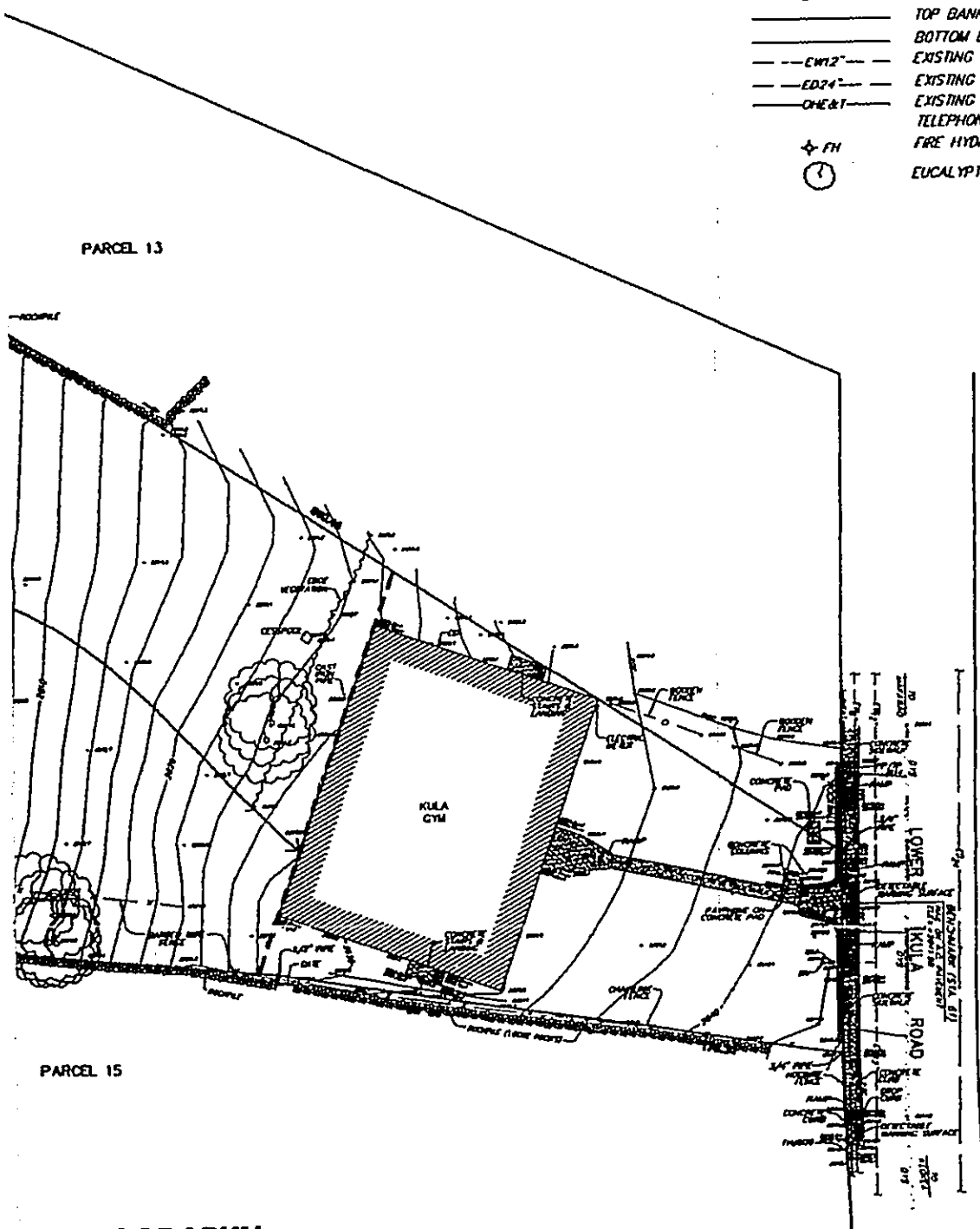


NOTES FOR TOPOGRAPHIC FEATURES:

1. ELEVATION DATUM = APPROXIMATE SEA LEVEL.
2. ALL VISIBLE UTILITY STRUCTURES HAVE BEEN LOCATED IN THE FIELD, HOWEVER, CONNECTION OF UNDERGROUND UTILITY LINES AS SHOWN ARE UNVERIFIED AND COMPILED FROM EXISTING DATA. UNDERGROUND UTILITIES SHOWN HEREON ARE FOR INFORMATION ONLY, HAVING BEEN OBTAINED FROM THE BEST AVAILABLE SOURCES, BUT FROM OTHERS NOT CONNECTED WITH THIS COMPANY. THEREFORE, NO GUARANTEE IS MADE ON THE ACCURACY OR COMPLETENESS OF SAID INFORMATION.

LEGEND AND ABBREVIATIONS:

- 2820 — CONTOUR
- 2840 • EXISTING SPOT ELEVATION
- 60C — EDGE AC PAVEMENT
- GDx GRATED DRAINAGE INLET
- DYS DOUBLE YELLOW STRIPING
- WS SINGLE WHITE STRIPING
- PP/TP • POWER POLE/TELEPHONE POLE
- CW CUY WIRE
- WV — WATER VALVE
- WM WATER METER
- TOP BANK
- BOTTOM BANK
- EW12" — EXISTING WATERLINE & SIZE
- ED24" — EXISTING DRAINAGELINE & SIZE
- OHE&T — EXISTING OVERHEAD ELECTRICAL & TELEPHONE LINES
- ◆ FH FIRE HYDRANT
- ⊙ EUCALYPTUS TREE



TOPOGRAPHY
SCALE: 1 in. = 50 ft.

lanaka
CIVIL & STRUCTURAL ENGINEERS
LAND SURVEYORS
871 KULU STREET
SUITE 201
WAILUKU, MAUI, HAWAII
PHONE No.: 242-6861

**KULA AFFORDABLE SENIOR HOUSING
AT WAIKOA, KULA, MAUI, HAWAII
FOR KULA COMMUNITY FEDERAL CREDIT UNION
EXISTING TOPOGRAPHY**

THIS WORK WAS PREPARED BY I.C. OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY SUPERVISION.

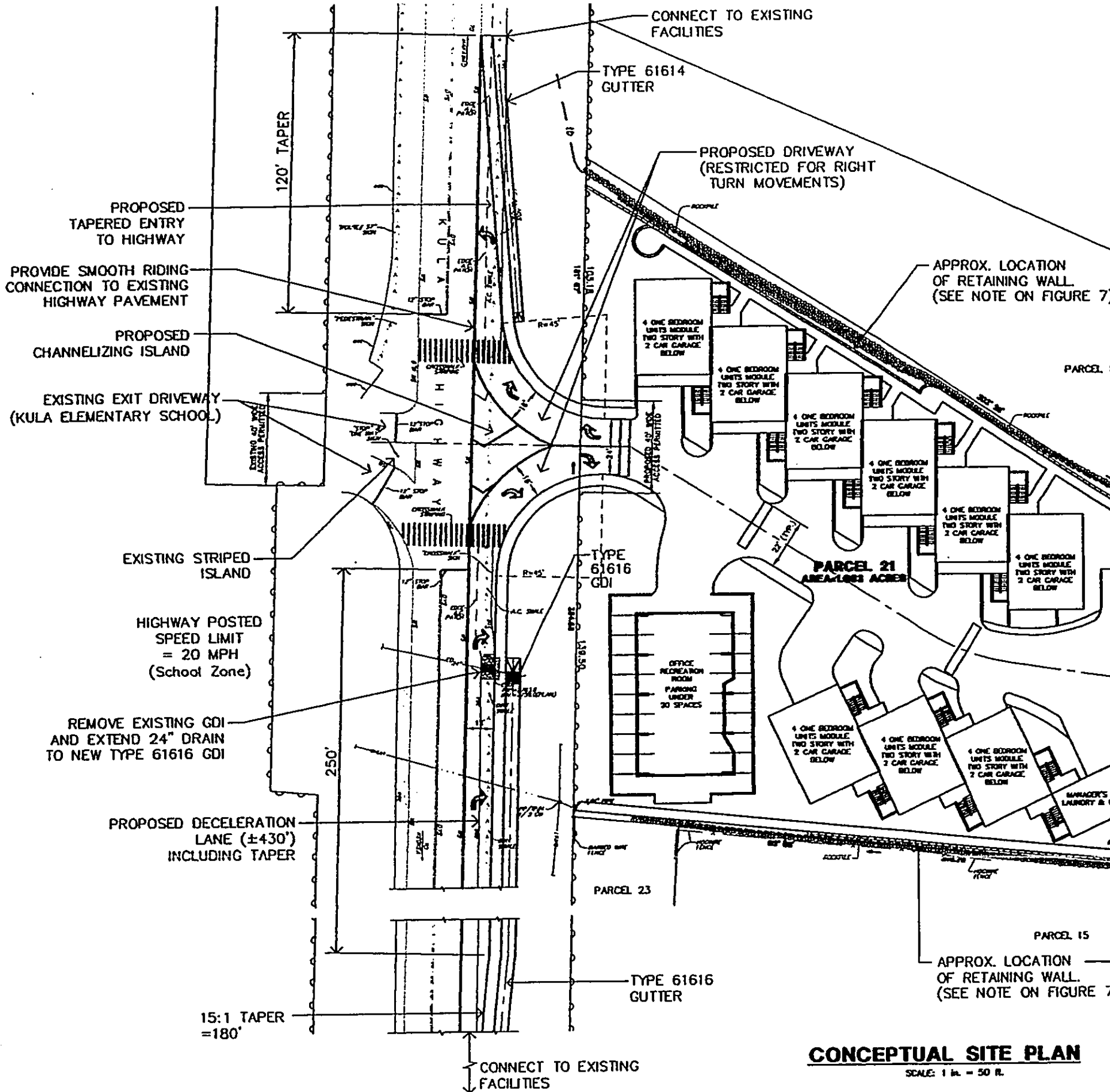
DATE: _____

REVISIONS:

T.M.K.: (2) 2-2-14-21
SCALE: AS NOTED
DESIGNED BY: K.T.
CHECKED BY: K.T.
DRAWN BY: M.D.
DATE: DECEMBER 2005
JOB No.: 05-088

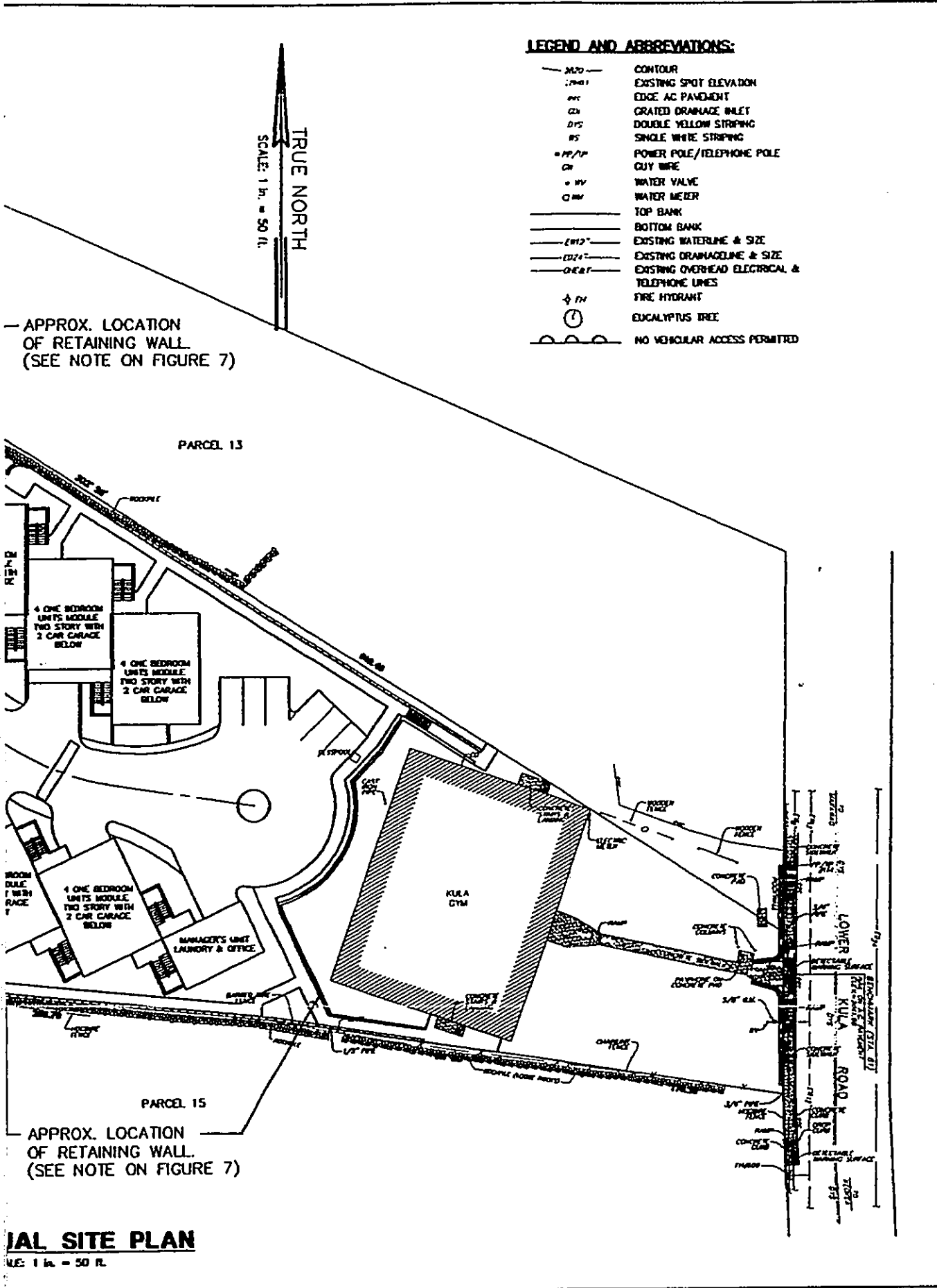
**FIGURE
4**

Q:\2005\05-069\HIYAKU_PLAN.dwg Layout: SITE PLAN (REPORT)



CONCEPTUAL SITE PLAN

SCALE: 1 in. = 50 ft.



Banaka
ENGINEERS, INC.
CIVIL & STRUCTURAL ENGINEERS
LAND SURVEYORS
871 KULU STREET
SUITE 201
WAILUKU, MAUI, HAWAII
PHONE No.: 242-6861

**KULA AFFORDABLE SENIOR HOUSING
AT WAIKOA, KULA, MAUI, HAWAII
FOR KULA COMMUNITY FEDERAL CREDIT UNION
CONCEPTUAL SITE PLAN**

DATE: _____

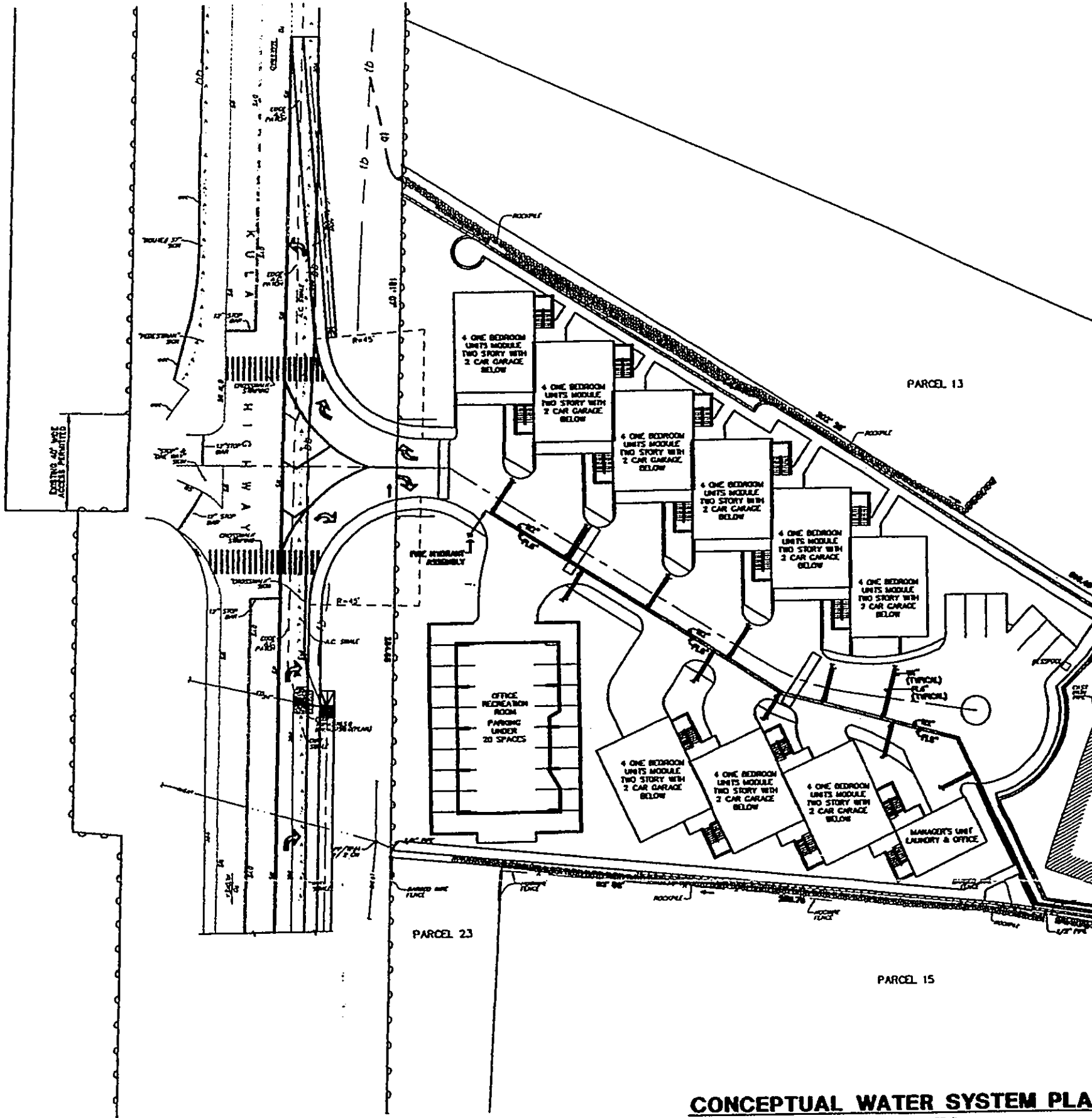
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

REVISIONS:

TALK: (2) 2-2-14-21
SCALE: AS NOTED
DESIGNED BY: K.T.
CHECKED BY: K.T.
DRAWN BY: M.D.
DATE: JANUARY 2008
JOB No.: 05-000

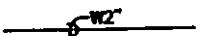

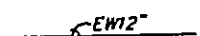
FIGURE 5

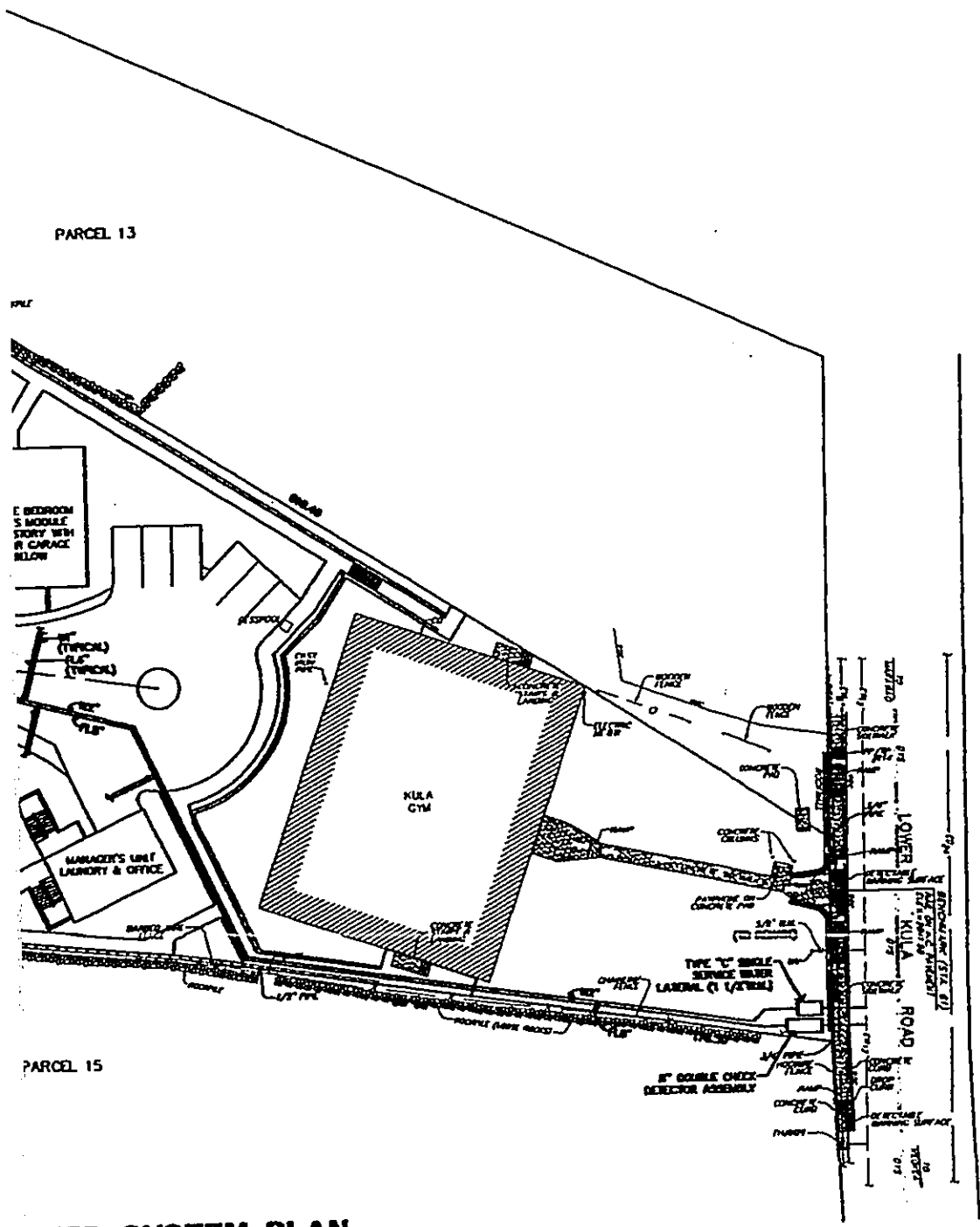
TRUE NORTH
SCALE 1 in. = 50 ft.



CONCEPTUAL WATER SYSTEM PLAN
SCALE 1 in. = 50 ft.

LEGEND AND ABBREVIATIONS:

-  PROPOSED DOMESTIC WATER LINE, SIZE AS SHOWN
-  PROPOSED DOMESTIC FIRE LINE, SIZE AS SHOWN
-  EXISTING WATERLINE, SIZE AS SHOWN



WATER SYSTEM PLAN
 1" = 50 FT.

lanoka
 CIVIL & STRUCTURAL
 ENGINEERS
 LAND SURVEYORS
 871 KOLU STREET
 SUITE 201
 HAWAII, MAUI, HAWAII
 PHONE No.: 242-6681

**KULA AFFORDABLE SENIOR HOUSING
 AT WAIKOA, KULA, MAUI, HAWAII
 FOR KULA COMMUNITY FEDERAL CREDIT UNION
 CONCEPTUAL WATER SYSTEM PLAN**

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONTROL AND I AM A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF HAWAII. I HEREBY CERTIFY THAT THE INFORMATION CONTAINED HEREIN IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

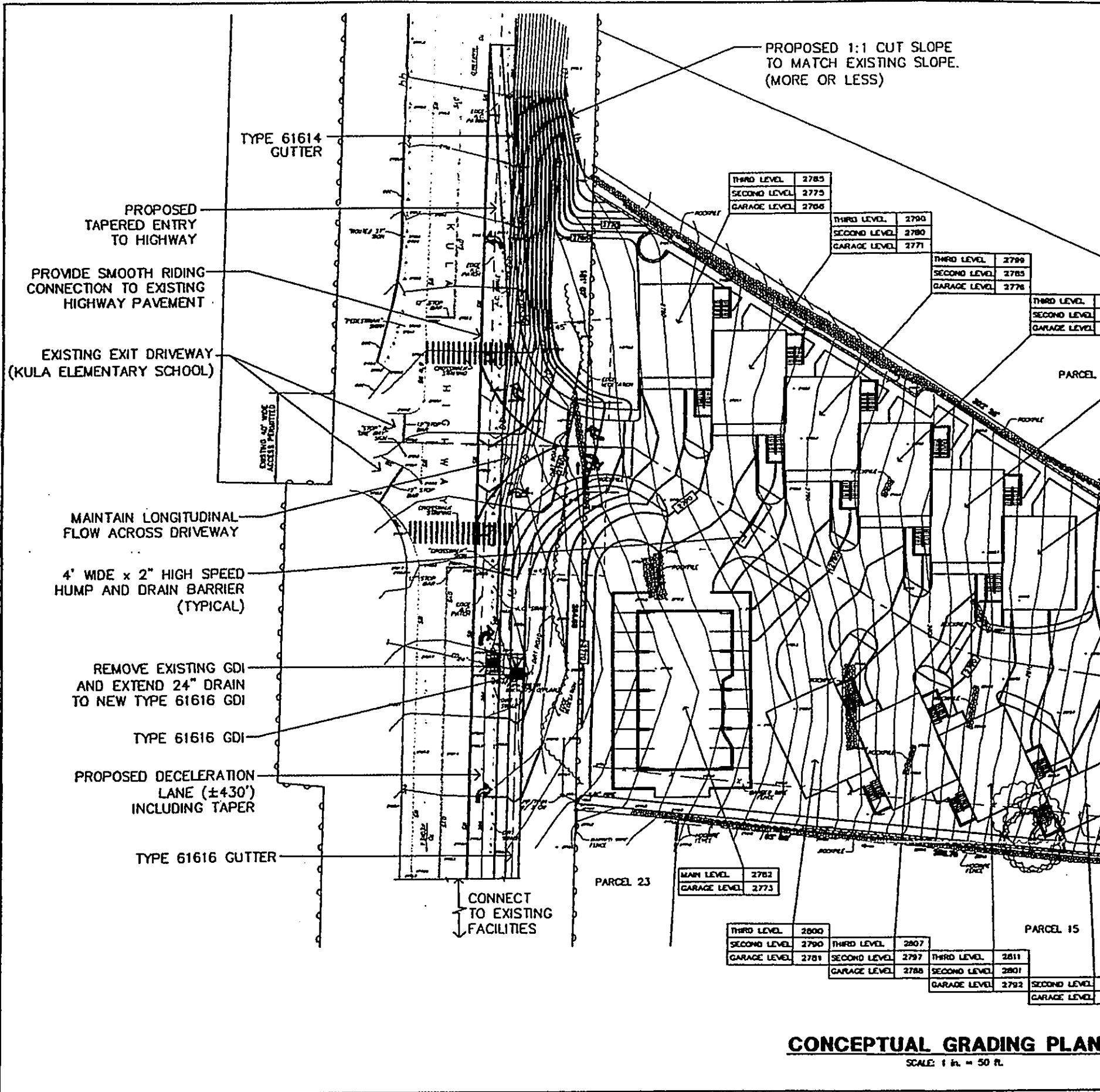
DATE: _____

REVISIONS:

T.M.K.: (2) 2-2-14-21
 SCALE: AS NOTED
 DESIGNED BY: K.T.
 CHECKED BY: K.T.
 DRAWN BY: H.D.
 DATE: JANUARY 2008
 JOB No.: 05-080

**FIGURE
 6**

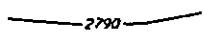
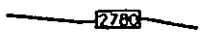
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LOPE
LOPE.

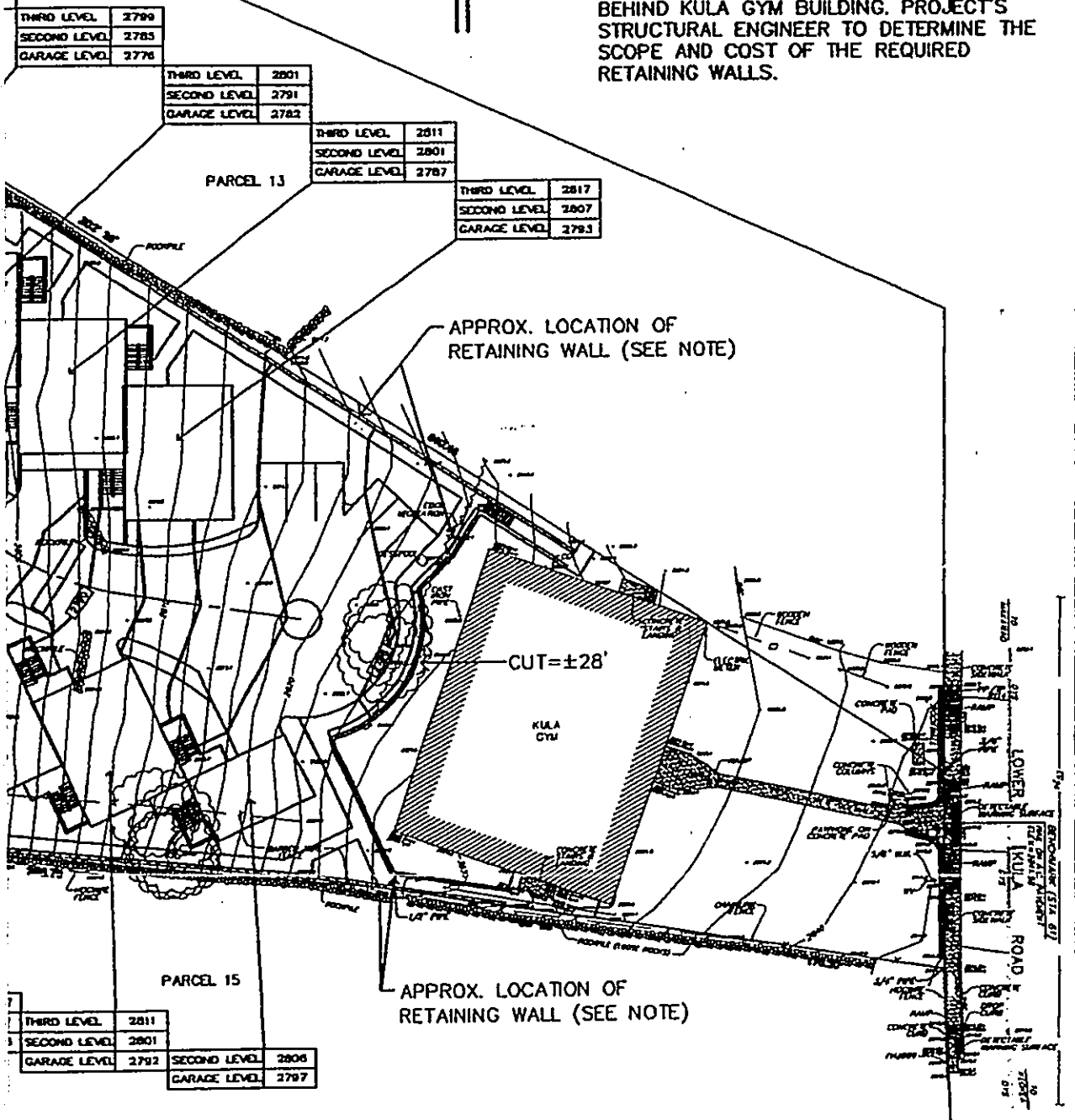
TRUE NORTH
SCALE: 1 in. = 50 ft.

LEGEND AND ABBREVIATIONS:

-  2790 EXISTING CONTOUR
-  2780 PROPOSED FINISHED CONTOUR

NOTE:

RETAINING WALLS ARE NEEDED ALONG THE NORTHERN AND SOUTHERN BOUNDARIES AND BEHIND KULA GYM BUILDING. PROJECT'S STRUCTURAL ENGINEER TO DETERMINE THE SCOPE AND COST OF THE REQUIRED RETAINING WALLS.



L GRADING PLAN

SCALE: 1 in. = 50 ft.

lanaka
ENGINEERS, INC.
CIVIL & STRUCTURAL
ENGINEERS
LAND SURVEYORS

871 KULU STREET
SUITE 201
WAILUKU, MAUI, HAWAII
PHONE No.: 242-6861

**KULA AFFORDABLE SENIOR HOUSING
AT WAIKOA, KULA, MAUI, HAWAII
FOR KULA COMMUNITY FEDERAL CREDIT UNION
CONCEPTUAL GRADING PLAN**

DATE: _____

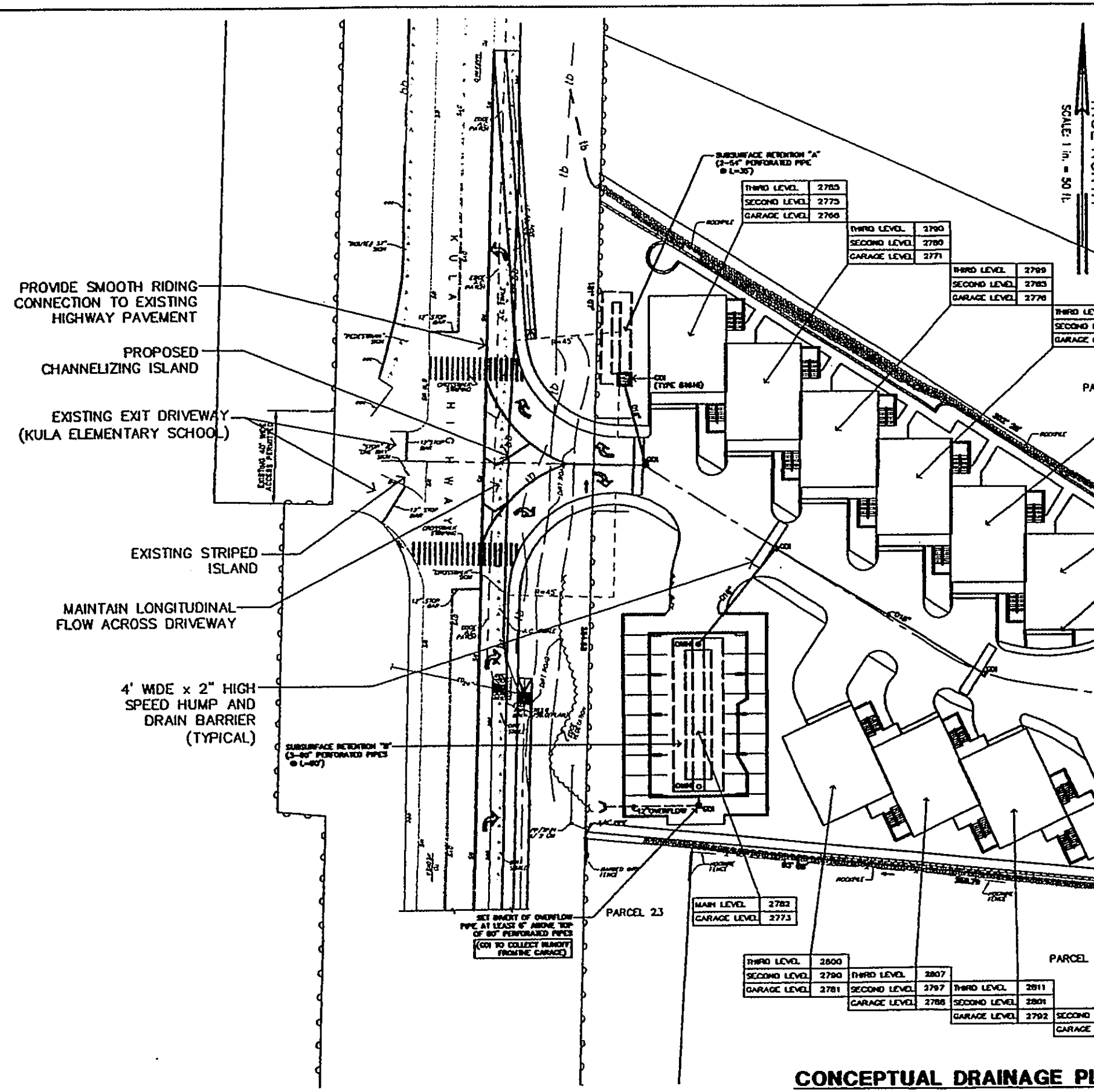
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

REVISIONS:

T.M.K.: (2) 2-2-14-21
SCALE: AS NOTED
DESIGNED BY: K.T.
CHECKED BY: K.T.
DRAWN BY: M.D.
DATE: JANUARY 2008
JOB No.: 05-089

**FIGURE
7**

C:\2005\05-069\HIYAKU_PLAN.dwg Layout: DRN PLAN (REPORT)



PROVIDE SMOOTH RIDING CONNECTION TO EXISTING HIGHWAY PAVEMENT

PROPOSED CHANNELIZING ISLAND

EXISTING EXIT DRIVEWAY (KULA ELEMENTARY SCHOOL)

EXISTING STRIPED ISLAND

MAINTAIN LONGITUDINAL FLOW ACROSS DRIVEWAY

4' WIDE x 2" HIGH SPEED HUMP AND DRAIN BARRIER (TYPICAL)

SUBSURFACE RETENTION "B" (3-6" PERFORATED PIPE @ L-80)

SUBSURFACE RETENTION "A" (3-6" PERFORATED PIPE @ L-35)

THIRD LEVEL	2785
SECOND LEVEL	2775
GARAGE LEVEL	2766

THIRD LEVEL	2790
SECOND LEVEL	2780
GARAGE LEVEL	2771

THIRD LEVEL	2789
SECOND LEVEL	2783
GARAGE LEVEL	2778

MAIN LEVEL	2782
GARAGE LEVEL	2773

THIRD LEVEL	2800
SECOND LEVEL	2790
GARAGE LEVEL	2781

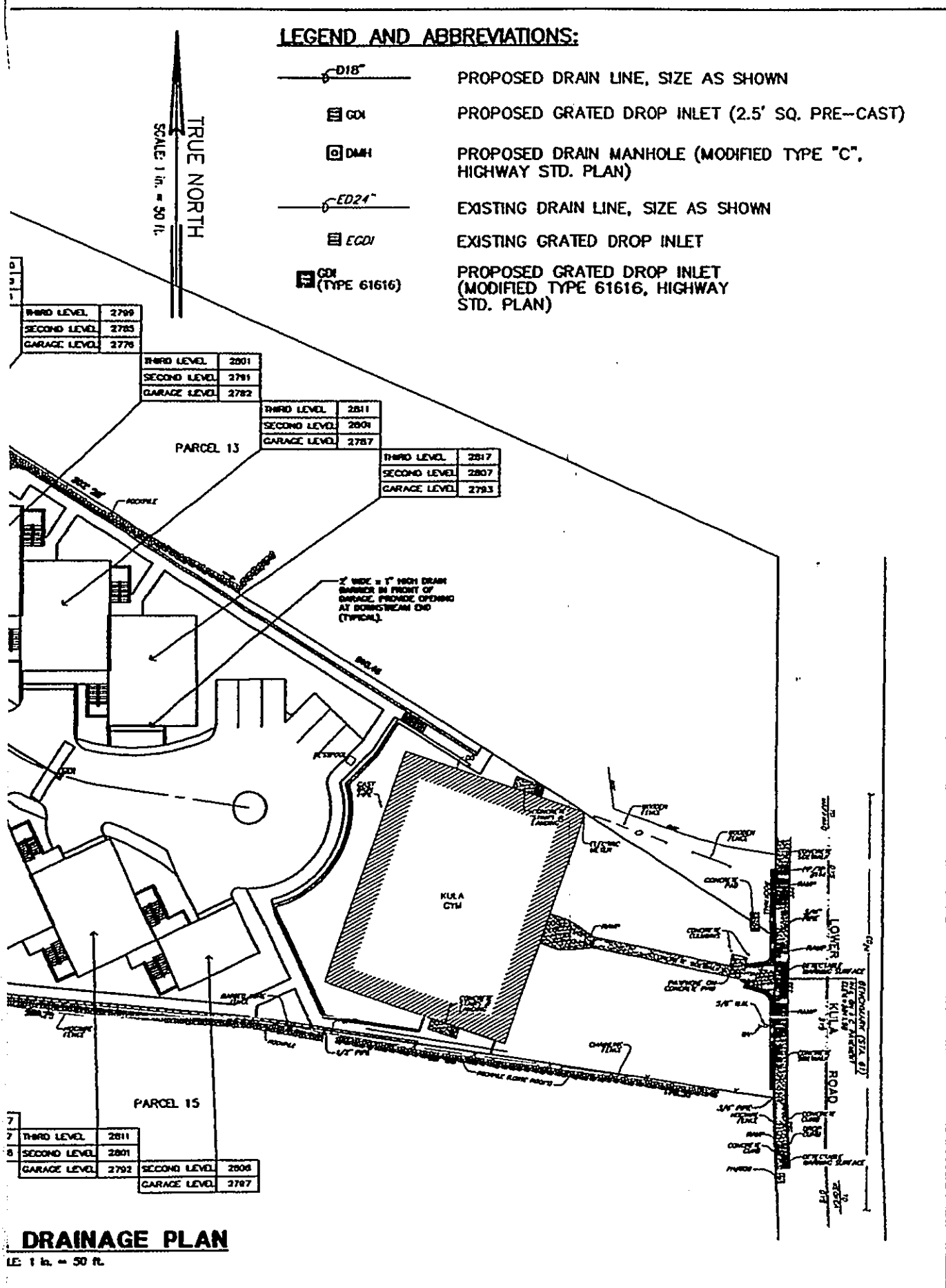
THIRD LEVEL	2807
SECOND LEVEL	2797
GARAGE LEVEL	2788

THIRD LEVEL	2811
SECOND LEVEL	2801
GARAGE LEVEL	2792

SCALE: 1 in. = 50 ft.

CONCEPTUAL DRAINAGE PLAN

SCALE: 1 in. = 50 ft.



lanoka
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PHONE No.: 212-0301

**KULA AFFORDABLE SENIOR HOUSING
AT WAIAKOA, KULA, MAUI, HAWAII
FOR KULA COMMUNITY FEDERAL CREDIT UNION
CONCEPTUAL DRAINAGE PLAN**

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND I AM A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF HAWAII. THE PROJECT WILL BE UNDER MY JURISDICTION.

DATE: _____

REVISIONS:

T.M.K.: (2) 2-2-14-21
SCALE: AS NOTED
DESIGNED BY: K.T.
CHECKED BY: K.T.
DRAWN BY: M.D.
DATE: JANUARY 2006
JOB No.: 05-080

FIGURE 8

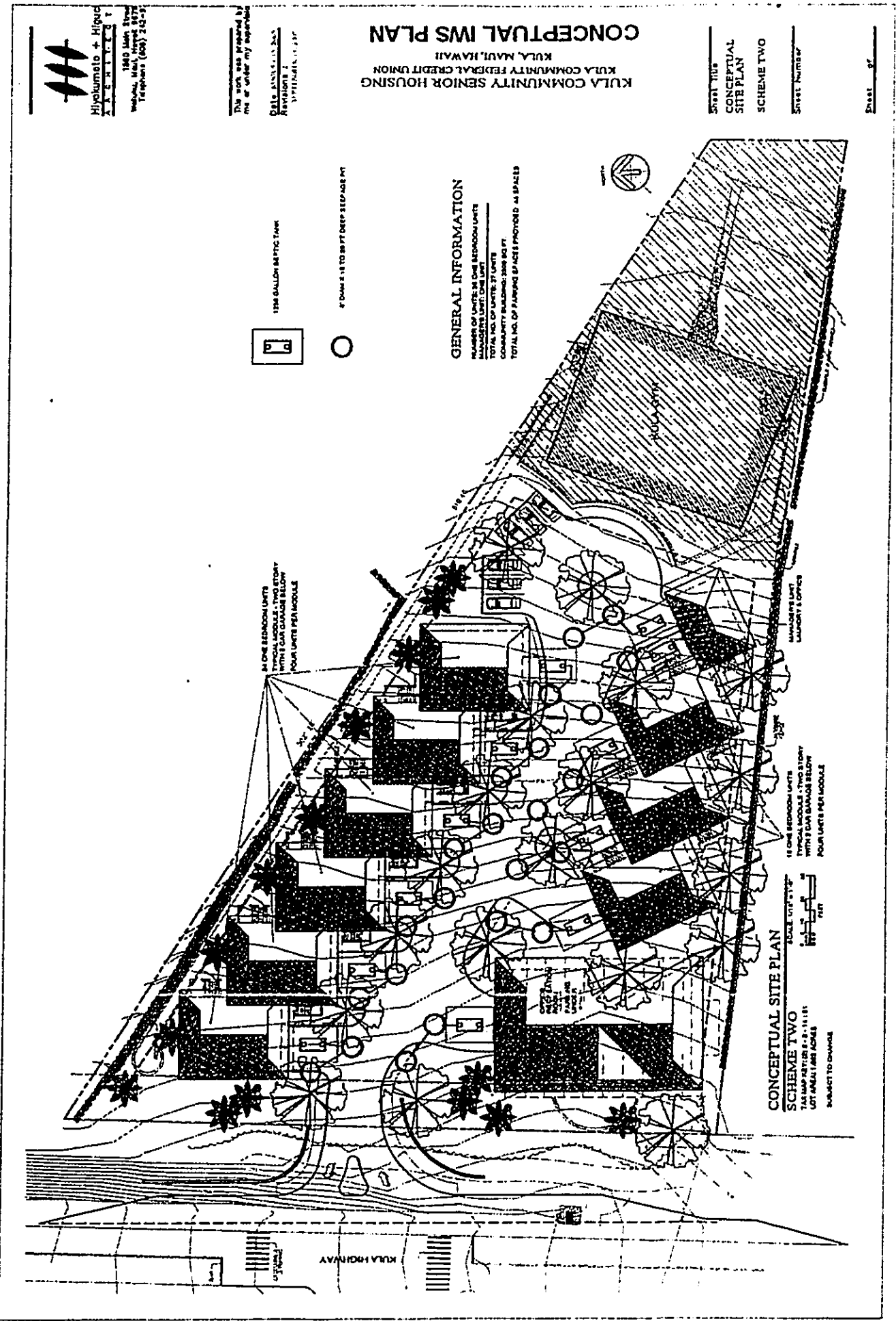


FIGURE 9

APPENDIX C.

