ALAN M. ARAKAWA
Mayor

WILLIAM R. SPENCE
Director

MICHELE CHOUTEAU McLEAN
Deputy Director

COUNTY OF MAUI
DEPARTMENT OF PLANNING

June 18, 2013

Ms. Genevieve Salmonson, Acting Director
Office of Environmental Quality Control
State of Hawaii, Department of Health
235 South Beretania Street, Room 702
Honolulu, Hawaii 96813

Dear Ms. Salmonson:

With this letter, the Department of Planning hereby transmits the Draft Environmental Assessment (EA) and anticipated Finding Of No Significant Impact (FONSI) for the Chopra Hale Apartments situated at Tax Map Key (2) 5-3-004:028, at 190 Makena Place, Kaunakakai, Molokai for publication in the next available edition of the Environmental Notice.

Attached is a completed Office of Environmental Quality Control Publication Form, two (2) copies of the Draft EA FONSI, an Adobe Acrobat PDF file of the same, and an electronic copy of the publication form in MS Word. Simultaneous with this letter, we have submitted the summary of the action in a text file by electronic mail to your office.

Thank you for your cooperation. If there are any questions, please contact Molokai Planner Benjamin Sticka at benjamin.sticka@mauicounty.gov or at (808) 270-7520.

Sincerely,

CLAYTON I. YOSHIDA, AICP
Planning Program Administrator

for WILLIAM SPENCE
Planning Director

Attachments
xc: Clayton I. Yoshida, AICP, Planning Program Administrator (PDF)
Jeffrey P. Dack, AICP, Current Planning Supervisor (PDF)
Benjamin T. Sticka, Molokai Planner (PDF)
Suzette Esmeralda, Secretary to Boards and Commissions (PDF)
Nina-Lehua Kawano, Molokai Clerk (PDF)
Project File
General File
WRS:CIY:BTS:nlk:nt
K:\WP_DOCS\PLANNING\EA\2011\0006_ChopraHaleCondo\OEQC_ChopraHale.doc

APPLICANT ACTIONS
SECTION 343-5(C), HRS
PUBLICATION FORM (JANURARY 2013 REVISION)

Project Name: **CHOPRA HALE APARTMENTS**
Island: **Molokai**
District: **Kaunakakai**
TMK: **(2) 5-3-004:028**
Permits: **Change in Zoning/Community Plan Amendment**
Approving Agency: **County of Maui, Department of Planning**
(*250 SOUTH HIGH STREET, WAILUKU, MAUI, HAWAII 96793, William Spence, 808 270 8205*)
Applicant: **LDE GROUP, LLC**
(*15091 Becky Lane, Monte Sereno, CA 95030-2105, DILIP GUNAWARDENA, 408 402 3680*)
Consultant: **Architectural Drafting Service - Luigi Manera**
(*P.O. Box 1718, Kaunakakai, HI 96748, Luigi Manera, 808 553 9045*)
Status (check one only):