Soils Investigation Report

REPORT
SOILS INVESTIGATION

PROPOSED
KULA COMMUNITY SENIOR HOUSING
KULA HIGHWAY

KULA, MAUI, HAWAII
TMK: (2) 2-2-14: 21

for

KULA COMMUNITY FEDERAL CREDIT UNION

HIYAKUMOTO HIGUCHI ARCHITECTS, INC.
Architects

Project No. 051056-FM
February 9, 2006

ISLAND GEOTECHNICAL ENGINEERING, INC.
Geotechnical Consultants

222-A Kawaipuna Place
Wailuku, Maui, Hawaii 96793
Phone: (808) 243-9355
Fax: (808) 244-8997

February 9, 2006
Project No. 051056-FM

Kula Community Federal Credit Union
c/o Hiyakumoto Higuchi Architects, Inc.
1860 Main Street
Wailuku, Hawaii 96793

The attached report presents the results of a soils investigation at the site of the proposed Kula Community Senior Housing complex to be located in Kula, Maui, Hawaii.

A summary of the findings is as follows:

- 1) Seven (7) test pits were excavated to depths of 2.33 to 9.5 feet below the existing grade. In general, the test pits disclosed the site to be covered with 1 to 5.5 feet of very soft to very stiff SILT and sandy SILT. The SILT was underlain by moderately dense to very dense GRANULAR SOILS (gravels & cobbles) to the final depth of the test pits at 2.33 to 9.5 feet below existing grade where BASALT ROCK was encountered (except for Test Pit 2 which did not encounter any ROCK) and could not be penetrated at 2.33 to 7.0 feet below existing grade.
- 2) No groundwater was encountered in the test pits.
- 3) Based on the findings and observations, it is concluded that the proposed structures can be supported on spread or continuous footings.
- 4) The upper 1.5 feet of on-site SILT soil was found to be soft to very soft in some areas. Following clearing and grubbing of the site in building areas (and to 3 feet beyond the edge of the buildings), the on-site SILT soils should be removed to a depth of 1.5 feet below existing grade. This removal applies to areas that will be filled as well as cut; in areas that will be cut more than 1.5 feet in order to achieve finished grade, the mass grading will remove the 1.5 feet of SILT in the normal course of operations. The removed SILT can be re-used as fill in parking lots or landscape areas. Following removal of the 1.5 feet of SILT from the building pads, the building pads should be proof-rolled with a sheepsfoot roller weighing not less than 15,000 pounds in order to compact any soft soils which may be present. This proof-rolling is standard construction practice but is especially important in light of the fact that soft soils were encountered in our soils investigation. Proof-rolling shall

Kula Community Federal Credit Union
February 9, 2006
Page Two

continue until a firm/un-yielding surface has been achieved as determined by the project geotechnical engineer. If soft soils are encountered during the proofrolling operation which cannot be compacted, the soft soils shall be removed and replaced with properly compacted structural fill.

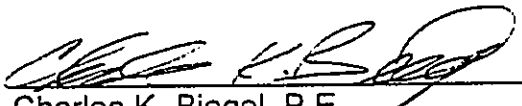
- 5) Moderately hard to hard BASALT ROCK was encountered at 6 of the 7 test pits at depths of 2.33 to 7 feet below existing grade. This rock could not be penetrated (refusal) with the CAT 420 D backhoe. Excavation into this rock will be difficult to accomplish and will likely require heavy equipment or hoerammimg for removal.

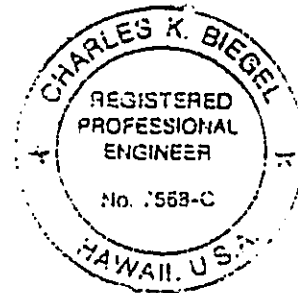
Details of the findings and recommendations are presented in the attached report.

This investigation was made in accordance with generally accepted engineering procedures and included such field and laboratory tests considered necessary for the project. In the opinion of the undersigned, the accompanying report has been substantiated by mathematical data in conformity with generally accepted engineering principles and presents fairly the design information requested by your organization. No other warranty is either expressed or given.

Respectfully submitted,

ISLAND GEOTECHNICAL ENGINEERING, INC.


Charles K. Biegel, P.E.
President



This work was prepared by me
or under my supervision.

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APPENDIX	
Field Investigation	
Laboratory Testing	
Logs of Test Pits	
Laboratory Test Results	

INTRODUCTION

This investigation was made for the purpose of obtaining information on the subsurface conditions from which to base recommendations for foundation design for the proposed Kula Community Senior Housing to be located on Kula Highway in Kula, Maui, Hawaii. The location of the site, relative to the existing streets and landmarks, is shown on the Vicinity Map, Plate 1.

SCOPE OF WORK

The services included excavating 7 test pits to depths of 2.33 to 9.5 feet below existing grade, obtaining samples of the underlying soils, performing laboratory tests on the samples, and performing an engineering analysis from the data gathered. In general, the following information is provided for use by the Architect and/or Engineer:

1. General subsurface conditions, as disclosed by the test pits.
2. Physical characteristics of the soils encountered.
3. Recommendations for foundation design, including bearing values, embedment depth and estimated settlement.
4. Recommendations for placement of fill and backfill.
5. Special considerations.

PLANNED DEVELOPMENT

From the information provided, the project will consist of constructing 4 buildings on the site. Two of the buildings will be 2-stories in height and two of the buildings will be 1-story.

SITE CONDITIONS

Surface

The property, designated by Tax Map Key number (2) 2-2-14: 21, is located on Kula Highway in Kula, Maui.

At the time of the field investigation, the site was covered with trees, bushes and weeds.

From the topographic map provided by R.T. Tanaka Engineers (see Plate 2), the surface of site slopes down from east to west at an angle of approximately 4 horizontal to 1 vertical in the steeper areas to 7 horizontal to 1 vertical in the flatter areas.

Subsurface

The subsurface conditions at the site were explored by excavating 7 test pits to depths of 2.33 to 9.5 feet below existing grade. The location of the test pits are shown on the Plot Plan, Plate 2. A detailed log of each test pit is presented in the Appendix to this report.

In general, the test pits disclosed the site to be covered with 1 to 5.5 feet of very soft to very stiff SILT and sandy SILT. The SILT was underlain by moderately dense to very dense GRANULAR SOILS (gravels & cobbles) to the final depth of the test pits at 2.33 to 9.5 feet below existing grade where BASALT ROCK was encountered (except for Test Pit 2 which did not encounter any ROCK to a depth of 9.5 feet) and could not be penetrated

at 2.33 to 7 feet below existing grade.

No groundwater was encountered in the test pits.

From the USDA Soil Conservation Service "Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai and Lanai, State of Hawaii", the site is located in an area designated as Kula cobbly loam, 12 to 20 percent slopes (KxaD). The Kula series consist of well-drained soils on uplands on the island of Maui. These soils developed in volcanic ash. Elevations range from 2,000 feet to 3,500 feet. Depth to bedrock is 2 to 5 feet. (USDA, 1972, pp. 76, 160-161 and Plate 116).

Geology

The island of Maui is a volcanic doublet formed when lavas from Haleakala ponded against the older West Maui Mountains. The development of the island above sea level is believed to have occurred between late Pliocene and Pleistocene time (approximately 1 to 12 million years ago).

The site is located on the westerly flank of the Haleakala Volcano. The volcano was built over three rift zones that trend north, southwest and east. These rift zones are studded with large cinder cones. The lava flows making up the main mass of the mountain is known as the Honomanu Volcanic Series which consists of thin-bedded pahoehoe and aa

lava flows. Above the Hononamu volcanics is the Kula Volcanic Series which consists of thicker andesitic aa flows. Most of the lava flows dip about 12 degrees. Along the southwest and east rift zones only, the volcano is capped with the Hana volcanic series (Stearns, 1966).

Fresh to slightly weathered pahoehoe flows generally have a relatively smooth, billowy or ropy surface. The vesicles in pahoehoe flows usually have a fairly regular spheroidal shape. Lava tubes and pressure domes are common in this type of flow.

Fresh to slightly weathered aa flows are characterized by very rough, spiny or rubbly surfaces. The clinkery surface covers a massive, relatively dense rock interior (commonly known as blue rock). Vesicles within the rock mass are generally irregular in shape.

The surface soils on the site have generally developed from volcanic ash. Below the soil mantle, the bedrock formation grades harder with depth.

CONCLUSIONS AND RECOMMENDATIONS

General

Based on the findings and observations, it is concluded that the site may be developed for the intended use. Proposed structures can be supported on spread or continuous footings.

Special Considerations

- 1) The upper 1.5 feet of on-site SILT soil was found to be soft to very soft in some areas. Following clearing and grubbing of the site in building areas (and to 3 feet beyond the edge of the buildings), the on-site SILT soils should be removed to a depth of 1.5 feet below existing grade. This removal applies to areas that will be filled as well as cut; in areas that will be cut more than 1.5 feet in order to achieve finished grade, the mass grading will remove the 1.5 feet of SILT in the normal course of operations. The removed SILT can be re-used as fill in parking lots or landscape areas. Following removal of the 1.5 feet of SILT from the building pads, the building pads should be proof-rolled with a sheepsfoot roller weighing not less than 15,000 pounds in order to compact any soft soils which may be present. This proof-rolling is standard construction practice but is especially important in light of the fact that soft soils were encountered in our soils investigation. Proof-rolling shall continue until a firm/un-yielding surface has been achieved as determined by the project geotechnical engineer. If soft soils are encountered during the proofrolling operation which cannot be compacted, the soft soils shall be removed and replaced with properly compacted structural fill.

- 2) Moderately hard to hard BASALT ROCK was encountered at 6 of the 7 test pits at depths of 2.33 to 7 feet below existing grade. This rock could not be penetrated (refusal) with the CAT 420 D backhoe. Excavation into this rock will be difficult to

accomplish and will likely require heavy equipment or hoerammimg for removal.

Foundations

For footings bearing on firm on-site soil or properly compacted imported structural fill, an allowable bearing value of 2,000 psf may be used. The minimum footing embedment depth shall be 18 inches below the lowest adjacent compacted grade (measured to bottom of footing).

An allowable bearing value of 6,000 psf may be used for footings bearing on the underlying moderately hard to hard BASALT ROCK.

For footings located adjacent to new or existing utility trenches, the bottom of the footing shall be deepened below a 1 horizontal to 1 vertical plane projected upwards from the edge of the utility trench.

For footings located on or adjacent to slopes, the footing shall be deepened such that there is a minimum horizontal distance of 5 feet from the edge of the footing to the slope face.

The bearing value is for dead plus live loads and may be increased by one-third for momentary loads due to wind or seismic forces. If any footing is eccentrically loaded, the maximum edge pressure shall not exceed the bearing pressure for permanent or for

momentary loads.

All loose and disturbed soil at the bottom of footing excavations shall be removed to firm soil or the disturbed soil shall be compacted prior to laying of steel or placing of concrete. The bottom of all footings should be mechanically compacted to a minimum of 90 percent of the maximum dry density as determined by the ASTM D 1557 test procedure.

Backfill around the perimeter of all foundations should be mechanically compacted to a minimum of 90 percent of the maximum dry density as determined by the ASTM D 1557 test procedure.

Site grading should be designed to prevent ponding of water adjacent to slab and footing areas.

Settlement

Under the fully applied recommended bearing pressure, it is estimated that settlement of footings up to 3 feet continuous or 5 feet square bearing on firm on-site soils or properly compacted fill will be less than 3/4 inch.

For footings bearing on the underlying BASALT ROCK, it is estimated that settlement will be less than 1/4 inch.

Differential settlement between footings will vary according to the size, bearing pressure and bearing material of the footing.

Lateral Resistance

For resistance of lateral loads, such as wind or seismic forces, an allowable passive resistance equivalent to that exerted by a fluid weighing 300 pounds per cubic foot may be used for footings, or other structural elements, provided the vertical surface is in direct contact with undisturbed soil or properly compacted fill.

Frictional resistance between footings and the underlying on-site soils may be assumed as 0.4 times the dead load. Frictional resistance between footings and the underlying ROCK may be assumed as 0.6 times the dead load.

Lateral resistance and friction may be combined.

Retaining Walls

Foundations for retaining walls shall be designed as per the foundation section of this report.

Depending on the type of backfill material within a 1H:2V plane projected upwards from the bottom edge of the retaining wall footing, the following active earth pressures may be used

for design of free-standing retaining walls:

Imported granular soil (1.5" minus, well graded) as retaining wall backfill material:

<u>Backfill Slope</u>	<u>Horizontal Component</u>	<u>Vertical Component</u>
Level Backfill	30 pcf	0
3H:1V Backfill	35 pcf	10 pcf
2H:1V Backfill	40 pcf	20 pcf

Free-standing walls are defined as walls that are allowed to rotate between 0.005 to 0.01 times the wall height. The rotation of the wall away from the backfill develops "active earth pressures". If the wall is not allowed to move as in the case of basement walls or walls that are restrained at the top, the soil pressure that will develop is known as an "at rest" pressure; for restrained walls, the above active earth pressures shall be increased by 50 percent for "at-rest" conditions.

For granular retaining wall backfill, the top 1 foot of the backfill shall be "capped" with an impervious clay or silt type soil, or capped by an impervious surface such as concrete or asphaltic concrete.

Drainage for the retaining wall backfill shall be accomplished by providing 4-inch diameter weepholes spaced 8-feet on-center (horizontally as well as vertically) or by using a

minimum 4-inch diameter perforated PVC footing drain pipe. A 2-foot thick layer of crushed gravel, which is wrapped with geotextile filter fabric, shall be placed above the pipe; the crushed gravel shall be continuous from weep hole to weep hole, or in the case of a footing drain pipe, laid throughout the full length of the pipe. Geotextile fabric shall be AMOCO 4545 or similar.

The backfill for the retaining wall shall be properly compacted in accordance with the Site Preparation and Grading section to this report. Site grading should be designed to drain surface water away from the backfill area.

The above active pressures do not include surcharge loads such as footings located within a 45 degree plane projected upwards from the heel of the footing, fine-grained soils as backfill, and/or from hydrostatic pressures. If such conditions occur, the active pressure shall be increased accordingly.

Drainage for the retaining wall backfill shall be accomplished by providing 4-inch diameter weep holes spaced 6-feet on-center (horizontally as well as vertically) or by using a minimum 4-inch diameter perforated PVC footing drain pipe. A 2-foot thick layer of crushed gravel, which is wrapped with geotextile filter fabric, shall be placed above the pipe; the crushed gravel shall be continuous from weep hole to weep hole, or in the case of a footing drain pipe, laid throughout the full length of the pipe. Geotextile fabric shall be

AMOCO 4545 or similar.

Slopes

Cut and fill slopes shall not exceed 2 horizontal to 1 vertical. Exposed slopes shall be covered as soon as practical after construction to minimize erosion.

Fill slopes shall be constructed by overfilling and cutting back to compacted soil.

Site Preparation and Grading

It is recommended that the site be prepared in the following manner:

1. All vegetation, weeds, brush, roots, stumps, rubbish, debris, soft soil and other deleterious material shall be removed and disposed of off-site.

2. In areas to receive fill and at finished subgrade in cut areas, the exposed surface shall then be moisture conditioned to near optimum moisture and then compacted with a compaction machine weighing not less than 15,000 pounds to at least 90 percent of the maximum dry density as determined by the ASTM D 1557 test procedure. If soft or loose spots are encountered, the loose/soft areas shall be removed to firm material and the resulting depression shall be filled with properly compacted fill.

3. Where fill is placed on existing ground that is steeper than 5 horizontal to 1 vertical, the existing ground surface shall be benched into firm soil as the fill is placed.
4. Fill and Backfill in Structural Areas: Structural areas shall be defined as areas beneath and 3 feet beyond the edges of building structures.

Structural fill and backfill material shall consist of 3 inch minus granular material which is well-graded & free of organics and debris and is non-expansive. The on-site SILT soils are not acceptable for use as structural fill.

Each layer of structural fill and backfill material shall be placed in lifts not exceeding 6 inches in compacted thickness. Each layer of structural fill and backfill shall be thoroughly compacted prior to placing of any subsequent lifts. Structural fill and backfill shall be compacted to at least 95 percent of the maximum dry density. The maximum dry density shall be determined by the ASTM D 1557 test procedure.

5. Fill and Backfill in Pavement Areas: Pavement areas shall be defined as areas beneath vehicle pavements.

Pavement fill and backfill material shall consist of 6 inch minus material which is not gap-graded & free of organics and debris. The on-site SILT soils are acceptable for

use as pavement fill to the bottom of the pavement base course gravel; proper compaction of the SILT soils may be difficult to accomplish and the use of the SILT soil in landscape areas may be more desirable.

Each layer of pavement fill and backfill material shall be placed in lifts not exceeding 6 inches in compacted thickness. Each layer of pavement fill and backfill shall be thoroughly compacted prior to placing of any subsequent lifts. Pavement fill and backfill shall be compacted to at least 90 percent of the maximum dry density. The maximum dry density shall be determined by the ASTM D 1557 test procedure.

6. Fill and Backfill in Non-Structural Areas: Non-structural areas shall be defined as areas beyond 3 feet from the edge of any building structure and non-pavement areas.

Non-structural fill and backfill material shall consist of material which is free of organics and debris. In the upper 3 feet from finished grade, the fill and backfill material shall be less than 3 inches in greatest dimension. Below 3 feet from finished grade, the fill material shall be less than 24 inches in greatest dimension, provided there is sufficient fines to fill the interstices. The on-site soils are acceptable for use as non-structural fill provided the above size requirements can be met.

Each layer of non-structural fill and backfill material shall be placed in lifts not exceeding 12 inches in compacted thickness. Each layer of non-structural fill and backfill shall be thoroughly compacted prior to placing of any subsequent lifts. The top 2 feet of non-structural fill and backfill shall be compacted to at least 90 percent of the maximum dry density as determined by the ASTM D 1557 test procedure. Non-structural fill and backfill below 2 feet from finished grade shall be compacted to at least 85 percent of the maximum dry density as determined by the ASTM D 1557 test procedure.

7. Backfill Behind Retaining Walls Retaining wall backfill shall be defined as backfill that extends from the stem of the retaining wall to 6 inches beyond the heel of the wall footing or the footing excavation line, whichever is greater.

All retaining wall backfill material shall consist of material that is in accordance with the project plans and specifications and meets the design criteria of the structural engineer.

Each layer of backfill shall be placed in layers not exceeding 6 inches in compacted thickness. Each layer of backfill shall be thoroughly compacted prior to placing of any subsequent lifts. All retaining wall backfill shall be compacted to at least 90 percent of the maximum dry density as determined by the ASTM D 1557 test

procedure. Retaining wall backfill that will support structures or roadways shall be placed and compacted in accordance with the above requirements for Fill and Backfill in Structural Areas.

8. During construction, drainage shall be provided to prevent ponding of water adjacent to or on foundation areas. Ponded areas shall be drained immediately or water pumped out without damaging adjacent structures and property. If water accumulation softens the subgrade materials, the affected soils shall be removed and replaced with properly compacted fill.

It is particularly important to see that all fill and backfill soils are properly compacted in order to maintain the recommended design parameters provided in this report.

ON-SITE OBSERVATION

During the progress of construction, so as to evaluate general compliance with the design concepts, specifications and recommendations contained in this report, a representative from this office should be present to observe the following operations:

1. Site preparation.
2. Placement of fill and backfill.
3. Footing excavations.

REMARKS

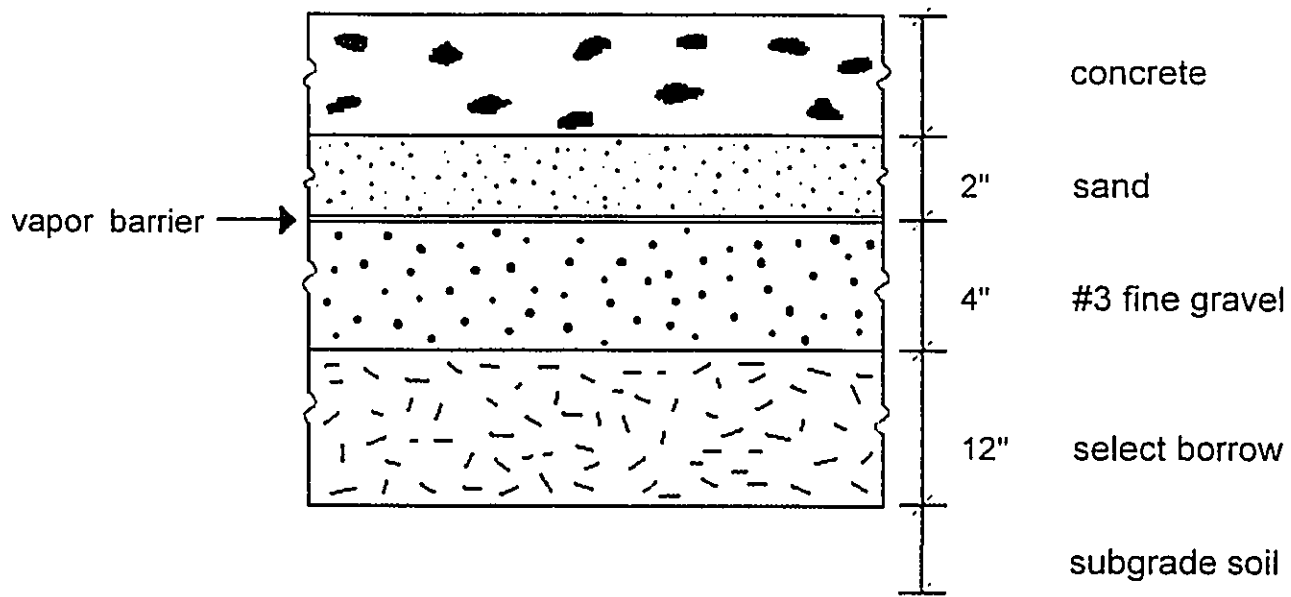
The conclusions and recommendations contained herein are based on the findings and observations made at the test pit locations. If conditions are encountered during construction which appear to differ from those disclosed by the explorations, this office shall be notified so as to consider the need for modifications.

This report has been prepared for the exclusive use of Kula Community Federal Credit Union and their respective design consultants. It shall not be used by or transferred to any other party or to another project without the consent and/or thorough review by this facility. Should the project be delayed beyond the period of one year from the date of this report, the report shall be reviewed relative to possible changed conditions.

Samples obtained in this investigation will deteriorate with time and will be unsuitable for further laboratory tests within one (1) month from the date of this report. Unless otherwise advised, the samples will be discarded at that time. The following are included and complete this report:

- Slab-On-Grade Detail ----- Plate A
- Vicinity Map ----- Plate 1
- Plot Plan ----- Plate 2
- Appendix
- Field Investigation, Laboratory Testing
- Logs of Test Pits & Laboratory Test Results

SLAB-ON GRADE DETAIL



- Notes:
1. The subgrade soil should be moisture conditioned to within 3 percent of optimum moisture content and compacted to a minimum of 90% of the maximum dry density if the material is fine-grained or 95% of the maximum dry density if the material is granular, as determined by the ASTM D 1557 test procedure.
 2. The select borrow shall be compacted to a minimum of 95% of the maximum dry density as determined by the ASTM D 1557 test procedure.
 3. The #3 fine gravel shall be compacted by means of a vibratory plate compactor making a minimum of 4 passes.
 4. The SAND shown above is for concrete curing purposes and should be moist prior to placement of the concrete. In the event the slab designer eliminates the 2 inches of sand, the select borrow thickness should be increased to 14 inches.
 5. The concrete thickness, reinforcing and curing compound recommendations are to be provided by others.
 6. Exterior slabs may eliminate the #3 fine gravel, vapor barrier and sand; concrete may be placed on 12 inches of select borrow.

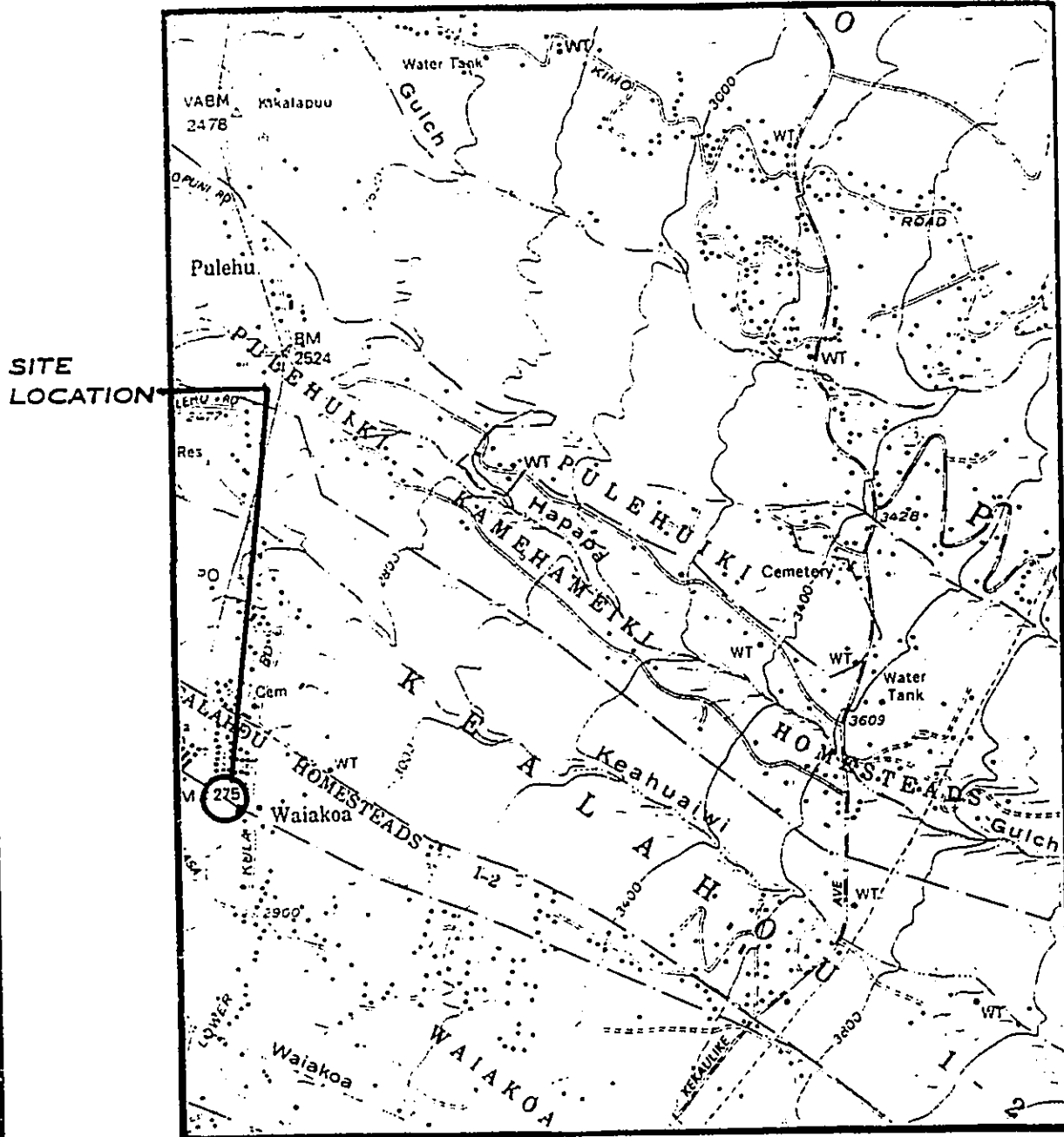
Project : KULA COMMUNITY SENIOR HOUSING

Project No. : 051056-FM

ISLAND GEOTECHNICAL ENGINEERING, INC.

PLATE A

VICINITY MAP

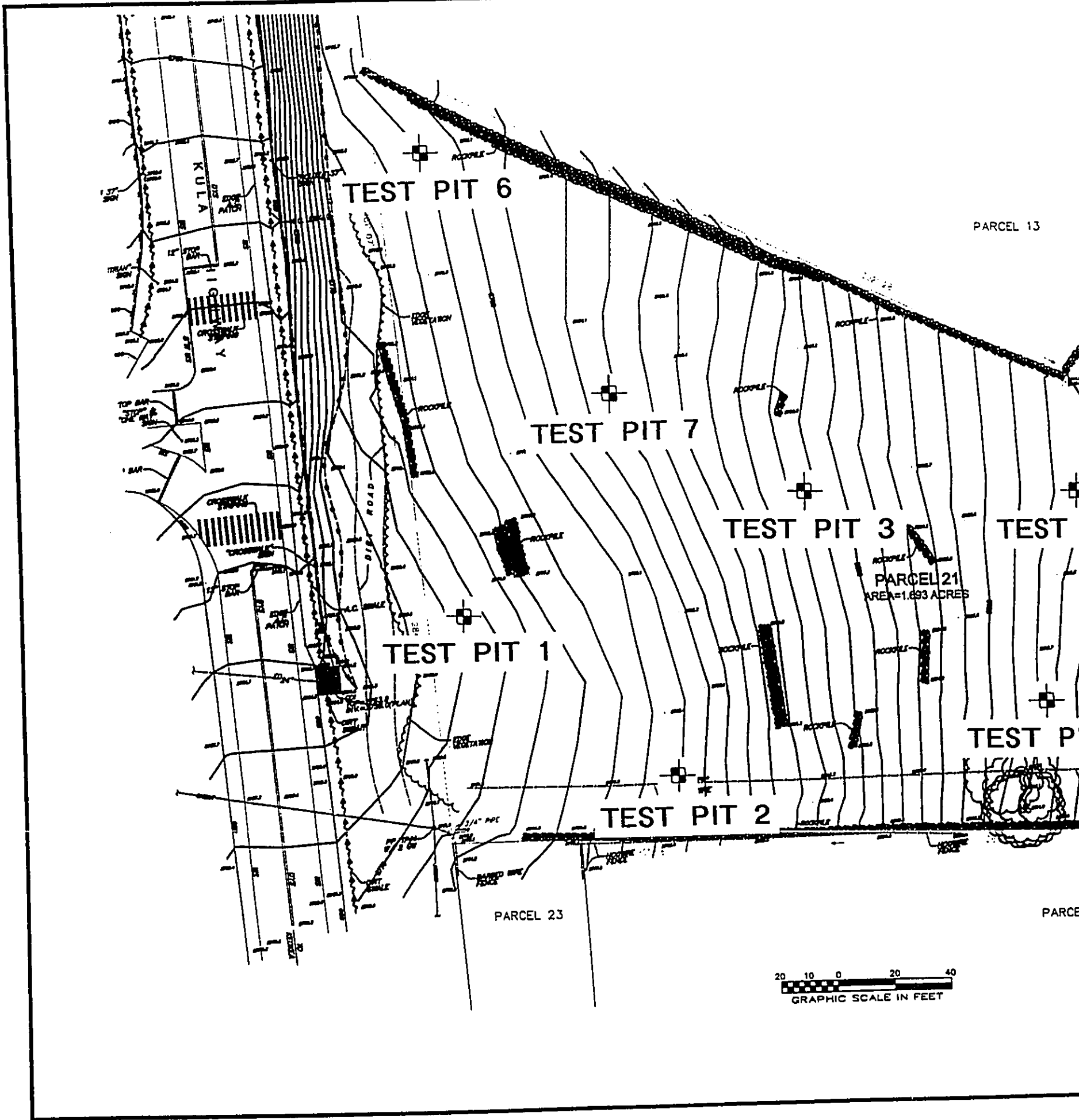


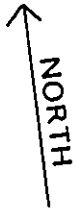
REFERENCE:

USGS TOPOGRAPHIC MAP
KILOHANA QUADRANGLE

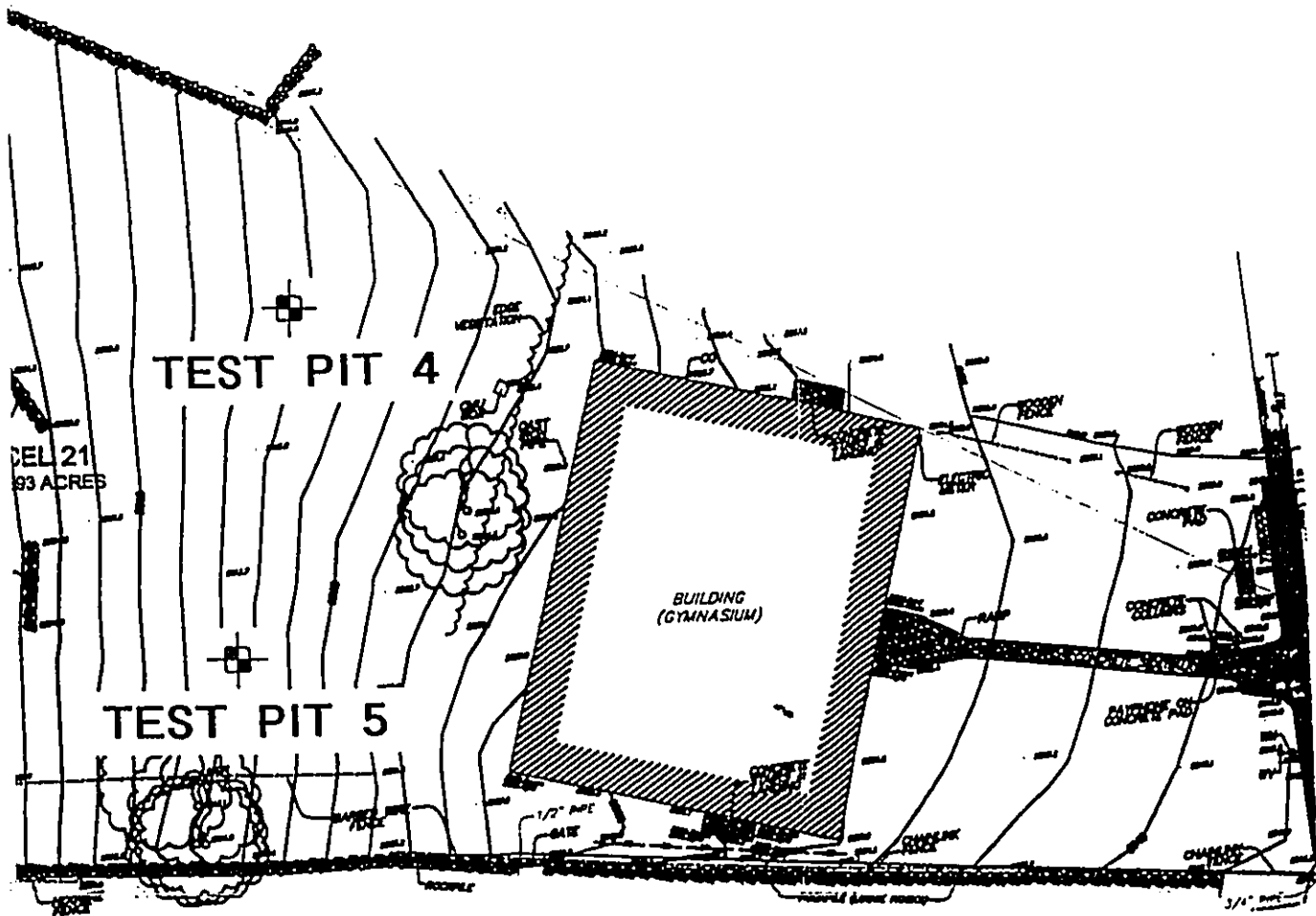
Dated: 1983

KULA COMMUNITY SENIOR HOUSING	
ISLAND GEOTECHNICAL ENGINEERING, INC. <i>Geotechnical Consultants</i>	PROJECT NO. 051056FM DATE Jan. 2006 SCALE 1" = 2000' PLATE 1





PARCEL 13



DEL 21
93 ACRES

TEST PIT 4

BUILDING
(GYMNASIUM)

TEST PIT 5

PARCEL 15



PLOT PLAN

SCALE: AS SHOWN

APPROVED BY: *

DRAWN BY

DATE: JANUARY, 2006

REVISED

KULA COMMUNITY SENIOR HOUSING

ISLAND GEOTECHNICAL PROJECT # 051056-FM

PLATE 2

APPENDIX

FIELD INVESTIGATION AND LABORATORY TESTING

FIELD INVESTIGATION

General

The field investigation consisted of performing explorations at the locations shown on the Plot Plan. The method used for the exploratory work is shown on the respective exploration log. A description of the various method or methods used is presented below.

Test Borings Using Truck-Mounted Drilling Equipment

Truck-mounted borings are drilled using a gas-powered drilling rig. The hole is advanced using continuous flight augers, wash boring and/or NX coring.

Auger drilling is used in soils where caving does not occur. The augers are 4-1/2 inch diameter continuous helical flight augers with the lead auger having a head equipped with changeable cutting teeth. Soil cuttings are brought to the surface by the continuous flights. After the bore hole is advanced to the required depth and cleaned of cuttings by additional rotation of the augers, the augers are retracted for soil sampling or in-situ testing.

In soils where caving of the bore hole occurs, the hole is advanced by wash boring or hollow-stem augering. Wash boring consists of advancing steel casing by rotary action and water pressure to flush the soil from the casing. The lead section of the casing is equipped with a carbide or diamond casing bit. After the casing has been advanced to the required depth, soil samples are obtained through the inside of the casing. Hollow-stem drilling consists of advancing the hole with 7-5/8 inch outside diameter and 4-1/4 inch inside diameter augers. The leading drill bit is connected to drilling rods through the central portion of the auger. At the required sampling depth, the interior drill rods and lead bit are removed, and the soil sample is taken by driving a sampler

through the "hollow" section of the augers.

Coring is used for hard formations such as rock, coral or boulders. The core barrel, consisting of a 5-foot long double tube, hardened steel barrel with either a carbide or diamond bit, is attached to drilling rods and set on the hard formation. The core barrel is advanced through the formation by rotation of the core barrel. Water is used to flush out the cuttings. Upon completion of the core run, the sample is removed from the core barrel and inspected. The total core recovery length and the sum of all intact pieces over 4-inch in length are measured. The length of core recovery divided by the length of the core run is the recovery ratio. The combined length of the 4-inch or longer pieces divided by the length of core run is the Rock Quality Designation (RQD). The values provide an indication of the quality of the formation.

Test Borings Using Portable Drilling Equipment

In areas inaccessible to truck-mounted equipment, portable drilling equipment is used to drill the test boring. The boring is advanced by either 1) continuous drive sampling or by 2) using a small gas-powered drill rig with continuous flight augers, wash boring or NX coring.

Soil samples are obtained with a tripod and cathead assembly using soil sampling methods described below.

Test Pits Using Excavators/Backhoes

Test pits are excavated using a excavator or backhoe. Material excavated from the pit and the sides and bottom of the pit are visually inspected and a continuous log of the hole is kept.

Explorations Using Hand Tools

In inaccessible areas requiring only shallow explorations, borings and test pits are made using hand equipment. Borings are drilled using hand augers. Test pits are excavated using hand tools. Cuttings from the boring and/or pit are inspected and visually classified.

Soil Sampling

Relatively undisturbed samples of the underlying soils are obtained from borings by driving a sampling tube into the subsurface material using a 140-pound safety hammer falling from a height of 30 inches. Ring samples are obtained using a 3-inch outside diameter, 2.5 inch inside diameter steel sampling tube with an interior lining of one-inch long, thin brass rings. The tube is driven approximately 18 inches into the soil and a section of the central portion is placed in a close fitting waterproof container in order to retain field conditions until completion of the laboratory tests. Standard Penetration Test (SPT) values and disturbed soil samples are obtained with a 2-inch (outside diameter) split-barrel sampler instead of the 3-inch sampler. The number of blows required to drive the sampler into the ground is recorded at 6-inch intervals. The blow count for the last 12-inches is shown on the boring logs.

From test pit excavations, relatively undisturbed soil samples are obtained by pushing the 3 inch outside diameter sampling tube (mentioned above) into the ground with the backhoe bucket. In addition, undisturbed bulk samples are retained from cohesive type soil formations and disturbed bulk samples are retained from friable and cohesionless soil formations.

The soil samples are visually classified in the field using the Unified Soil Classification System. Samples are packed in moisture proof containers and transported to the laboratory for testing.

Dynamic Cone Penetrometer (DCP)

There are two types of DCP test used in the field. One test is generally used for pavement design and the other test is generally used for foundation design.

The DCP test for pavement design is an in-place test generally performed on the near surface soils. The DCP consist of a steel rod with a steel cone attached to one end which is driven into the soil by means of a sliding hammer. The angle of the cone is 60 degrees. The depth of the cone penetration is recorded at selected penetration or hammer drop intervals. The standard DCP test is designed to penetrate soils to a total depth of 1 meter (39.4 inches), however, extension rods may be used to reach greater depths. The recorded data from the DCP test can be converted to CBR values for use in pavement design.

The DCP test for foundation design (aka Wildcat DCP) is used to evaluate the consistency of the subsurface soils to depths of 25 feet. The test is performed by driving a 1.4 inch diameter (10 square centimeter area) steel cone (cone is connected to 1.1" diameter steel rods) into the ground using a 35 pound slide hammer that is dropped from a height of 15 inches. The number of blows required to drive the steel cone 10 centimeters is recorded and the process is continued until the desired depth is reached.

LABORATORY TESTING

General

Laboratory tests are performed on various soil samples to determine their engineering properties.

Description of the various tests are listed below.

Unit Weight and Moisture Content

The in-place moisture content and unit weight of the samples are used to correlate similar soils at various depths. The sample is weighed, the volume determined, and a portion of the sample is placed in the oven. After oven-drying, the sample is again weighed to determine the moisture loss. The data is used to determine the wet-density, dry-density and in-place moisture content.

Direct Shear

Direct shear tests are performed to determine the strength characteristics of the representative soil samples. The test consists of placing the sample into a shear box, applying a normal load and then shearing the sample at a constant rate of strain. The shearing resistance is recorded at various rates of strain. By varying the normal load, the angle of internal friction and cohesion can be determined.

Consolidation Test

Consolidation tests are performed to obtain data from which time rates of consolidation and amounts of settlement may be estimated. The test is performed by placing a specimen in a consolidation apparatus. Loads are applied in increments to the circular face of a one (1) inch high sample. Deformation or changes in thickness of the specimen are recorded at selected time intervals. Water is introduced to or allowed to drain from the sample through porous disks placed against the top and bottom faces of the specimen. The data is then used to plot a stress-volume strain curve which is used in estimating settlement.

Expansion Index Test

Expansion Index of fine-grained soils is determined in accordance with ASTM D 4829-88 test

procedure. The soil specimen is compacted into a metal ring so that the degree of saturation is between 40 and 60 percent. The specimen and the ring are placed in a consolidometer. A vertical confining pressure of 1 psi is applied to the specimen and then the specimen is inundated with water. The deformation of the specimen is recorded for 24 hours. The data is used to determine the expansion potential of the soil.

One-Dimensional Swell Test

Another procedure for determining the expansion potential of fine-grained soils is ASTM D 4546-90 (Method B) test procedure. The soil specimen is compacted into a 2.5 inch diameter (1 inch height) metal ring using a 10 pound hammer. The specimen and the ring are placed in an expansion apparatus. A vertical confining pressure of 155 psf is applied to the specimen and then the specimen is inundated with water. The deformation of the specimen is recorded for 24 hours.

This test is similar in principle to the Expansion Index Test (see above) with the primary difference being the soil specimen in the One-Dimensional Swell Test is usually compacted to a higher dry density than the Expansion Index and, therefore, generally produces a higher degree of expansion.

Classification Tests

The soil samples are classified using the Unified Soil Classification System. Classification tests include sieve and hydrometer analysis to determine grain size distribution, and Atterberg Limits to determine the liquid limit, plastic limit and plasticity index.

California Bearing Ratio Test

California Bearing Ratio (CBR) tests are performed on materials to determine the bearing strength

of the soil for determination of pavement sections. The sample is compacted into a 6-inch diameter mold in 5 equal layers. Each layer is compacted with a 10-pound hammer falling from a height of 18-inches, with each layer receiving 56 blows. The mold is then placed in a water bath for 4-days and the vertical swell is measured under a surcharge weight of 10 pounds. After the soaking period, the sample is placed in a CBR apparatus that has a 3-square inch penetrometer. The penetrometer is pressed vertically into the soil at constant strain and the loads required to press the penetrometer are recorded. A plot of the load-strain relationship is made to determine the CBR value.

Maximum Dry Density/Optimum Moisture Content

The maximum dry density and optimum moisture content of the material is determined in accordance with the ASTM D1557-91 test procedure. The sample is compacted into a mold in 5 equal layers using a 10 pound hammer falling from a height of 18 inches. The diameter of the mold is either 4-inches or 6-inches depending on the proportion of gravel in the sample. The sample is compacted at various moisture contents to develop a compaction curve for the soil. The curve is usually bell-shaped with a peak indicating the maximum dry density and optimum moisture content.

Penetrometer Test

Penetrometer tests are performed on clayey soils to determine the consistency of the material and an approximate value of the unconfined compressive strength.

Torvane

Torvane tests are used to determine the approximate undrained shear strength of clayey soils.

The torvane apparatus consists of a torque device with a small diameter plate that has vanes situated perpendicular to the plate. The vanes are pushed into the soil and torque is applied until failure occurs. The torque required to cause failure is converted to approximate undrained strength of the soil.

LOG OF TEST PIT NO. 1

ELEVATION: see Plate 2

EQUIPMENT USED: Backhoe: CAT 420D

DEPTH OF TEST PIT (feet): 5

DATE EXCAVATED: December 16, 2005

DEPTH OF GROUNDWATER: unknown

DEPTH (FT.)	GRAPHIC SYMBOL	SOIL CLASSIFICATION	DESCRIPTION	SAMPLE	COLOR	CONSISTENCY	MOISTURE	DRY DENSITY (PCF)	MOISTURE CONTENT (% OF DRY WT.)	PENETROMETER (TSF)	ATTERBERG LIMITS		
											LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX
0		MH	SILT with sand		very dark brown	very soft to soft	mod. moist		33.0				
1.5						stiff				2.5			
3		GM	silty GRAVEL with sand and cobbles		dark brown	mod. dense			21.2	1.5			
4.5		cob	silty COBBLES with gravel			mod. dense to dense				2.0			
6		rock	END OF TEST PIT BASALT ROCK: REFUSAL			mod. hard to hard rock							
7.5													
9													
10.5													

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PLATE

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LOG OF TEST PIT NO. 2

ELEVATION: see Plate 2

EQUIPMENT USED: Backhoe: CAT 420D

DEPTH OF TEST PIT (feet): 9.5

DATE EXCAVATED: December 16, 2005

DEPTH OF GROUNDWATER: unknown

DEPTH (FT.)	GRAPHIC SYMBOL	SOIL CLASSIFICATION	DESCRIPTION	SAMPLE	COLOR	CONSISTENCY	MOISTURE	DRY DENSITY (PCF)	MOISTURE CONTENT (% OF DRY WT.)	PENETROMETER (TSF)	ATTERBERG LIMITS			
											LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0		MH	SILT with occasional gravel		dark yellowish brown	soft	dry to mod. moist							
1.5						stiff			52.3	1.5				
3						mod. stiff	mod. moist			0.5				
4.5		MH	SILT			very stiff	moist		43.2					
6		GM	silty GRAVEL with sand		brown	mod. dense								
7.5														
9									33.1					
10.5			END OF TEST PIT											

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LOG OF TEST PIT NO. 3										ELEVATION: see Plate 2				
EQUIPMENT USED: Backhoe: CAT 420D										DEPTH OF TEST PIT (feet): 2.33				
DATE EXCAVATED: December 16, 2005										DEPTH OF GROUNDWATER: unknown				
DEPTH (FT.)	GRAPHIC SYMBOL	SOIL CLASSIFICATION	DESCRIPTION	SAMPLE	COLOR	CONSISTENCY	MOISTURE	DRY DENSITY (PCF)	MOISTURE CONTENT (% OF DRY WT.)	PENETROMETER (TSF)	ATTERBERG LIMITS			
											LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0		MH	SILT		dark brown	mod. stiff	dry to mod. moist							
1.5		GM	silty GRAVEL with sand			mod. dense			15.2					
3		rock	END OF TEST PIT BASALT ROCK: REFUSAL			mod. hard to hard rock								
4.5														
6														
7.5														
9														
10.5														

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PLATE
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LOG OF TEST PIT NO. 4

EQUIPMENT USED: Backhoe: CAT 420D

DATE EXCAVATED: December 16, 2005

ELEVATION: see Plate 2

DEPTH OF TEST PIT (feet): 2.75

DEPTH OF GROUNDWATER: unknown

DEPTH (FT.)	GRAPHIC SYMBOL	SOIL CLASSIFICATION	DESCRIPTION	SAMPLE	COLOR	CONSISTENCY	MOISTURE	DRY DENSITY (PCF)	MOISTURE CONTENT (% OF DRY WT.)	PENETROMETER (TSF)	ATTERBERG LIMITS			
											LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0		MH	SILT with gravel		dark yellowish brown	mod. stiff	dry to mod. moist		43.6					
1.5		GM	silty GRAVEL with sand			mod. dense to dense			18.9					
3		rock	END OF TEST PIT BASALT ROCK: REFUSAL			mod. hard to hard rock								
4.5														
6														
7.5														
9														
10.5														

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PLATE

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LOG OF TEST PIT NO. 5										ELEVATION: see Plate 2			
EQUIPMENT USED: Backhoe: CAT 420D										DEPTH OF TEST PIT (feet): 4.25			
DATE EXCAVATED: December 16, 2005										DEPTH OF GROUNDWATER: unknown			
DEPTH (FT.)	GRAPHIC SYMBOL	SOIL CLASSIFICATION	DESCRIPTION	SAMPLE	COLOR	CONSISTENCY	MOISTURE	DRY DENSITY (PCF)	MOISTURE CONTENT (% OF DRY WT.)	PENETROMETER (TSF)	ATTERBERG LIMITS		
											LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX
0		MH	SILT		dark yellowish brown	very soft to soft	dry to mod. moist			.25			
1.5			---with gravel			stiff to very stiff				2.25			
							mod. moist		21.0	4.5			
3		GM	silty GRAVEL with sand			mod. dense							
		cob	silty COBBLES			dense							
4.5		rock	END OF TEST PIT BASALT ROCK: REFUSAL			mod. hard to hard rock							
6													
7.5													
9													
10.5													
PROJECT NAME: KULA COMMUNITY SENIOR HOUSING								ISLAND GEOTECHNICAL ENGINEERING, INC.			PLATE		
PROJECT NO.: 051056-FM								Geotechnical Consultants			7		

LOG OF TEST PIT NO. 6

ELEVATION: see Plate 2

EQUIPMENT USED: Backhoe: CAT 420D

DEPTH OF TEST PIT (feet): 7

DATE EXCAVATED: December 16, 2005

DEPTH OF GROUNDWATER: unknown

DEPTH (FT.)	GRAPHIC SYMBOL	SOIL CLASSIFICATION	DESCRIPTION	SAMPLE	COLOR	CONSISTENCY	MOISTURE	DRY DENSITY (PCF)	MOISTURE CONTENT (% OF DRY WT.)	PENETROMETER (TSF)	ATTERBERG LIMITS		
											LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX
0		SM-MH	silty SAND/sandy SILT		dark brown	soft to mod. stiff	dry to mod. moist			0			
1.5			—Specific Gravity = 2.68						35.1	0.0	76	68	8
3						mod. stiff to stiff				4.5			
4.5						stiff to very stiff			37.4				
6		GP	GRAVEL		dark gray	mod. dense to dense			5.6				
6.5		GM	silty GRAVEL with sand		dark yellowish brown	mod. dense			29.6				
7.5		rock	END OF TEST PIT BASALT ROCK: REFUSAL			mod. hard to hard rock							
9													
10.5													

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PLATE

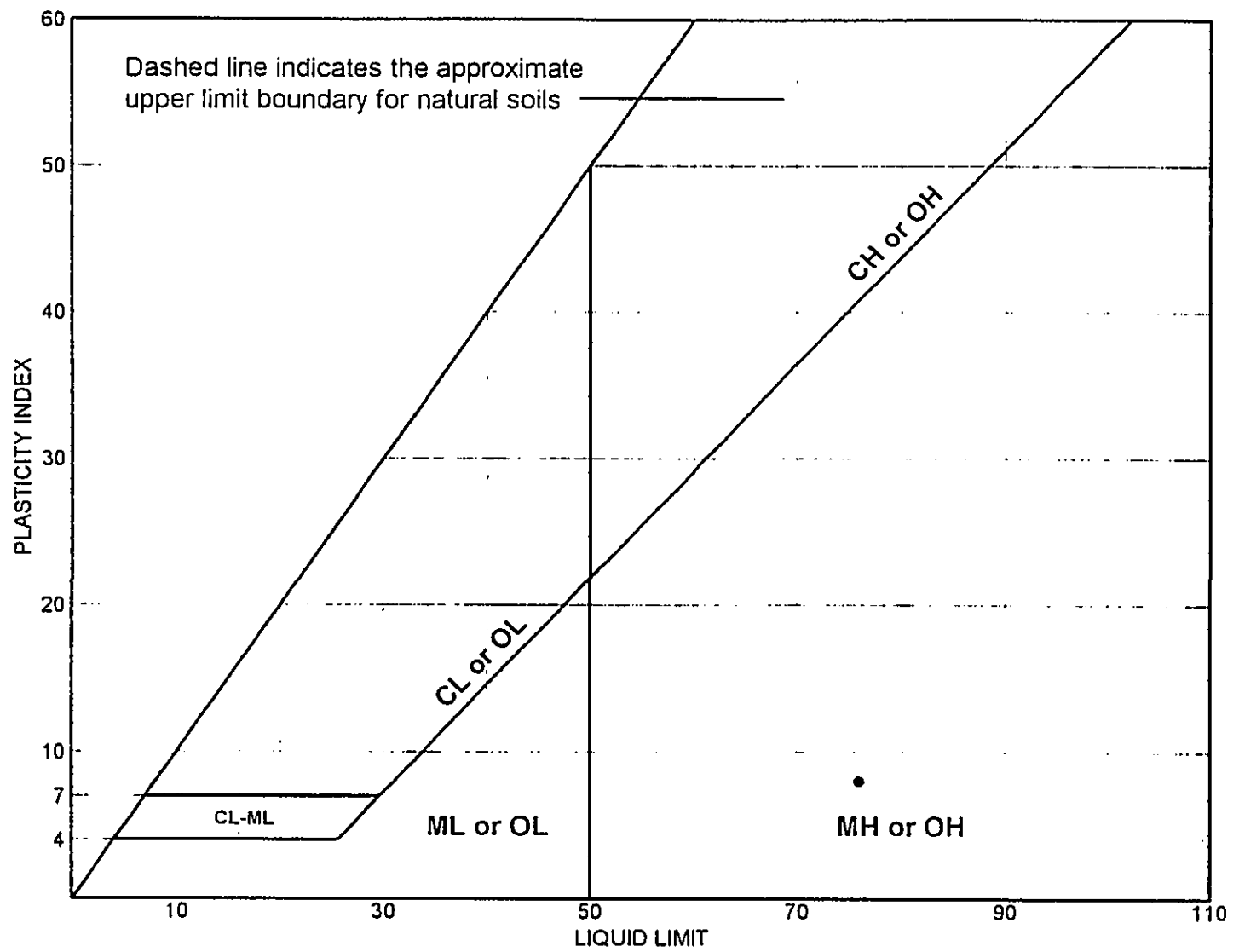
PROJECT NO.: 051056-FM

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LOG OF TEST PIT NO. 7										ELEVATION: see Plate 2				
EQUIPMENT USED: Backhoe: CAT 420D										DEPTH OF TEST PIT (feet): 4.75				
DATE EXCAVATED: December 16, 2005										DEPTH OF GROUNDWATER: unknown				
DEPTH (FT.)	GRAPHIC SYMBOL	SOIL CLASSIFICATION	DESCRIPTION	SAMPLE	COLOR	CONSISTENCY	MOISTURE	DRY DENSITY (PCF)	MOISTURE CONTENT (% OF DRY WT.)	PENETROMETER (TSF)	ATTERBERG LIMITS			
											LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0		MH	SILT with gravel		dark brown	soft to mod. stiff	dry to mod. moist							
1.5														
3						mod. stiff to stiff								
4.5														
6		rock	END OF TEST PIT BASALT ROCK: REFUSAL			mod. hard to hard rock								
7.5														
9														
10.5														
PROJECT NAME: KULA COMMUNITY SENIOR HOUSING							ISLAND GEOTECHNICAL ENGINEERING, INC.				PLATE			
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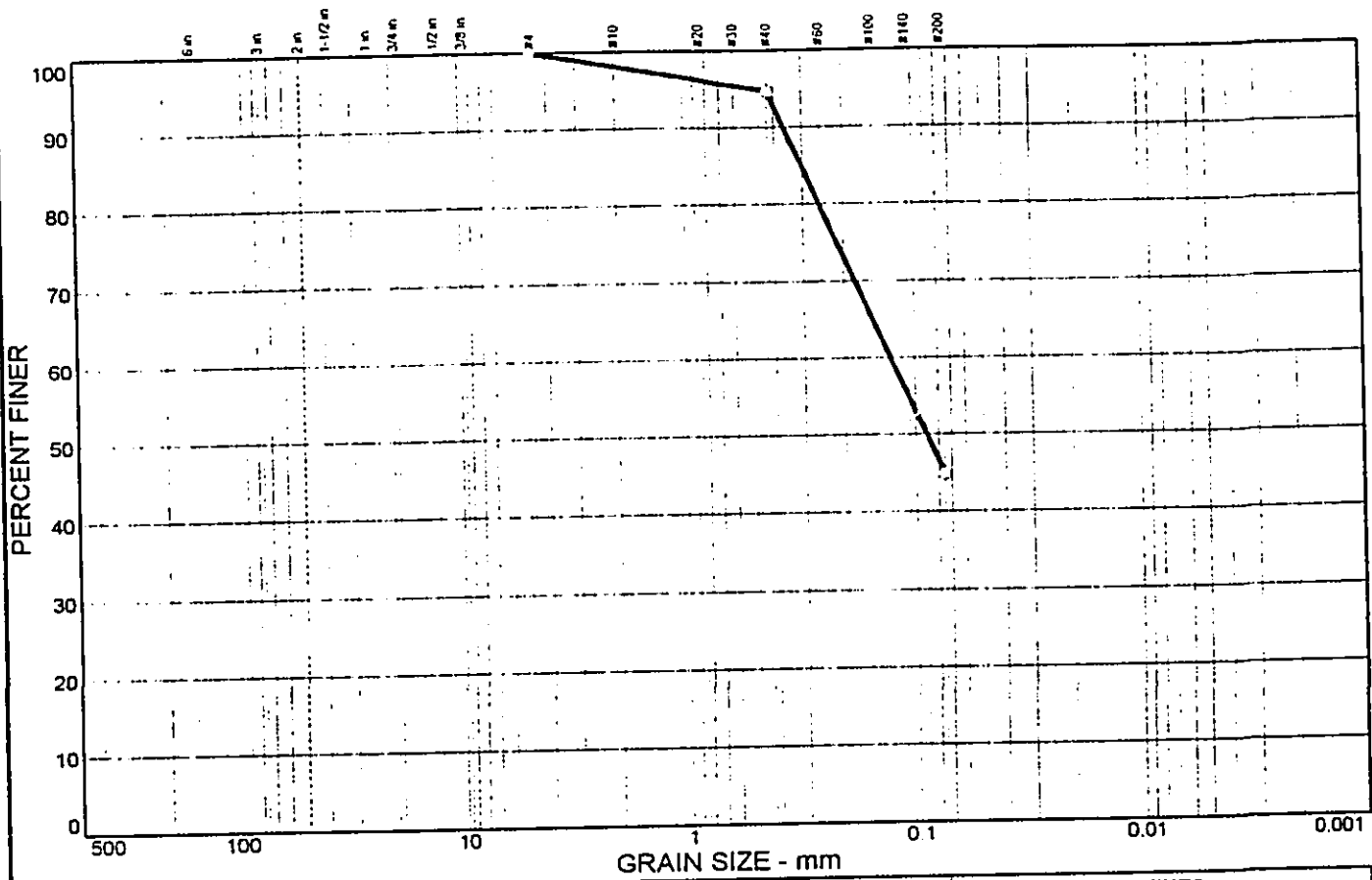
LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
•	Test Pit 6	1	-1.33 to -2.0	35.1	68	76	8	SM

LIQUID AND PLASTIC LIMITS TEST REPORT Island Geotechnical Engineering, Inc.	Client: _____ Project: Kula Community Senior Housing Project No.: 051056-EM
	Plate 10

Particle Size Distribution Report



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	1.9	3.4	49.8	44.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#40	94.7		
#200	44.9		

Soil Description
dark brown silty SAND

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₈₅= 0.303 D₆₀= 0.127 D₅₀= 0.0896
 D₃₀= D₁₅= D₁₀=
 C_u= C_c=

Classification
 USCS= SM AASHTO=

Remarks

(no specification provided)

Sample No.: 1
Location:

Source of Sample: Test Pit 6

Date: 01-06-06
Elev./Depth: 1.33-2.0

Island Geotechnical Engineering, Inc.	Client: Project: Kula Community Senior Housing Project No: 051056-FM	Plate 11
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REMOLDED EXPANSION TEST REPORT (One-Dimensional Swell Test)

ASTM D 4546-96: Method B modified (note 1)

<u>SAMPLE LOCATION</u>	<u>DEPTH (feet)</u>	<u>MOLDING WATER CONTENT</u>	<u>MOLDED DRY DENSITY (pcf)</u>	<u>MOLDED % SAT.</u>	<u>FINAL WATER CONTENT</u>	<u>MEASURED EXPANSION</u>
Test Pit 6	1.3 to 2.0	46.9%	58.4	67.6	67.0%	1.6%
"	"	"	62.3	74.6	60.2%	1.5% (note 2)
"	"	25.3%	62.4	40.4	89.3%	13.5%

note 1: The above test were performed by compacting the soil into a 2.375 inch diameter (1 inch height) ring using 9 blows with a 10 pound hammer; the sample was then placed into an expansion apparatus. A 155 psf surcharge was then placed on the sample. The sample was then submerged in water and the change in vertical height was recorded.

note 2: After compacting, this sample was air-dried to 36.9% moisture content prior to submerging in water.

Project: KULA COMMUNITY SENIOR HOUSING

Project No.: 051056-FM

ISLAND GEOTECHNICAL ENGINEERING, INC.

PLATE 12

APPENDIX D.

**Archaeological Inventory
Survey**

**An Archaeological Inventory Survey of a 1.69 Acre Parcel in
Waiakoa Ahupua'a, Kula, Makawao District,
Island of Maui (TMK (2) 2-2-14: 21)**

Prepared for

**Mr. Elmer Cravalho, Chairman
Kula Community Federal Credit Union
Kula, Maui**

Prepared by

**Xamanek Researches, LLC
Pukalani, Maui**

**Jonas K. Madeus
Erik M. Fredericksen**

14 February 2005

ABSTRACT

Xamanek Researches, LLC conducted an archaeological inventory survey of a 1.69 acre portion of land in Kula, Maui during November-December 2005. The project area is located in Waiakoa *ahupua`a*, Makawao District, Island of Maui (TMK: (2) 2-2-14: 21). It lies between Kula Highway and Old Kula Road in a mixed residential and business community of Kula. This project was conducted on behalf of Mr. Elmer Cravalho, Chairman, Kula Community Federal Credit Union.

Project plans call for the ultimate construction of 36 one bedroom apartments along with a *manager's residence on the parcel*, which is owned by the Kula Community Federal Credit Union. These units will be offered to senior citizens at below market rental rates. Various on-site improvements including utility work would require excavation actions, etc.

The archaeological study utilized a 100% pedestrian surface survey, as well as a series of shovel tests and test units to assess subsurface conditions. Manually excavated soil was screened through 1/8th inch wire mesh. Two previously unrecorded cultural resources, Site 50-50-11-5800 and Site 5824, were located during our inventory level walk-over and testing of the parcel.

Site 5800 consists of 10 features, six of which are interpreted as possible precontact features, along with four that are thought to be post-contact ones. The possible precontact features consist of a probable *ahupua`a* division/boundary rock wall and five agricultural terraces. The post-contact features are composed of a boundary rock wall, an historic habitation terrace and two planting terraces.

Site 5824 is an historic building, the Old Kula Gymnasium. This community oriented structure was built in the late 1930s, and continues to be used by residents of the general area.

Sites 5800 and 5824 are considered significant under Criterion "d" for their information content, because of their potential to yield information about the prehistory and history of Hawaii. The Old Kula Gymnasium may also qualify for significance under Criterion "e" for its value to the Kula community.

While no further testing is recommended for the parcel at this point in time, archaeological monitoring is, nevertheless, recommended during any ground alteration activities on the subject parcel. This precautionary monitoring is deemed appropriate, in case subsurface features and/or human remains are inadvertently unearthed. A monitoring plan will be prepared per previous discussions with Dr. Melissa Kirkendall, SHPD Maui staff archaeologist.

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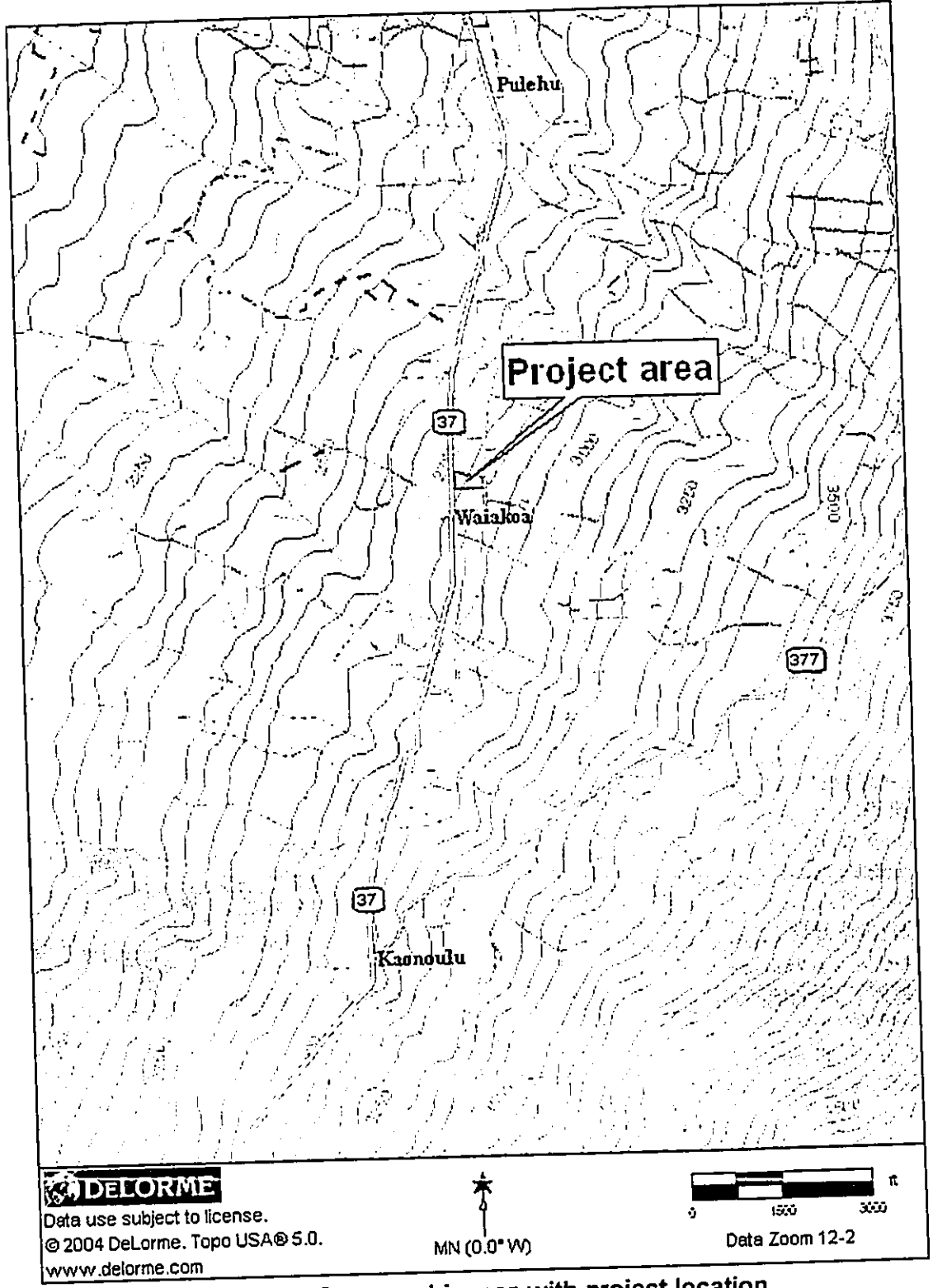


Figure 1. Topographic map with project location

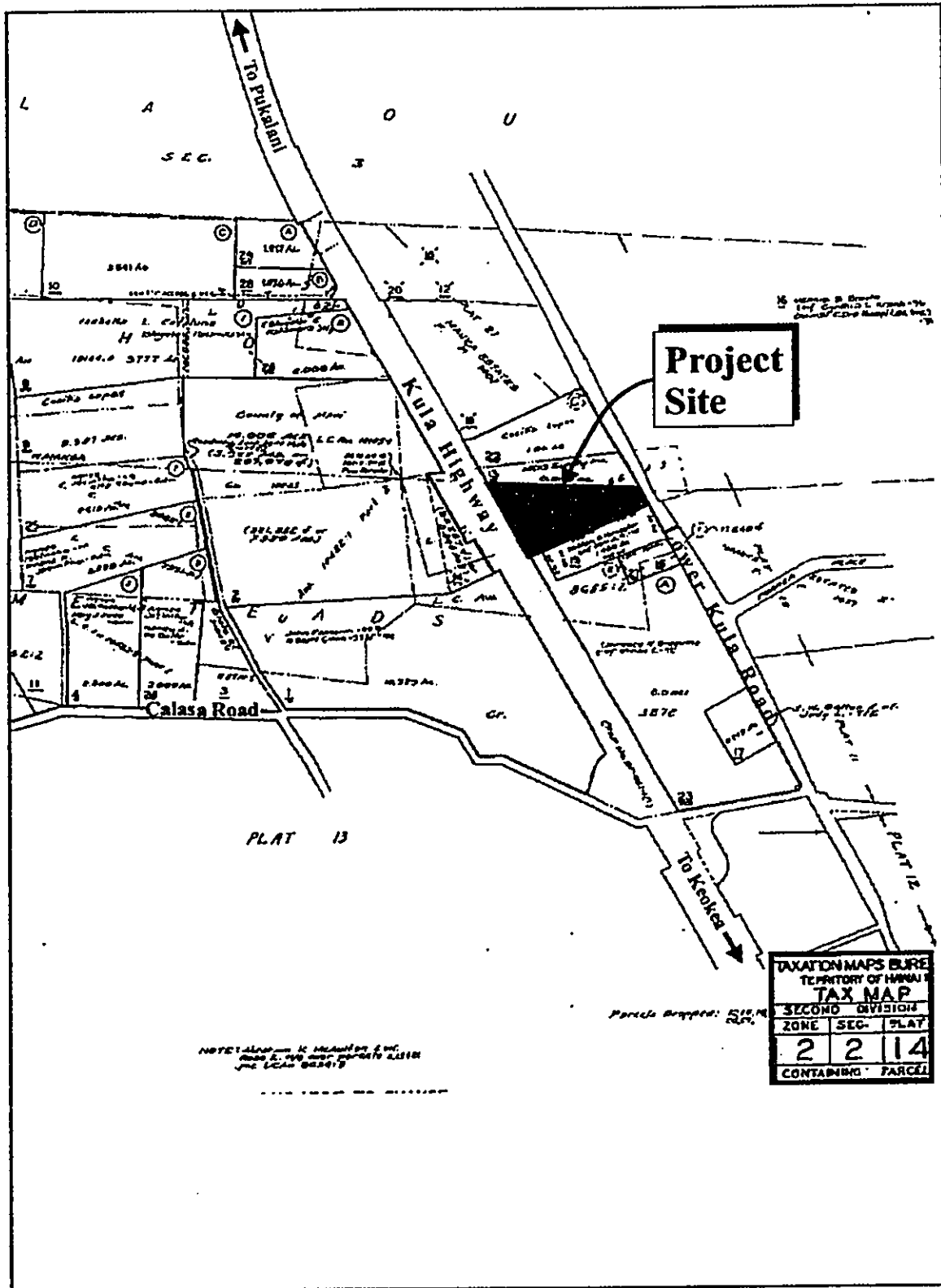


Figure 2. Tax map of the project area, Kula, Maui

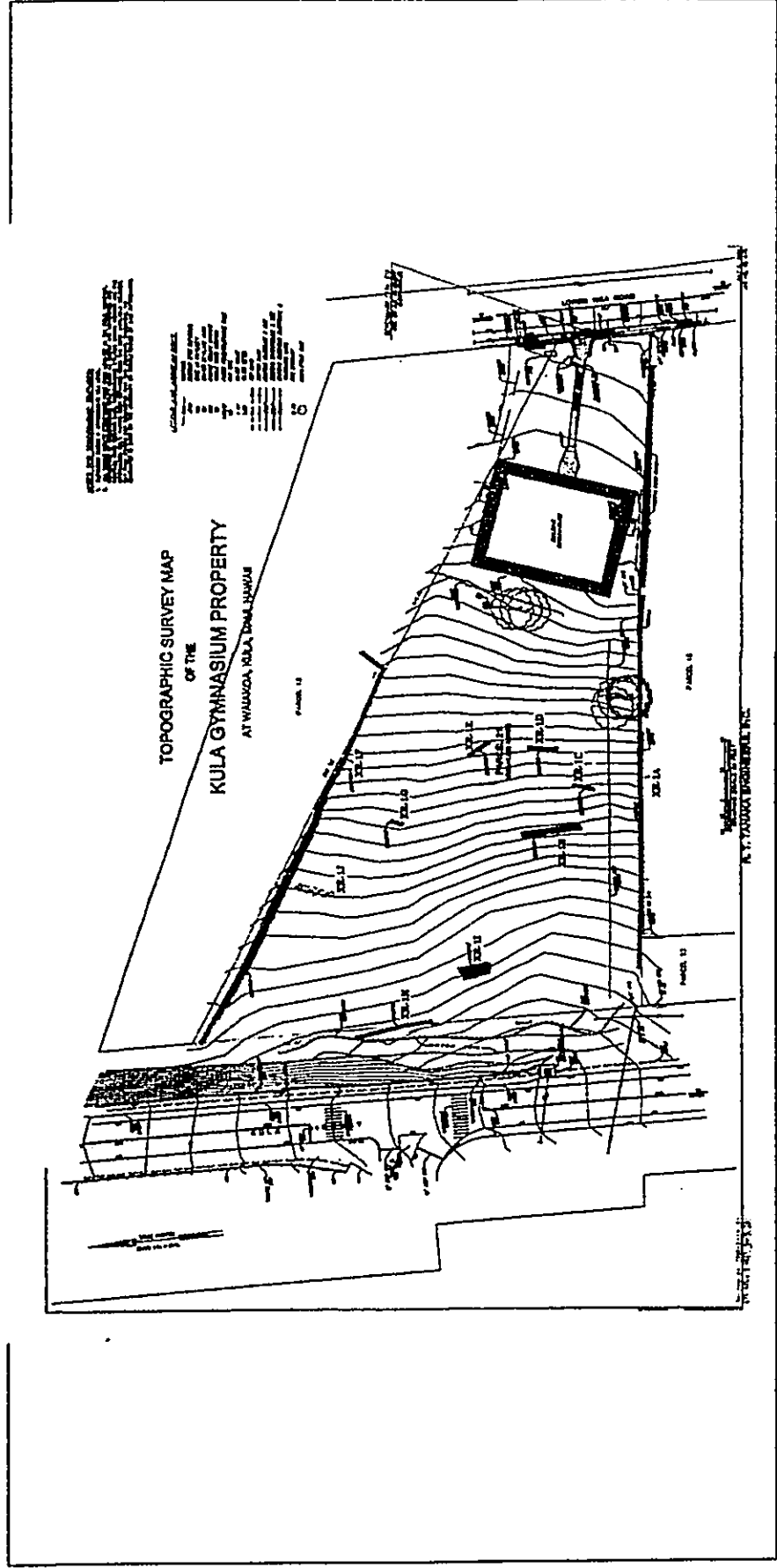


Figure 3. Topographic map of the project area with SIHP No. 50-50-11-5800 and 5824

INTRODUCTION

Ms. Tara Nakashima, Planner with Munekiyo & Hiraga, Inc, contacted Xamanek Researches, LLC in spring of 2005 about a piece of property that was located in Waiakoa *ahupua`a*, Makawao District, Maui (Maps 1 and 2). This property, owned by the Kula Community Federal Credit Union, was a total of 1.69 acres in size (TMK (2) 2-2-14: 21). Project plans called for the ultimate construction of 36 one bedroom apartments along with a manager's residence. These units would be offered to senior citizens at below market rental rates. Various on-site improvements including utility work would require excavation actions, etc. Given the location of the project area, the State Historic Preservation Division was contacted and recommended that a field inspection be initially carried out.

Following the field inspection, it was determined that the project area contained a previously undocumented agricultural complex, along with a post-contact structure—the Old Kula Gymnasium—that was over 50 years old. Given this information, it was necessary to conduct an archaeological inventory survey of the study area. The following report has been prepared on behalf of Mr. Elmer Cravalho, Chairman, Kula Community Federal Credit Union.

STUDY AREA

As previously noted, this 1.69 acre portion of land lies in Waiakoa *ahupua`a*, Makawao District, Maui (see Figures 1-3). The project area is located within a mixed residential and business neighborhood of Kula, Maui. The parcel at the time of the assessment survey was vacant, but had been previously impacted sometime in the past 5-10 years by what appeared to have been some limited clearing (with a bulldozer) of larger wattle trees from the parcel.

Other above ground vegetation included *koa haole* (*Leucaena leucocephala*) trees that were relatively common across portions of the project area. In addition, unidentified pine trees were present along parts of the northern and southern boundaries of the

property. Some scattered prickly pear cactus or *panini* (*Opuntia megacantha*) were also noted in a few instances. Surface vegetation consisted of buffel grass, fountain grass, and annual succulent weeds. The project area consists of a 1.69 acre portion of land that ranges from a low elevation of 2,770 ft AMSL along Kula Highway to a high of 2,844 AMSL along Lower Kula Road.

This relatively arid portion of Maui receives approximately 40-50 inches of annual precipitation, and is fairly typical of the upland Kula region. It falls within the classification of the "Kula slightly dissected upland" physiographic region of our island (University of Hawaii, 1983, pp. 29-32). The underlying bedrock is primarily composed of lava from the Kula series, with occasional outcroppings visible on this parcel. Kula lavas are dated from between 400 and 800 years ago (MacDonald and Abbott, 1970, p. 268). The soils are generally classified as mollisols. They are further identified as the Pu'u Pa-Kula-Pane Association, described as deep, gently sloping to steep and well-drained with a medium or moderately fine-textured subsoil (Foote et al., 1972). These soils are generally powdery in texture and subject to erosion, unless held in place by surface vegetation such as kikuyu grass (*Pennisetum clandestinum*).

BACKGROUND RESEARCH

The Kula District was a relatively minor political territory under the jurisdiction of West Maui Chiefs. It is a relatively arid region with no perennial streams, located on the western slope of Haleakala Crater. The primary resources of the upland area of Kula district were dry forest products, and dry land agricultural products, e.g. sweet potatoes (*uala*) (Kolb, July 1997, p. 25). Within this larger traditional land division (*moku*) there are several long, narrow *ahupua`a* that stretch to the ocean shore. These are shown on Figure 4 below.

The study parcel is located in the upper central inland portion of the *ahupua`a* of Waiakoa. The *ahupua`a* of Waiakoa became part of the Hawaiian Government Lands during the Mahele of 1848. Perusal of the Land Commission Awards data reveal that no kuleana were awarded in the coastal portion of the *ahupua`a*. A total of 52 claims were recorded, all of them being in the Kula district. Of these claims, more than half (28) were not awarded (Waihona `Aina data base). Those that were awarded were for house lots, and/or garden plots (*kula* lands). All of these awarded plots are located above the 750-foot contour line, on both sides of the old government road that follows the general route of the *alanui apuni* [Kolb et al., 1997, pp. 50-60].

Kula land is described by Handy and Handy (1972, pg. 510) as:

"...open country, or plain, as distinct from valley or stream bottom, and has long been used as a term to distinguish between dry, or "kula land" and "wet-taro land". This is an essential characteristic of Kula, the central plain of Maui which is practically devoid of streams. ...Kula was widely famous for its sweet-potato plantations. `Uala was the staple of life here."

By the 1840's, the increased number of whaling ships anchoring off Maui shores created a substantial market for produce such as sweet and Irish potatoes, which grew well in inland areas of the Kula region. Irish potatoes were coveted more highly, however, and were thus of greater importance in the produce trade. They were transported from the Kula fields to the shore, where they were often sold directly to ships that called at Kalepolepo. From there they were shipped to Lahaina, where the bulk of the whaling fleet was moored.

After the California Gold Rush began in 1848 a potato boom commenced on Maui in the fall of 1849. A trading post was established in 1849 by Captain John

Halstead¹ in the village of Kalepolepo on the coast, which allowed him to take advantage of this commercial activity. He built a large Pennsylvania Dutch-style, 3-story residence next to the south wall of Kalepolepo Fishpond. His trading station was located on the first floor of this structure. It was known locally for the Koa House (Photo 1). Halstead's large prominent house stood as a landmark for nearly one hundred years²—and was visited by Kamehamehas III, IV and V between 1850 and 1870.

Kuykendall (1938, p. 313) refers to an article in the Polynesian in November of 1849:

“The call for [potatoes] is loud and pressing, as some vessels bound for California have taken as many as 1,000 barrels each. The price is high, and the probability is that the market cannot be supplied this autumn. Kula, however, is full of people...preparing the ground for planting, so that if the demand from California shall be urgent next spring as it is now the people will reap a rich harvest.”

In 1843, construction of a small stone church was begun at Kalepolepo³ under the direction of David Malo. This gentleman was a native Hawaiian, probably born in 1783 on the Big Island, who moved to Lahaina in the 1820's. He came under the influence of Reverend William Richards and was converted to Christianity. With the establishment of Lahainaluna High School in 1831, he enrolled as one of its first students. In 1843 he was licensed to the Christian ministry, and assigned to a congregation in Kalepolepo. He began construction of Kilolani Church, which continued until 1852. It was completed shortly before the death of David Malo on October 21, 1853. Following his death, his Kilolani congregation dispersed, and never met again at Kalepolepo. A fire is said to have damaged the structure, and a flood in the 1880's also added to the destruction of the little stone church. The ruins of this church are listed on the National Register of Historic Places (Site 50-50-09-1587). Religious services were once again begun at the ruins of this church in 1976. It is known today as “Trinity Church by the Sea”.

Another activity in the Kula district was cattle ranching, which had become a booming enterprise by the 1880's. Large sections of land in Lower Kula became pastureland, and large sections of Crown land were leased for grazing acreage. Two large ranches operated in this part of Maui—Ka'ono'ulu Ranch, and Haleakala Ranch.

Haleakala Ranch began as a \$50,000 land purchase in 1888, on a joint venture of well-known Hawaii figures Edward H. Bailey, Lorrin A. Thurston, W.H. Bailey and Henry Perrine Baldwin. By 1925 H.P. Baldwin's sons Harry and Samuel were the sole owners of the ranch. It is previously owned by members of the Baldwin Family. It still maintains several thousand cattle on its 32,000 acres.

¹ Captain Halstead arrived in Lahaina from New York in 1838, and married the chiefess Kaurikiwikilani Davis, granddaughter of Isaac Davis, Kamehameha's advisor.

² In 1946 it was abandoned and was leased by the Kihei Yacht Club, the members of which tried to burn it down because it was so unsafe. Several attempts failed, but eventually the Maui Fire Department was called in and succeeded in reducing it to ashes in August of 1946 (Kolb, 1997, p. 70).

³ Halstead's trading post was built nearby.

Ka'ono'ulu Ranch lands were originally part of an LCA to H. Hewahewa (LCA 8452 made up of 5715 acres), and LCAs 8452: 19 and 20 to A. Keohokaole. In the 1860's, ranch lands were obtained by a young Chinese immigrant, Young Hee, who was forced to return to China in the 1890s in order to settle family problems. At that time, the lands were acquired by William H. Cornwell, and they became the Cornwell Ranch. Harold W. Rice purchased the property in 1916, and it is currently operated by his grandson, Henry Rice, and consists of nearly 9,000 acres in its entirety.⁴

Another smaller ranch was located to the southwest of the project area—Kamaole Ranch. An article in *The Maui News* (December 19, 1908) states that Antone F. Tavares of Makawao "purchased S. Ahmi's Kamaole Ranch property." It goes on to say that Mr. Ahmi refused a former offer for \$9500.00 when he was asking \$15,000.00 for it.⁵

The *Maui News* (March 17, 1928) noted:

"Senator A.F. Tavares has sold Kama'ole Ranch to Haleakala Ranch for approximately \$110,000. For himself he retains the title to the cottage on the place and about 5.95 acres surrounding it...

At present there are about 500 head of cattle running over the ranch and the purchasers have an option on this live stock at \$30 per head.

Kama'ole ranch has an area of approximately 1500 acres. It adjoins the Ulupalakua ranch which is owned by Frank F. Baldwin.

Alexander and Baldwin, Ltd., is agent for Haleakala ranch and the purchase of Kama'ole brings together two properties which occupy many thousands of acres of cattle land on the slopes of Haleakala. Kama'ole is to be continued by the purchasers as a cattle ranch."

The other influence that changed the landscape of this part of Maui was the presence of the military on the island during the Second World War. In 1940, responding to the increased turmoil in Asia, the United States began to prepare for war. The Pu'unene Naval Air Station was built, and over the war years, thousands of military personnel passed through Maui. The terrain of the island was ideal for training men for combat in the South Pacific, as much of it was similar. All types of exercises were conducted—from amphibious landings on the beaches of Kihei (Kalama) and Makena, to the training soldiers on how to find and fight their way through dense sugarcane fields. In mauka areas of Kihei and portions of lower Ulupalakua artillery practice was undertaken in barren areas, away from populated areas. Various concrete bunkers and pill boxes were built in various coastal portions of Maui, as well as the Kula and Olinda

⁴ Ka'ono'ulu Ranch encompasses the entire *ahupua'a* of Ka'ono'ulu, which borders the upper and lower portions of Waiakoa *ahupua'a*.

⁵ Mr. Ahmi was also known as Sun Mei, a notable personage in Kula in the early part of the century. In 1901 he was arrested for stealing cattle, and he sued for false imprisonment a few weeks later. In 1903 he was indicted in a police bribery case, but was later acquitted. He was also involved in civil suits, and tax cases, as well as being outspoken in political matters during 1904 and 1905. By 1906 his property was listed in a sheriff's sale, and sold in 1908 (Bartholomew, 1985).

areas.⁶ After the war, the National Guard took over from the WWII military, and set up a training area at Ulupalakua.⁷ Training activities were probably conducted in this area up until about 10 to 20 years ago. A fenced training area, located about 1 kilometer to the northeast at Pu`u o Kali, is still in use.

⁶ A number of concrete bunkers are located c. 2 km *mauka* of the Polo Field in a grove of eucalyptus trees just to the southeast of Haleakala Highway above Pukalani.

⁷ Personal communication with Ms. Helene Takamoto of the Formerly Used Defense Sites (FUDS) Program, Army Corps of Engineers at Fort Shafter—June 12, 2002.

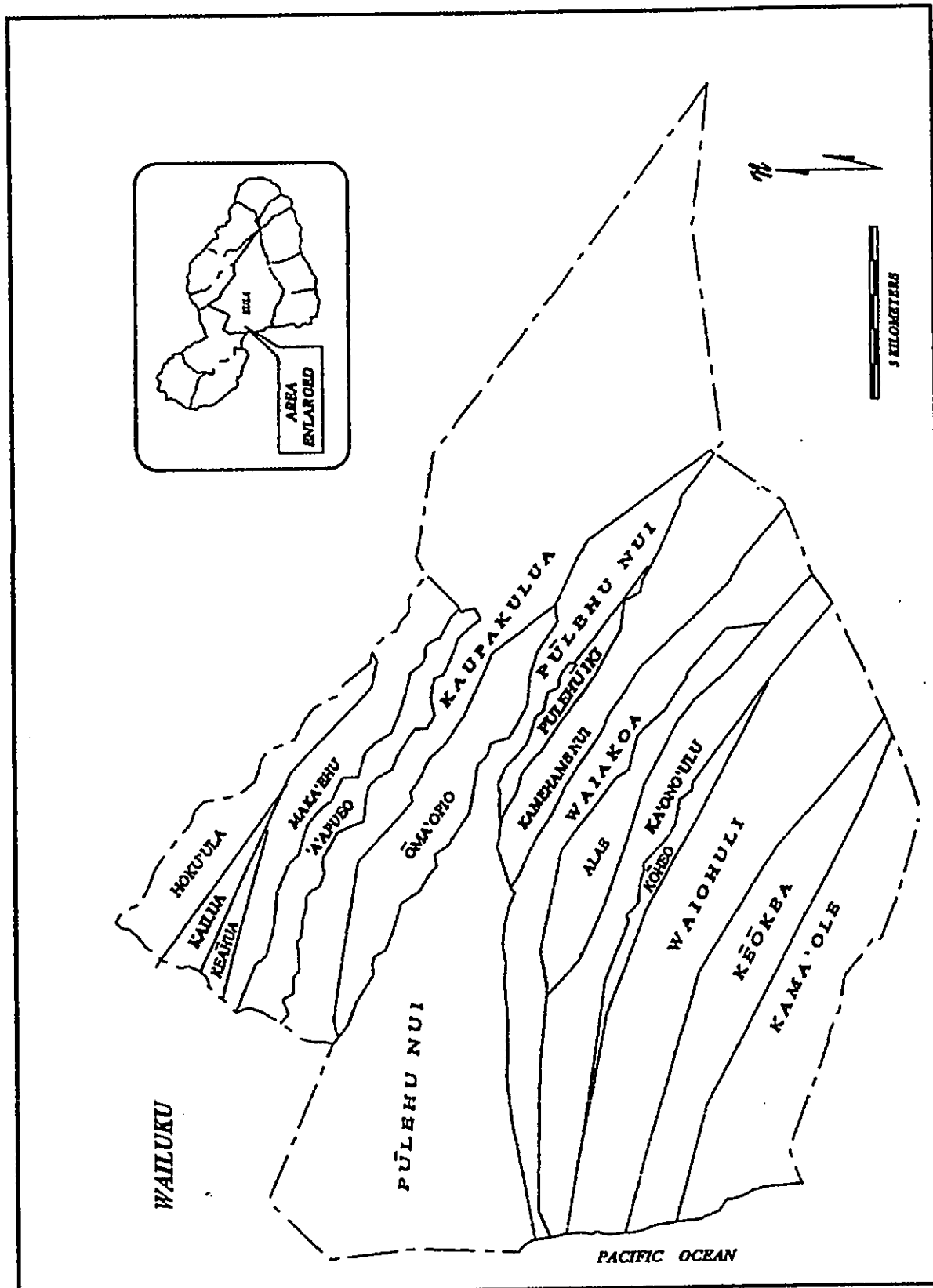


Figure 4. Map showing the Kula lands (Kolb et al., 1997, p. 24).

PREVIOUS ARCHAEOLOGICAL WORK

Winslow Walker carried out the first island-wide assessment of notable sites on Maui in 1929-1930. Walker (1931) identified 23 *heiau* and an L-shaped enclosure within the Kula area. Waiakoa *Heiau* (Site 1048—possibly Walker's "unnamed *heiau*" #219) and Alae *Heiau* (Site 1049—possibly #220 in Walker's survey) are located in Waiakoa *ahupua`a* within about 2 km of the current study area.

A number of petroglyphs are located in the area near Alae *Heiau*, including Site 1239—the Alae Petroglyphs (formerly known as the Honda Petroglyphs), and Site 1240—the Kula Bridge Petroglyphs. The Alae Petroglyph complex includes 60 figures including stick and triangular bodied men, dogs, horses, and indistinct forms that are spread out over a c. 5.5 meter portion of cliff face in Waiakoa Gulch. The Kula Bridge Petroglyphs contain c. 20 figures dating from the 1870s, and consist primarily of words and letters.

Another petroglyph complex lies to the northwest of the project area and is known as Keahuaiwi Rock Art Site 1050. This group of petroglyphs is associated with a rock overhang shelter that is located along Keahuaiwi Stream. The tallest of the 44 human figures is c. 75 cm in height and may be the largest on Maui. The 1973 State-wide survey team suggested that this site be given "valuable" status because of the rarity of these works and their generally good state of preservation.

Two large surveys were carried out on Department of Hawaiian Homes Lands to the south in Waiohuli and Keokea. The Bishop Museum conducted a survey of c. 800 acres in 1986. A total of 113 sites, composed of 252 features were located (Riford, October 1986). Additional work was recommended and has subsequently been carried out on portions of this land. PHRI conducted an extensive inventory survey of 1,025 acres in DHHL Keokea and Waiohuli subdivisions between 1,800-3,000 ft AMSL in early 1989. A total of 160 sites were identified—108 in Keokea, and 52 in Waiohuli *ahupua`a* to the south. The various site types included habitation and agricultural complexes, enclosures for possible precontact ceremonial uses, ranch-era animal containment features, and human burials (Brown and Haun, 1989).

Xamanek-Researches conducted three archaeological studies in close proximity to the current project area. In addition we also carried out an inventory survey and subsequent monitoring on a portion of land in the adjacent Ka`ono`ulu *ahupua`a* c. 4 km

to the southeast.⁸ The three nearest studies included two inventory surveys and a data recovery program—all *makai* (WSW) and across the Kula Highway from the study area.