_**X**_DEA-AFNSI	Submit the approving agency notice of determination/transmittal on agency letterhead, a hard copy of DEA, a completed OEQC publication form, along with an electronic word processing summary and a PDF copy (you may send both summary and PDF to oeqchawaii@doh.hawaii.gov; a 30-day comment period ensues upon publication in the periodic bulletin.
__FEA-FONSI	Submit the approving agency notice of determination/transmittal on agency letterhead, a hard copy of the FEA, an OEQC publication form, along with an electronic word processing summary and a PDF copy (send both summary and PDF to oeqchawaii@doh.hawaii.gov; no comment period ensues upon publication in the periodic bulletin.
__FEA-EISPN	Submit the approving agency notice of determination/transmittal on agency letterhead, a hard copy of the FEA, an OEQC publication form, along with an electronic word processing summary and PDF copy (you may send both summary and PDF to oeqchawaii@doh.hawaii.gov; a 30-day consultation period ensues upon publication in the periodic bulletin.
__Act 172-12 EISPN	Submit the approving agency notice of determination on agency letterhead, an OEQC publication form, and an electronic word processing summary (you may send the summary to oeqchawaii@doh.hawaii.gov. NO environmental assessment is required and a 30-day consultation period upon publication in the periodic bulletin.
__DEIS	The applicant simultaneously transmits to both the OEQC and the approving agency, a hard copy of the DEIS, a completed OEQC publication form, a distribution list, along with an electronic word processing summary and PDF copy of the DEIS (you may send both the summary and PDF to oeqc@doh.hawaii.gov); a 45-day comment period ensues upon publication in the periodic bulletin.
__FEIS	The applicant simultaneously transmits to both the OEQC and the approving agency, a hard copy of the FEIS, a completed OEQC publication form, a distribution list, along with an electronic word processing summary and PDF copy of the FEIS (you may send both the summary and PDF to oeqc@doh.hawaii.gov); no comment period ensues upon publication in the periodic bulletin.
__ Section 11-200-23 Determination	The approving agency simultaneous transmits its determination of acceptance or nonacceptance (pursuant to Section 11-200-23, HAR) of the FEIS to both OEQC and the applicant. No comment period ensues upon publication in the periodic bulletin.
__Statutory hammer Acceptance	The approving agency simultaneously transmits its notice to both the applicant and the OEQC that it failed to timely make a determination on the acceptance or nonacceptance of the applicant's FEIS under Section 343-5(c), HRS, and that the applicant's FEIS is deemed accepted as a matter of law.
__Section 11-200-27 Determination	The approving agency simultaneously transmits its notice to both the applicant and the OEQC that it has reviewed (pursuant to Section 11-200-27, HAR) the previously accepted FEIS and determines that a supplemental EIS is not required. No EA is required and no comment period ensues upon publication in the periodic bulletin.
__Withdrawal (explain)	

Summary (Provide proposed action and purpose/need in less than 200 words. Please keep the summary brief and on this one page)**:**

The subject property consists of 1.004 acres and is identified by TMK 5-3-004:028. The property is located in the State Urban District and is designated Single Family by the Moloka'i Community Plan and Interim by Maui County zoning. The property carries no other special designations.

The Applicant intends to obtain a Community Plan Amendment from Single Family to Multi-Family designation and a Change in Zoning from Interim to A-1, Residential District in order to increase the inventory of affordable apartment rentals on the island of Molokai.

CHOPRA HALE APARTMENTS

DRAFT ENVIRONMENTAL ASSESSMENT

FOR

COMMUNITY PLAN AMENDMENT

REQUIRED SUBMITTALS

TMK: 5-3-004:028

Kaunakakai, Molokai, Hawai'i

PREPARED FOR:
LDE GROUP, LLC
DILIP GUNAWARDENA
15091 Becky Lane
Monte Sereno, CA 95030-2105

Prepared by:
Architectural Drafting Service
P.O. Box 1718
Kaunakakai, HI 96748

JANUARY 2013

TABLE OF CONTENTS

ATTACHMENTS

FIGURES

APPENDICES

I. PROJECT INFORMATION

A. PREFACE

The subject property consists of 1.004 acres and is identified by TMK 5-3-004:028. The property is located in the State Urban District and is designated Single Family by the Moloka'i Community Plan and Interim by Maui County zoning. The property carries no other special designations.

The Applicant intends to obtain a Community Plan Amendment from Single Family to Multi-Family designation and a Change in Zoning from Interim to A-1, Residential District in order to increase the inventory of affordable apartment rentals on the island of Molokai. On behalf of the Applicant, LDE Group, LLC, a consolidated application for a Community Plan Amendment and Change in Zoning has been prepared to establish Multi-Family designation and A-1, Residential District zoning for the subject parcel in order to allow the intended construction of the Chopra Hale 16-unit apartment to serve the affordable housing needs of Molokai.