The first study consisted of an inventory survey for the Kula Fire Station and Kula Recreation Center that essentially lies across the road (Kula Highway) from the subject parcel. This survey was carried out in 1991-1992 for the County of Maui. One site complex with 11 features was designated SIHP No 50-50-11-2899 (W. and D. Fredericksen, 1992). Most of these features consisted of rock walls for erosion control, animal containment, boundary markers, and several agricultural clear piles. One feature (#2) was further studied during a subsequent data recovery program. This feature, an ovoid rock mound, turned out to be a post-contact agricultural clear pile (W. and D. Fredericksen, 1993) Results from subsurface investigation suggested that all of the features were associated with the post-contact period, and included ranching and agricultural functions.

An inventory survey of an essentially adjacent 13.89 acre parcel, Lot 9 of Waiakoa Homesteads Subdivision, was carried out in 1993.⁹ A total of 15 sites (SIHP No 50-50-11-3700-3714) were encountered and subsequently documented during this survey (Fredericksen, et al., November 1993). These sites were composed of five rock alignments, two wall features, six modified bedrock outcrop enclosures, one rectangular enclosure (a corral), and one complex of agricultural terraces and enclosures. All of the walls were interpreted as post-contact features most likely associated with animal containment. The corral appeared to be a late 1800s-early 1900s feature. The modified outcrop features (circular and semi-circular features resembling "pocket gardens" similar to those described in Handy and Handy [1972, p. 131]) and agricultural terraces were interpreted as possible traditional Hawaiian sites.

Xamanek Researches carried out an inventory survey for the GTE Hawaiian Telephone Haleakala Fiber Optics Ductline Corridor in 1995 (Fredericksen, et al., 1996). This survey, which covered a c. 10 km long corridor from Haleakala (Science City) to Kula Highway identified four previously unidentified sites, two rock shelters and two agricultural complexes with associated habitation areas. The site closest to Kula Highway, Site 4135, consisted of a complex of traditional dry land agricultural terraces that appeared to have been modified and expanded for post-contact use. In addition, an historic house site was also noted within the survey corridor. Given the presence of several Chinese bottles (including opium bottles) it appears plausible that at least some of these terraces were used to grow Irish potatoes in the mid-1800s. Post-contact material culture remains were found to overlie precontact material culture remains in several test instances. Subsequent monitoring conducted later in 1996 revealed additional indigenous materials such as volcanic glass, lithic tool fragments, a probable coral abrader, and traditional food remains (Fredericksen, 1996).

⁸ The two projects in the nearby Ka'ono'ulu *ahupua'a* are included because they were located at a similar elevation and in a similar environmental setting.

⁹ This parcel is located across Calasa Road from the first study area.

Settlement Patterns

The study area lies in the region that Cordy (1977, p. 11) classifies as the "upland field zone" of settlement. He also notes that "Kula was not a political center on Maui; the ruler and high chiefs lived in other more productive lands (i.e., Hana, Lahaina, and Wailuku). This, at any one point in time in late prehistory...residents seem to have been commoners, with one resident low chief" (Ibid., p. 11). Finally, Cordy points out that temporary habitation sites are rare in agricultural fields because these locations were within easy walking distance to permanent habitation sites. Instead, temporary habitation areas consisted of small rock shelters or overhangs, or small surface structures such as C-shaped enclosures (Ibid., p. 11-12).

Expected Findings

Ranching and post-contact agricultural activities have impacted portions of the Kula area. It is noteworthy that the Irish potato boom in the mid-1800s brought about the adaptive reuse and/or expansion of traditional Hawaiian dry land field systems in this area. Based on our background research and the lack of Land Commission Awards in the general project area, the expected findings could include possible precontact dry land agricultural site remnants, and/or temporary habitation site remnants, possibly containing associated human burials. In addition, post-contact agricultural site remnants and/or house sites could be present. Finally, ranch-era sites could also be expected on the subject parcel.

FIELD METHODS

At the request of Kula Community Federal Credit Union, Xamanek Researches LLC, conducted an archaeological inventory survey on a 1.69-acre parcel between Kula Highway and the Lower Kula Road in Waiakoa *ahupua'a*, Makawao District, Island of Maui. Archaeological fieldwork was conducted by supervisory archaeologist Jonas Madeus, B.A., Hugh Coflin, B.A. and Erin Burry, B.A. The overall project was under the general guidance of Principal Archaeologist Erik Fredericksen, M.A. The fieldwork was conducted during May 25-29 and December 1-2, 2005.

The archaeological investigation consisted of a 100% of surface survey and the manual excavation of 16 shovel tests (STs) and one test unit (TU) [Figure 5]. The pedestrian inspection of the project area was accomplished through systematic sweeps oriented in a north/south direction at 5-10 m intervals. The survey began in the southwest corner of the project area and moved to the east. All encountered sites were recorded and documented with a written site description, site maps, and digital photographs.

Subsurface testing consisted of controlled excavation of sixteen 0.5 square meter shovel tests and the one square meter TU (see testing results). All excavated materials were sifted through a 1/8 inch wire mesh recovered portable remains were placed in plastic bags, labeled with the appropriate provenience information, and sent to the lab for analysis. Following the excavations, a representative test unit wall was hand scraped with a trowel to aid in recording the soil stratigraphy. The wall profile was mapped to scale and described using Munsell soil colors and US Soil Conservation Service terminology. The completed test units were then digitally photographed and backfilled.

RESULTS OF FIELDWORK

The Inventory Survey identified two new archaeological sites in the project area between the Lower Kula Road and the Kula Highway at the old Kula gym east of Kula Elementary School. The project area is roughly triangular in shape, and most of State Site 50-50-11-5800 is situated in the wider portion of this pie-shaped area; Site 50-50-11-5824 is located at the narrower portion of the parcel (Figure 5).

These newly identified sites consist of a complex and a single component site (Site 5800 contains 10 features, while Site 5824 is an historic building). The Site 5800 features include six features that are interpreted as possible precontact features, along with five that are thought to be post-contact ones (see Figure 5). The precontact features consist of a possible *ahupua'a* division/boundary rock wall and five agricultural terraces; and the post-contact features consist of a boundary rock wall, an historic habitation/utility terrace and two planting terraces.

The two rock walls bound the northern and southern boundaries of the subject parcel and the agricultural terraces extend from approximately 96 m west of the Old Kula Gymnasium (Site 5824) down to just above the Kula Highway—across from the Kula Elementary School. The sites are discussed below.

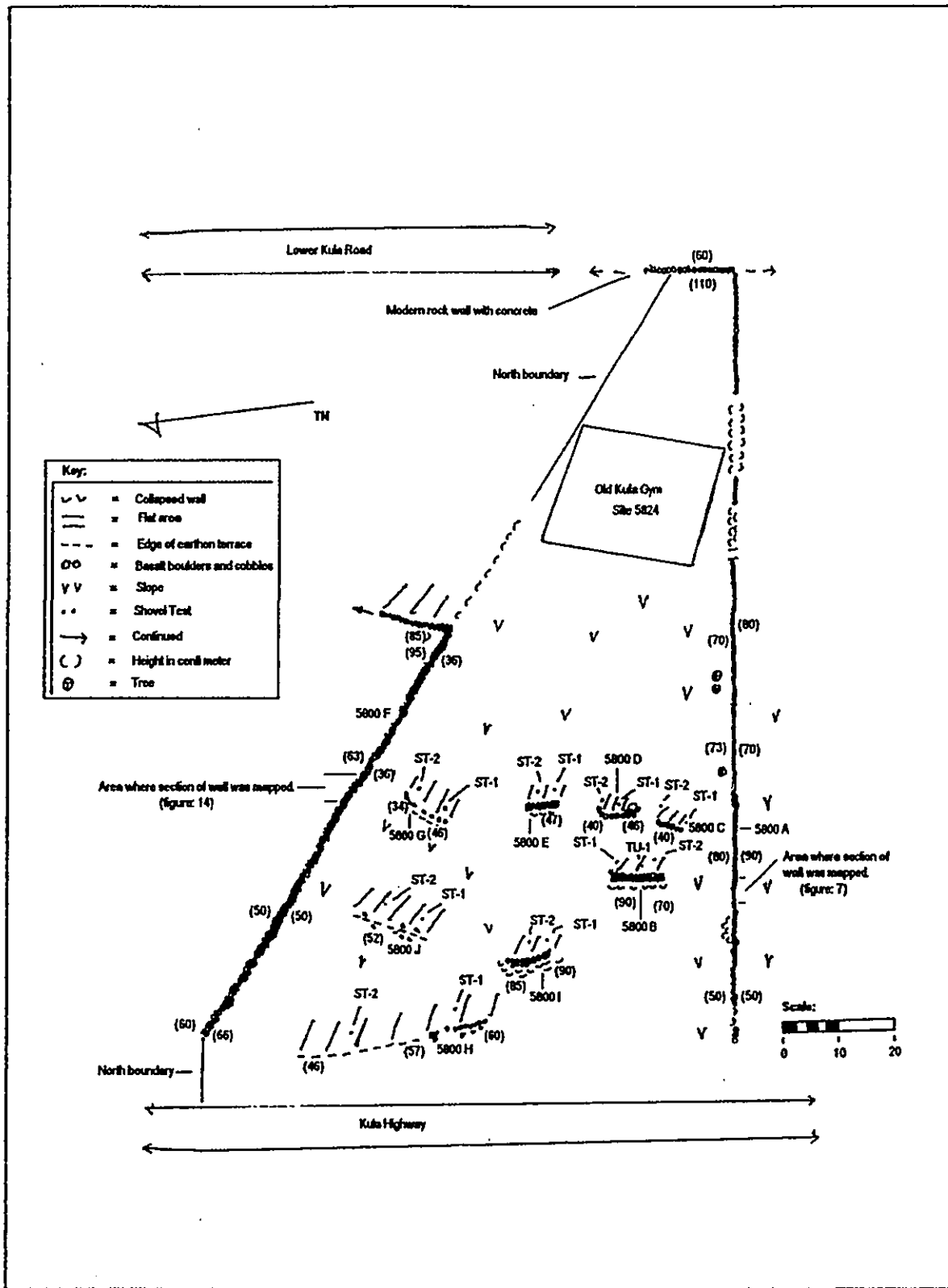


Figure 5. Plan view map of the project area with Site 5800, Features A through J, and Site 5824.

SITE: 50-50-11-5800
SITE TYPE: Rock walls, and terraces
FUNCTION: Boundary walls, agricultural terraces, and probable habitation
PROBABLE AGE; Pre-contact, and post-contact
TOTAL FEATURES: 10
DIMENSIONS: Feature: A 135 m in length by 1.2 m in width
Feature: B 11 m N/S by 3.5 m E/W
Feature: C 8.0 m NE/SW by 2.8 m NW/SE
Feature: D 7.6 m N/S by 3.0 m E/W
Feature: E 4.5 m NW/SE by 2.5 m NE/SW
Feature: F 96 m in length by 2.2 m in width
Feature: G 7.6 m N/S by 4.5 m E/W
Feature: H 40 m N/S by 7.5 m E/W
Feature: I 8.0 m N/S by 6.5 m E/W
Feature: J 12 m N/S by 3.5 m E/W

SIGNIFICANCE: Criterion "d"

DESCRIPTION: Site 50-50-11-5800 is a complex of probable precontact and post-contact boundary walls, agricultural terraces and a probable habitation terrace. This complex is made up of 10 features and it covers much of the project area.

Feature A of Site 5800 consists of a boundary wall that is located along the southern boundary of the subject parcel. This boundary wall runs approximately eight meters from the east side of Kula Highway toward the west side of Lower Kula Road. A hog wire fence, and chain link fence runs along the south edge of this rock wall. Feature A measures c. 135 m in length by 1.2 m in width. It is constructed from medium to small sub-angular basalt boulders and cobbles stacked one to six courses high to a maximum height of 0.95 m (Photograph 1, Figure 5, and Figure 6). The eastern segment of this wall has been impacted, possibly from the construction and landscaping of the adjacent buildings.

There were no indigenous or precontact artifacts observed on and around this feature, although there was a lot of historic refuse on the surface.



Photograph 1. Over view of a section of Feature A—Site 5800, view to the south

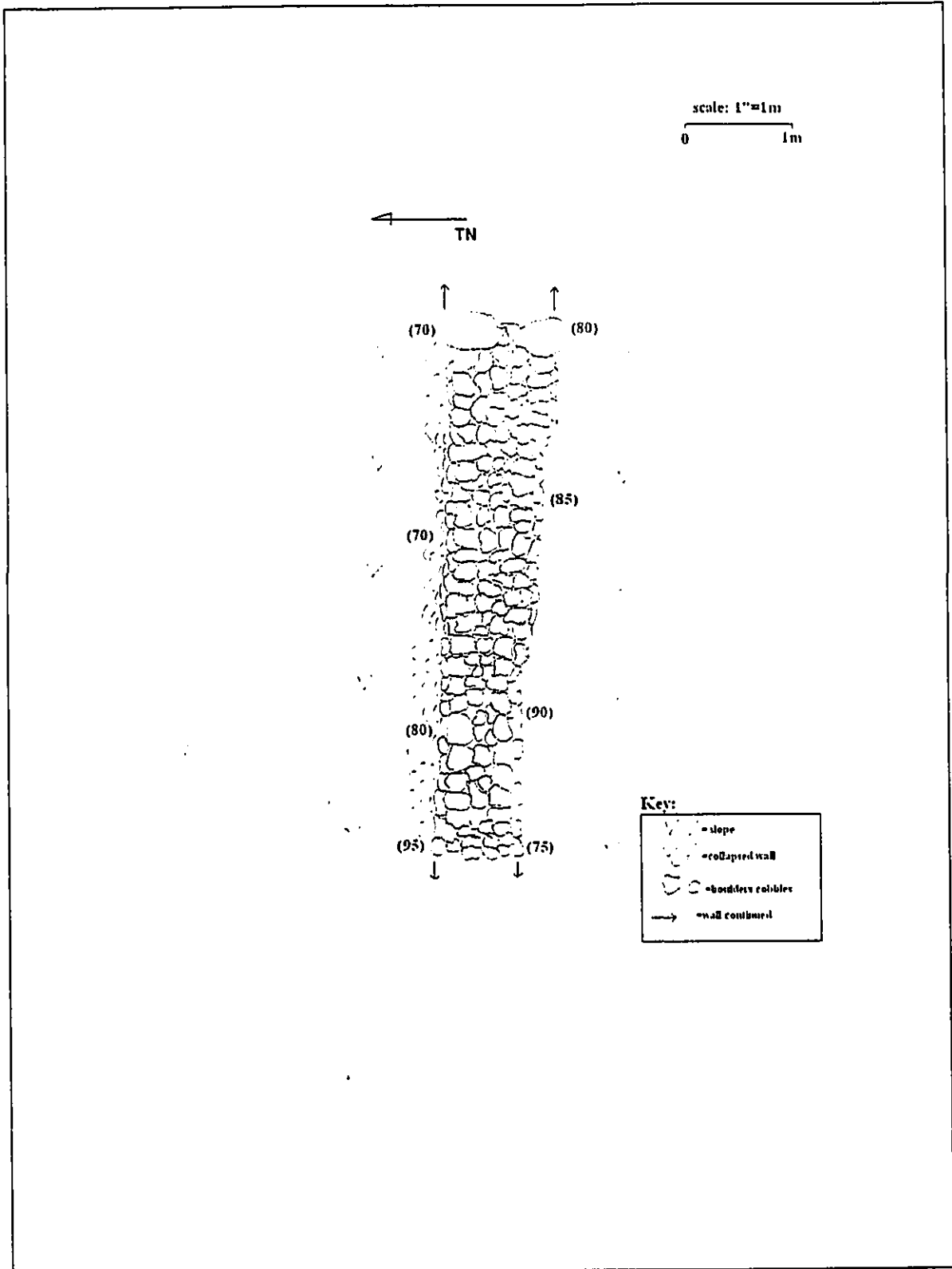


Figure 6. Plan view map of a Section of Site 5800, Feature A.

Feature B of Site 5800 is a terrace that is situated approximately 13 m north of Feature A and 6.5 m west of Feature C. This feature is rectangular in shape and measures 11.0 m N/S by 3.5 m E/W. The retaining wall of this terrace is partially collapsed although, the intact section is core filled and faced. It is constructed from medium to small sub-angular basalt boulders and cobbles stacked three to five courses high (Photograph 2 and Figure 7). The interior height of the retaining wall ranges from 0.3 to 0.54 m and the exterior height ranges from 0.5 m to 0.97 m. The interior of this terrace is flat and filled with soil and some small sub-angular basalt boulders and cobbles.

There were no indigenous Hawaiian cultural materials encountered during the recording of this feature.



Photograph 2. Over view Site 5800—Feature B, view to the northeast

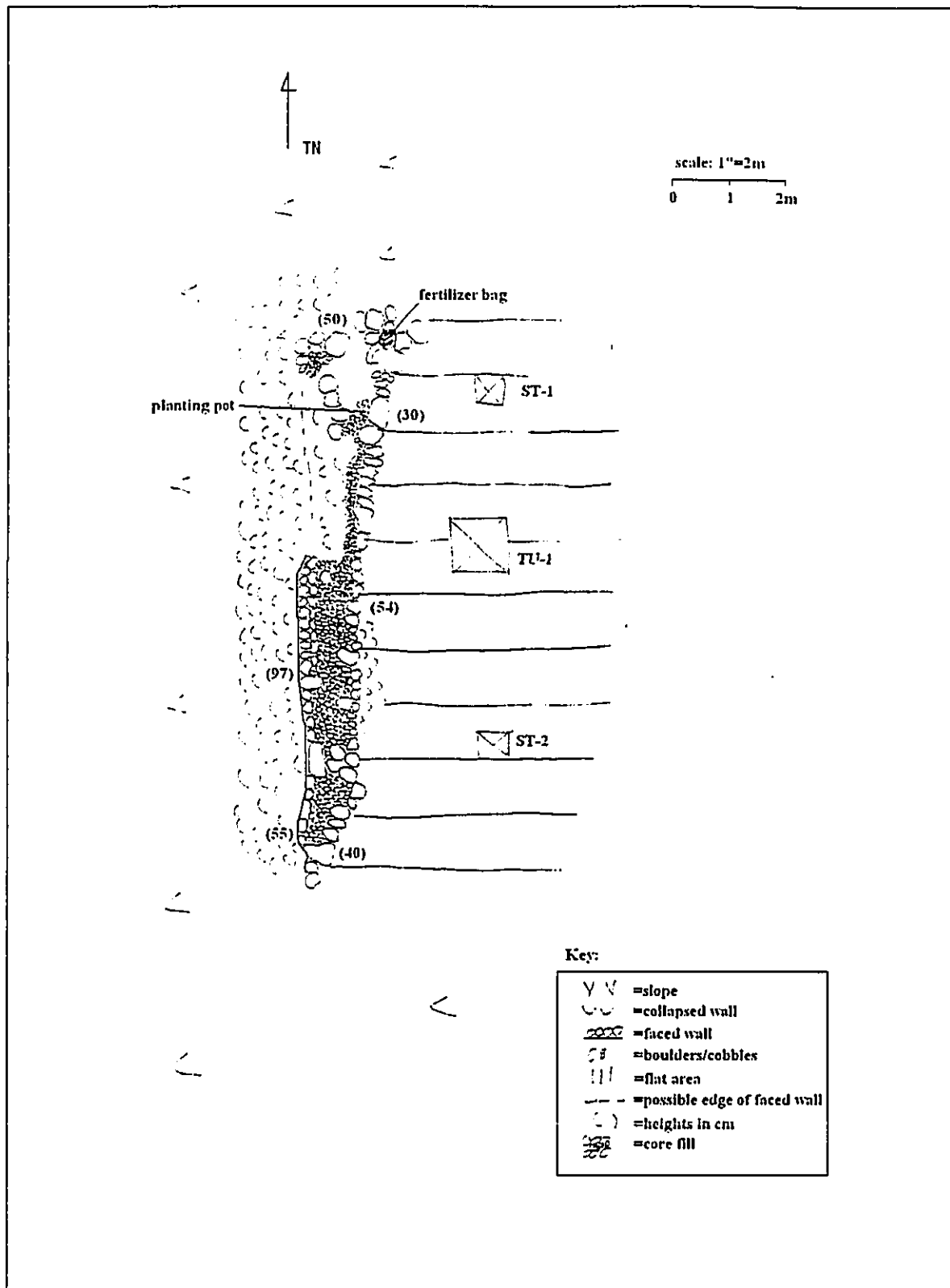


Figure 7. Plan view map of Site 5800, Feature B.

Test Results

A one meter square unit, TU-1, and two 0.5 m by 0.5m square STs were excavated at Site 5800, Feature B. The one meter square TU was placed and excavated in the middle of the structure to test for the presence/absence of cultural deposits, and ST-1 was placed and excavated on the northern end and ST-2 was on the southern end (Figure 7, Figure 8 and Figure 9).

Test Unit 1

The TU was excavated by stratigraphic layer to a final depth of 50 cmbs. There was only one layer present in this TU.

Layer I (0 to 50 cmbs) silty loam, 10YR3/2, very dark grayish brown; medium, weak, medium and single grain; loose, non-sticky and non-plastic consistency; contains five fragments of modern brown bottle glass.

These glass bottle fragments were collected from 0 through 20 cmbs, and this TU was terminated due to a 30 cm sterile level and the presence of weathered rock outcrop at c. 50 cmbs.

Shovel Test 1

Both STs also contained one stratigraphic layer and a thick layer of grass root. The top profile in figure 6 is the east wall of ST-1 and the one below is the east wall of ST-2.

Tuft/grass root layer (0 to 9 cmbs)

Layer I (9 to 39 cmbs) silty loam, 10YR3/2, very dark grayish brown; medium, weak, medium and single grain; loose, non-sticky and non-plastic consistency; smooth boundary; contains very small probable fragments of coral.

Shovel Test 2

Tuft/grass root layer (0 to 10 cmbs)

Layer I (10 to 49 cmbs) silty loam, 10YR3/2, very dark grayish brown; medium, weak, medium and single grain; loose, non-sticky and non-plastic consistency; smooth boundary; contains one fragment of modern clear glass bottle.

These STs were terminated after 25 cmbs of sterile soil was encountered prior to weathered rock outcrop.

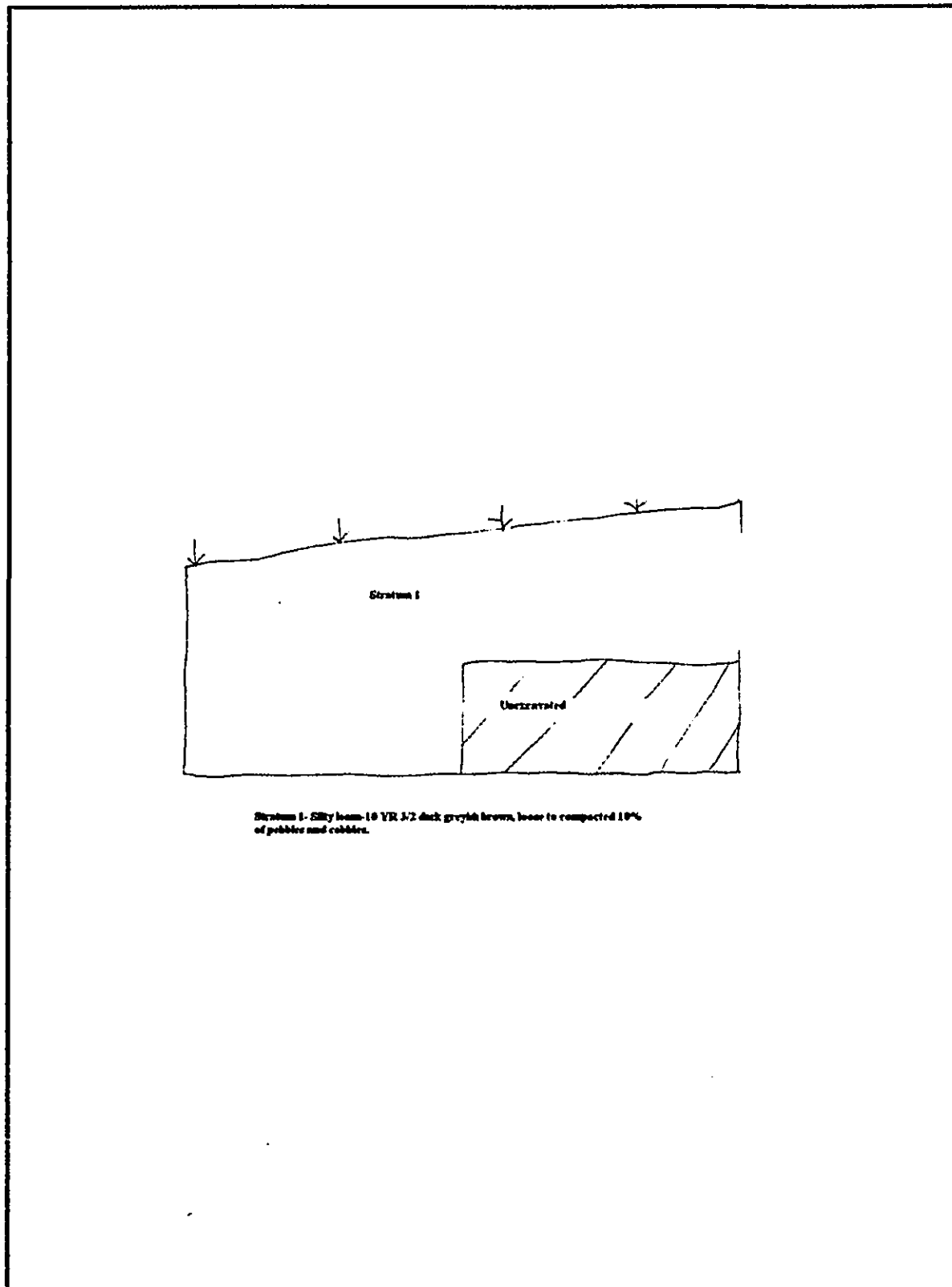


Figure 8. Profile of the north wall of TU-1, Site 5800, Feature B.

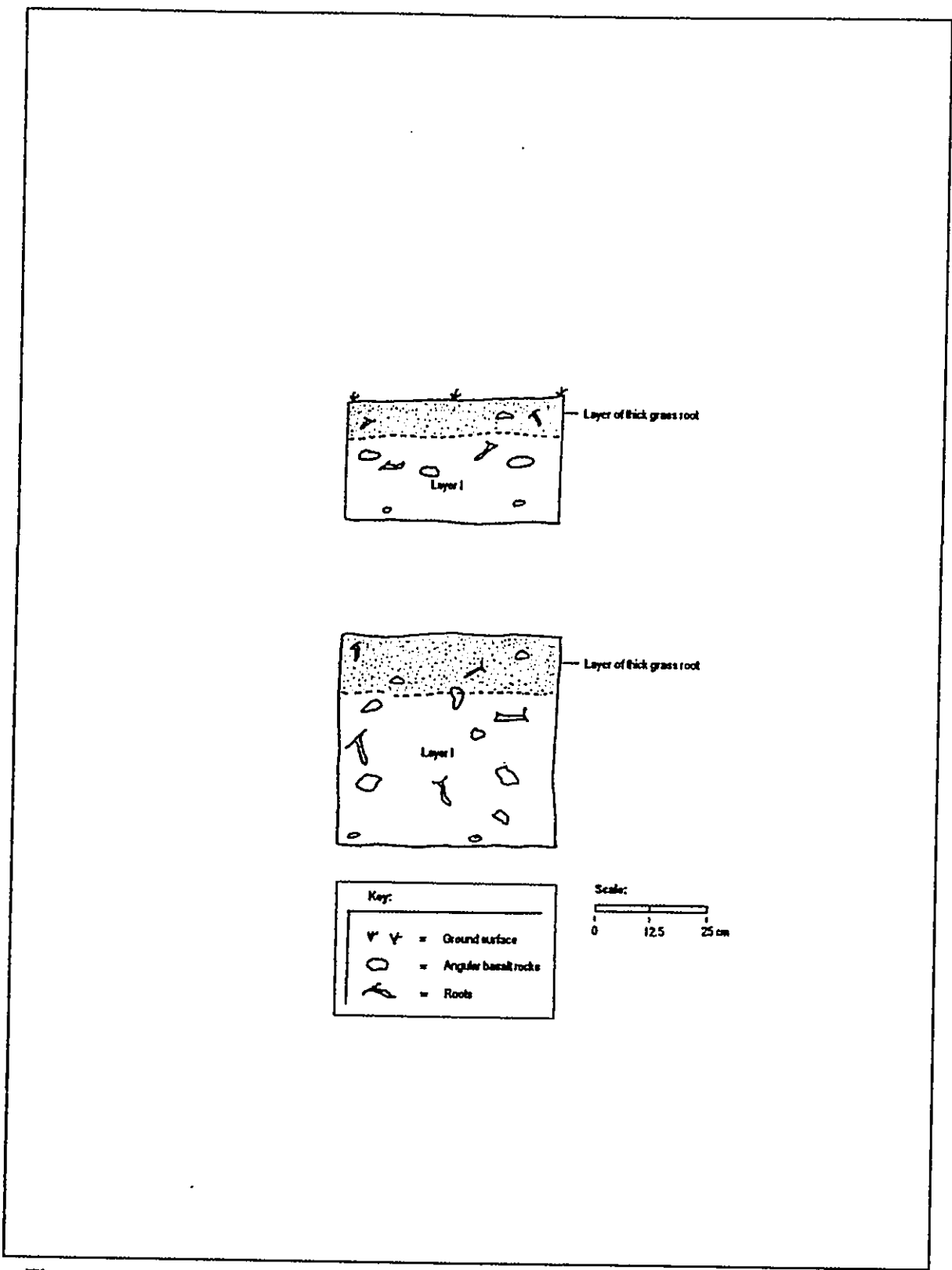


Figure 9. Profiles of the north and east walls of ST-1 (top) and 2 at Site 5800, Feature B.

Feature C of Site 5800 consists of a very crude and irregularly shaped terrace that is located approximately eight meters north of Feature A and four meters east of Feature B. Feature C measures 8.0 m NE/SW by 2.8 m NW/SE. The crude and irregular shape retaining wall is constructed from small to large sub-angular basalt boulders and cobbles stacked one to two courses high to a maximum height of 0.63 m. A four meters soil berm is extended out from the northeast end of the retaining wall (Photograph 3 and Figure 10). The interior of this terrace slopes slightly to the southwest. This feature is thought to be a probable historic planting bed because of its crude construction and the subsurface results.

There were no indigenous material culture remains observed on or around this feature during recordation.

Test Results

ST-1 and 2 were excavated on Site 5800, Feature C. ST-1 was situated on the southern end of this structure and ST-2 was at the northern end. These STs were excavated to test for the presence and absence of cultural deposits at this feature. The STs were excavated stratigraphically and there were two stratigraphic layers present in these STs (Figure 11). The top profile in figure 8 is the east wall of ST-1 and the one at the bottom is the east wall of ST-2. There were no photographs for ST-1 and 2 because the digital photographs were lost.

Shovel Test 1

Layer I (0 to 10 cmbs) silty loam, 10YR3/2, very dark grayish brown; medium, weak, medium and single grain; loose, non-sticky and non-plastic consistency; smooth boundary; contains one fragment of modern brown bottle glass.

Layer II (10 to 28 cmbs) silty clay, 10YR3/4, dark yellowish brown medium, slightly strong, medium and single grain; semi compacted to compacted, slightly sticky and slightly plastic consistency; smooth boundary; contains no cultural material.

Shovel Test 2

Layer I (0 to 15 cmbs) silty loam, 10YR3/2, very dark grayish brown; medium, weak, medium and single grain; loose, non-sticky and non-plastic consistency; smooth boundary; contains one fragment of modern clear bottle glass.

Layer II (15 to approximately 25 cmbs) silty clay, 10YR3/4, dark yellowish brown medium, slightly strong, medium and single grain; semi compacted to compacted, slightly sticky and slightly plastic consistency; smooth boundary; contains of no cultural material

These shovel tests were terminated after excavation through 10 to 18 cm of sterile soil and onto weathered rock outcrop.



Photograph 3. Overview of Site 5800, Feature C, view southwest.

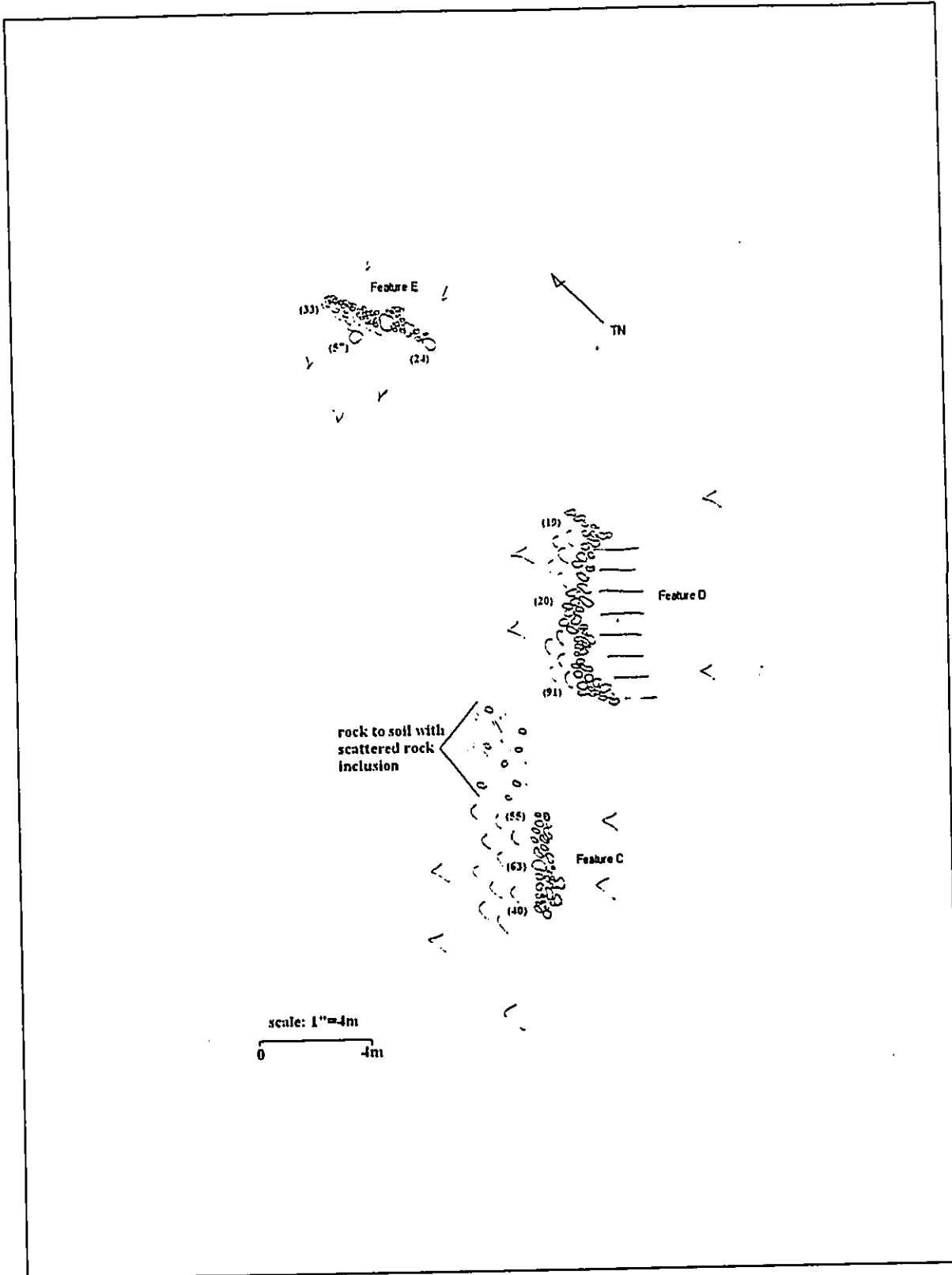


Figure 10. Plan view map of Site 5800, Features C through E.

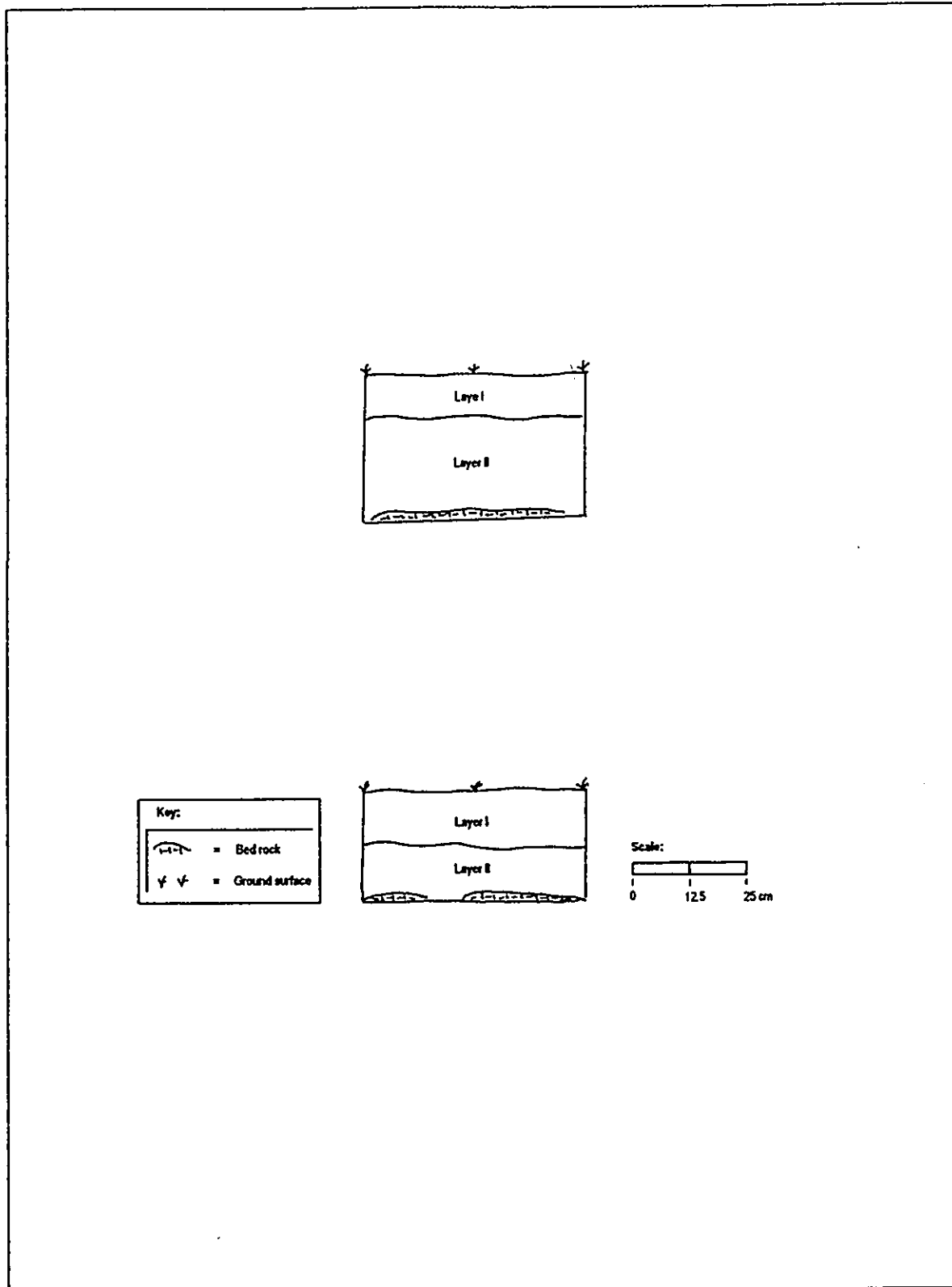


Figure 11. Profiles of the east walls of ST-1 and 2 at Site 5800, Feature C

Feature D of Site 5800 consists of a crude and crescent-shaped terrace that is located approximately three meters northeast of Feature C, and four meters south of Feature E. Feature D measures 7.6 m N/S by 3.0 m E/W and its retaining wall is constructed from small to large sub-angular basalt boulders stacked one to three courses high to a maximum height of 0.91 m (Photograph 4 and Figure 10). The interior of this terrace is flat and filled with mostly soil and very few of sub-angular basalt cobbles and small boulders. Based on subsurface results and the relatively rough construction of Feature D, it is tentatively interpreted as a post-contact planting area.

There were no indigenous artifacts observed on or around this feature during the inventory survey.

Test Results

ST-1 and 2 were excavated on Site 5800, Feature D. ST-1 was situated on the southern end of this structure and ST-2 was at the northern end. These STs were excavated to test for the presence and absence of cultural deposits at this feature. The STs were excavated stratigraphically and there were two stratigraphic layers present in these STs (Figure 12). The top profile in Figure 9 is the east wall of ST-1 and the one below is the east wall ST-1. There were no photographs for ST-1 and 2, because the digital photographs were lost.

Shovel Test 1

Layer I (0 to 15 cmbs) silty loam, 10YR3/2, very dark grayish brown; medium, weak, medium and single grain; loose, non-sticky and non-plastic consistency; smooth boundary; contains two small fragments of modern green glass bottle

Layer II (15 to 50 cmbs) silty clay, 10YR3/4, dark yellowish brown medium, slightly strong, medium and single grain; semi-compacted to compacted, slightly sticky and slightly plastic consistency; contains no cultural material

Shovel Test 2

Layer I (0 to 10 cmbs) silty loam, 10YR3/2, very dark grayish brown; medium, weak, medium and single grain; loose, non-sticky and non-plastic consistency; smooth boundary; contains nine fragments of brown and one fragment of clear modern glass bottle

Layer II (15 to 30 cmbs) silty clay, 10YR3/4, dark yellowish brown, medium, slightly strong, medium and single grain; semi compacted to compacted, slightly sticky and slightly plastic consistency; contains no cultural material

Both shovel tests were terminated after digging through 20 to 35 cm of sterile soil and encountering weathered parent material.



Photograph 4. Overview of Site 5800, Feature D, view to the northeast

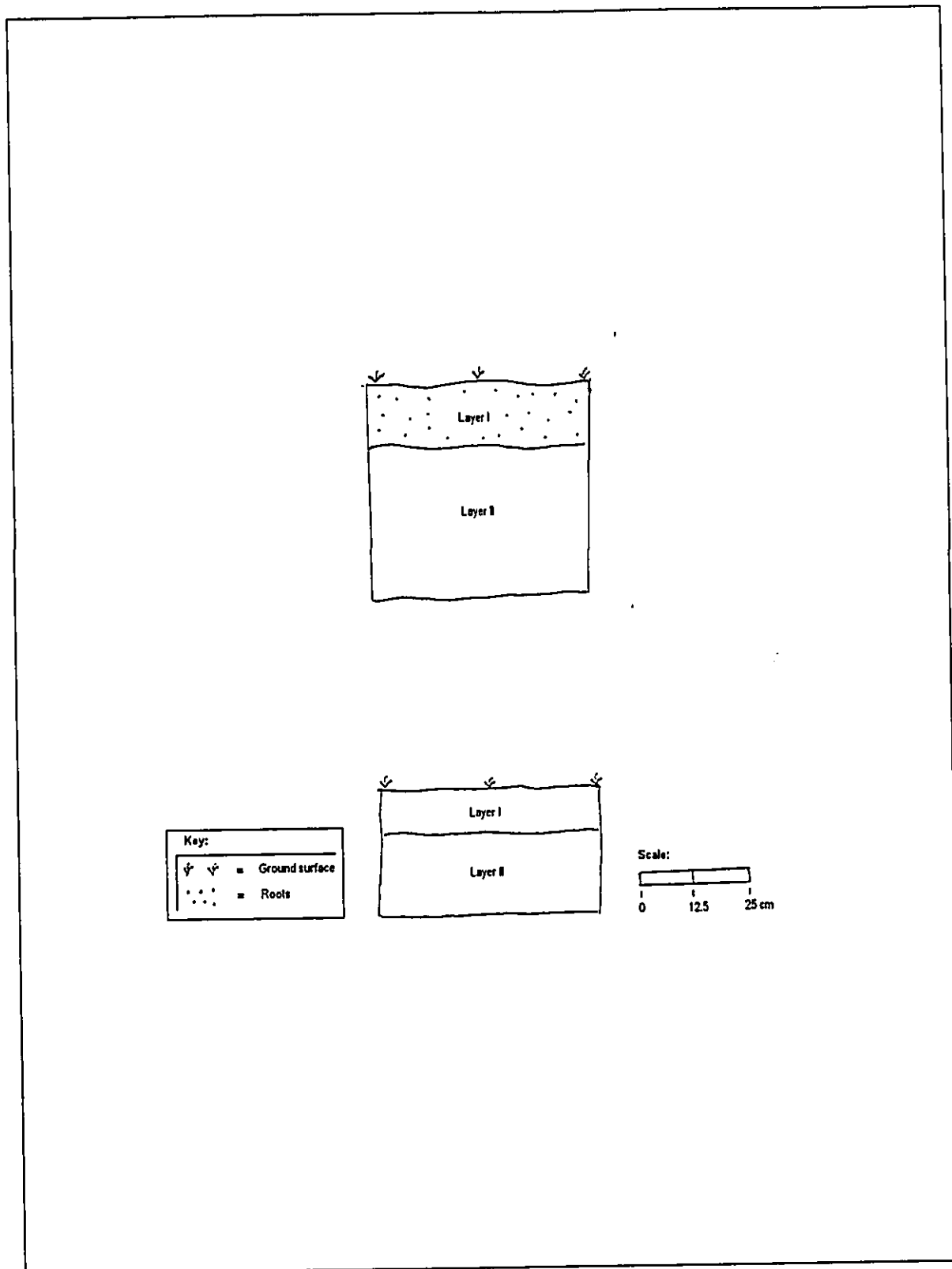


Figure 12. Profiles of the east walls of ST-1 and 2 at Site 5800, Feature D

Feature E of Site 5800 is a mostly collapsed, eroded, and rectangular-shaped terrace that is located approximately 7 m north of Feature D. Feature E measures 4.5 m NW/SE by 2.5 m NE/SW and its eroded retaining wall is constructed from small to medium angular basalt boulders and cobbles stacked one to three courses high to a maximum height of 0.57 m (Photograph 5 and Figure 10). The interior of this terrace is filled with mostly soil and a few of angular basalt cobbles, and it also slopes slightly to the west.

The stones used in the construction of the retaining walls of Features E through I are angular *a'a* boulders and cobbles.



Photograph 5. Overview of Site 5800, Feature E, view north

Test Results

ST-1 and 2 were excavated on Site 5800, Feature E. ST-1 was situated on the southern end of this structure and ST-2 was at the northern end. These STs were excavated to test for the presence and absence of cultural deposits at this feature. The STs were excavated stratigraphically and there were three soil layers present in these shovel tests (Figure 13). Profile on top of figure 10 is the east wall of ST-1 and the one below is the east wall of ST-2. There are no photographs of ST-1 and 2 because the digital photographs were lost.

Shovel Test 1

Layer I (0 to 10 cmbs) silty loam, 10YR3/2, very dark grayish brown; medium, weak, medium and single grain; loose, non-sticky and non-plastic consistency; smooth boundary; contains one small fragment of modern brown bottle glass.

Layer II (10 to 28 cmbs) silty clay, 10YR3/4, dark yellowish brown, medium, slightly strong, medium and single grain; semi compacted to compacted, slightly sticky and slightly plastic consistency; smooth boundary; contains no cultural material.

Layer III (28 to 33 cmbs) silty clay, 7.5YR3/2, dark brown, fine to medium, strong, medium and single grain, very compacted, sticky and plastic consistency, contains no cultural material

Shovel Test 2

Layer I (0 to 5 cmbs) silty loam, 10YR3/2, very dark grayish brown; medium, weak, medium and single grain; loose, non-sticky and non-plastic consistency; smooth boundary; contains three fragments of modern brown bottle glass.

Layer II (5 to 40 cmbs) silty, 10YR3/4, dark yellowish brown, medium, slightly strong, medium and single grain; semi compacted to compacted, slightly sticky and slightly plastic consistency; smooth boundary; contains no cultural material.

Layer III (40 to 45 cmbs) silty clay, 7.5YR3/2, dark brown, fine to medium, strong, medium and single grain, very compacted, sticky and plastic consistency, contains no cultural material

These shovel tests were terminated in sterile layers.

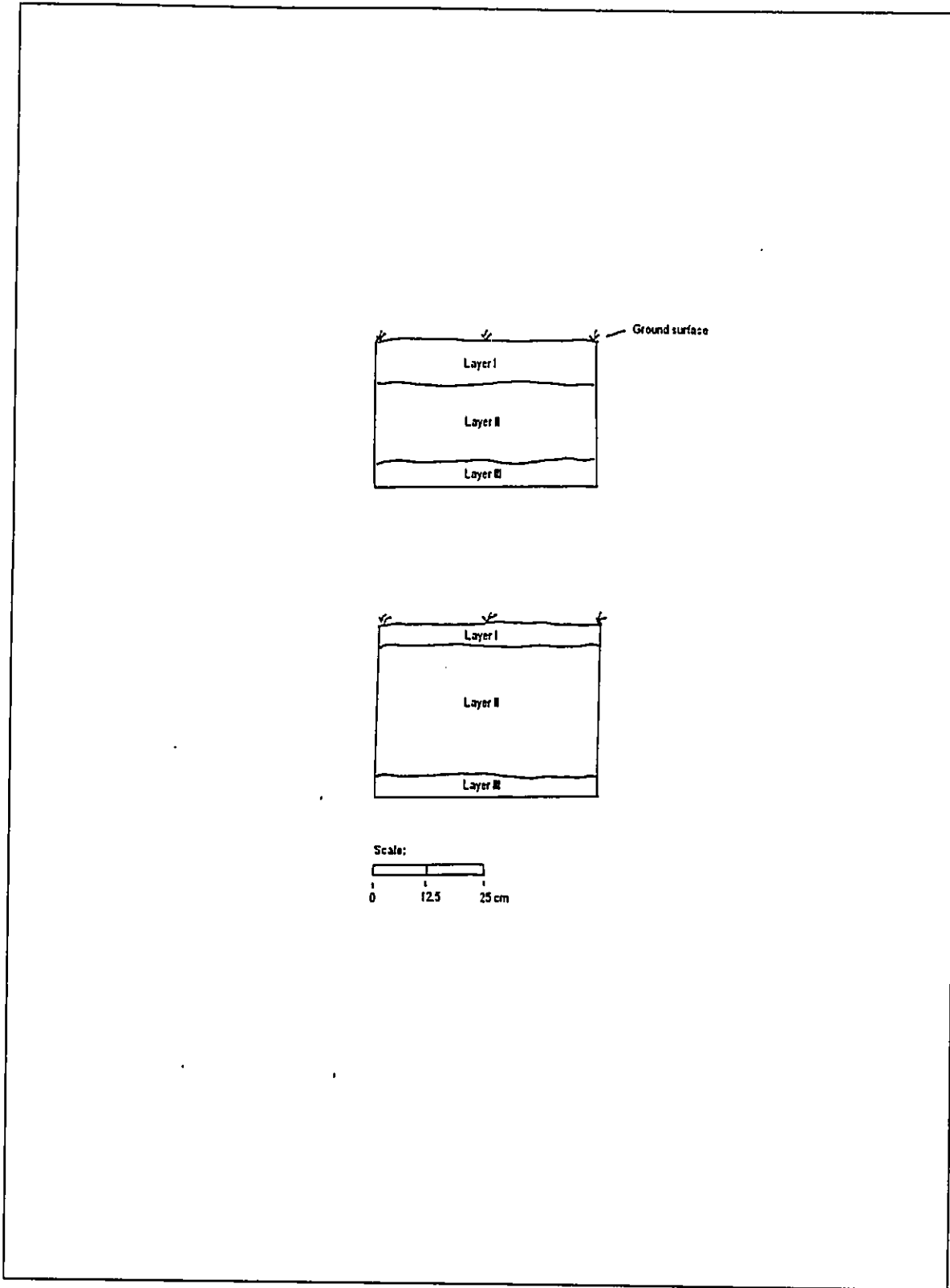
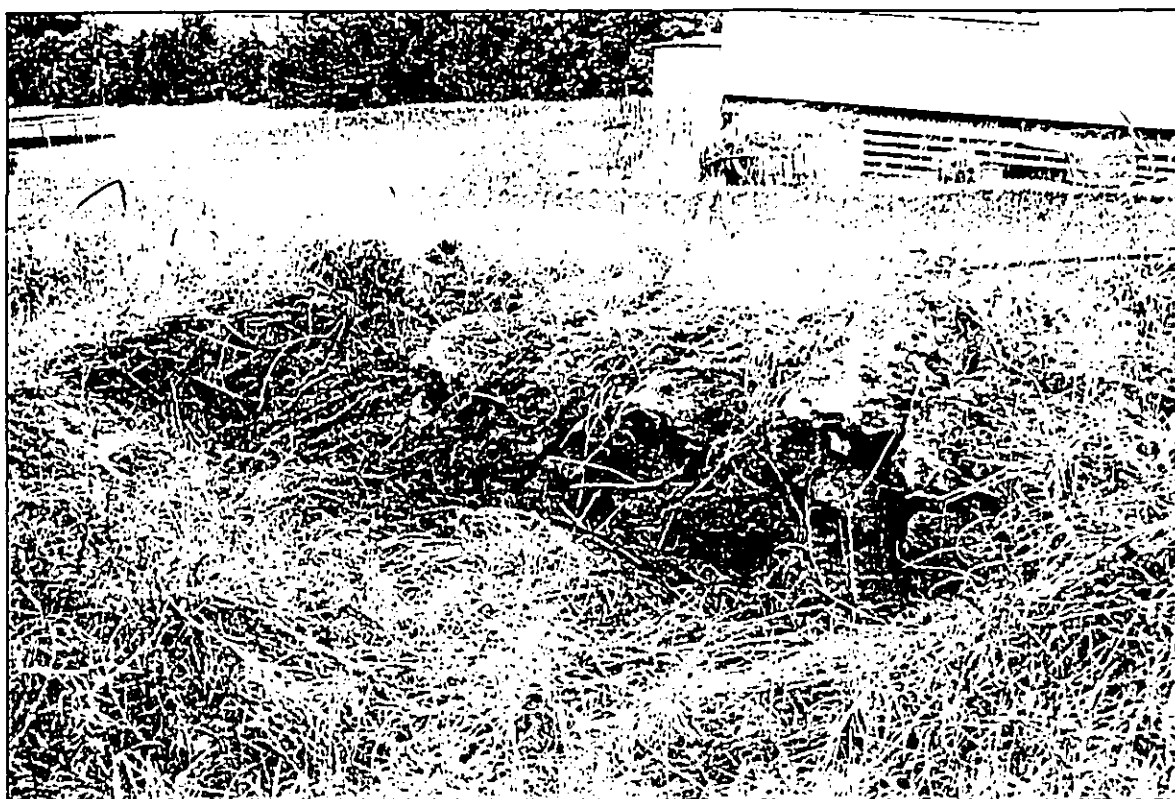


Figure 13. Profiles of the east walls of ST-1 (top) and ST-2 at Site 5800, Feature E

Feature F of Site 5800 consists of a linear rock wall that is located along the northern boundary of the project area. This rock wall lies along the boundary of Waiakoa and Kealaho *ahupua'a*. This feature runs northwest to southeast from just above Kula Highway along the northern boundary to the midpoint where it abuts a retaining wall on the adjacent property to the north. The linear boundary wall measures 96.0 m in length by 2.2 m in width. This structure is constructed from small to medium angular basalt boulders and cobbles stacked three to five courses high to a maximum height of 0.75 m. It well built, core filled and faced in sections on both sides (Photograph 6, Figure 5, and Figure 14). It appears that this rock wall has been modified possibly from the adjacent house just north of it, and there quantities of modern refuse along the top of the feature.



Photograph 6. Plan view of a section of Site 5800, Feature F, view to the north.

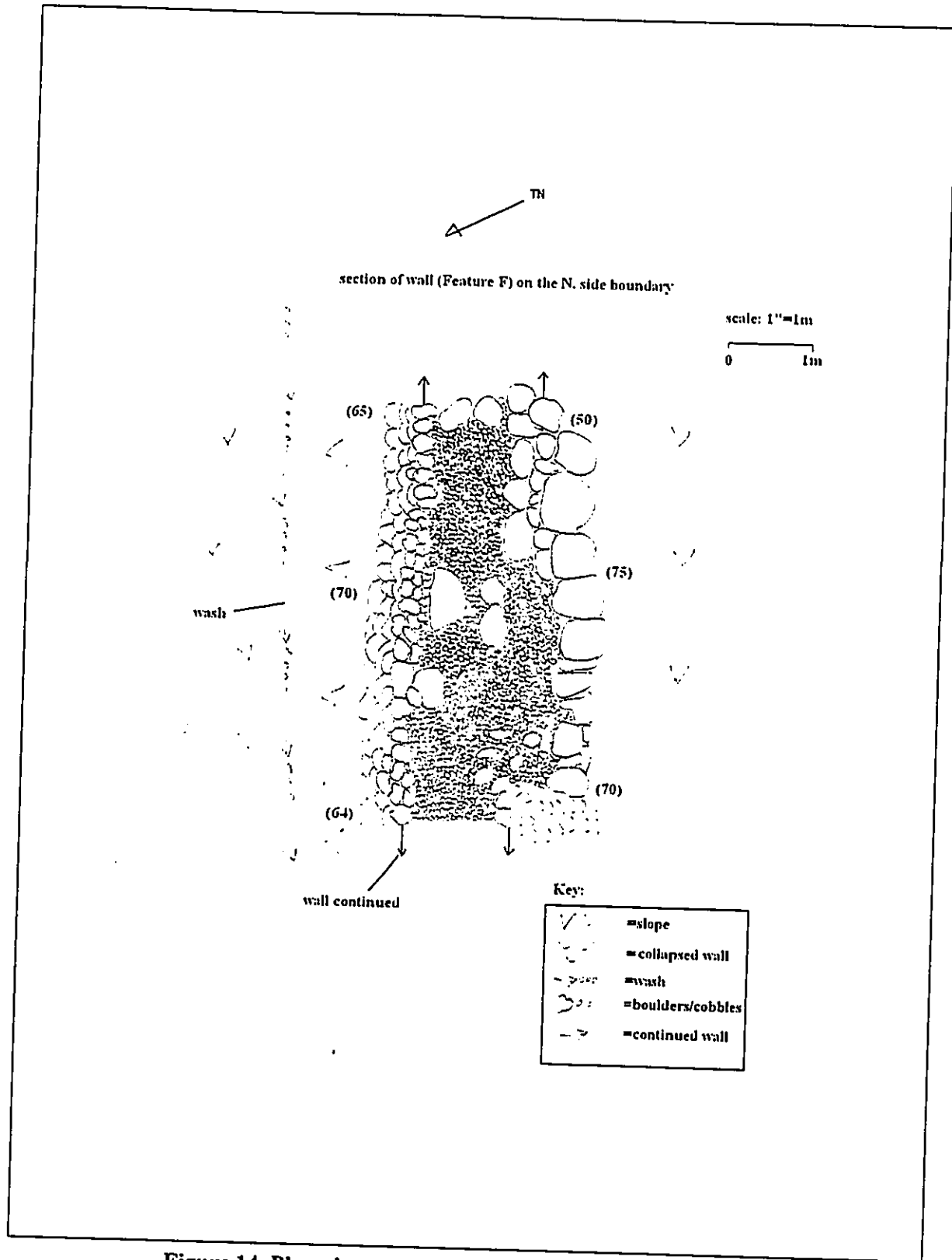


Figure 14. Plan view map of a section of Site 5800, Feature F

Feature G of State Site 5800 has been impacted. This agricultural terrace is partially collapsed, rectangular in shape and is situated approximately eight meters south of Feature F, and 10 meters southeast of Feature J. Feature G measures 7.6 m N/S by 4.5 m E/W. Most of its retaining wall is damaged, but about four meters of this feature is somewhat intact at the northern end. It is constructed from small to medium angular basalt boulders and cobbles stacked one to two courses high to a maximum height of 0.23 m (Photograph 7 and Figure 15). The interior of the terrace is flat and filled with mostly soil and a few boulders and cobbles. Some boulders on this feature exhibit possible heavy equipment scars.

Two shovel tests were excavated at this feature.



Photograph 7. Overview of Site 5800, Feature G, view to the southwest.

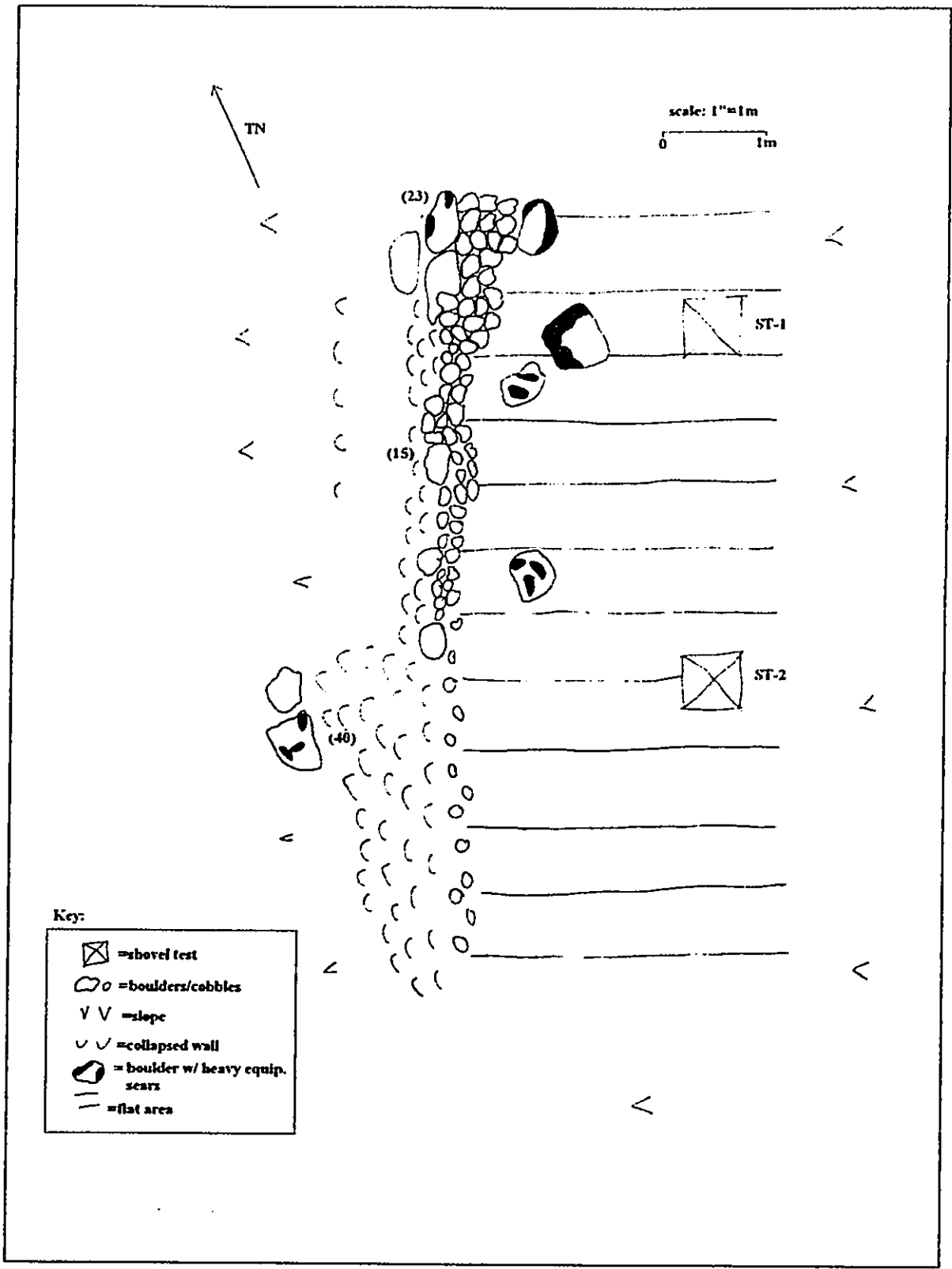


Figure 15. Plan view map of Site 5800, Feature G

Test Results

ST-1 and 2 were excavated at Site 5800, Feature G. ST-1 was situated at the northern end of this structure and ST-2 was located at the southern end. These tests were excavated in order to assess the presence/absence of cultural deposits at this feature. The shovel tests were excavated by stratigraphic layer and there were three strata present in these units (Figure 16). There are no photographs for ST-1 and 2 because the digital photographs (disc) were lost.

Shovel Test 1

Layer I (0 to 10 cmbs) silty loam, 10YR3/2, very dark grayish brown; medium, weak, medium and single grain; loose, non-sticky and non-plastic consistency; smooth boundary; contains modern glass bottle fragments.

Layer II (10 to 25 cmbs) silty clay, 10YR3/4, dark yellowish brown, medium, slightly strong, medium and single grain; semi compacted to compacted, slightly sticky and slightly plastic consistency; smooth boundary; contains fifteen fragments of modern brown bottle glass.

Layer III (25 to 32 cmbs) silty, 7.5YR3/2, dark brown, fine to medium, strong, medium and single grain, very compacted, sticky and plastic consistency, contains no cultural material

Shovel Test 2

Layer I (0 to 09 cmbs) silty loam, 10YR3/2, very dark grayish brown; medium, weak, medium and single grain; loose, non-sticky and non-plastic consistency; smooth boundary; contains one fragment of modern brown bottle glass.

Layer II (09 to 24 cmbs) silty clay, 10YR3/4, dark yellowish brown, medium, slightly strong, medium and single grain; semi compacted to compacted, slightly sticky and slightly plastic consistency; smooth boundary; contains no cultural material.

Layer III (24 to 39 cmbs) silty, 7.5YR3/2, dark brown, fine to medium, strong, medium and single grain, very compacted, sticky and plastic consistency, contains no cultural material

These shovel tests were terminated at weathered bedrock.

Feature H of Site 5800 is an earthen terrace located approximately 13 meters above and east of Kula Highway across from Kula Elementary School. Feature H measures 40.0 meters in length by 7.5 meters in width and it is rectangular in shape. Some angular basalt boulders and cobbles are scattered on the sloping face of the southern end of the earthen terrace. The height ranges from 0.35 to 0.5 m. There is a lower and flat area or old dirt road at the base of the sloping face of the earthen terrace (Photograph 8 and Figure 17). The interior of this terrace is flat and filled with mostly soil and a few angular boulders and cobbles.

Two shovel tests were excavated in this feature.

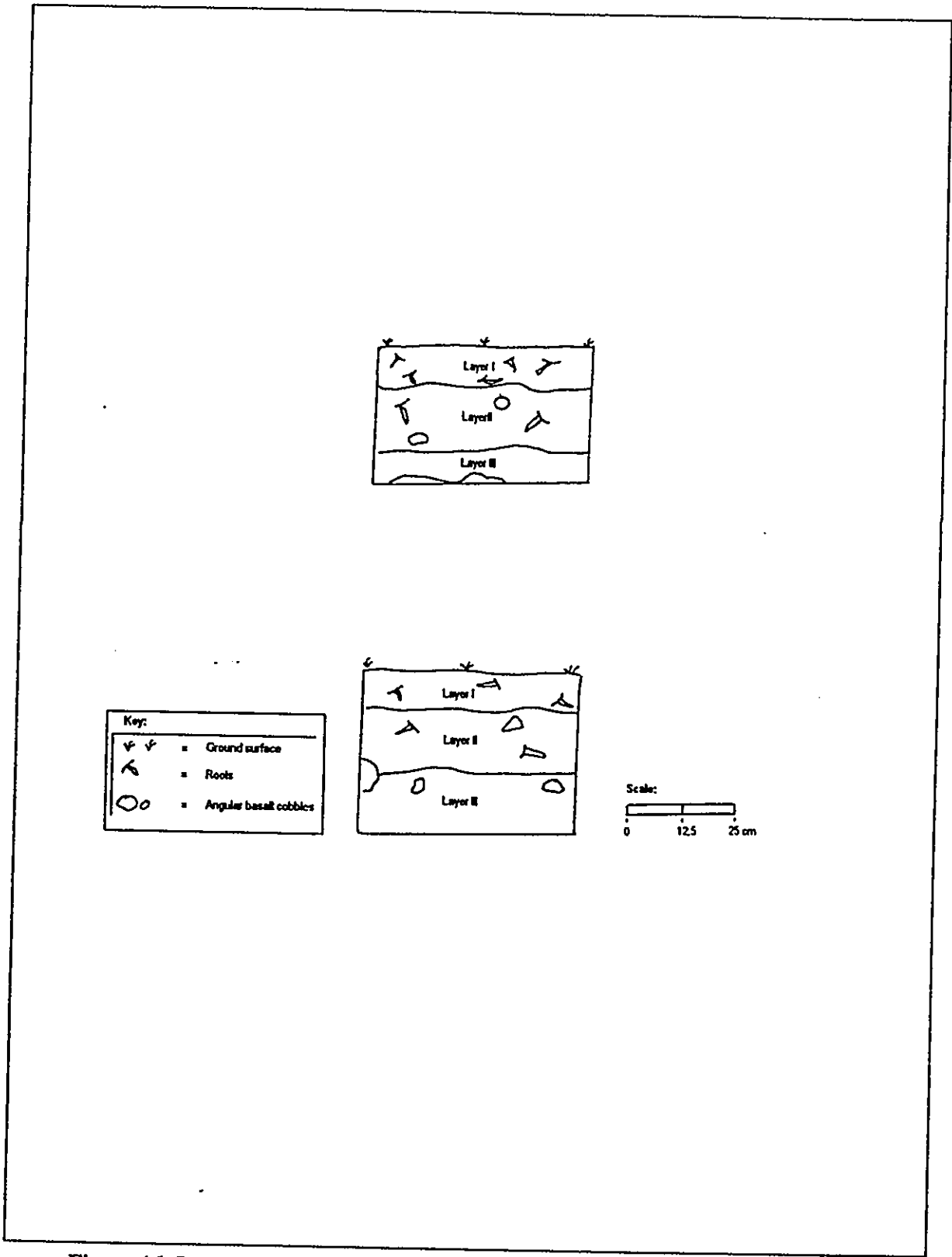


Figure 16. Profiles of ESE and NNE walls of ST-1 and 2 at Site 5800, Feature G



Photograph 8. Overview of Site 5800, Feature H, view to the south

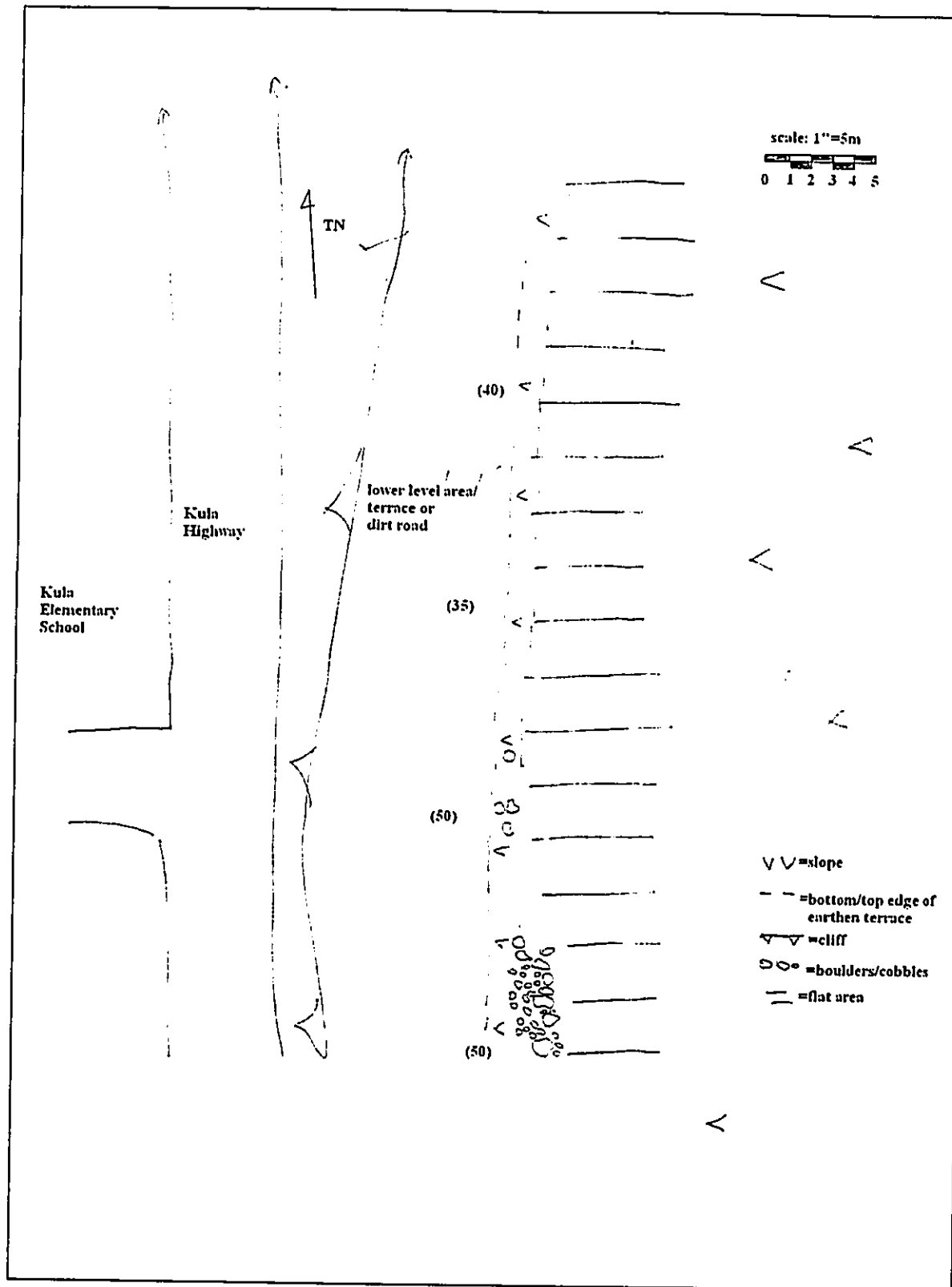


Figure 17. Plan view map of Site 5800, Feature H.

Test Results

ST-1 and 2 were excavated at Site 5800, Feature H. ST-1 was situated on the southern end of this structure and ST-2 was at the northern end. These STs were excavated to test for the presence and absence of cultural deposits at this feature. The STs were excavated by stratigraphic layer and there were four layers present in these STs (Figure 18). Profile on top of figure 15 is the east wall of ST-1 and the one at the bottom is the east wall of ST-2. There were no photos for ST-1 and 2 because the photographs were lost.

Shovel Test 1

Layer I (0 to 08 cmbs) silty loam, 10YR3/2, very dark grayish brown; medium, weak, medium and single grain; loose, non-sticky and non-plastic consistency; smooth boundary; contains one fragment of modern clear glass bottle

Layer II (08 to 16 cmbs) silty clay, 10YR3/4, dark yellowish brown, medium, slightly strong, medium and single grain; semi compact to compact, slightly sticky and slightly plastic consistency; smooth boundary; contains very small amount of charcoal flakes

Layer III (16 to 23 cmbs) silt, 7.5YR3/2, dark brown, fine to medium, strong, medium and single grain, very compacted, slightly sticky and slightly plastic consistency, smooth boundary, contains no cultural material

Layer IV (23 to 34) 7.5YR3/2 silt, dark brown, fine, strong, fine and single grain, very compacted, slightly stick and slightly plastic, contains no cultural material

Shovel Test 2

Layer I (0 to 11 cmbs) silty loam, 10YR3/2, very dark grayish brown; medium, weak, medium and single grain; loose, non-sticky and non-plastic consistency; smooth boundary; contains one fragment of a hard and white plastic

Layer II (11 to 23 cmbs) silty clay, 10YR3/4, dark yellowish brown, medium, slightly strong, medium and single grain; semi compacted to compacted, slightly sticky and slightly plastic consistency; smooth boundary; contains no cultural material

Layer III (23 to 31 cmbs) silt, 7.5YR3/2, dark brown, fine to medium, strong, medium and single grain, very compacted, slightly sticky and slightly plastic consistency, smooth boundary, contains no cultural material

Layer IV (31 to 36) 7.5YR3/2 silt, dark brown, fine, strong, fine and single grain, very compacted, slightly stick and slightly plastic, contains no cultural material

These shovel tests were terminated after excavation into two layers of sterile soil.

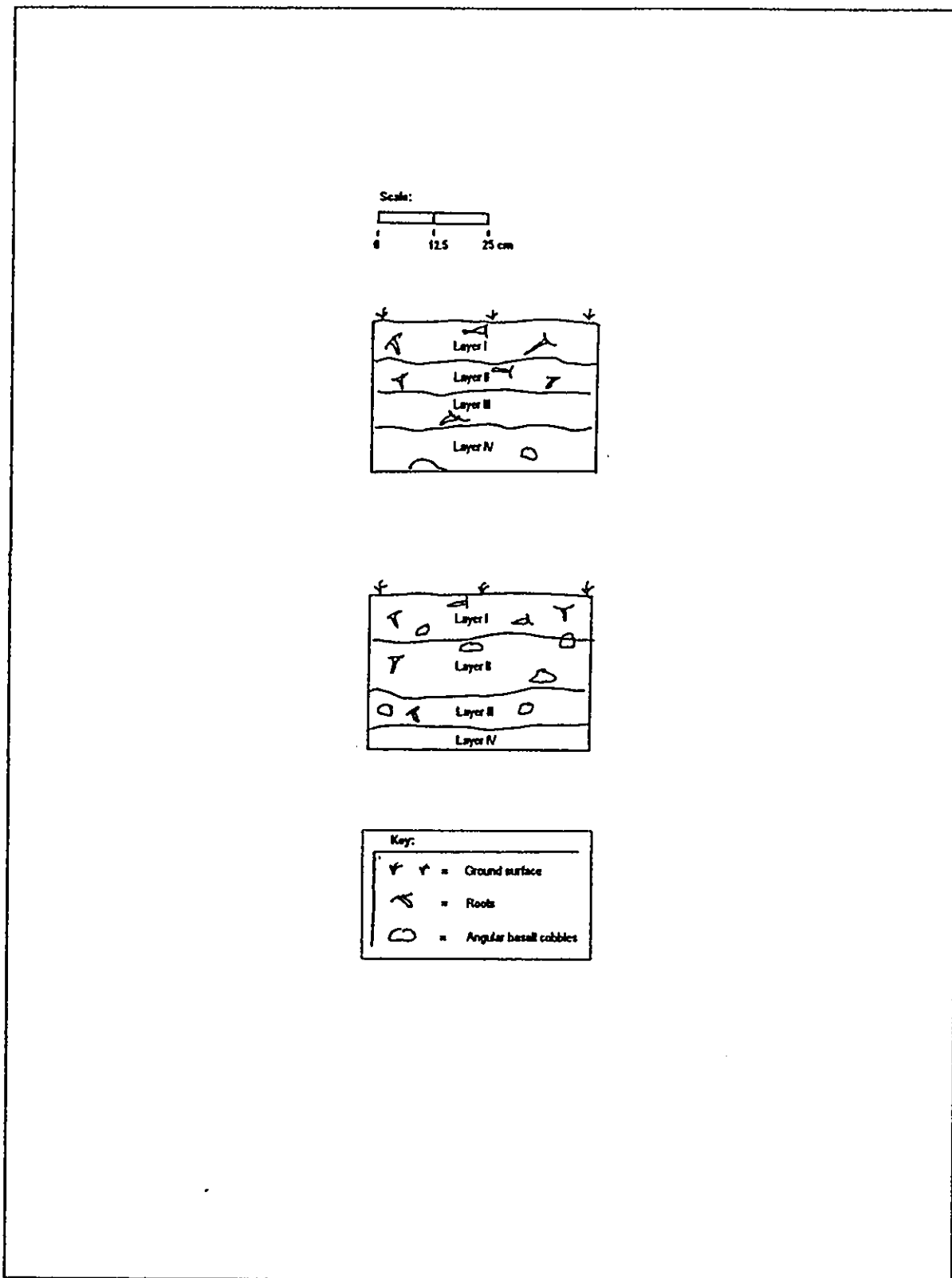


Figure 18. Profiles of the east walls of ST-1 and 2 at Site 5800, Feature H

Feature I of Site 5800 consists of a collapsed agricultural terrace that is located approximately 8 m southeast of Feature H, and 18 meters east of Kula Highway. Feature I measures 8.0 m N/S by 6.5 m E/W and it is rectangular in shape. This feature has a mostly collapsed retaining wall, and the semi-intact section is constructed from small to medium angular basalt boulders and cobbles stacked three to five courses high to a maximum height of 1.56 m (Photograph 9 and Figure 19). The interior of this terrace is flat and filled with mostly soil and some angular boulders and cobbles.

Two shovel tests were utilized to assess this feature.



Photograph 9. Overview of Site 5800, Feature I, view to the southeast

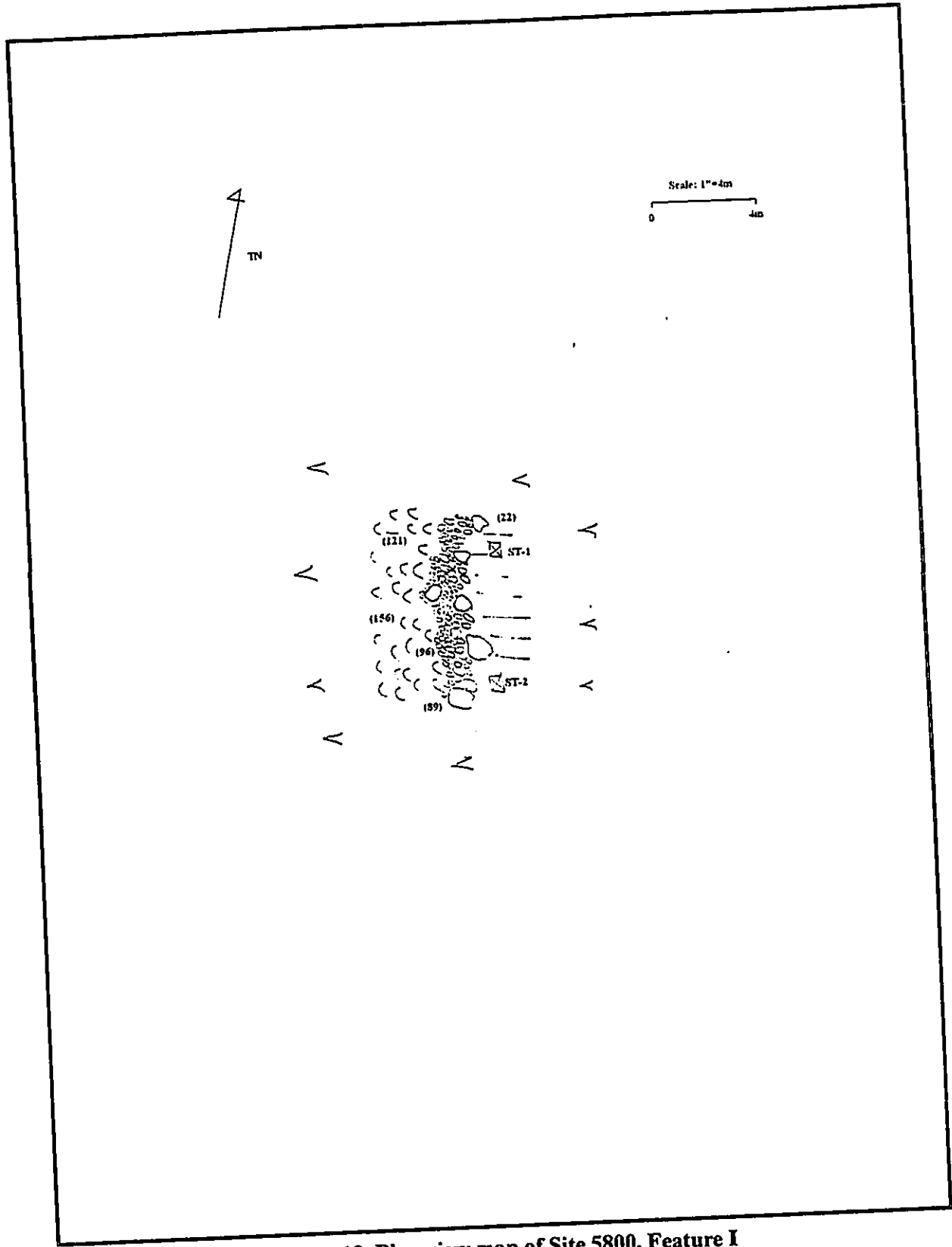


Figure 19. Plan view map of Site 5800, Feature I

Test Results

ST-1 and 2 were used to assess Site 5800, Feature I. ST-1 was situated on the southern end of this structure and ST-2 was at the northern end. These tests were excavated to sample subsurface conditions at this feature (Figure 20). The STs were excavated stratigraphically and there were three stratigraphic layers present in these tests. The profile at the top of figure 13 is of the north wall of ST-1 and below is the east wall of ST-2. There were no photographs for ST-1 and 2 because they were lost.

Shovel Test 1

Layer I (0 to 05 cmbs) silty loam, 10YR3/2, very dark grayish brown; medium, weak, medium and single grain; loose, non-sticky and non-plastic consistency; smooth boundary; contains no cultural material.

Layer II (05 to 50 cmbs) silty clay, 10YR3/4, dark yellowish brown, medium, slightly strong, medium and single grain; semi-compact to compact, slightly sticky and slightly plastic consistency; smooth boundary; contains animal bones (with saw cuts), one steel bolt, and charcoal.

Layer III (50 to 75 cmbs) silt, 10YR4/4, dark yellowish brown, fine to medium, weak, medium and single grain, loose to semi-compacted, slightly sticky and slightly plastic consistency, smooth boundary, contains no cultural material.

Shovel Test 2

Layer I (0 to 10 cmbs) silty loam, 10YR3/2, very dark grayish brown; medium, weak, medium and single grain; loose, non-sticky and non-plastic consistency; smooth boundary; contains no cultural material.

Layer II (10 to 30 cmbs) silty clay, 10YR3/4, dark yellowish brown, medium, slightly strong, medium and single grain; semi-compact to compact, slightly sticky and slightly plastic consistency; smooth boundary; contains no cultural material.

Layer III (30 to 50 cmbs) silt, 10YR4/4, dark yellowish brown, fine to medium, weak, medium and single grain, loose to semi-compacted, slightly sticky and slightly plastic consistency, smooth boundary, sterile.

These tests were halted after excavation into one to three layers of sterile soil and when weathered rock outcrop was encountered.

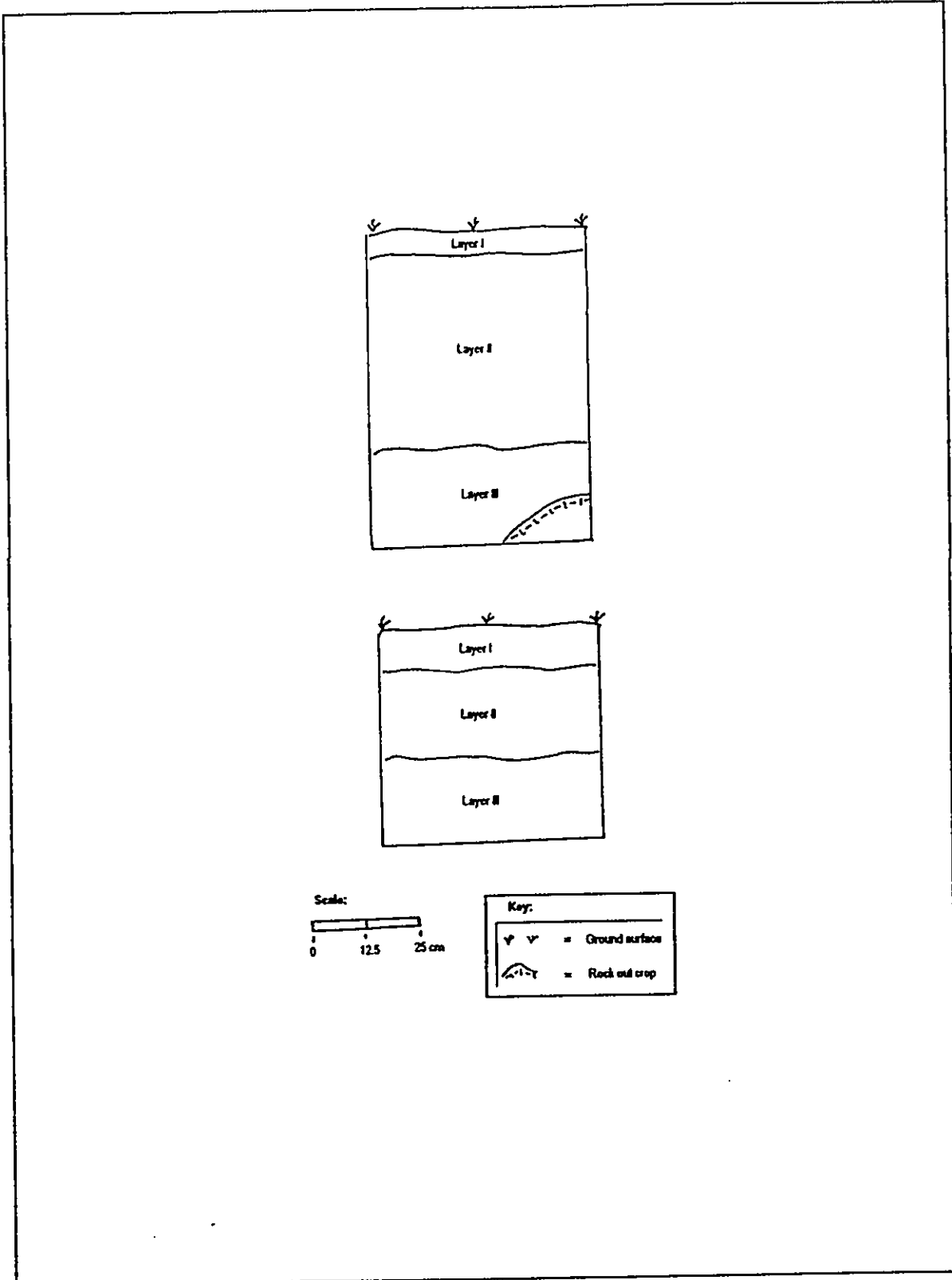


Figure 20. Profiles of the N and E walls of ST-1 and 2 at Site 5800, Feature L.

Feature J of Site 5800 consists of an earthen terrace that is situated adjacent to the southern side of Feature F, and between Features G and H. Feature J measures 12 meters in length by 3.5 m in width and it is rectangular in shape. Some angular basalt boulders and cobbles are scattered along the sloping face of the earthen terrace. The height of this terrace ranges from 0.4 to 0.6 m (Photograph 10). The interior of this structure is flat and filled with soil.

There were two shovel tests excavated at this feature.



Photograph 10. Overview of Site 5800, Feature J, view to the north.

Test Results

ST-1 and 2 were excavated at Site 5800, Feature J. ST-1 was situated on the southern end of this structure and ST-2 was at the northern end. These STs were utilized to assess the presence/absence of cultural deposits at this feature. The tests were excavated stratigraphically and there were two layers present in these units (Figure 21). Profile at the top of figure 18 is of the east wall of ST-1 and the one below is the east wall of ST-2. There were no photos for ST-1 and 2 because the photos were lost.

Shovel Test 1

Layer I (0 to 05 cmbs) silty loam, 10YR3/2, very dark grayish brown; medium, weak, medium and single grain; loose, non-sticky and non-plastic consistency; smooth boundary; contained a piece of clear glass bottle fragment, and six pieces of volcanic glass flakes (unworked) and nodules.

Layer II (05 to 30 cmbs) silty clay, 10YR4/3, brown, slightly strong, fine and single grain, slightly strong, loose to semi compact, slightly sticky and slightly plastic consistency; smooth boundary; contains no cultural material.

Layer III (30 to 55 cmbs) silt, 10YR4/4, dark yellowish brown, slightly strong, fine and single grain, slightly strong, loose to semi compact, slightly sticky and slightly plastic consistency; smooth boundary; contains no cultural material.

Shovel Test 2

Layer I (0 to 7 cmbs) silty loam, 10YR3/2, very dark grayish brown; medium, weak, medium and single grain; loose, non-sticky and non-plastic consistency; smooth boundary; contains one fragment of clear modern glass bottle.

Layer II (7 to 25 cmbs) silty clay, 10YR4/3, brown, slightly strong, fine and single grain, slightly strong, loose to semi compact, slightly sticky and slightly plastic consistency; smooth boundary; contains six pieces of volcanic glass flakes (unworked) and nodules.

Layer III (25 to 45 cmbs) silt, 10YR4/4, dark yellowish brown, slightly strong, fine and single grain, slightly strong, loose to semi compact, slightly sticky and slightly plastic consistency; smooth boundary; contains no cultural material.

Layer IV (45 to 56 cmbs) silty clay, 7.5YR3/2, dark brown, fine, slightly strong, fine and single grain, semi compacted, slightly sticky and slightly plastic consistency, contains no cultural material.

These tests were terminated after excavation into two sterile layers of soil.

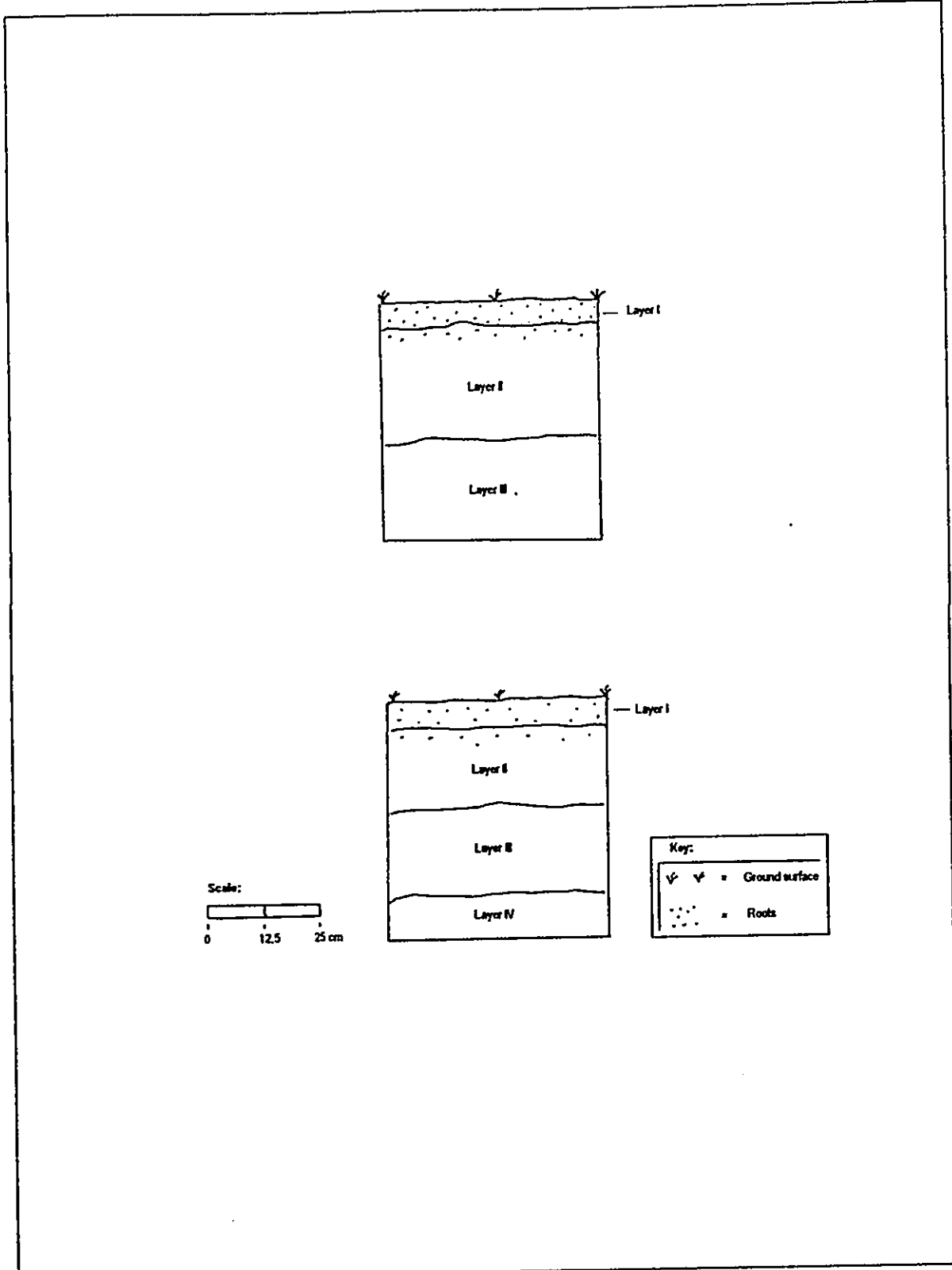


Figure 21. Profiles of the east walls of ST-1 and ST-2 at Site 5800, Feature J.

SITE: 50-50-11-5824
SITE TYPE: Building structure
FUNCTION: Community hall
PROBABLE AGE; Post-contact
TOTAL FEATURES: 1
DIMENSIONS: 28.8 m in length by 21.5 m in width
SIGNIFICANCE: Criterion "d"

DESCRIPTION: Site 5824 consists of the Old Kula Gymnasium, which is located at the eastern portion of the subject property adjacent to the Lower Kula Road. This building measures 28.8 m N/S by 21.5 m E/W and it is rectangular in shape. The eastern edge of this structure sits on the higher elevation of a slope and the majority of it sits on posts in order to be leveled to the angle of the slope. This building is made out of milled lumber and corrugated tin roofing. The roof of this gymnasium has a central peak and sloping sides. The central peak of the roof is more than 11.0 m high from the ground surface. The interior flooring is made out of wood. There are sliding glass windows at the mid point along the eastern and northern walls of the structure. There are two entrances into this building, one is on the eastern side and the other one is located in the northern wall. There is an open space right below the extension of the roof beyond the eastern wall. This space is enclosed by wire mesh (Photograph 11 and Photograph 12). The integrity of this structure is poor to fair, because it appears to have partially burned in the past and it has been subsequently refurbished. The wooden pillars and other supports for the wooden floor are charred—presumably from a fire as mentioned above.

The land for the structure was donated by Mrs. Violet (Atherton) Harris in May of 1936 (*The Maui News*; 5/23/36 1:8). Kula Community members then came together the following year to help construct the building (*The Maui News*, 11/24/37 1:2). The Waiakoa-Kula Community Association was subsequently formed, in order to complete the Kula Community Center (AKA as the Violet Harris Atherton Community Center and the Old Kula Gymnasium) in 1939 (*The Maui News*, 03/22/39:4).

Mr. Elmer F. Cravalho, former Mayor of Maui County, life-long resident of Kula, and Chairman of the Kula Community Federal Credit Union recalls that Site 5824 is approximately 65 to 70 years old (personal communication with Mr. Elmer Cravalho, February 2006). Project plans call for the preservation of this community-oriented structure, which has been used by generations of Kula residents for various activities.



Photograph 11. Overview of the old Kula Gymnasium, Site 5824, view to the SW.



Photograph 12. Overview of the front entrance of Site 5824, view to the NNW.

SUMMARY AND CONCLUSIONS

Summary of Sites

Two State Inventory of Historic Places (SIHP) site numbers were assigned within the current project area during the course of this archaeological inventory survey. Site 5800 includes probable precontact as well as post-contact features. The probable precontact features of this site were possibly utilized and/or modified during the post-contact period for both private and commercial agricultural purposes. Site 5800 has one possible post-contact habitation terrace, an historic boundary wall, two historic planting terraces or beds, a probable *ahupua'a*/boundary rock wall, and five possible precontact agricultural terraces. Site 5824, the Old Kula Gymnasium, consists of a late 1930s recreational building.

Habitation Feature

There is a possible habitation feature identified within the subject parcel. This consists of a well built retaining wall, Feature B of Site 5800. The construction quality of this feature is high, suggesting that the builder expended a large amount of labor. The lack of indigenous Hawaiian cultural material in the three subsurface test units excavated in this feature suggest that it may represent a post-contact habitation/utility feature, rather than a precontact structure.

Old Kula Gym

A large building is located on the eastern portion of the subject property. The Old Kula Gymnasium (Site 5824) was built in the late 1930s and is still utilized by the community, in part for recreational purposes.

Agricultural Features

There are a total of seven agricultural terraces—five of which appear to have been utilized in precontact (Features E, G, H, I, and J). These features have likely been utilized and/or modified during the post-contact period. The other two features seem to have been built during the post-contact period, based on the construction style of the retaining walls. Rocks used in the construction of the features consist primarily of sub-angular *pahoehoe* cobbles and boulders. Kula, with seasonal rainfall and sloping land, at the higher altitudes on the northwestern side of Haleakala was known for dry land sweet potato cultivation and other traditional Hawaiian crops during precontact times. During post-contact times (especially the mid-1800s), Irish potatoes were grown in abundance. In more recent times, truck farming has taken place in various portions of Kula. It

appears quite possible that portions of the subject parcel were farmed sometime into the mid-20th century.

Boundary Walls

Two features, a rock wall (Feature F) between Waiakoa and Kealaho *ahupua'a* and another rock wall (Feature A) between the subject parcel and the adjacent property on the south are interpreted as boundary walls. The former, Feature F, may also be a portion of an *ahupua'a* boundary wall.

Conclusions

The results of the current inventory survey of the project area generally conform to most of our expectations derived from the historical and archaeological background research. The absence of a permanent precontact habitation site was not unexpected, given the location of the study area. It is interesting to note that some the agricultural terraces do appear to have been utilized in pre- and post-contact times.

Table 1. Inventory survey results and tested features

Site	Feature	Type	Function	Probable age	Length	Width		Height		Depth	Shape	Remarks/extends into the adjacent property
						Interior	Exterior	Interior	Exterior			
50-50-11-5800	A	Rock wall	boundary	Post-contact	135 m	1.2 m			25-95 cm		Linear	Into the south adjacent property
50-50-11-5800	B	Terrace*	Possible habitation	Possible post-contact	11 m	3.5 m	30-54 cm		50-97 cm		Rectangular	
50-50-11-5800	C	Terrace*	Agricultural	Probable Post-contact	8.0 m	2.8 m			40-55 cm		Irregular	
50-50-11-5800	D	Terrace*	Probable Agriculture	Possible post-contact	7.6 m	3.0 m			20-91 cm		Crescent	
50-50-11-5800	E	Terrace*	Probable Agriculture	Probable pre-contact	4.5 m	2.5 m			24-57 cm		Rectangular	
50-50-11-5800	F	Rock wall	Boundary	Pre-contact	96 m	2.2 m			45-75 cm		Linear	Into the north adjacent property
50-50-11-5800	G	Terrace*	Probable Agriculture	Probable Pre-contact	7.6 m	4.5 m			15-40 cm		Rectangular	
50-50-11-5800	H	Terrace*	Probable Agriculture	Probable Pre-contact	40 m	7.5 m			30-50 cm		Rectangular	
50-50-11-5800	I	Terrace*	Probable Agriculture	Probable Pre-contact	8.0 m	6.5 m			89-156 cm		Rectangular	
50-50-11-5800	J	Terrace*	Probable Agriculture	Pre-contact	12 m	3.5 m			40-60 cm		Rectangular	
50-50-11-5824		Building structure	Gymnasium	Pre 1930s								

* = Tested feature

Site Significance and Recommendations

Significance Evaluations

The following significance evaluations are based on the Rules Governing Procedures for Historic Preservation Review (DLNR 1996; Chapter 275). According to these rules, a site must possess integrity of location, design, setting, materials, workmanship, feeling and association and shall meet one or more of the following criteria:

- Criterion "a"—Be associated with events that have made an important contribution to the broad patterns of our history;
- Criterion "b"—Be associated with the lives of persons important in our past;
- Criterion "c"—Embody the distinctive characteristics of a type, period, or method of construction; represent the work of a master; or possess high artistic value;
- Criterion "d"—Have yielded, or is likely to yield, important information for research on prehistory or history;
- Criterion "e"—Have an important traditional cultural value to the native Hawaiian people or to another ethnic group of the state due to associations with traditional cultural practices once carried out, or still carried out, at the property or due to associations with traditional beliefs, events or oral accounts.

Site 5800 and 5824 are considered significant under Criterion "d" for their information content, because of their potential to yield information about the prehistory and history of Hawaii. The Old Kula Gymnasium may also qualify for significance under Criterion "e" for its value to the Kula community.

Recommended Treatment

The archaeological inventory survey discussed in this report was designed and completed in order to meet DLNR-SHPD requirements for a permit to build an affordable senior citizen housing complex on the lower portion of this 1.69 acre parcel.

The possible post-contact habitation/utility feature, post-contact terraces or planting beds, and precontact agricultural terraces of Site 5800 are considered to be thoroughly documented and no further work such as data recovery is recommended at this time. This conclusion is based upon the general absence of indigenous Hawaiian cultural materials on the surface and in most subsurface tests. In addition, the post-contact and precontact agricultural features are relatively small scale, compared to other agricultural fields in the State of Hawaii that have been preserved. The two boundary

rock walls extend onto the adjacent properties to the north and the south; these should be left in place and/or preserved.

The Old Kula Gymnasium (Site 5824) represents a community meeting area and recreational resource. It is noteworthy that the proposed project will preserve this building, developing the lower two thirds of the property. In the event that this structure, which is well over 50 years old, is scheduled for demolition, HABS level documentation will be required.

While no further testing is recommended for the parcel at this point in time, archaeological monitoring is, nevertheless, recommended during any ground alteration on the subject parcel. This precautionary monitoring is deemed appropriate, in case subsurface features and/or human remains are inadvertently unearthed. A monitoring plan will be prepared per previous discussions with Dr. Melissa Kirkendall, SHPD Maui staff archaeologist.

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APPENDIX E.

**Traffic Impact Assessment
Report**

Traffic Impact Report

Kula Senior Community Housing



Submitted to:
Kula Community Federal
Credit Union



Submitted by:
Wilson Okamoto Corporation

December 2005

TRAFFIC IMPACT REPORT
FOR THE PROPOSED
KULA SENIOR COMMUNITY HOUSING

Prepared for:

Kula Community Federal Credit Union
P.O. Box 518
Kahului, Hawaii 96732

Prepared by:

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December 2005

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I. INTRODUCTION

A. Purpose of Study

The purpose of this study is to identify and assess the traffic impacts resulting from the proposed Kula Senior Community Housing development in Kula on the Island of Maui. The proposed project will be located east of Kula Highway across from Kula Elementary School and is expected to provide rental opportunities to senior citizens with limited annual incomes.

B. Scope of Study

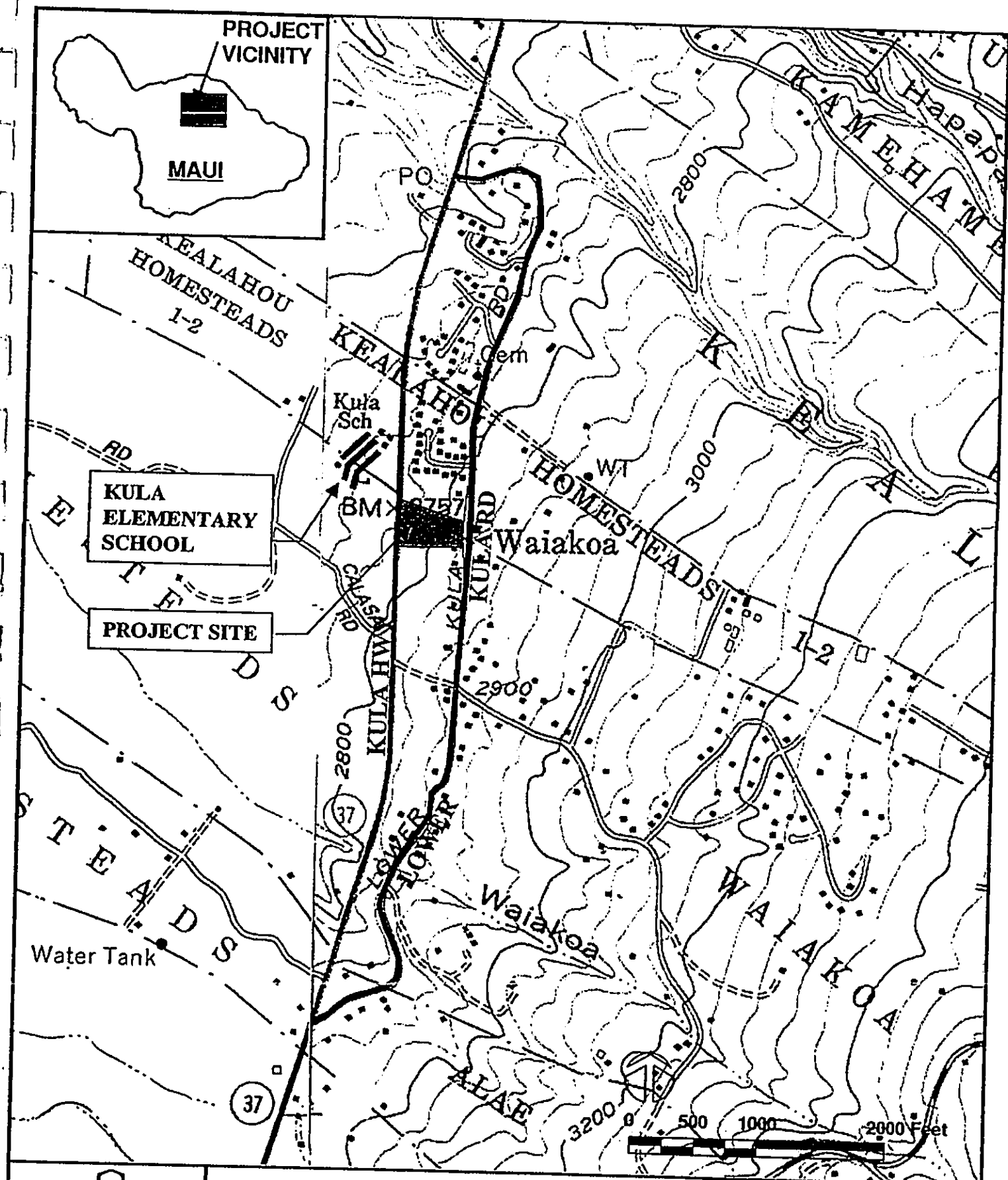
This report presents the findings and conclusions of the traffic study, the scope of which includes:

1. Description of the proposed project.
2. Evaluation of existing roadway and traffic operations in the vicinity.
3. Analysis of future roadway and traffic conditions without the proposed project.
4. Analysis and development of trip generation characteristics for the proposed project.
5. Superimposing site-generated traffic over future traffic conditions.
6. The identification and analysis of traffic impacts resulting from the proposed project.
7. Recommendations of improvements, if appropriate, that would mitigate the traffic impacts resulting from the proposed project.

II. PROJECT DESCRIPTION

A. Location

The project site will be located in Kula on the island of Maui and is bordered by Kula Highway to the west, residential homes to the north and south, and Lower Kula Road to the east. The project site is further identified as a portion of the Tax Map Key 2-2-14: 21(see Figure 1). Access to the proposed project will be via a new driveway off Kula Highway.




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KULA SENIOR COMMUNITY HOUSING

Location Map and Vicinity Map

FIGURE
1

B. Project Characteristics

The proposed Kula Senior Community Housing project will be located on a portion of an approximately 1.69-acre lot adjacent to Kula Highway. The project, which is expected to be completed and occupied by the Year 2006, includes 36 one-bedroom units in nine two-story structures and amenities which include an office/recreation room, laundry unit, and parking. The existing Kula Gym is also located on the same site, however there are currently no plans to close the gym or provide an interior connection between the proposed project and Kula Gym. Vehicular access to the proposed Kula Senior Community Housing development will be provided via a new right-turn in and right-turn out driveway off Kula Highway while pedestrian access will be provided via two existing crosswalks near the Kula Elementary School exit driveway. The proposed project site plan is shown in Figure 2.

III. EXISTING TRAFFIC CONDITIONS

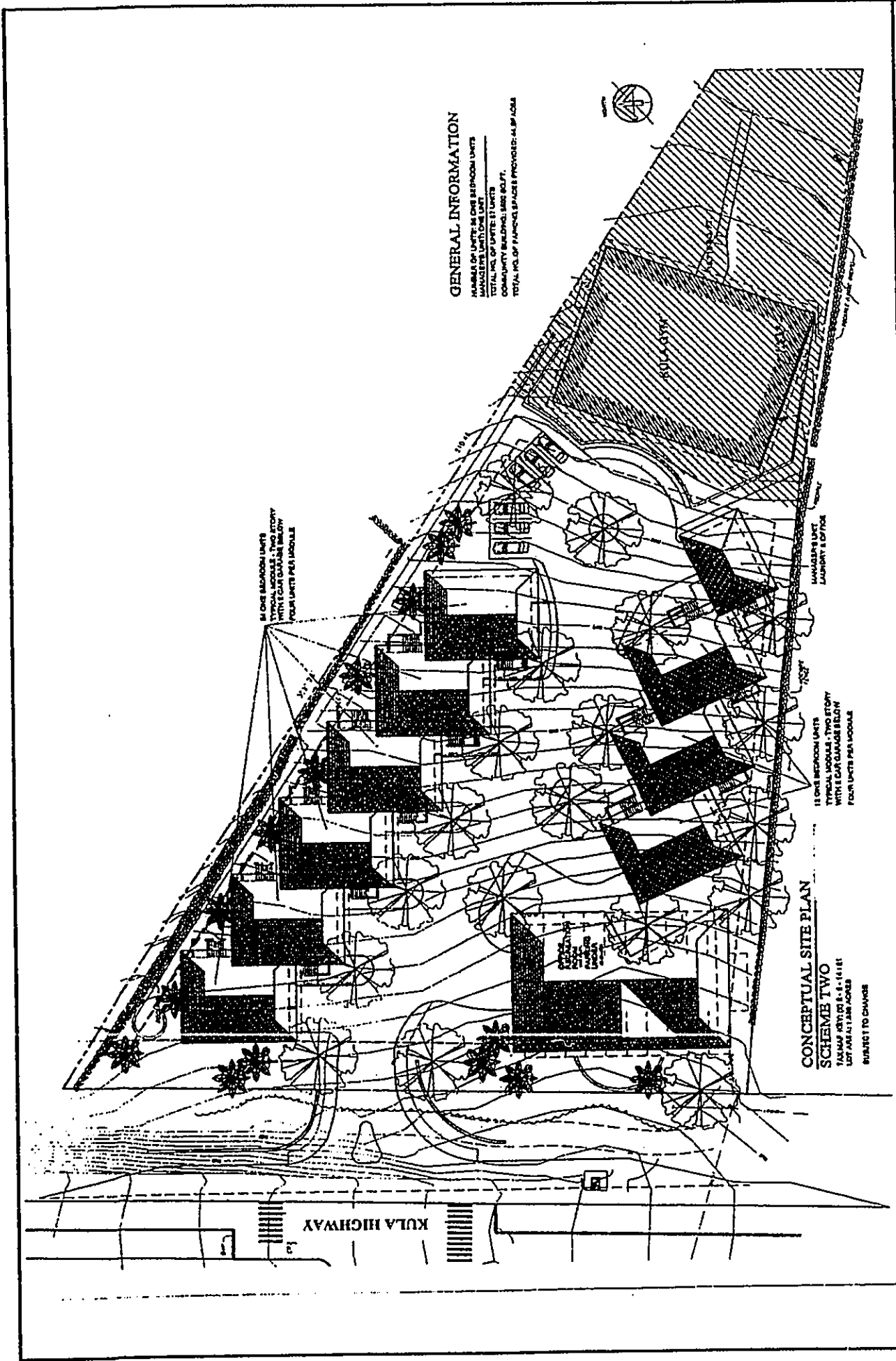
A. General

The proposed project site is located between Kula Highway and Lower Kula Road across from the Kula Elementary School. Kula Highway is predominately a two-way, two-lane State of Hawaii roadway generally oriented in the north-south direction. The highway serves as an access road through central Maui between its origin at Haleakala Highway and its terminus in Ulupalakua.

B. Area Roadway System

In the vicinity of the project site, Kula Highway intersects the entrance and exit driveways of Kula Elementary School. At both unsignalized intersections, the highway has one lane in each direction that serves through and turning movements while the school's exit driveway has exclusive left-turn and right-turn lanes.

Approximately 2,500 feet north of the Kula Elementary School driveways and approximately 4,000 feet south of the school driveways, Kula Highway intersects with Lower Kula Road, a predominately two-way, two-lane roadway generally oriented in the east-west direction that serves as an access road for residents between the



GENERAL INFORMATION
 NUMBER OF UNITS: 48 ONE BEDROOM UNITS
 NUMBER OF UNITS: 12 TWO BEDROOM UNITS
 TOTAL NO. OF UNITS: 60 UNITS
 COMMUNITY BUILDING: 500 SQ. FT.
 TOTAL NO. OF PARKING SPACES PROVIDED: 48 SPACES

12 ONE BEDROOM UNITS
 TYPICAL MODULE - TWO STORY
 WITH 1 CAR GARAGE BELOW
 FOUR UNITS PER MODULE

12 ONE BEDROOM UNITS
 TYPICAL MODULE - TWO STORY
 WITH 1 CAR GARAGE BELOW
 FOUR UNITS PER MODULE

CONCEPTUAL SITE PLAN
SCHEME TWO
 TAKAMAP DRIVE (D/S 11-14111)
 LOT AREA 11,141 SQ. METERS
 SUBJECT TO CHANGE

FIGURE
2

KULA SENIOR COMMUNITY HOUSING
 PROJECT SITE PLAN

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surrounding neighborhoods and Kula Highway. At both unsignalized t-intersections with Lower Kula Road, the highway has one lane in each direction that serves through and turning movements while the Lower Kula Road approaches have one lane that serves left-turn and right-turn traffic movements.

C. Traffic Volumes and Conditions

1. General

a. Field Investigation

A field investigation was conducted on May 31, 2005 and June 1, 2005 and consisted of manual turning movement count surveys during the morning peak period between 6:00 AM and 8:00 AM, and the afternoon peak period between 3:00 PM and 6:00 PM at the following intersections:

- Kula Highway and Lower Kula Road (North)
- Kula Highway and School Entrance Driveway
- Kula Highway and School Exit Driveway
- Kula Highway and Lower Kula Road (South)

In addition, 24-hour mechanical traffic count surveys were collected along the Kula Highway within the project vicinity to verify the peak traffic periods on the highway. Appendix A includes the existing traffic count data.

b. Capacity Analysis Methodology

The highway capacity analysis performed in this study is based upon procedures presented in the "Highway Capacity Manual", Transportation Research Board, 2000, and the "Highway Capacity Software", developed by the Federal Highway Administration. The analysis is based on the concept of Level of Service (LOS) to identify the traffic impacts associated with traffic demands during the peak periods of traffic.

LOS is a quantitative and qualitative assessment of traffic operations. Levels of Service are defined by LOS "A" through "F";

LOS "A" representing ideal or free-flow traffic operating conditions and LOS "F" unacceptable or potentially congested traffic operating conditions.

"Volume-to-Capacity" (v/c) ratio is another measure indicating the relative traffic demand to the road carrying capacity. A v/c ratio of one (1.00) indicates that the roadway is operating at or near capacity. A v/c ratio of greater than 1.00 indicates that the traffic demand exceeds the road's carrying capacity. The LOS definitions are included in Appendix B.

2. Existing Peak period Traffic

a. General

Figures 3 and 4 illustrate the existing AM and PM peak period traffic volumes and operating conditions. In the vicinity of the proposed project, the absolute commuter peak period time periods for each intersection are shown in Table 1.

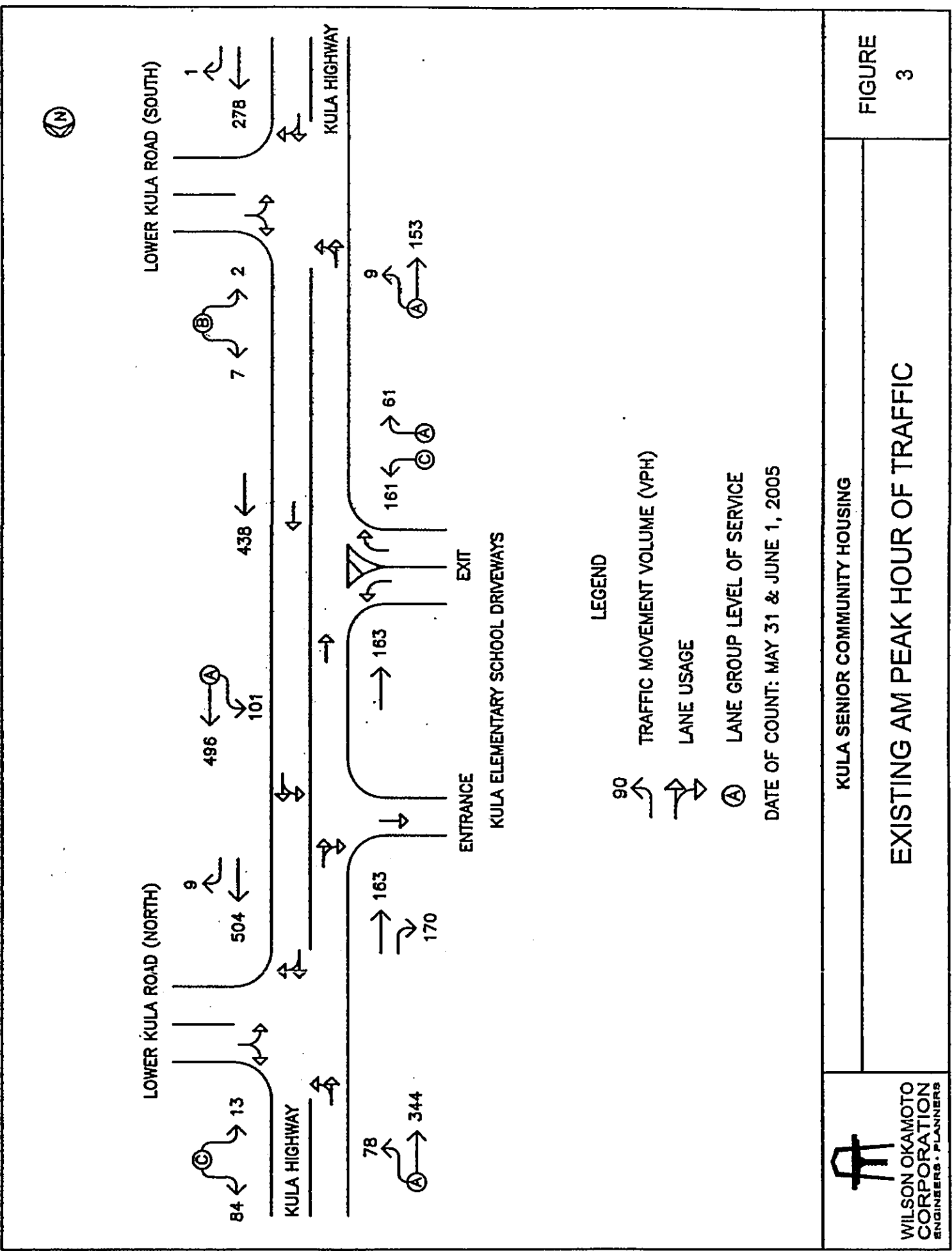
Table 1: Peak Periods of Traffic

Intersection	AM Peak	PM Peak
Kula Hwy/ Lower Kula Rd (North)	7:00 AM to 8:00 AM	3:30 PM to 4:30 PM
Kula Hwy/School Entrance Drwy	7:00 AM to 8:00 AM	3:30 PM to 4:30 PM
Kula Hwy/School Exit Drwy	7:00 AM to 8:00 AM	3:30 PM to 4:30 PM
Kula Hwy/Lower Kula Rd (South)	7:00 AM to 8:00 AM	4:00 PM to 5:00 PM

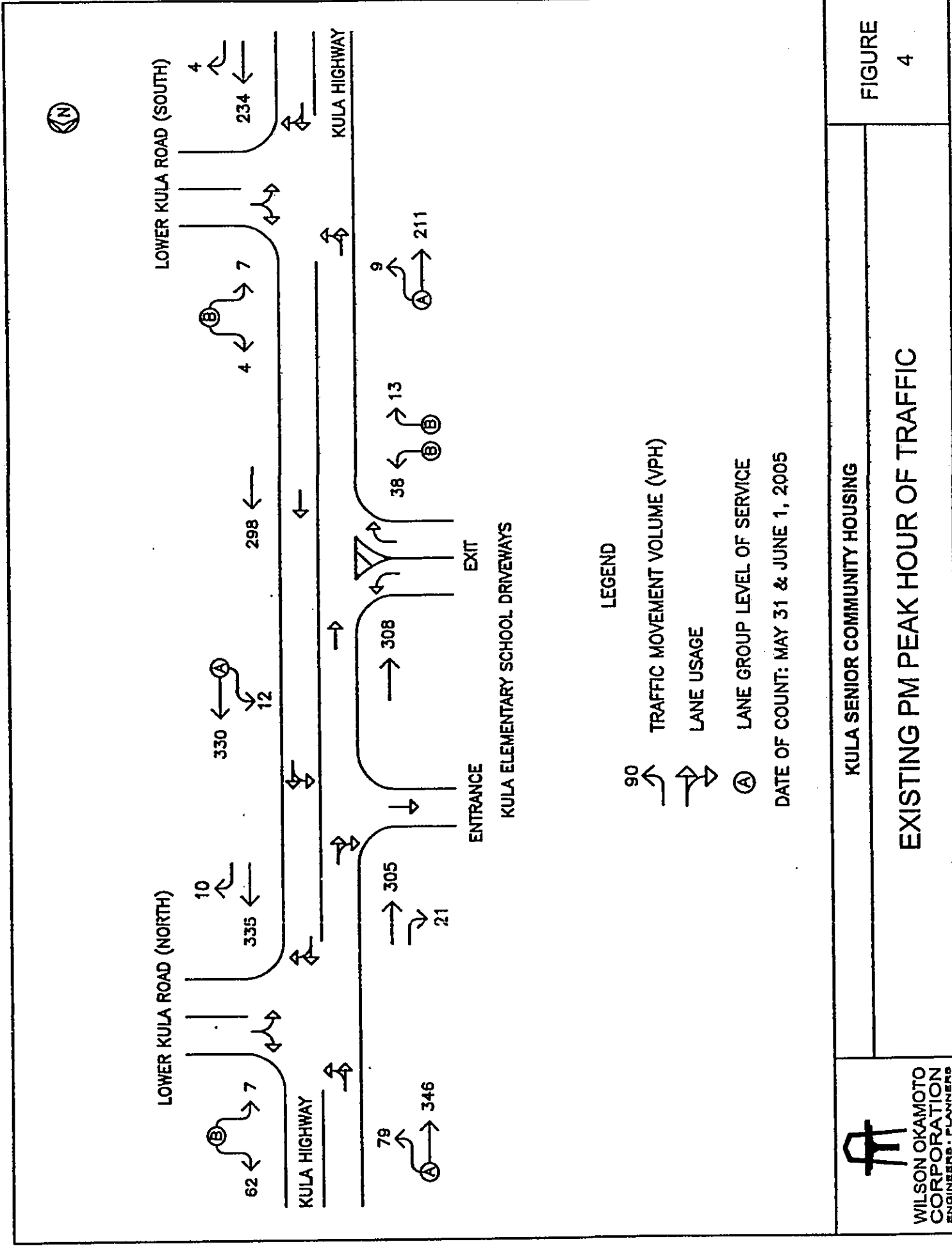
The analysis is based on these peak period time periods to identify the traffic impacts resulting from the proposed project. The LOS calculations are included in Appendix C.

b. Kula Highway and School Driveways

At the unsignalized intersection with Kula Highway, the Kula Elementary School exit driveway carries 222 vehicles eastbound



KULA SENIOR COMMUNITY HOUSING



during the AM peak period and 51 vehicles eastbound during the PM peak period. Just north of this driveway, Kula Highway carries 597 vehicles northbound and 163 vehicles southbound during the AM peak period, and 342 vehicles northbound and 308 vehicles southbound during the PM peak period. The critical movement at the intersection with Kula Highway and the School driveways is the eastbound left-turn traffic movement at the exit driveway which operates at LOS "C" and LOS "B" during the AM and PM peak periods, respectively.

Field observations at this intersection indicate that the most significant queuing occurs on the northbound approach of the school entrance driveway and the eastbound approach of the school exit driveway during the AM peak period due to the high influx of drop-offs right before school begins. Average vehicle queue lengths of approximately 4 to 6 vehicles were observed for both school driveways during this period. However, these queues dispersed quickly after school began.

c. Kula Highway and Lower Kula Road (North)

At the northern unsignalized intersection of Kula Highway and Lower Kula Road, Lower Kula Road carries 97 vehicles and 69 vehicles westbound during the AM and PM peak periods, respectively. This approach operates at LOS "C" and LOS "B" during the AM and PM peak periods, respectively.

At this intersection, Kula Highway carries 513 vehicles northbound and 422 vehicles southbound during the AM peak period, and 345 vehicles northbound and 425 vehicles southbound during the PM peak period. The critical movement along the highway at this intersection is the southbound left-turn movement which operates at LOS "A" during both peak periods of traffic.

d. Kula Highway and Lower Kula Road (South)

At the southern unsignalized intersection of Kula Highway and Lower Kula Road, Lower Kula Road carries 9 vehicles and 11 vehicles westbound during the AM and PM peak periods, respectively. This approach operates at LOS "B" and LOS "A" during the AM and PM peak periods, respectively.

At this intersection, Kula Highway carries 279 vehicles northbound and 162 vehicles southbound during the AM peak period, and 238 vehicles northbound and 220 vehicles southbound during the PM peak period. The critical movement along the highway at this intersection is the southbound left-turn movement which operates at LOS "A" during both peak periods of traffic.

IV. PROJECTED TRAFFIC CONDITIONS

A. Site-Generated Traffic

1. Trip Generation Methodology

The trip generation methodology used in this study is based upon generally accepted techniques developed by the Institute of Transportation Engineers (ITE) and published in "Trip Generation, 7th Edition," 2003. The ITE trip generation rates are developed empirically by correlating the vehicle trip generation data with various land use characteristics such as the number of vehicle trips generated per dwelling unit. Table 2 summarizes the project site trip generation characteristics applied to the AM and PM peak periods of traffic.

Table 2: Peak Hour Trip Generation

SENIOR ADULT HOUSING - ATTACHED		
INDEPENDENT VARIABLE		(36 Units)
		PROJECTED TRIP ENDS
AM PEAK	ENTER	1
	EXIT	1
	TOTAL	2
PM PEAK	ENTER	2
	EXIT	2
	TOTAL	4

2. Trip Distribution

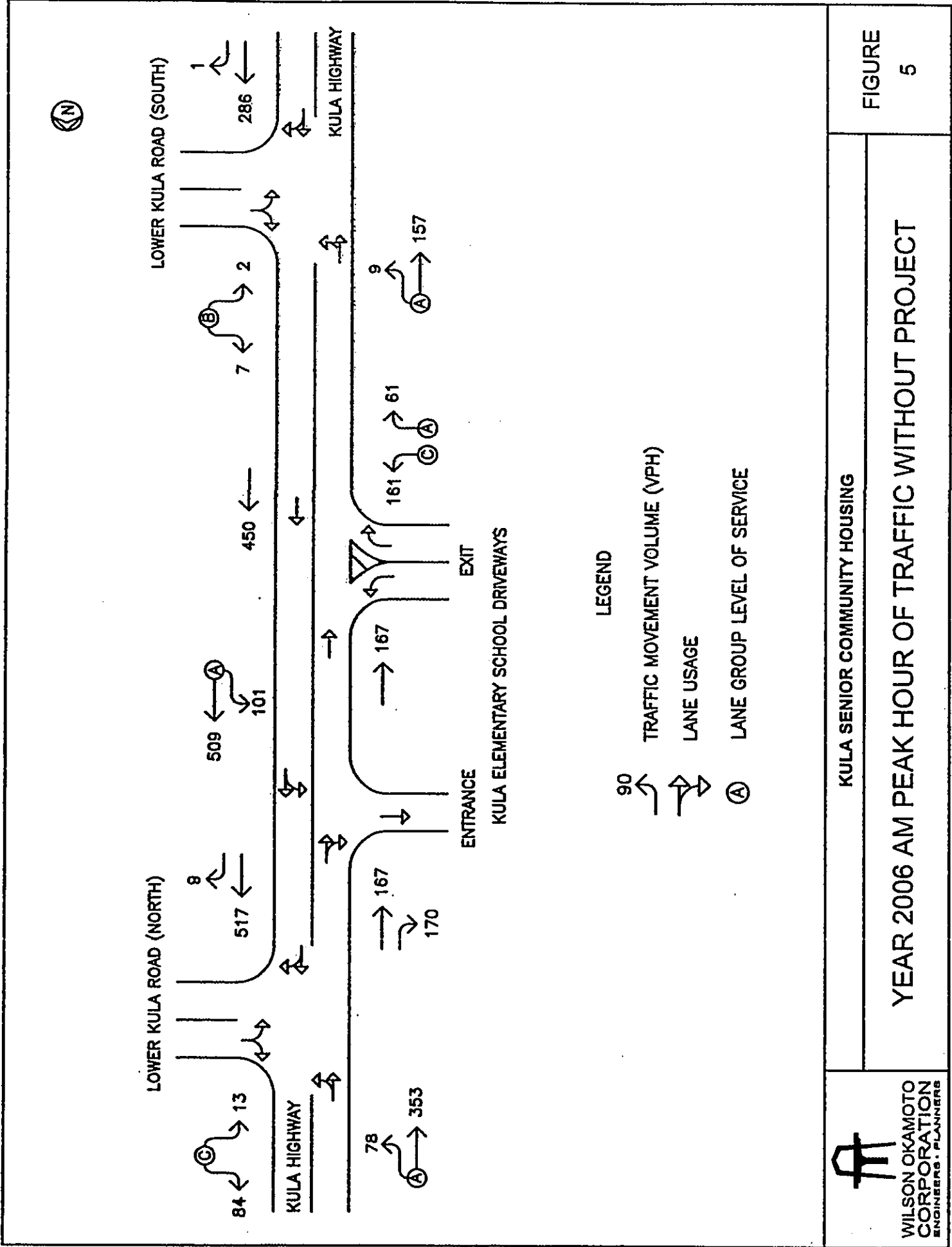
Access to the project site will be provided via a new right-turn in and right-turn out driveway off of Kula Highway. Traffic movements at this driveway will be restricted to right-turn in and right-turn out movements only. The directional distribution of traffic at this driveway was based on the prevalent distribution of traffic along Kula Highway and the allowed movements at the project driveway. As such, 60.6% of vehicles were assumed to be traveling northbound and 39.4% of vehicles traveling southbound during the AM peak period while 51.4% of vehicles were assumed to be traveling northbound and 48.6% of vehicles traveling southbound during the PM peak period.

B. Through Traffic Forecasting Methodology

An analysis of both historical traffic data and traffic projections contained within the Maui Long-Range Land Transportation Plan (MLRLTP) was made to determine an appropriate ambient growth of traffic demands in the project vicinity. Using linear regression analyses, historical data indicates an average annual traffic growth rate in the vicinity of approximately 2.7%, while the MLRLTP indicates an average annual traffic growth rate of less than 0.5%. Therefore, for conservative analysis purposes, the travel forecast used in this study is based upon the historical traffic count data obtained from the State Department of Transportation (DOT). Using Year 2005 as the base year, a growth factor of 1.027 was applied to the existing traffic demands on the highways to achieve the projected ambient traffic demands for Year 2006.

C. Total Traffic Volumes Without Project

The projected Year 2006 AM and PM peak period traffic volumes and operating conditions without the proposed Kula Senior Community Housing development are shown in Figures 5 and 6, and summarized in Table 3. The existing levels of service are provided for comparison purposes. LOS calculations are included in Appendix D.

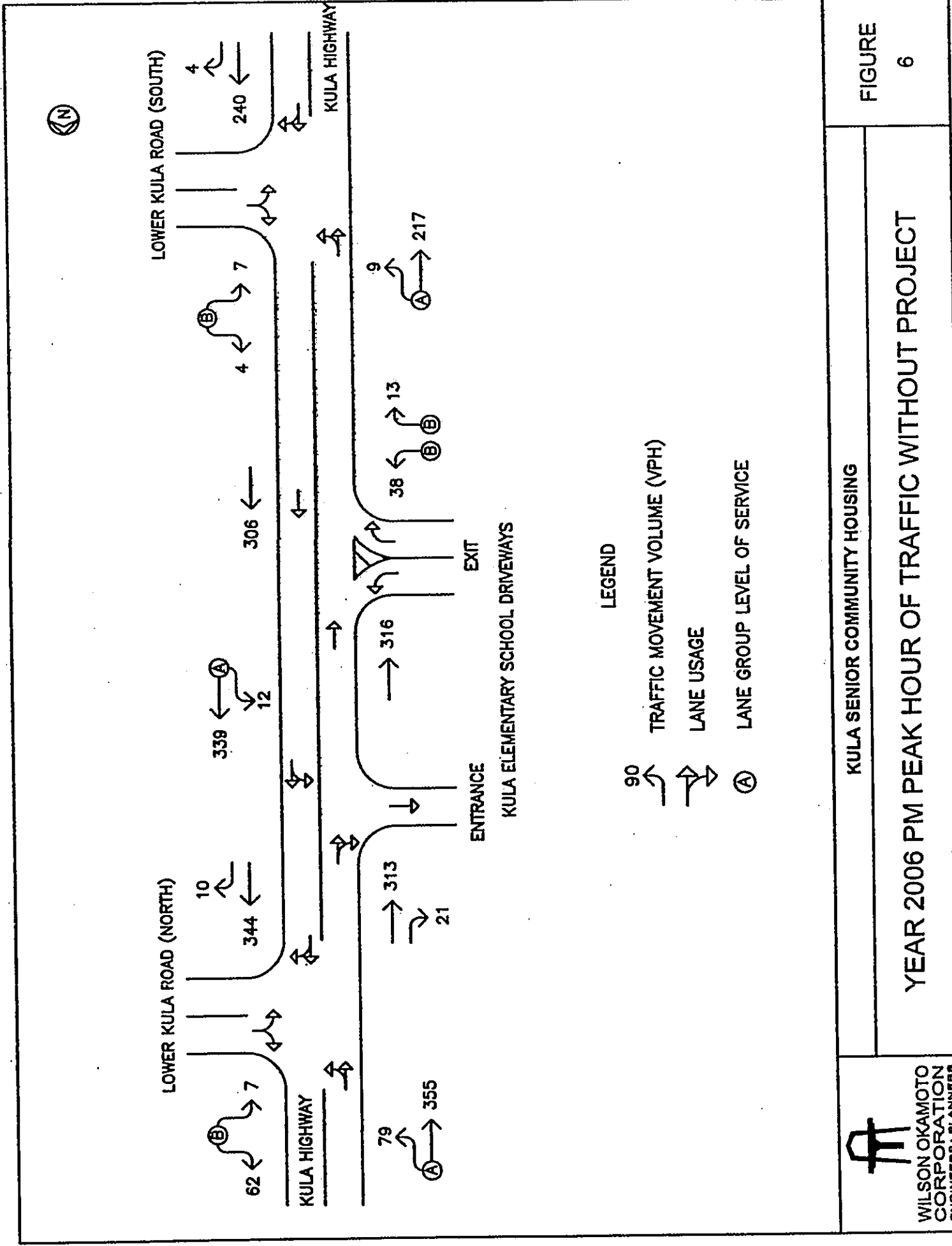


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YEAR 2006 AM PEAK HOUR OF TRAFFIC WITHOUT PROJECT

FIGURE 5



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YEAR 2006 PM PEAK HOUR OF TRAFFIC WITHOUT PROJECT

FIGURE 6

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

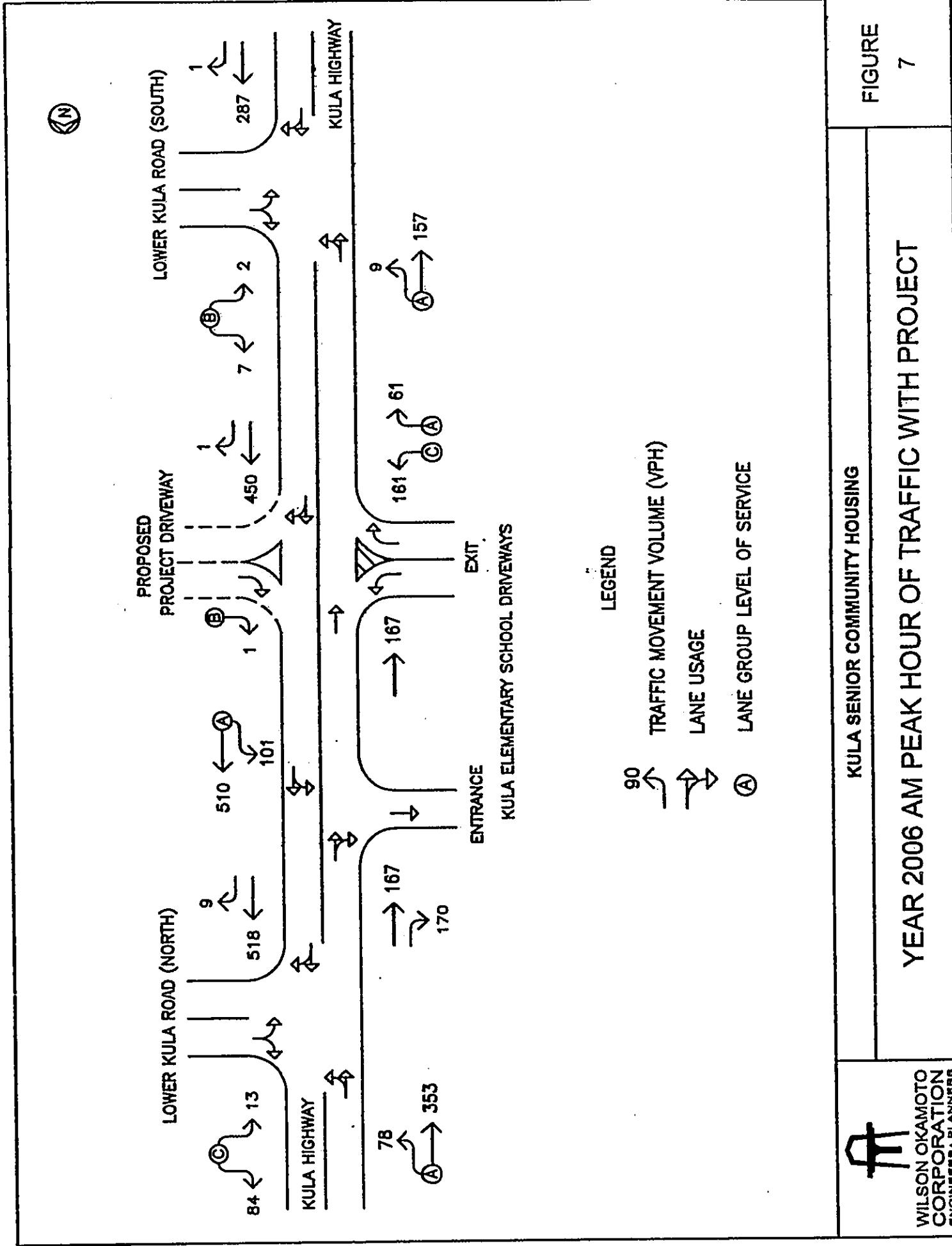
Table 3: Existing and Projected (Without Project) LOS Traffic Operating Conditions

Intersection	Critical Movements	AM		PM	
		Exist	Year 2006 w/out Proj	Exist	Year 2006 w/out Proj
Kula Hwy/ Lower Kula Rd (North)	Southbound (LT-TH)	A	A	A	A
	Westbound (LT-RT)	C	C	B	B
Kula Hwy/ School Exit Drwy	Eastbound (LT)	C	C	B	B
Kula Hwy/ Lower Kula Rd (South)	Southbound (LT-TH)	A	A	A	A
	Westbound (LT-RT)	B	B	B	B

Traffic operations under Year 2006 without project conditions are expected to remain similar to existing conditions. The critical movements on the westbound approach of the Kula Highway with Lower Kula Road (North) intersection and the eastbound approach of the intersection with the school's exit driveway are expected to continue operating at LOS "C" during the AM peak period and LOS "B" during the PM peak period. At the intersection of Kula Highway with Lower Kula Road (South), the critical movement on the southbound approach is expected to remain at LOS "A" during both peak periods while the critical movement on the westbound approach is expected to remain at LOS "B" during both peak periods.

D. Total Traffic Volumes With Project

The projected Year 2006 AM and PM peak period traffic volumes and operating conditions with the development of the proposed Kula Senior Community Housing are shown in Figures 7 and 8. The cumulative volumes consist of site-generated traffic superimposed over Year 2006 projected traffic demands. The traffic impacts resulting from the proposed project are addressed in the following section.

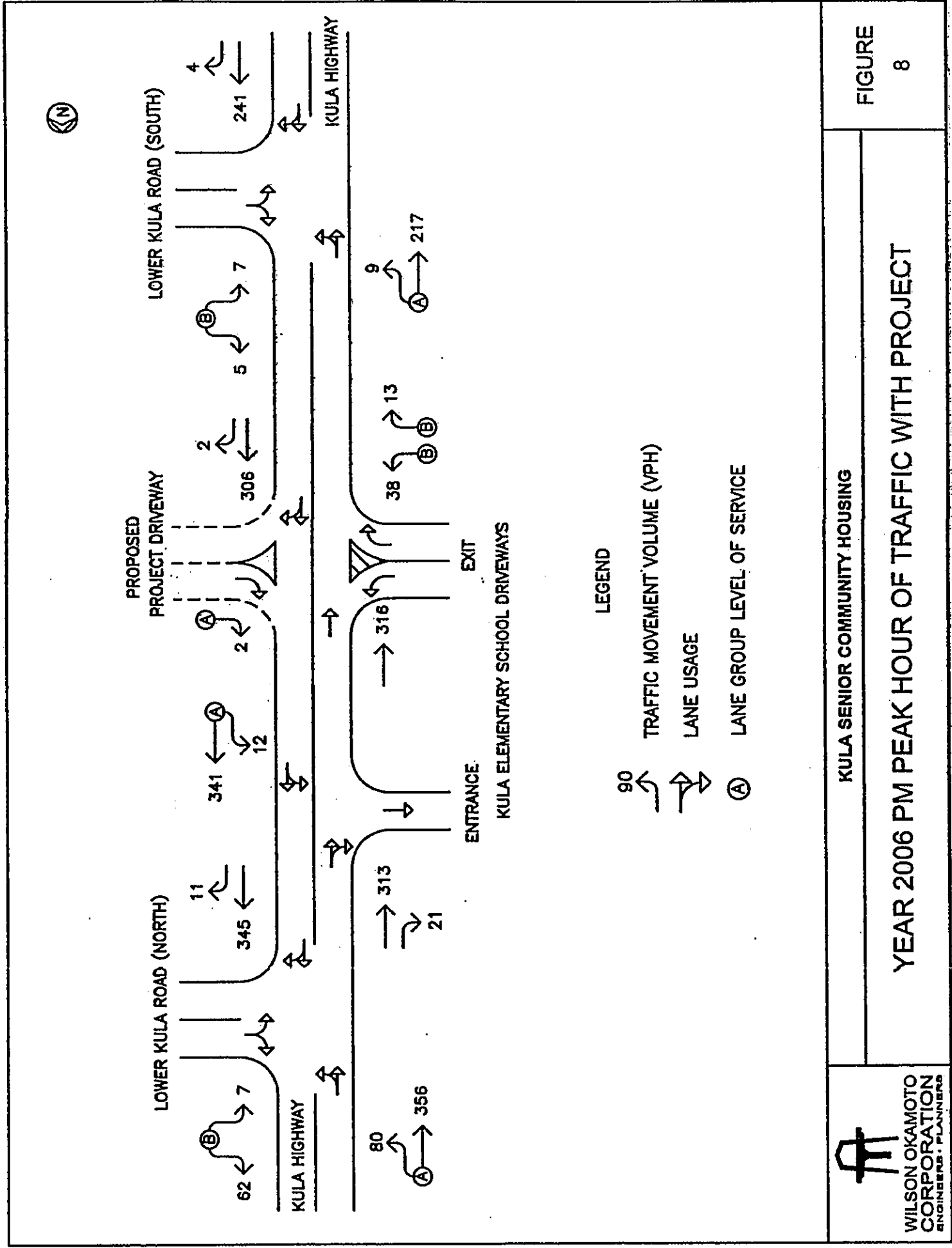


KULA SENIOR COMMUNITY HOUSING

YEAR 2006 AM PEAK HOUR OF TRAFFIC WITH PROJECT

FIGURE 7

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100



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FIGURE
8

YEAR 2006 PM PEAK HOUR OF TRAFFIC WITH PROJECT

V. TRAFFIC IMPACT ANALYSIS

The Year 2006 cumulative AM and PM peak hour traffic conditions with the development of the Kula Senior Community Housing development are summarized in Table 4. The existing and projected Year 2006 (Without Project) operating conditions are provided for comparison purposes. LOS calculations are included in Appendix E.

Table 4: Existing and Projected Year 2006 (With and Without Project) Traffic Operating Conditions

Intersection	Critical Movements	AM			PM		
		Exist	Year 2006 w/out Proj	Year 2006 w/ Proj	Exist	Year 2006 w/out Proj	Year 2006 w/ Proj
Kula Hwy/ Lower Kula Rd (North)	Southbound (LT-TH)	A	A	A	A	A	A
	Westbound (LT-RT)	C	C	C	B	B	B
Kula Hwy/ School Exit Drwy/Project Drwy	Eastbound (LT)	C	C	C	B	B	B
	Westbound (RT)	---	---	B	---	---	A
Kula Hwy/ Lower Kula Rd (South)	Southbound (LT-TH)	A	A	A	A	A	A
	Westbound (LT-RT)	B	B	B	B	B	B

Traffic operations in the vicinity of the proposed Kula Senior Community Housing project are expected to remain similar to existing and Year 2006 without project conditions during both peak hours of traffic. The critical movements at all four-study intersections are expected to operate at levels of service similar to Year 2006 without project conditions during both peak hours of traffic. In addition, traffic on the new access road connection to Kula Highway is anticipated to operate at LOS "B" and LOS "A" during the AM and PM peak periods, respectively. The total traffic volumes entering the study intersections are expected to increase by less than 1% during both peak periods due to the development of the senior housing project. These increases are in the range of daily volume fluctuation along Kula Highway and represent a minimal increase in overall traffic volumes.

VI. RECOMMENDATIONS

Based on the analysis of the traffic data, the following are the recommendations of this study to be incorporated in the project design.

1. Maintain sufficient sight distance for motorists to safely enter and exit the project driveway.
2. The project driveway on Kula Highway should be aligned with the Kula Elementary School exit driveway to create a four-way intersection to minimize conflicting turning movements.
3. Channelize the project driveway to ensure that the planned turning movement restrictions, right-turn in and right-turn out traffic movements only, are clear to site-generated vehicles.
4. Provide adequate on-site loading and off-loading service areas and prohibit off-site loading operations.
4. Provide adequate turn-around area for service, delivery, and refuse collection vehicles to maneuver on the project site to avoid vehicle-reversing maneuvers onto State roadways.
5. Provide sufficient driveway width to accommodate safe vehicle ingress and egress.
6. Provide sufficient turning radii at the project driveway to avoid or minimize vehicle encroachments to oncoming traffic lanes.

VII. CONCLUSION

The proposed Kula Senior Community Housing development entails the construction of 36 one-bedroom dwelling units for senior citizens with limited annual incomes and is not expected to have a significant impact on traffic operations in the vicinity of the project site. The critical movements at the study intersection along Kula Highway are expected to operate at levels of service similar to existing and Year 2006 without project conditions. In addition, the total traffic volumes entering the study intersections along Kula Highway are anticipated to increase by less than 1% during both AM and PM peak periods. These increases in the total traffic volumes along this highway are in the range of daily volume fluctuations along this roadway and represent a minimal increase in the overall traffic volumes.

APPENDIX A
EXISTING TRAFFIC COUNT DATA

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Wilson Okamoto Corporation
 1907 S. Beretania Street, Suite 400
 Honolulu, HI 96826

File Name : KuliLkul-nP
 Site Code : 00000001
 Start Date : 5/31/2005
 Page No : 1

Counter: D1-0769
 Counted By: GMT
 Weather: CLEAR

Start Time	Kula Highway Southbound						Lower Kula Highway (North) Westbound						Kula Highway Northbound						Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total			
	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0				
03:00 PM	16	54	0	70	1	0	23	24	0	0	0	0	59	0	0	59	0	153	
03:15 PM	13	59	0	72	3	0	13	16	0	0	4	4	77	4	0	81	0	169	
03:30 PM	27	91	0	118	2	0	13	15	0	0	1	1	88	1	0	89	0	222	
03:45 PM	15	83	0	98	3	0	17	20	0	0	0	0	71	0	0	71	0	189	
Total	71	287	0	358	9	0	66	75	0	0	5	5	295	0	0	300	0	733	
04:00 PM	20	86	0	106	1	0	20	21	0	0	3	3	97	0	0	100	0	227	
04:15 PM	17	86	0	103	1	0	12	13	0	0	6	6	79	0	0	85	0	201	
04:30 PM	18	75	0	93	1	0	19	20	0	0	1	1	73	0	0	74	0	187	
04:45 PM	23	90	0	113	1	0	12	13	0	0	4	4	83	0	0	87	0	213	
Total	78	337	0	415	4	0	63	67	0	0	14	14	332	0	0	346	0	828	
05:00 PM	21	82	0	103	1	0	22	23	0	0	1	1	56	0	0	57	0	183	
05:15 PM	34	72	0	106	1	0	16	17	0	0	2	2	76	0	0	78	0	201	
05:30 PM	31	68	0	99	1	0	21	22	0	0	1	1	74	0	0	75	0	196	
05:45 PM	29	77	0	106	0	0	6	6	0	0	1	1	63	0	0	64	0	176	
Total	115	299	0	414	3	0	65	68	0	0	5	5	269	0	0	274	0	756	
Grand Total	264	923	0	1187	16	0	194	210	0	0	24	24	896	0	0	920	0	2317	
Approch %	22.2	77.8	0.0	51.2	7.6	0.0	92.4	9.1	0.0	0.0	2.6	2.6	97.4	0.0	0.0	39.7	0.0	0.0	
Total %	11.4	39.8	0.0	51.2	0.7	0.0	8.4	9.1	0.0	0.0	1.0	1.0	38.7	0.0	0.0	39.7	0.0	0.0	

Start Time	Kula Highway Southbound						Lower Kula Highway (North) Westbound						Kula Highway Northbound						Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total			
	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0				
Peak Hour From 03:00 PM to 05:45 PM - Peak 1 of 1	79	346	0	425	7	0	62	69	0	0	10	10	335	0	0	345	0	839	
Intersection 03:30 PM	18.6	81.4	0.0	106	10.1	0.0	89.9	21	0.0	0.0	2.9	2.9	97.1	0	0	100	0	227	
04:00 Volume	20	86	0	106	1	0	20	21	0	0	3	3	97	0	0	100	0	0.924	
Peak Factor					04:00 PM				04:00 PM							2:45:00 PM			
High Int. Volume	27	91	0	118	1	0	20	21	0	0	3	3	97	0	0	100	0	0.863	
Peak Factor				0.900				0.821											

Wilson Okamoto Corporation
 1907 S. Beretania Street, Suite 400
 Honolulu, HI 96826

Counter: D1-0526
 Counted By: KT
 Weather: CLEAR

File Name : KulDriv(in)A
 Site Code : 00000002
 Start Date : 6/1/2005
 Page No : 1

Groups Printed- Unshifted

Start Time	Kula Highway Southbound			Westbound			Kula Highway Northbound			Eastbound		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
06:00 AM	0	15	1	0	0	0	0	57	0	0	0	0
06:15 AM	0	26	1	0	0	0	0	67	0	0	0	0
06:30 AM	0	43	3	0	0	0	0	60	0	0	0	0
06:45 AM	0	36	7	0	0	0	4	96	0	0	0	0
Total	0	120	12	0	0	0	4	280	0	0	0	0
07:00 AM	0	37	26	0	0	0	9	106	0	0	0	0
07:15 AM	0	31	56	0	0	0	24	137	0	0	0	0
07:30 AM	0	50	71	0	0	0	54	130	0	0	0	0
07:45 AM	0	45	17	0	0	0	14	123	0	0	0	0
Total	0	163	170	0	0	0	101	496	0	0	0	0
Grand Total	0	283	182	0	0	0	105	776	0	0	0	0
Approch %	0.0	60.9	39.1	0.0	0.0	0.0	11.9	88.1	0.0	0.0	0.0	0.0
Total %	0.0	21.0	13.5	0.0	0.0	0.0	7.8	57.7	0.0	65.5	0.0	0.0

Start Time	Kula Highway Southbound			Westbound			Kula Highway Northbound			Eastbound		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Peak Hour: From 06:00 AM to 07:45 AM - Peak 1 of 1	0	163	170	0	0	0	101	496	0	0	0	0
Intersection 07:00 AM	0	48.9	51.1	0	0	0	16.9	83.1	0	0	0	0
Volume	0	50	71	0	0	0	54	130	0	0	0	0
Percent	0.0	50	71	0.0	0.0	0.0	7.8	57.7	0.0	65.5	0.0	0.0
Peak Volume	0	50	71	0	0	0	54	130	0	184	0	0
Peak Factor	0	0.5	0.7	0	0	0	0.7	0.7	0	0.7	0	0
High Int. Volume	0	50	71	0	0	0	54	130	0	184	0	0
Volume	0	50	71	0	0	0	54	130	0	184	0	0
Peak Factor	0	0.5	0.7	0	0	0	0.7	0.7	0	0.7	0	0

Wilson Okamoto Corporation
 1907 S. Beretania Street, Suite 400
 Honolulu, HI 96826

File Name : KulDriv(in)P
 Site Code : 00000002
 Start Date : 5/31/2005
 Page No : 1

Counter: D1-0526
 Counted By: KT
 Weather: CLEAR

Groups Printed- Unshifted

Start Time	Kula Highway Southbound				Westbound				Kula Highway Northbound				Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
03:00 PM	0	40	9	49	0	0	0	0	2	55	0	57	0	0	0	0	
03:15 PM	0	59	3	62	0	0	0	0	2	79	0	81	0	0	0	0	
03:30 PM	0	73	5	78	0	0	0	0	2	86	0	88	0	0	0	0	
03:45 PM	0	85	3	88	0	0	0	0	2	68	0	70	0	0	0	0	
Total	0	257	20	277	0	0	0	0	8	288	0	296	0	0	0	0	
04:00 PM	0	76	6	82	0	0	0	0	4	90	0	94	0	0	0	0	
04:15 PM	0	71	7	78	0	0	0	0	4	86	0	90	0	0	0	0	
04:30 PM	0	78	6	84	0	0	0	0	2	70	0	72	0	0	0	0	
04:45 PM	0	75	5	80	0	0	0	0	0	81	0	81	0	0	0	0	
Total	0	300	24	324	0	0	0	0	10	327	0	337	0	0	0	0	
05:00 PM	0	78	6	84	0	0	0	0	2	58	0	60	0	0	0	0	
05:15 PM	0	63	6	69	0	0	0	0	2	77	0	79	0	0	0	0	
05:30 PM	0	64	0	64	0	0	0	0	1	75	0	76	0	0	0	0	
05:45 PM	0	74	0	74	0	0	0	0	0	59	0	59	0	0	0	0	
Total	0	279	12	291	0	0	0	0	5	269	0	274	0	0	0	0	
Grand Total	0	836	56	892	0	0	0	0	23	884	0	907	0	0	0	0	
Approch %	0.0	93.7	6.3	99.6	0.0	0.0	0.0	0.0	2.5	97.5	0.0	99.4	0.0	0.0	0.0	0.0	
Total %	0.0	46.5	3.1	49.6	0.0	0.0	0.0	0.0	1.3	49.1	0.0	50.4	0.0	0.0	0.0	0.0	

Start Time	Kula Highway Southbound				Westbound				Kula Highway Northbound				Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour From 03:00 PM to 05:45 PM - Peak 1 of 1																	
Intersection 03:30 PM	0	305	21	326	0	0	0	0	12	330	0	342	0	0	0	0	
Volume	0	93.6	6.4	100	0.0	0.0	0.0	0.0	3.5	96.5	0.0	100	0.0	0.0	0.0	0.0	
Percent	0	76	6	82	0	0	0	0	4	90	0	94	0	0	0	0	
04:00 Volume	0	85	3	88	0	0	0	0	0	90	0	90	0	0	0	0	
Peak Factor	0	85	3	88	0	0	0	0	0	90	0	90	0	0	0	0	
High Int. 03:45 PM	0	85	3	88	0	0	0	0	0	90	0	90	0	0	0	0	
Volume	0	85	3	88	0	0	0	0	0	90	0	90	0	0	0	0	
Peak Factor	0	85	3	88	0	0	0	0	0	90	0	90	0	0	0	0	
High Int. 04:00 PM	0	85	3	88	0	0	0	0	0	90	0	90	0	0	0	0	
Volume	0	85	3	88	0	0	0	0	0	90	0	90	0	0	0	0	
Peak Factor	0	85	3	88	0	0	0	0	0	90	0	90	0	0	0	0	
High Int. 04:45 PM	0	85	3	88	0	0	0	0	0	90	0	90	0	0	0	0	
Volume	0	85	3	88	0	0	0	0	0	90	0	90	0	0	0	0	
Peak Factor	0	85	3	88	0	0	0	0	0	90	0	90	0	0	0	0	

Counter: D1-0768
 Counted By: IQ
 Weather: CLEAR

Wilson Okamoto Corporation
 1907 S. Beretania Street, Suite 400
 Honolulu, HI 96826

File Name : KulDriv(out)A
 Site Code : 00000003
 Start Date : 6/1/2005
 Page No : 1

Start Time	Groups Printed- Unshifted											
	Kula Highway Southbound				Kula Highway Northbound				School Driveway (out) Eastbound			
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total
06:00 AM	0	16	0	16	0	58	0	58	0	0	0	0
06:15 AM	0	26	0	26	0	65	0	65	0	0	0	0
06:30 AM	0	38	0	38	0	61	0	61	0	0	0	0
06:45 AM	0	41	0	41	0	96	0	96	4	0	0	4
Total	0	121	0	121	0	280	0	280	4	0	0	4
07:00 AM	0	37	0	37	0	95	0	95	20	0	1	21
07:15 AM	0	30	0	30	0	126	0	126	35	0	14	49
07:30 AM	0	51	0	51	0	125	0	125	60	0	26	86
07:45 AM	0	45	0	45	0	92	0	92	46	0	20	66
Total	0	163	0	163	0	438	0	438	161	0	61	222
Grand Total	0	284	0	284	0	718	0	718	165	0	61	226
Approch %	0.0	100.0	0.0	23.1	0.0	100.0	0.0	58.5	73.0	0.0	27.0	18.4
Total %	0.0	23.1	0.0	23.1	0.0	58.5	0.0	58.5	13.4	0.0	5.0	18.4

Start Time	Kula Highway Southbound											
	Kula Highway Southbound				Kula Highway Northbound				School Driveway (out) Eastbound			
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total
Peak Hour From 06:00 AM to 07:45 AM - Peak 1 of 1	0	163	0	163	0	438	0	438	161	0	61	222
Volume	0	163	0	163	0	438	0	438	161	0	61	222
Percent	0.0	100.0	0.0	23.1	0.0	100.0	0.0	58.5	73.0	0.0	27.0	18.4
Peak Factor	0	51	0	51	0	125	0	125	60	0	26	86
High Int. 07:30 AM	0	51	0	51	0	125	0	125	60	0	26	86
Volume	0	51	0	51	0	125	0	125	60	0	26	86
Peak Factor	0	0.799	0	0.799	0	0.869	0	0.869	0.785	0	0.785	0.785

Wilson Okamoto Corporation
 1907 S. Beretania Street, Suite 400
 Honolulu, HI 96826

Counter: D1-0768
 Counted By: IQ
 Weather: CLEAR

File Name : KulDriv(out)P
 Site Code : 00000003
 Start Date : 5/31/2005
 Page No : 1

Groups Printed- Unshifted															
Start Time	Kula Highway Southbound					Kula Highway Northbound					School Driveway (out) Eastbound				
	Left	Thru	Right	App. Total	App. Total	Left	Thru	Right	App. Total	App. Total	Left	Thru	Right	App. Total	Int. Total
	1.0	1.0	1.0			1.0	1.0	1.0			1.0	1.0	1.0		
03:00 PM	0	42	0	42	0	0	53	0	53	0	3	0	2	5	100
03:15 PM	0	60	0	60	0	0	76	0	76	0	9	0	2	11	147
03:30 PM	0	73	0	73	0	0	78	0	78	0	6	0	2	8	159
03:45 PM	0	83	0	83	0	0	65	0	65	0	8	0	5	13	161
Total	0	258	0	258	0	0	272	0	272	0	26	0	11	37	567
04:00 PM	0	80	0	80	0	0	77	0	77	0	14	0	4	18	175
04:15 PM	0	72	0	72	0	0	78	0	78	0	10	0	2	12	162
04:30 PM	0	77	0	77	0	0	62	0	62	0	11	0	3	14	153
04:45 PM	0	74	0	74	0	0	76	0	76	0	5	0	6	11	161
Total	0	303	0	303	0	0	293	0	293	0	40	0	15	55	651
05:00 PM	0	79	0	79	0	0	58	0	58	0	5	0	5	10	147
05:15 PM	0	65	0	65	0	0	66	0	66	0	10	0	5	15	146
05:30 PM	0	61	0	61	0	0	69	0	69	0	8	0	2	10	140
05:45 PM	0	77	0	77	0	0	56	0	56	0	0	0	0	0	133
Total	0	282	0	282	0	0	249	0	249	0	23	0	12	35	566
Grand Total	0	843	0	843	0	0	814	0	814	0	89	0	38	127	1784
Approch %	0.0	100.0	0.0	47.3	0.0	0.0	100.0	0.0	45.6	0.0	70.1	0.0	29.9	7.1	
Total %	0.0	47.3	0.0	47.3	0.0	0.0	45.6	0.0	45.6	0.0	5.0	0.0	2.1		
Peak Hour From 03:00 PM to 05:45 PM - Peak 1 of 1															
Start Time	Kula Highway Southbound					Kula Highway Northbound					School Driveway (out) Eastbound				
Intersection	Left	Thru	Right	App. Total	App. Total	Left	Thru	Right	App. Total	App. Total	Left	Thru	Right	App. Total	Int. Total
Volume	0	308	0	308	0	0	298	0	298	0	38	0	13	51	657
Percent	0.0	100.0	0.0	80	0	0.0	100.0	0.0	77	0	74.5	0.0	25.5	18	175
04:00 Volume	0	80	0	80	0	0	77	0	77	0	14	0	4	18	0.939
Peak Factor															
High Int.	03:45 PM			2:45:00 PM	03:30 PM	04:00 PM					14	0	4	18	
Volume	0	83	0	83	0	0	78	0	78	0	14	0	4	18	
Peak Factor				0.928					0.955					0.708	

Wilson Okamoto Corporation
 1907 S. Beretania Street, Suite 400
 Honolulu, HI 96826

Counter: D1-0528
 Counted By: TO
 Weather: CLEAR

File Name : KuilKul-sA
 Site Code : 00000004
 Start Date : 6/1/2005
 Page No : 1

Start Time	Kula Highway Southbound						Lower Kula Highway (South) Westbound						Kula Highway Northbound					
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total		
	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0			
Factor	0	15	0	15	0	0	0	0	0	0	0	0	0	35	0	35	0	
06:00 AM	1	23	0	24	0	0	0	0	0	0	0	0	0	36	0	36	0	
06:15 AM	0	38	0	38	2	1	1	3	0	0	1	1	0	47	1	48	0	
06:30 AM	0	36	0	36	1	0	1	2	0	0	2	2	0	57	2	59	0	
06:45 AM	1	112	0	113	3	0	2	5	0	0	3	5	0	175	3	178	0	
Total	1	112	0	113	3	0	2	5	0	0	3	5	0	175	3	178	0	
07:00 AM	1	28	0	29	0	0	2	2	0	0	2	2	0	61	1	62	0	
07:15 AM	2	15	0	17	1	0	2	3	0	0	2	3	0	80	0	80	0	
07:30 AM	3	52	0	55	1	0	2	3	0	0	2	3	0	84	0	84	0	
07:45 AM	3	58	0	61	0	0	1	1	0	0	1	1	0	53	0	53	0	
Total	9	153	0	162	2	0	7	9	0	0	7	9	0	278	1	279	0	
Grand Total	10	265	0	275	5	0	9	14	0	0	9	14	0	453	4	457	0	
Approch %	3.6	96.4	0.0	36.9	35.7	0.0	64.3	1.9	0.0	0.0	60.7	61.3	0.0	99.1	0.9	0.0	0.0	
Total %	1.3	35.5	0.0	36.9	0.7	0.0	1.2	1.9	0.0	0.0	60.7	61.3	0.0	60.7	0.5	61.3	0.0	

Start Time	Kula Highway Southbound						Lower Kula Highway (South) Westbound						Kula Highway Northbound					
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total		
	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0			
Intersection 07:00 AM	9	153	0	162	2	0	7	9	0	0	7	9	0	278	1	279	0	
Volume	5.6	94.4	0.0	55	22.2	0.0	77.8	3	0.0	0.0	84.3	1.9	0.0	99.6	0.4	0.0	0.0	
Percent	3	52	0	55	1	0	2	3	0	0	2	3	0	84	0	84	0	
07:30 Volume	3	52	0	55	1	0	2	3	0	0	2	3	0	84	0	84	0	
Peak Factor	0.745	0.745	0.0	0.745	0.745	0.0	0.745	0.745	0.0	0.0	0.745	0.745	0.0	0.745	0.0	0.745	0.0	
High Int. 07:45 AM	3	58	0	61	07:15 AM	1	0	2	3	07:30 AM	0	3	0	84	0	84	0	
Volume	3	58	0	61	1	0	2	3	0	0	2	3	0	84	0	84	0	
Peak Factor	0.745	0.745	0.0	0.745	0.745	0.0	0.745	0.745	0.0	0.0	0.745	0.745	0.0	0.745	0.0	0.745	0.0	
07:45 AM	3	58	0	61	07:15 AM	1	0	2	3	07:30 AM	0	3	0	84	0	84	0	
Volume	3	58	0	61	1	0	2	3	0	0	2	3	0	84	0	84	0	
Peak Factor	0.745	0.745	0.0	0.745	0.745	0.0	0.745	0.745	0.0	0.0	0.745	0.745	0.0	0.745	0.0	0.745	0.0	
07:45 AM	3	58	0	61	07:15 AM	1	0	2	3	07:30 AM	0	3	0	84	0	84	0	
Volume	3	58	0	61	1	0	2	3	0	0	2	3	0	84	0	84	0	
Peak Factor	0.745	0.745	0.0	0.745	0.745	0.0	0.745	0.745	0.0	0.0	0.745	0.745	0.0	0.745	0.0	0.745	0.0	
07:45 AM	3	58	0	61	07:15 AM	1	0	2	3	07:30 AM	0	3	0	84	0	84	0	
Volume	3	58	0	61	1	0	2	3	0	0	2	3	0	84	0	84	0	
Peak Factor	0.745	0.745	0.0	0.745	0.745	0.0	0.745	0.745	0.0	0.0	0.745	0.745	0.0	0.745	0.0	0.745	0.0	

Wilson Okamoto Corporation
 1907 S. Beretania Street, Suite 400
 Honolulu, HI 96826

Counter: D1-0528
 Counted By: TO
 Weather: CLEAR

File Name : KulLkul-sP
 Site Code : 00000004
 Start Date : 5/31/2005
 Page No : 1

Start Time	Groups Printed- Unshifted											
	Kula Highway Southbound				Lower Kula Highway (South) Westbound				Kula Highway Northbound			
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0	
03:00 PM	0	39	0	39	0	0	2	2	0	44	0	44
03:15 PM	1	40	0	41	2	0	1	3	0	56	1	57
03:30 PM	2	52	0	54	0	0	3	3	0	61	1	62
03:45 PM	3	49	0	52	0	0	0	0	0	50	0	50
Total	6	180	0	186	2	0	6	8	0	211	2	213
04:00 PM	1	60	0	61	5	0	1	6	0	61	2	63
04:15 PM	3	50	0	53	2	0	0	2	0	62	1	63
04:30 PM	2	51	0	53	4	0	3	7	0	51	2	53
04:45 PM	1	58	0	59	1	0	1	2	0	63	4	67
Total	7	219	0	226	12	0	5	17	0	237	9	246
05:00 PM	1	53	0	54	0	0	5	5	0	53	1	54
05:15 PM	1	55	0	56	1	0	2	3	0	60	0	60
05:30 PM	2	42	0	44	1	0	0	1	0	52	2	54
05:45 PM	1	54	0	55	1	0	1	2	0	49	4	53
Total	5	204	0	209	3	0	8	11	0	214	7	221
Grand Total	18	603	0	621	17	0	19	36	0	662	18	680
Approch %	2.9	97.1	0.0		47.2	0.0	52.8		0.0	97.4	2.6	
Total %	1.3	45.1	0.0	46.4	1.3	0.0	1.4	2.7	0.0	49.5	1.3	50.9

Start Time	Lower Kula Highway (South)											
	Kula Highway Southbound				Westbound				Kula Highway Northbound			
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total
Peak Hour From 03:00 PM to 05:45 PM - Peak 1 of 1												
Intersection 04:00 PM	7	219	0	226	12	0	5	17	0	237	9	246
Volume Percent	3.1	96.9	0.0	61	70.6	0.0	29.4	6	0.0	96.3	3.7	63
04:00 Volume	1	60	0	61	5	0	1	6	0	61	2	63
Peak Factor												
High Int. 04:00 PM	1	60	0	61	04:30 PM	4	3	7	04:45 PM	0	4	67
Volume				0.926				0.607				0.918
Peak Factor												

Wilson Okamoto Corporation
 1907 S. Beretania Street, Suite 400
 Honolulu, HI 96826
 Counter: D1-0528
 Counted By: TO
 Weather: CLEAR
 File Name : KulLkul-sP
 Site Code : 00000004
 Start Date : 5/31/2005
 Page No : 1

Wilson Okamoto Corporation

1907 S. Bereania Street #400

Honolulu, HI 96826

Title1 : Kula Highway
 Title2 : South of school driveway
 Title3 : 7410-01

Site: 01
 Date: 05/31/05

Interval	SB		NB		Combined		Day:
Begin	AM	PM	AM	PM	AM	PM	Tuesday
12:00	
12:15	
12:30	
12:45	
01:00	
01:15	
01:30	
01:45	
02:00	.	18	.	8	.	26	391
02:15	.	60	.	52	.	112	
02:30	.	67	.	58	.	125	
02:45	.	66	.	62	.	128	
03:00	.	43	.	56	.	99	549
03:15	.	65	.	68	.	133	
03:30	.	73	.	81	.	154	
03:45	.	91	.	72	.	163	
04:00	.	86	.	75	.	161	609
04:15	.	72	.	76	.	148	
04:30	.	83	.	64	.	147	
04:45	.	75	.	78	.	153	
05:00	.	80	.	50	.	130	544
05:15	.	80	.	66	.	146	
05:30	.	63	.	70	.	133	
05:45	.	78	.	57	.	135	
06:00	.	66	.	62	.	128	429
06:15	.	64	.	47	.	111	
06:30	.	63	.	54	.	117	
06:45	.	41	.	32	.	73	
07:00	.	53	.	30	.	83	322
07:15	.	44	.	40	.	84	
07:30	.	52	.	39	.	91	
07:45	.	38	.	26	.	64	
08:00	.	35	.	26	.	61	194
08:15	.	40	.	20	.	60	
08:30	.	32	.	14	.	46	
08:45	.	21	.	6	.	27	
09:00	.	44	.	16	.	60	171
09:15	.	21	.	10	.	31	
09:30	.	26	.	12	.	38	
09:45	.	31	.	11	.	42	
10:00	.	29	.	10	.	39	100
10:15	.	18	.	3	.	21	
10:30	.	15	.	4	.	19	
10:45	.	19	.	2	.	21	
11:00	.	16	.	6	.	22	69
11:15	.	13	.	4	.	17	
11:30	.	16	.	7	.	23	
11:45	.	3	.	4	.	7	
Totals	0	1,900	0	1,478	0	3,378	
lit%	.	56.2	.	43.8	.		
Day Totals		1,900		1,478		3,378	
Day Splits		56.2		43.8			
Peak Hour	.	03:45	.	03:30	.	03:30	
Volume	.	332	.	304	.	626	
Factor	.	0.91	.	0.94	.	0.96	

Wilson Okamoto Corporation

1907 S. Beretania Street #400
Honolulu, HI 96826

Title1 : Kula Highway
Title2 : South of school driveway
Title3 : 7410-01

Site: 01
Date: 06/01/05

Interval	SB		NB			Combined		Day
	AM	PM	AM	PM	AM	PM		
12:00	5	24	3	6	8	30		
12:15	10		1		11			
12:30	4		0		4			
12:45	5		2		7			
01:00	3	12	0	3	3	15		
01:15	1		1		2			
01:30	3		0		3			
01:45	5		2		7			
02:00	3	5	4	11	7	16		
02:15	0		4		4			
02:30	1		3		4			
02:45	1		0		1			
03:00	0	3	4	11	4	14		
03:15	1		2		3			
03:30	2		2		4			
03:45	0		3		3			
04:00	4	12	2	21	6	33		
04:15	4		4		8			
04:30	1		4		5			
04:45	3		11		14			
05:00	6	29	20	100	26	129		
05:15	5		19		24			
05:30	7		30		37			
05:45	11		31		42			
06:00	18	122	58	275	76	397		
06:15	25		63		88			
06:30	38		62		100			
06:45	41		92		133			
07:00	32	234	96	436	128	670		
07:15	49		124		173			
07:30	80		124		204			
07:45	73		92		165			
08:00	0		0		0			
08:15	.		.		.			
08:30	.		.		.			
08:45	.		.		.			
09:00	.		.		.			
09:15	.		.		.			
09:30	.		.		.			
09:45	.		.		.			
10:00	.		.		.			
10:15	.		.		.			
10:30	.		.		.			
10:45	.		.		.			
11:00	.		.		.			
11:15	.		.		.			
11:30	.		.		.			
11:45	.		.		.			
Totals	441	0	863	0	1304	0		
lit%	33.8	.	66.2	.				
Day Totals		441		863		1304		
Day Splits		33.8		66.2				
Peak Hour	07:00	.	06:45	.	07:00	.		
Volume	234	.	436	.	670	.		
Factor	0.73	.	0.88	.	0.82	.		

APPENDIX B
LEVEL OF SERVICE DEFINITIONS

LEVEL OF SERVICE DEFINITIONS

LEVEL-OF-SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS

Level of Service (LOS) criteria are given in Table 1. As used here, control delay is defined as the total elapsed time from the time a vehicle stops at the end of the queue to the time required for the vehicle to travel from the last-in-queue position to the first-in-queue position, including deceleration of vehicles from free-flow speed to the speed of vehicles in the queue.

The average total delay for any particular minor movement is a function of the service rate or capacity of the approach and the degree of saturation. If the degree of saturation is greater than about 0.9, average control delay is significantly affected by the length of the analysis period.

Table 1: Level-of-Service Criteria for Unsignalized Intersections

Level of Service	Average Control Delay (Sec/Veh)
A	≤ 10.0
B	> 10.0 and ≤ 15.0
C	> 15.0 and ≤ 25.0
D	> 25.0 and ≤ 35.0
E	> 35.0 and ≤ 50.0
F	> 50.0

APPENDIX C

**CAPACITY ANALYSIS CALCULATIONS
EXISTING PEAK PERIOD TRAFFIC ANALYSIS**

HCS+: Unsignalized Intersections Release 5.1

TWO-WAY STOP CONTROL SUMMARY

Analyst: KT
 Agency/Co.:
 Date Performed: 9/26/2005
 Analysis Time Period: AM Peak Period
 Intersection: Kula Hwy/Lower Kula Rd (North)
 Jurisdiction:
 Units: U. S. Customary
 Analysis Year: Existing
 Project ID:
 East/West Street: Lower Kula Rd (North)
 North/South Street: Kula Highway
 Intersection Orientation: NS Study period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street:	Approach Movement	Northbound			Southbound		
		1 L	2 T	3 R	4 L	5 T	6 R
Volume			504	9	78	344	
Peak-Hour Factor, PHF			0.90	0.90	0.77	0.77	
Hourly Flow Rate, HFR			560	10	101	446	
Percent Heavy Vehicles			--	--	2	--	--
Median Type/Storage		Undivided			/		
RT Channelized?							
Lanes			1	0	0	1	
Configuration				TR		LT	
Upstream Signal?			No			No	

Minor Street:	Approach Movement	Westbound			Eastbound		
		7 L	8 T	9 R	10 L	11 T	12 R
Volume		13		84			
Peak Hour Factor, PHF		0.84		0.84			
Hourly Flow Rate, HFR		15		100			
Percent Heavy Vehicles		2		2			
Percent Grade (%)			0			0	
Flared Approach: Exists?/Storage				No	/		/
Lanes		0		0			
Configuration				LR			

Delay, Queue Length, and Level of Service

Approach Movement	NB 1	SB 4	Westbound			Eastbound		
			7	8	9	10	11	12
Lane Config		LT		LR				
v (vph)		101		115				
C(m) (vph)		1002		460				
v/c		0.10		0.25				
95% queue length		0.34		0.99				
Control Delay		9.0		15.4				
LOS		A		C				
Approach Delay				15.4				
Approach LOS				C				

HCS+: Unsignalized Intersections Release 5.1

TWO-WAY STOP CONTROL SUMMARY

Analyst: KT
 Agency/Co.:
 Date Performed: 9/26/2005
 Analysis Time Period: PM Peak Period
 Intersection: Kula Hwy/Lower Kula Rd (North)
 Jurisdiction:
 Units: U. S. Customary
 Analysis Year: Existing
 Project ID:
 East/West Street: Lower Kula Rd (North)
 North/South Street: Kula Highway
 Intersection Orientation: NS
 Study period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street:	Approach Movement	Northbound			Southbound		
		1 L	2 T	3 R	4 L	5 T	6 R
Volume			335	10	79	346	
Peak-Hour Factor, PHF			0.86	0.86	0.90	0.90	
Hourly Flow Rate, HFR			389	11	87	384	
Percent Heavy Vehicles			--	--	2	--	--
Median Type/Storage		Undivided			/		
RT Channelized?							
Lanes			1	0		0	1
Configuration				TR		LT	
Upstream Signal?			No			No	

Minor Street:	Approach Movement	Westbound			Eastbound		
		7 L	8 T	9 R	10 L	11 T	12 R
Volume		7		62			
Peak Hour Factor, PHF		0.82		0.82			
Hourly Flow Rate, HFR		8		75			
Percent Heavy Vehicles		2		2			
Percent Grade (%)			0			0	
Flared Approach: Exists?/Storage				No	/		/
Lanes		0		0			
Configuration				LR			

Delay, Queue Length, and Level of Service

Approach Movement	NB 1	SB 4	Westbound			Eastbound		
			7 LT	8 LR	9	10	11	12
Lane Config								
v (vph)		87		83				
C(m) (vph)		1159		603				
v/c		0.08		0.14				
95% queue length		0.24		0.48				
Control Delay		8.4		11.9				
LOS		A		B				
Approach Delay				11.9				
Approach LOS				B				

HCS+: Unsignalized Intersections Release 5.1

TWO-WAY STOP CONTROL SUMMARY

Analyst: KT
 Agency/Co.:
 Date Performed: 9/26/2005
 Analysis Time Period: AM Peak Period
 Intersection: Kula Highway/Driveway (out)
 Jurisdiction:
 Units: U. S. Customary
 Analysis Year: Existing
 Project ID:
 East/West Street: School Driveway (out)
 North/South Street: Kula Highway
 Intersection Orientation: MS Study period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street:	Approach Movement	Northbound			Southbound		
		1 L	2 T	3 R	4 L	5 T	6 R
Volume		438			163		
Peak-Hour Factor, PHF		0.87			0.80		
Hourly Flow Rate, HFR		503			203		
Percent Heavy Vehicles		--			--		
Median Type/Storage		Undivided			/		
RT Channelized?							
Lanes		1			1		
Configuration		T			T		
Upstream Signal?		No			No		

Minor Street:	Approach Movement	Westbound			Eastbound		
		7 L	8 T	9 R	10 L	11 T	12 R
Volume					161		
Peak Hour Factor, PHF					0.65		
Hourly Flow Rate, HFR					247		
Percent Heavy Vehicles					2		
Percent Grade (%)		0			0		
Flared Approach: Exists?/Storage					/		
Lanes					1		
Configuration					L R		

Delay, Queue Length, and Level of Service

Approach Movement Lane Config	NB	SB	Westbound			Eastbound		
	1	4	7	8	9	10 L	11	12 R
v (vph)						247		
C(m) (vph)						510		
v/c						0.48		
95% queue length						2.76		
Control Delay						18.6		
LOS						C		
Approach Delay						16.2		
Approach LOS						C		

HCS+: Unsignalized Intersections Release 5.1

TWO-WAY STOP CONTROL SUMMARY

Analyst: KT
 Agency/Co.:
 Date Performed: 9/26/2005
 Analysis Time Period: AM Peak Period
 Intersection: Kula Hwy/Lower Kula Rd (South)
 Jurisdiction:
 Units: U. S. Customary
 Analysis Year: Existing
 Project ID:
 East/West Street: Lower Kula Rd (South)
 North/South Street: Kula Highway
 Intersection Orientation: NS
 Study period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street: Approach Movement	Northbound			Southbound		
	1 L	2 T	3 R	4 L	5 T	6 R
Volume		278	1	9	153	
Peak-Hour Factor, PHF		0.83	0.83	0.66	0.66	
Hourly Flow Rate, HFR		334	1	13	231	
Percent Heavy Vehicles		--	--	2	--	--
Median Type/Storage	Undivided			/		
RT Channelized?						
Lanes		1	0	0	1	
Configuration			TR		LT	
Upstream Signal?		No			No	

Minor Street: Approach Movement	Westbound			Eastbound		
	7 L	8 T	9 R	10 L	11 T	12 R
Volume	2		7			
Peak Hour Factor, PHF	0.75		0.75			
Hourly Flow Rate, HFR	2		9			
Percent Heavy Vehicles	2		2			
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			No	/		/
Lanes	0		0			
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach Movement Lane Config	NB	SB	Westbound			Eastbound		
	1	4 LT	7	8 LR	9	10	11	12
v (vph)		13		11				
C(m) (vph)		1224		672				
v/c		0.01		0.02				
95% queue length		0.03		0.05				
Control Delay		8.0		10.4				
LOS		A		B				
Approach Delay				10.4				
Approach LOS				B				

HCS+: Unsignalized Intersections Release 5.1

TWO-WAY STOP CONTROL SUMMARY

Analyst: KT
 Agency/Co.:
 Date Performed: 9/26/2005
 Analysis Time Period: PM Peak Period
 Intersection: Kula Hwy/Lower Kula Rd (South)
 Jurisdiction:
 Units: U. S. Customary
 Analysis Year: Existing
 Project ID:
 East/West Street: Lower Kula Rd (South)
 North/South Street: Kula Highway
 Intersection Orientation: NS
 Study period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street: Approach Movement	Northbound			Southbound		
	1 L	2 T	3 R	4 L	5 T	6 R
Volume		234	4	9	211	
Peak-Hour Factor, PHF		0.92	0.92	0.93	0.93	
Hourly Flow Rate, HFR		254	4	9	226	
Percent Heavy Vehicles		--	--	2	--	--
Median Type/Storage	Undivided			/		
RT Channelized?						
Lanes		1	0		0	1
Configuration			TR		LT	
Upstream Signal?		No			No	

Minor Street: Approach Movement	Westbound			Eastbound		
	7 L	8 T	9 R	10 L	11 T	12 R
Volume	7		4			
Peak Hour Factor, PHF	0.61		0.61			
Hourly Flow Rate, HFR	11		6			
Percent Heavy Vehicles	2		2			
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			No	/		/
Lanes	0		0			
Configuration			LR			

Delay, Queue Length, and Level of Service

Approach Movement Lane Config	NB	SB	Westbound			Eastbound		
	1	4 LT	7	8 LR	9	10	11	12
v (vph)		9		17				
C(m) (vph)		1307		658				
v/c		0.01		0.03				
95% queue length		0.02		0.08				
Control Delay		7.8		10.6				
LOS		A		B				
Approach Delay				10.6				
Approach LOS				B				

APPENDIX D

CAPACITY ANALYSIS CALCULATIONS
PROJECTED YEAR 2006 PEAK PERIOD TRAFFIC
ANALYSIS WITHOUT PROJECT

HCS+: Unsignalized Intersections Release 5.1

TWO-WAY STOP CONTROL SUMMARY

Analyst: KT
 Agency/Co.:
 Date Performed: 9/26/2005
 Analysis Time Period: AM Peak Period
 Intersection: Kula Hwy/Lower Kula Rd (North)
 Jurisdiction:
 Units: U. S. Customary
 Analysis Year: Year 2006 without Project
 Project ID:
 East/West Street: Lower Kula Rd (North)
 North/South Street: Kula Highway
 Intersection Orientation: NS Study period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street:	Approach Movement	Northbound			Southbound		
		1 L	2 T	3 R	4 L	5 T	6 R
Volume			517	9	78	353	
Peak-Hour Factor, PHF			0.90	0.90	0.77	0.77	
Hourly Flow Rate, HFR			574	10	101	458	
Percent Heavy Vehicles			--	--	2	--	--
Median Type/Storage		Undivided			/		
RT Channelized?							
Lanes			1	0		0	1
Configuration				TR		LT	
Upstream Signal?			No			No	

Minor Street:	Approach Movement	Westbound			Eastbound		
		7 L	8 T	9 R	10 L	11 T	12 R
Volume		13		84			
Peak Hour Factor, PHF		0.84		0.84			
Hourly Flow Rate, HFR		15		100			
Percent Heavy Vehicles		2		2			
Percent Grade (%)			0			0	
Flared Approach: Exists?/Storage				No	/		/
Lanes		0		0			
Configuration				LR			

Delay, Queue Length, and Level of Service

Approach	NB Movement	SB 4	Westbound			Eastbound		
			7	8	9	10	11	12
Lane Config	1	LT		LR				
v (vph)		101		115				
C(m) (vph)		991		450				
v/c		0.10		0.26				
95% queue length		0.34		1.02				
Control Delay		9.0		15.7				
LOS		A		C				
Approach Delay				15.7				
Approach LOS				C				

HCS+: Unsignalized Intersections Release 5.1

TWO-WAY STOP CONTROL SUMMARY

Analyst: KT
 Agency/Co.:
 Date Performed: 9/26/2005
 Analysis Time Period: PM Peak Period
 Intersection: Kula Hwy/Lower Kula Rd (North)
 Jurisdiction:
 Units: U. S. Customary
 Analysis Year: Year 2006 without Project
 Project ID:
 East/West Street: Lower Kula Rd (North)
 North/South Street: Kula Highway
 Intersection Orientation: NS
 Study period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street:	Approach Movement	Northbound			Southbound		
		1 L	2 T	3 R	4 L	5 T	6 R
Volume			344	10	79	355	
Peak-Hour Factor, PHF			0.86	0.86	0.90	0.90	
Hourly Flow Rate, HFR			399	11	87	394	
Percent Heavy Vehicles			--	--	2	--	--
Median Type/Storage		Undivided			/		
RT Channelized?							
Lanes			1	0		0	1
Configuration				TR		LT	
Upstream Signal?			No			No	

Minor Street:	Approach Movement	Westbound			Eastbound		
		7 L	8 T	9 R	10 L	11 T	12 R
Volume		7		62			
Peak Hour Factor, PHF		0.82		0.82			
Hourly Flow Rate, HFR		8		75			
Percent Heavy Vehicles		2		2			
Percent Grade (%)			0			0	
Flared Approach: Exists?/Storage				No	/		/
Lanes		0		0			
Configuration				LR			

Delay, Queue Length, and Level of Service

Approach Movement	NB 1	SB 4	Westbound			Eastbound		
			7 LT	8 LR	9	10	11	12
Lane Config								
v (vph)		87		83				
C(m) (vph)		1149		595				
v/c		0.08		0.14				
95% queue length		0.25		0.49				
Control Delay		8.4		12.0				
LOS		A		B				
Approach Delay				12.0				
Approach LOS				B				

HCS+: Unsignalized Intersections Release 5.1

TWO-WAY STOP CONTROL SUMMARY

Analyst: KT
 Agency/Co.:
 Date Performed: 9/26/2005
 Analysis Time Period: AM Peak Period
 Intersection: Kula Hwy/Lower Kula Rd (South)
 Jurisdiction:
 Units: U. S. Customary
 Analysis Year: Year 2006 without Project
 Project ID:
 East/West Street: Lower Kula Rd (South)
 North/South Street: Kula Highway
 Intersection Orientation: NS Study period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street:	Approach Movement	Northbound			Southbound		
		1 L	2 T	3 R	4 L	5 T	6 R
Volume			286	1	9	157	
Peak-Hour Factor, PHF			0.83	0.83	0.66	0.66	
Hourly Flow Rate, HFR			344	1	13	237	
Percent Heavy Vehicles			--	--	2	--	--
Median Type/Storage		Undivided			/		
RT Channelized?							
Lanes			1	0	0	1	
Configuration				TR		LT	
Upstream Signal?			No			No	

Minor Street:	Approach Movement	Westbound			Eastbound		
		7 L	8 T	9 R	10 L	11 T	12 R
Volume		2		7			
Peak Hour Factor, PHF		0.75		0.75			
Hourly Flow Rate, HFR		2		9			
Percent Heavy Vehicles		2		2			
Percent Grade (%)			0			0	
Flared Approach: Exists?/Storage				No	/		/
Lanes		0		0			
Configuration			LR				

Delay, Queue Length, and Level of Service

Approach Movement	NB 1	SB 4	Westbound			Eastbound		
			7	8	9	10	11	12
Lane Config		LT		LR				
v (vph)		13		11				
C(m) (vph)		1214		663				
v/c		0.01		0.02				
95% queue length		0.03		0.05				
Control Delay		8.0		10.5				
LOS		A		B				
Approach Delay				10.5				
Approach LOS				B				

HCS+: Unsignalized Intersections Release 5.1

TWO-WAY STOP CONTROL SUMMARY

Analyst: KT
 Agency/Co.:
 Date Performed: 9/26/2005
 Analysis Time Period: PM Peak Period
 Intersection: Kula Hwy/Lower Kula Rd (South)
 Jurisdiction:
 Units: U. S. Customary
 Analysis Year: Year 2006 without Project
 Project ID:
 East/West Street: Lower Kula Rd (South)
 North/South Street: Kula Highway
 Intersection Orientation: NS Study period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street:	Approach Movement	Northbound			Southbound		
		1 L	2 T	3 R	4 L	5 T	6 R
Volume			240	4	9	217	
Peak-Hour Factor, PHF			0.92	0.92	0.93	0.93	
Hourly Flow Rate, HFR			260	4	9	233	
Percent Heavy Vehicles			--	--	2	--	--
Median Type/Storage		Undivided			/		
RT Channelized?							
Lanes			1	0		0	1
Configuration				TR		LT	
Upstream Signal?			No			No	

Minor Street:	Approach Movement	Westbound			Eastbound		
		7 L	8 T	9 R	10 L	11 T	12 R
Volume		7		4			
Peak Hour Factor, PHF		0.61		0.61			
Hourly Flow Rate, HFR		11		6			
Percent Heavy Vehicles		2		2			
Percent Grade (%)			0			0	
Flared Approach: Exists?/Storage				No	/		/
Lanes		0		0			
Configuration				LR			

Delay, Queue Length, and Level of Service

Approach Movement	NB 1	SB 4 LT	Westbound			Eastbound		
			7	8 LR	9	10	11	12
v (vph)		9		17				
C(m) (vph)		1300		650				
v/c		0.01		0.03				
95% queue length		0.02		0.08				
Control Delay		7.8		10.7				
LOS		A		B				
Approach Delay				10.7				
Approach LOS				B				

APPENDIX E

**CAPACITY ANALYSIS CALCULATIONS
PROJECTED YEAR 2006 PEAK PERIOD TRAFFIC
ANALYSIS WITH PROJECT**

HCS+: Unsignalized Intersections Release 5.1

TWO-WAY STOP CONTROL SUMMARY

Analyst: KT
 Agency/Co.:
 Date Performed: 9/26/2005
 Analysis Time Period: AM Peak Period
 Intersection: Kula Hwy/Lower Kula Rd (North)
 Jurisdiction:
 Units: U. S. Customary
 Analysis Year: Year 2006 with Project
 Project ID:
 East/West Street: Lower Kula Rd (North)
 North/South Street: Kula Highway
 Intersection Orientation: NS Study period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street:	Approach Movement	Northbound			Southbound		
		1 L	2 T	3 R	4 L	5 T	6 R
Volume		518	9		78	353	
Peak-Hour Factor, PHF		0.90	0.90		0.77	0.77	
Hourly Flow Rate, HFR		575	10		101	458	
Percent Heavy Vehicles		--	--		2	--	--
Median Type/Storage		Undivided			/		
RT Channelized?							
Lanes		1	0		0	1	
Configuration		TR			LT		
Upstream Signal?		No			No		

Minor Street:	Approach Movement	Westbound			Eastbound		
		7 L	8 T	9 R	10 L	11 T	12 R
Volume		13		84			
Peak Hour Factor, PHF		0.84		0.84			
Hourly Flow Rate, HFR		15		100			
Percent Heavy Vehicles		2		2			
Percent Grade (%)			0			0	
Flared Approach: Exists?/Storage				No	/		/
Lanes		0		0			
Configuration		LR					

Delay, Queue Length, and Level of Service

Approach Movement Lane Config	NB	SB	Westbound			Eastbound		
	1	4	7	8	9	10	11	12
v (vph)		101		115				
C(m) (vph)		990		450				
v/c		0.10		0.26				
95% queue length		0.34		1.02				
Control Delay		9.0		15.7				
LOS		A		C				
Approach Delay				15.7				
Approach LOS				C				

HCS+: Unsignalized Intersections Release 5.2

TWO-WAY STOP CONTROL SUMMARY

Analyst: KT
 Agency/Co.:
 Date Performed: 9/26/2005
 Analysis Time Period: PM Peak Period
 Intersection: Kula Hwy/Lower Kula Rd (North)
 Jurisdiction:
 Units: U. S. Customary
 Analysis Year: Year 2006 with Project
 Project ID:
 East/West Street: Lower Kula Rd (North)
 North/South Street: Kula Highway
 Intersection Orientation: NS Study period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street:	Approach Movement	Northbound			Southbound		
		1 L	2 T	3 R	4 L	5 T	6 R
Volume			345	11	80	356	
Peak-Hour Factor, PHF			0.86	0.86	0.90	0.90	
Hourly Flow Rate, HFR			401	12	88	395	
Percent Heavy Vehicles			--	--	2	--	--
Median Type/Storage		Undivided			/		
RT Channelized?							
Lanes			1	0		0	1
Configuration				TR		LT	
Upstream Signal?			No			No	

Minor Street:	Approach Movement	Westbound			Eastbound		
		7 L	8 T	9 R	10 L	11 T	12 R
Volume		7		62			
Peak Hour Factor, PHF		0.82		0.82			
Hourly Flow Rate, HFR		8		75			
Percent Heavy Vehicles		2		2			
Percent Grade (%)			0			0	
Flared Approach: Exists?/Storage				No	/		/
Lanes		0		0			
Configuration				LR			

Delay, Queue Length, and Level of Service

Approach Movement	NB 1	SB 4	Westbound			Eastbound		
			7 LT	8 LR	9	10	11	12
v (vph)		88		83				
C(m) (vph)		1146		592				
v/c		0.08		0.14				
95% queue length		0.25		0.49				
Control Delay		8.4		12.1				
LOS		A		B				
Approach Delay				12.1				
Approach LOS				B				

HCS+: Unsignalized Intersections Release 5.2

TWO-WAY STOP CONTROL SUMMARY

Analyst: KT
 Agency/Co.:
 Date Performed: 9/26/2005
 Analysis Time Period: AM Peak Period
 Intersection: Kula Highway/Driveway (in)
 Jurisdiction:
 Units: U. S. Customary
 Analysis Year: Year 2006 with Project
 Project ID:
 East/West Street: School Driveway (in only)
 North/South Street: Kula Highway
 Intersection Orientation: NS Study period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street: Approach Movement	Northbound			Southbound		
	1 L	2 T	3 R	4 L	5 T	6 R
Volume	101	510			167	170
Peak-Hour Factor, PHF	0.81	0.81			0.69	0.69
Hourly Flow Rate, HFR	124	629			242	246
Percent Heavy Vehicles	2	--	--		--	--
Median Type/Storage	Undivided			/		
RT Channelized?						
Lanes	0	1			1	0
Configuration	LT					TR
Upstream Signal?	No				No	

Minor Street: Approach Movement	Westbound			Eastbound		
	7 L	8 T	9 R	10 L	11 T	12 R
Volume						
Peak Hour Factor, PHF						
Hourly Flow Rate, HFR						
Percent Heavy Vehicles						
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage				/		/
Lanes						
Configuration						

Delay, Queue Length, and Level of Service

Approach Movement Lane Config	NB	SB	Westbound			Eastbound		
	1	4	7	8	9	10	11	12
v (vph)	124							
C(m) (vph)	1075							
v/c	0.12							
95% queue length	0.39							
Control Delay	8.8							
LOS	A							

HCS+: Unsignalized Intersections Release 5.2

TWO-WAY STOP CONTROL SUMMARY

Analyst: KT
 Agency/Co.:
 Date Performed: 9/26/2005
 Analysis Time Period: AM Peak Period
 Intersection: Kula Highway/Driveway (out)
 Jurisdiction:
 Units: U. S. Customary
 Analysis Year: Year 2006 with Project
 Project ID:
 East/West Street: School Driveway (out)
 North/South Street: Kula Highway
 Intersection Orientation: NS Study period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street: Approach Movement	Northbound			Southbound		
	1 L	2 T	3 R	4 L	5 T	6 R
Volume		450	1		167	
Peak-Hour Factor, PHF		0.87	0.90		0.80	
Hourly Flow Rate, HFR		517	1		208	
Percent Heavy Vehicles		--	--		--	--
Median Type/Storage	Undivided			/		
RT Channelized?						
Lanes		1	0		1	
Configuration			TR		T	
Upstream Signal?		No			No	

Minor Street: Approach Movement	Westbound			Eastbound		
	7 L	8 T	9 R	10 L	11 T	12 R
Volume			1	161		61
Peak Hour Factor, PHF			0.90	0.65		0.65
Hourly Flow Rate, HFR			1	247		93
Percent Heavy Vehicles			2	2		2
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage				/		/
Lanes			1	1	1	
Configuration			R	L	R	

Delay, Queue Length, and Level of Service

Approach Movement Lane Config	NB	SB	Westbound			Eastbound		
	1	4	7	8	9 R	10 L	11	12 R
v (vph)					1	247		93
C(m) (vph)					558	432		832
v/c					0.00	0.57		0.11
95% queue length					0.01	3.85		0.38
Control Delay					11.5	24.3		9.9
LOS					B	C		A
Approach Delay				11.5			20.4	
Approach LOS				B			C	

HCS+: Unsignalized Intersections Release 5.2

TWO-WAY STOP CONTROL SUMMARY

Analyst: KT
 Agency/Co.:
 Date Performed: 9/26/2005
 Analysis Time Period: PM Peak Period
 Intersection: Kula Highway/Driveway (out)
 Jurisdiction:
 Units: U. S. Customary
 Analysis Year: Year 2006 with Project
 Project ID:
 East/West Street: School Driveway (out)
 North/South Street: Kula Highway
 Intersection Orientation: NS Study period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street:	Approach Movement	Northbound			Southbound		
		1 L	2 T	3 R	4 L	5 T	6 R
Volume		306	2		316		
Peak-Hour Factor, PHF		0.96	0.90		0.93		
Hourly Flow Rate, HFR		318	2		339		
Percent Heavy Vehicles		--	--		--	--	
Median Type/Storage		Undivided			/		
RT Channelized?							
Lanes		1	0		1		
Configuration			TR		T		
Upstream Signal?		No			No		

Minor Street:	Approach Movement	Westbound			Eastbound		
		7 L	8 T	9 R	10 L	11 T	12 R
Volume				2	38		13
Peak Hour Factor, PHF				0.90	0.71		0.71
Hourly Flow Rate, HFR				2	53		18
Percent Heavy Vehicles				2	2		2
Percent Grade (%)		0				0	
Flared Approach: Exists?/Storage				/	/		/
Lanes			1		1	1	
Configuration			R		L	R	

Delay, Queue Length, and Level of Service

Approach Movement	NB	SB	Westbound			Eastbound			
			7	8	9	10	11	12	
Lane Config	1	4			R		L		R
v (vph)					2		53		18
C(m) (vph)					722		471		703
v/c					0.00		0.11		0.03
95% queue length					0.01		0.38		0.08
Control Delay					10.0		13.6		10.3
LOS					A		B		B
Approach Delay				10.0				12.8	
Approach LOS				A				B	

HCS+: Unsignalized Intersections Release 5.1

TWO-WAY STOP CONTROL SUMMARY

Analyst: KT
 Agency/Co.:
 Date Performed: 9/26/2005
 Analysis Time Period: AM Peak Period
 Intersection: Kula Hwy/Lower Kula Rd (South)
 Jurisdiction:
 Units: U. S. Customary
 Analysis Year: Year 2006 with Project
 Project ID:
 East/West Street: Lower Kula Rd (South)
 North/South Street: Kula Highway
 Intersection Orientation: NS Study period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street: Approach Movement	Northbound			Southbound		
	1 L	2 T	3 R	4 L	5 T	6 R
Volume		287	1	9	157	
Peak-Hour Factor, PHF		0.83	0.83	0.66	0.66	
Hourly Flow Rate, HFR		345	1	13	237	
Percent Heavy Vehicles		--	--	2	--	--
Median Type/Storage	Undivided			/		
RT Channelized?						
Lanes		1	0	0	1	
Configuration			TR		LT	
Upstream Signal?		No			No	

Minor Street: Approach Movement	Westbound			Eastbound		
	7 L	8 T	9 R	10 L	11 T	12 R
Volume	2		7			
Peak Hour Factor, PHF	0.75		0.75			
Hourly Flow Rate, HFR	2		9			
Percent Heavy Vehicles	2		2			
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			No	/		/
Lanes	0		0			
Configuration			LR			

Delay, Queue Length, and Level of Service

Approach Movement Lane Config	NB	SB	Westbound			Eastbound		
	1	4	7	8	9	10	11	12
		LT		LR				
v (vph)		13		11				
C(m) (vph)		1213		661				
v/c		0.01		0.02				
95% queue length		0.03		0.05				
Control Delay		8.0		10.5				
LOS		A		B				
Approach Delay				10.5				
Approach LOS				B				

HCS+: Unsignalized Intersections Release 5.2

TWO-WAY STOP CONTROL SUMMARY

Analyst: KT
 Agency/Co.:
 Date Performed: 9/26/2005
 Analysis Time Period: PM Peak Period
 Intersection: Kula Hwy/Lower Kula Rd (South)
 Jurisdiction:
 Units: U. S. Customary
 Analysis Year: Year 2006 with Project
 Project ID:
 East/West Street: Lower Kula Rd (South)
 North/South Street: Kula Highway
 Intersection Orientation: NS Study period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street:	Approach Movement	Northbound			Southbound		
		1 L	2 T	3 R	4 L	5 T	6 R
Volume		241	4	9	217		
Peak-Hour Factor, PHF		0.92	0.92	0.93	0.93		
Hourly Flow Rate, HFR		261	4	9	233		
Percent Heavy Vehicles		--	--	2	--	--	
Median Type/Storage		Undivided			/		
RT Channelized?							
Lanes		1	0		0	1	
Configuration			TR		LT		
Upstream Signal?		No			No		

Minor Street:	Approach Movement	Westbound			Eastbound		
		7 L	8 T	9 R	10 L	11 T	12 R
Volume		7		5			
Peak Hour Factor, PHF		0.61		0.61			
Hourly Flow Rate, HFR		11		8			
Percent Heavy Vehicles		2		2			
Percent Grade (%)			0			0	
Flared Approach: Exists?/Storage				No	/		/
Lanes		0		0			
Configuration			LR				

Delay, Queue Length, and Level of Service

Approach Movement	NB 1	SB 4	Westbound			Eastbound		
			7 LT	8 LR	9	10	11	12
Lane Config								
v (vph)		9		19				
C(m) (vph)		1299		661				
v/c		0.01		0.03				
95% queue length		0.02		0.09				
Control Delay		7.8		10.6				
LOS		A		B				
Approach Delay				10.6				
Approach LOS				B				

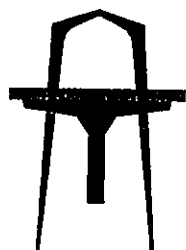
APPENDIX F.

**Supplemental Traffic
Assessment**

AUG 31 2008

7410-01
August 29, 2006

WILSON
OKAMOTO
CORPORATION



ENGINEERS
PLANNERS

1907 S. BERETANIA ST.
SUITE 400
HONOLULU, HI 96826
PH. (808)946-2277
FAX: (808)946-2253

Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, HI 96793

Attention: Mr. Mike Munekiyo

Subject: Traffic Impact Report for the Proposed Kula Senior Community
Housing

Dear Mr. Munekiyo:

As requested, the following are our responses to the DOT comments provided by your office.

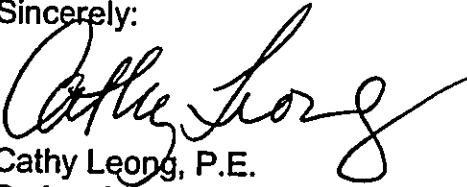
Comment: The traffic study should also include an analysis of traffic conditions during the school peak hour (i.e., at approximately 2:00 pm to 2:30 pm).

Response: The traffic study assesses the impact of the project on the surrounding roadways during the peak commuter periods along the highway. The PM peak commuter period generally occurs between 3:30 PM and 4:30 PM in the vicinity of the project. Supplemental data was collected at the exit driveway of the adjacent elementary school during the PM peak hour of the school between 1:45 PM and 2:45 PM. Field observations indicate that the majority of school traffic exits the school during a 30-minute period from 1:55 PM to 2:25 PM. Analysis of this data indicates that although the volume of traffic exiting the school is higher during the school PM peak period, the traffic movements on the school driveway are expected to operate at similar or better levels of service during the school PM peak period than the commuter PM peak period due to the lower volume of conflicting traffic along the highway (see Attachment A). In addition, the total volumes along the highway just south of the school exit driveway are approximately equal during the school and commuter PM peak periods indicating that traffic operations at the adjacent intersections are similar during both peak periods. As such, the use of the commuter PM peak period would represent the worst-case scenario along the surrounding roadways.

Comment: The traffic study should indicate the traffic conditions along Kula Highway to determine how much of a conflict there is with pedestrians crossing the highway. In other words, is there sufficient gaps in traffic flows to allow safe crossing of the highway?

Response: Supplemental data was collected at the crosswalks near the exit driveway of the adjacent elementary school during the morning period between 7:30 AM and 8:30 AM, and school PM peak period between 1:45 PM and 2:45 PM (see Attachment B). Only 5 pedestrians and 2 pedestrians were observed crossing Kula Highway in the vicinity of the school's exit driveway during the morning and school PM peak periods, respectively. Approximately 70-75% of the gaps timed between vehicular platoons headed southbound along the highway were at least 30 seconds long while 50-55% of the gaps timed between platoons headed northbound were at least 30 seconds long. Overall, approximately 60% of the gaps timed between platoons along the highway were at least 30 seconds long. Field observations indicated that pedestrians either had sufficient time to cross or vehicles along the highway stopped to allow them to cross.

Sincerely:


Cathy Leong, P.E.
Project Manager

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ATTACHMENT A

~~MARK~~ PM

TRAFFIC COUNTS

Date: 8/11/06

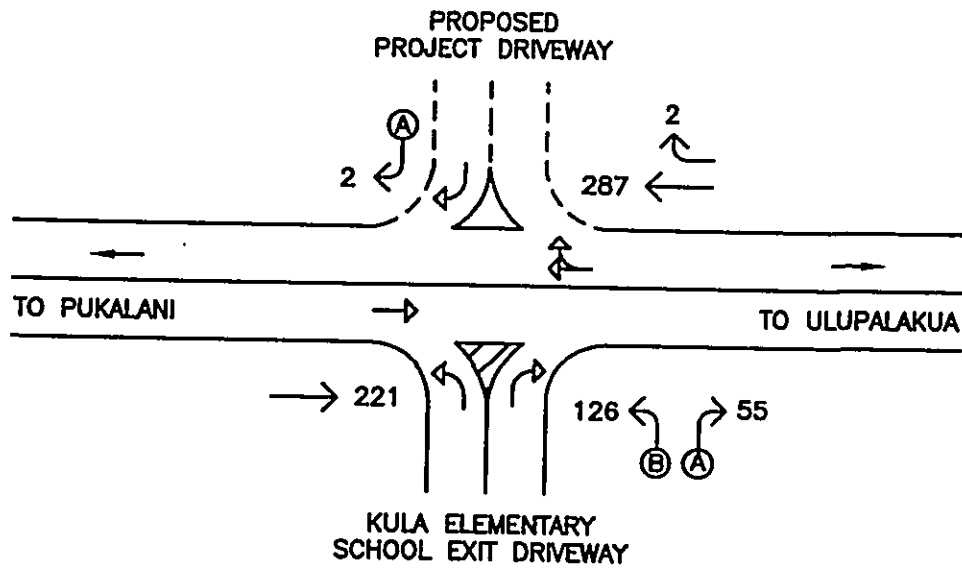
Start Time: 1:45 PM

End Time: 2:45 PM

Weather Condition: CL-UDY/OVERCAST
NO WIND

* ELEMENTARY SCHOOL TRAFFIC CLEARS BY 2:25 PM (START 1:55 PM) ⇒ 30 MIN DURATION

MANUAL TRAFFIC COUNTS				
	(2)	(3)	(4)	(5)
1	1	1	1	
2	1	1	1	
3	1	1	1	
4	1	1	1	
5	1	1	1	
6	1	1	1	
7	1	1	1	
8	1	1	1	
9	1	1	1	
10	1	1	1	
11	1	1	1	
12	1	1	1	
13	1	1	1	
14	1	1	1	
15	1	1	1	
16	1	1	1	
17	1	1	1	
18	1	1	1	
19	1	1	1	
20	1	1	1	
21	1	1	1	
22	1	1	1	
23	1	1	1	
24	1	1	1	
25	1	1	1	
26	1	1	1	
27	1	1	1	
28	1	1	1	
29	1	1	1	
30	1	1	1	
31	1	1	1	
32	1	1	1	
33	1	1	1	
34	1	1	1	
35	1	1	1	
36	1	1	1	
37	1	1	1	
38	1	1	1	
39	1	1	1	
40	1	1	1	
41	1	1	1	
42	1	1	1	
43	1	1	1	
44	1	1	1	
45	1	1	1	
46	1	1	1	
47	1	1	1	
48	1	1	1	
49	1	1	1	
50	1	1	1	
51	1	1	1	
52	1	1	1	
53	1	1	1	
54	1	1	1	
55	1	1	1	
56	1	1	1	
57	1	1	1	
58	1	1	1	
59	1	1	1	
60	1	1	1	
61	1	1	1	
62	1	1	1	
63	1	1	1	
64	1	1	1	
65	1	1	1	
66	1	1	1	
67	1	1	1	
68	1	1	1	
69	1	1	1	
70	1	1	1	
71	1	1	1	
72	1	1	1	
73	1	1	1	
74	1	1	1	
75	1	1	1	
76	1	1	1	
77	1	1	1	
78	1	1	1	
79	1	1	1	
80	1	1	1	
81	1	1	1	
82	1	1	1	
83	1	1	1	
84	1	1	1	
85	1	1	1	
86	1	1	1	
87	1	1	1	
88	1	1	1	
89	1	1	1	
90	1	1	1	
91	1	1	1	
92	1	1	1	
93	1	1	1	
94	1	1	1	
95	1	1	1	
96	1	1	1	
97	1	1	1	
98	1	1	1	
99	1	1	1	
100	1	1	1	



LEGEND

- 90 TRAFFIC MOVEMENT VOLUME (VPH)
- LANE USAGE
- (A) LANE GROUP LEVEL OF SERVICE



KULA SENIOR COMMUNITY HOUSING

SCHOOL PM PEAK HOUR OF TRAFFIC WITH PROJECT

FIGURE 1

HCS+: Unsignalized Intersections Release 5.2

TWO-WAY STOP CONTROL SUMMARY

Analyst: CL
 Agency/Co.:
 Date Performed: 08/28/06
 Analysis Time Period: PM School Peak Period
 Intersection:
 Jurisdiction:
 Units: U. S. Customary
 Analysis Year: Year 2006 with Project
 Project ID:
 East/West Street: School Driveway (out)
 North/South Street: Kula Highway
 Intersection Orientation: NS
 Study period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street:	Approach Movement	Northbound			Southbound		
		1 L	2 T	3 R	4 L	5 T	6 R
Volume		287		2		221	
Peak-Hour Factor, PHF		0.90		0.90		0.90	
Hourly Flow Rate, HFR		318		2		245	
Percent Heavy Vehicles		--		--		--	--
Median Type/Storage		Undivided			/		
RT Channelized?							
Lanes		1		0		1	
Configuration				TR		T	
Upstream Signal?		No			No		

Minor Street:	Approach Movement	Westbound			Eastbound		
		7 L	8 T	9 R	10 L	11 T	12 R
Volume				2	126		55
Peak Hour Factor, PHF				0.90	0.90		0.90
Hourly Flow Rate, HFR				2	140		61
Percent Heavy Vehicles				2	2		2
Percent Grade (%)		0			0		
Flared Approach: Exists?/Storage					/		
Lanes				1	1	1	
Configuration				R	L	R	

Delay, Queue Length, and Level of Service

Approach Movement	NB 1	SB 4	Westbound			Eastbound		
			7	8	9	10	11	12
Lane Config					R	L		R
v (vph)					2	140		61
C(m) (vph)					722	532		794
v/c					0.00	0.26		0.08
95% queue length					0.01	1.07		0.25
Control Delay					10.0	14.2		9.9
LOS					A	B		A
Approach Delay				10.0			12.9	
Approach LOS				A			B	

ATTACHMENT B

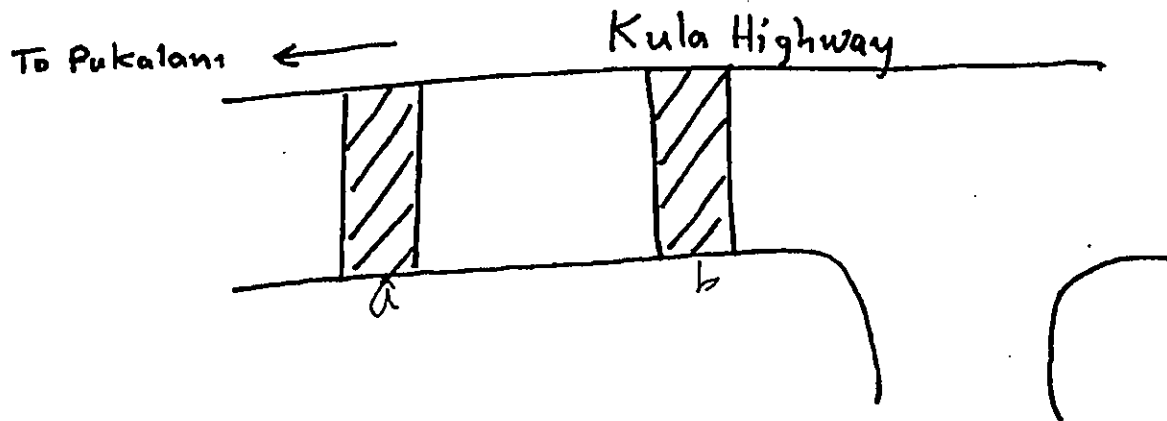
PEDESTRIAN COUNTS

Date: 8/11/06

Start Time: 6:45

End Time: 7:45

Weather Condition: Clear/Sunny



MANUAL PEDESTRIAN COUNTS				
No. of Pedestrians Crossing		Code	Time of Day	Time Between Platoons
E to W	W to E			
	3b	1		
	2b	1		
1b		1		
1b		2		

CODES:

- 1 = Car stopped to allow pedestrians to cross
- 2 = Sufficient crossing time
- 3 = Pedestrian hurried

VEHICLE PLATOONING

TCN (AM)

Date: 8/11/06

Start Time: 6:45

End Time: 7:45

Weather Condition: sunny

PUKALANI TO ULUPALAKUA

VEHICLE PLATOONING		
No. Of Vehicles in Platoon	Time of Day Recorded	Time Between Platoons (secs.)
6	6:45:05	--
6	6:46:40	1:35
2	6:47:04	:24
2	6:47:33	:29
3	6:55:00	7:27
2	6:56:40	1:40
2	6:58:04	1:24
4	6:58:25	:21
2	6:59:00	:35
4	6:59:11	:11
3	7:00:00	:49
1	7:00:22	:22
2	7:05:01	4:39
2	7:05:34	:33
2	7:07:00	1:26
2	7:08:15	1:15
2	7:12:00	3:45

ULUPALAKUA TO PUKALANI

VEHICLE PLATOONING		
No. Of Vehicles in Platoon	Time of Day Recorded	Time Between Platoons (secs.)
2	6:45:05	--
3	6:45:53	:49
3	6:55:11	9:18
4	6:55:22	:11
2	6:55:26	:04
3	6:55:51	:25
2	6:56:09	:18
3	6:57:04	:55
4	6:57:10	:06
6	6:57:29	:19
2	6:57:34	:05
3	6:57:59	:25
2	6:58:06	:07
3	6:58:29	:23
2	6:59:00	:31
3	6:59:27	:27
2	7:00:03	:36

VEHICLE PLATOONING

AM

Date: _____

Start Time: _____

End Time: _____

Weather Condition: _____

PUKALANI TO ULUPALAKUA

VEHICLE PLATOONING		
No. Of Vehicles in Platoon	Time of Day Recorded	Time Between Platoons (secs.)
5	7:15:40	3:40
2	7:17:00	1:60
3	7:17:20	:20
3	7:19:48	2:28
2	7:21:33	1:45
7	7:22:44	1:11
2	7:25:04	2:20
2	7:25:23	:19
2	7:25:43	:20
2	7:26:45	1:02
2	7:28:21	1:36
5	7:31:12	2:51
3	7:33:00	1:48
2	7:34:07	1:07
2	7:35:45	1:38
2	7:36:05	:20
2	7:37:42	1:37

ULUPALAKUA TO PUKALANI

VEHICLE PLATOONING		
No. Of Vehicles in Platoon	Time of Day Recorded	Time Between Platoons (secs.)
2	7:00:27	:24
6	7:00:34	:07
5	7:01:25	:51
2	7:01:35	:10
2	7:01:48	:13
2	7:04:30	2:42
3	7:05:01	:31
2	7:05:31	:30
4	7:06:07	:36
2	7:07:02	:55
4	7:07:34	:32
2	7:07:50	:16
6	7:08:05	:15
6	7:10:08	2:03
6	7:10:24	:16
2	7:10:41	:17
2	7:11:01	:20

VEHICLE PLATOONING

Date: _____

Start Time: _____

End Time: _____

Weather Condition: _____

PUKALANI TO ULUPALAKUA

VEHICLE PLATOONING		
No. Of Vehicles in Platoon	Time of Day Recorded	Time Between Platoons (secs.)
2	7:40:05	2:23
2	7:41:42	1:37
2	7:42:53	1:11
2	7:43:15	1:22
2	7:46:13	2:58

ULUPALAKUA TO PUKALANI

VEHICLE PLATOONING		
No. Of Vehicles in Platoon	Time of Day Recorded	Time Between Platoons (secs.)
2	7:11:50	1:49
2	7:12:09	:10
1	7:12:42	:33
2	7:13:45	1:03
3	7:14:01	:16
5	7:14:31	:30
5	7:15:02	:31
3	7:15:24	:22
2	7:17:10	1:46
4	7:17:41	:31
20	7:18:08	:27
6	7:19:32	1:24
2	7:20:49	1:17
2	7:21:19	:25
11	7:22:20	1:46
11	7:23:42	1:22
11	7:24:09	:27

VEHICLE PLATOONING

Date: _____
Start Time: _____
End Time: _____
Weather Condition: _____

PUKALANI TO ULUPALAKUA

VEHICLE PLATOONING		
No. Of Vehicles in Platoon	Time of Day Recorded	Time Between Platoons (secs.)

ULUPALAKUA TO PUKALANI

VEHICLE PLATOONING		
No. Of Vehicles in Platoon	Time of Day Recorded	Time Between Platoons (secs.)
2	7:25:18	1:09
6	7:26:02	:44
4	7:26:29	:27
9	7:27:11	:42
6	7:28:00	:49
10	7:28:04	:04
2	7:28:58	:54
2	7:29:12	:14
16	7:29:37	:25
5	7:29:48	:11
19	7:30:19	:31
10	7:30:44	:25
3	7:31:24	:40
5	7:35:02	4:38
7	7:35:33	:31
3	7:35:58	:25
3	7:36:30	:32

VEHICLE PLATOONING

Date: _____

Start Time: _____

End Time: _____

Weather Condition: _____

PUKALANI TO ULUPALAKUA

VEHICLE PLATOONING		
No. Of Vehicles in Platoon	Time of Day Recorded	Time Between Platoons (secs.)

ULUPALAKUA TO PUKALANI

VEHICLE PLATOONING		
No. Of Vehicles in Platoon	Time of Day Recorded	Time Between Platoons (secs.)
4	7:37:10	:40
3	7:37:46	:36
2	7:40:02	2:16
6	7:41:17	1:15
4	7:41:40	:23
4	7:42:05	:25
3	7:42:23	:18
2	7:42:58	:35
7	7:43:13	:15
8	7:44:00	:97
3	7:44:12	:12
3	7:44:59	:47
5	7:45:13	:19
2	7:45:39	:26
2	7:45:49	:10

PEDESTRIAN COUNTS

Date: 8/11/06

Start Time: 145

End Time: 245

Weather Condition: cloudy

MANUAL PEDESTRIAN COUNTS				
No. of Pedestrians Crossing		Code	Time of Day	Time Between Platoons
E to W	W to E			
16		2	1:47	
	36	2		

CODES:		
1	=	Car stopped to allow pedestrians to cross
2	=	Sufficient crossing time
3	=	Pedestrian hurried

VEHICLE PLATOONING

TKN PM

Date: 8/11/06

Start Time: 1:45

End Time: 2:45

Weather Condition: cloudy

PUKALANI TO ULUPALAKUA

VEHICLE PLATOONING		
No. Of Vehicles in Platoon	Time of Day Recorded	Time Between Platoons (secs.)
7	1:46:44	--
2	1:49:15	2:29
2	1:52:33	3:18
9	1:55:20	2:47
2	1:55:52	:32
2	1:57:34	1:42
7	1:58:59	1:25
4	1:59:38	:39
2	2:01:22	1:44
2	2:01:39	:17
4	2:02:15	:36
2	2:04:23	2:08
3	2:05:02	:39
2	2:09:46	4:44
2	2:10:00	:14
2	2:10:51	:51
2	2:11:38	1:47

ULUPALAKUA TO PUKALANI

VEHICLE PLATOONING		
No. Of Vehicles in Platoon	Time of Day Recorded	Time Between Platoons (secs.)
2	1:45:40	--
2	1:45:51	:11
3	1:46:42	:51
3	1:47:07	:25
2	1:47:36	:29
2	1:48:30	:54
2	1:48:48	:18
4	1:49:00	:12
3	1:50:00	1:00
2	1:50:41	:41
2	1:51:15	:34
3	1:51:49	:34
5	1:52:33	:44
3	1:53:12	:39
2	1:54:51	:39
2	1:56:15	1:24
2	1:56:38	:23

VEHICLE PLATOONING

Date: _____
 Start Time: _____
 End Time: _____
 Weather Condition: _____

PUKALANI TO ULUPALAKUA

VEHICLE PLATOONING		
No. Of Vehicles in Platoon	Time of Day Recorded	Time Between Platoons (secs.)
2	2:12:55	1:17
5	2:14:55	2:00
2	2:15:09	:14
2	2:15:46	:37
2	2:16:13	:27
2	2:17:22	1:09
2	2:17:41	:19
3	2:19:51	2:10
3	2:20:15	:24
4	2:20:30	:15
2	2:21:04	:34
2	2:22:20	1:16
2	2:22:31	:11
5	2:22:41	:10
2	2:24:18	1:37
2	2:25:33	1:15
3	2:25:48	:15

ULUPALAKUA TO PUKALANI

VEHICLE PLATOONING		
No. Of Vehicles in Platoon	Time of Day Recorded	Time Between Platoons (secs.)
3	1:57:44	1:06
4	1:58:28	:44
2	1:58:46	:18
2	1:59:33	:47
2	1:59:49	:16
2	2:00:17	:28
2	2:02:28	2:11
3	2:03:09	:41
2	2:04:48	1:36
5	2:07:11	2:36
2	2:09:01	1:50
2	2:09:25	:24
3	2:09:46	:21
2	2:10:46	1:00
6	2:11:38	:52
3	2:12:26	:48
2	2:12:53	:27

VEHICLE PLATOONING

Date: _____
 Start Time: _____
 End Time: _____
 Weather Condition: _____

PUKALANI TO ULUPALAKUA

VEHICLE PLATOONING		
No. Of Vehicles in Platoon	Time of Day Recorded	Time Between Platoons (secs.)
2	2:26:40	:52
2	2:27:36	:56
2	2:27:51	:15
3	2:29:51	2:00
2	2:31:12	1:21
3	2:31:40	:28
2	2:32:17	:37
2	2:34:04	1:47
3	2:34:44	:40
2	2:35:30	:46
3	2:38:44	3:14
4	2:41:15	2:31
2	2:42:21	1:06
3	2:43:47	1:26
4	2:44:12	:25
2	2:44:31	:19

ULUPALAKUA TO PUKALANI

VEHICLE PLATOONING		
No. Of Vehicles in Platoon	Time of Day Recorded	Time Between Platoons (secs.)
2	2:14:14	1:21
2	2:14:25	:11
2	2:14:55	:30
2	2:15:21	:26
4	2:15:40	:19
2	2:16:33	:53
3	2:16:55	:22
2	2:17:22	:27
2	2:17:41	:19
2	2:18:11	:30
3	2:18:39	:28
2	2:19:09	:30
3	2:19:45	:36
2	2:21:25	1:40
2	2:21:45	:20
2	2:22:12	:28
2	2:22:41	:28

VEHICLE PLATOONING

Date: _____
Start Time: _____
End Time: _____
Weather Condition: _____

PUKALANI TO ULUPALAKUA

VEHICLE PLATOONING		
No. Of Vehicles in Platoon	Time of Day Recorded	Time Between Platoons (secs.)

ULUPALAKUA TO PUKALANI

VEHICLE PLATOONING		
No. Of Vehicles in Platoon	Time of Day Recorded	Time Between Platoons (secs.)
3	2:22:09	:23
2	2:23:32	:28
2	2:23:45	:13
2	2:26:44	5:04
2	2:29:01	:12
3	2:29:18	:17
3	2:30:42	1:24
2	2:31:40	:58
2	2:33:11	:1:31
2	2:34:04	:53
2	2:35:37	1:33
2	2:36:03	:26
2	2:36:35	:32
3	2:37:46	1:11
2	2:38:31	:45
2	2:39:58	:27
2	2:39:20	:22

VEHICLE PLATOONING

Date: _____
Start Time: _____
End Time: _____
Weather Condition: _____

PUKALANI TO ULUPALAKUA

VEHICLE PLATOONING		
No. Of Vehicles in Platoon	Time of Day Recorded	Time Between Platoons (secs.)

ULUPALAKUA TO PUKALANI

VEHICLE PLATOONING		
No. Of Vehicles in Platoon	Time of Day Recorded	Time Between Platoons (secs.)
2	2:39:48	:28
2	2:42:09	2:21
2	2:42:27	:18
2	2:45:24	2:57