B. PURPOSE OF THE REQUEST

This HRS 343 Draft Environmental Assessment and Project Assessment Report has been prepared in support of an application for a Community Plan Amendment and Change in Zoning for a 1.004 acre parcel in the Kaunakakai area of Moloka'i from Single Family to Multi-Family and Interim to A-1, Residential District respectively. The granting of the proposed request will enable the Applicant to address conditions for the intended use of subject property as Multi-Family apartments in order to increase the inventory of affordable apartment rentals on Molokai.

The granting of the Community Plan Amendment and Change in Zoning requests is subject to the actions of the Maui County Council. The County Council is the decision-making body for all Community Plan Amendments and Changes in Zoning.

Pre-consultation requests for preliminary comments were submitted to the agencies listed in paragraph H. below and have been addressed throughout the report.

C. PROJECT PROFILE

Proposed Action:	Community Plan Amendment from Single Family to Multi-Family and Change in Zoning from Interim to A-1, Residential District
Existing Land Use:	Unimproved vacant land
Total Project Area:	1.004 acres
Access:	Mahalo Place

D. REQUIRED LAND USE AND DEVELOPMENT PERMITS

The following land use, development permits and approvals are required for the project, and all, except building and grading permits, are in the process of being obtained:

- Community Plan Amendment
- Change in Zoning
- Grading Permit
- Building Permits

E. ACCEPTING AUTHORITY

HRS 343 Draft Environmental Assessment (EA)
Molokai Planning Commission
P.O. Box 526
Kaunakakai, HI 96748
Phone: (808) 553-3221

Community Plan Amendment
Agency: Maui County Council
Address: 200 South High Street
Wailuku, Hawaii 96793

Change in Zoning
Agency: Maui County Council
Address: 200 South High Street
Wailuku, Hawaii 96793

F. IDENTIFICATION OF THE APPLICANT

Landowner:	LDE GROUP, LLC DILIP GUNAWARDENA 15091 Becky Lane Monte Sereno, CA 95030-2105 Phone: 408 402 3680
Applicant:	LDE GROUP, LLC DILIP GUNAWARDENA 15091 Becky Lane Monte Sereno, CA 95030-2105 Phone: 408 402 3680

G. CONSULTANT

Land Use Planner:	Luigi Manera P.O. Box 1718 Kaunakakai, HI 96748
Phone/Fax:	Phone: (808) 553-9045, Fax: (808) 553-3952
Contact:	Luigi Manera

H. PRE-CONSULTATION

GOVERNMENT AGENCIES

1. County of Maui, Department of Environmental Management
2. County of Maui, Department of Fire and Public Safety
3. County of Maui, Department of Housing and Human Concerns
4. County of Maui, Department of Parks & Recreation
5. County of Maui, Planning Department
6. County of Maui, Police Department
7. County of Maui, Department of Public Works
8. County of Maui, Department of Transportation
9. County of Maui, Department of Water Supply
10. County of Maui, Department of Economic Development
11. Department of Land and Natural Resources
12. Office of Hawaiian Affairs
13. County of Maui, Molokai Planning Commission

UTILITIES

1. Maui Electric Company
2. Hawaiian Telcom
3. Oceanic Time Warner Cable

SURROUNDING PROPERTIES

1. Owners and lessees within a 500-ft. radius of the subject property

I. PRE-CONSULTATION COMMENTS RECEIVED

GOVERNMENT AGENCIES

1. County of Maui, Department of Environmental Management
4. County of Maui, Department of Parks & Recreation
6. County of Maui, Police Department
7. County of Maui, Department of Public Works
8. County of Maui, Department of Transportation
9. County of Maui, Department of Water Supply
11. Department of Land and Natural Resources

UTILITIES

1. Maui Electric Company

II. DESCRIPTION OF THE PROPERTY AND PROPOSED ACTION

A. PROPERTY LOCATION

Identified by TMK 5-3-004:028, the subject property is parcel situated in the area known as “Manila Camp” just to the west of Kaunakakai town. The property is located approximately ¼ mile *mauka* of Kamehameha V Highway property and approximately ½ mile west of the town of Kaunakakai. (See: Figure Nos. 1 and 2, Regional Location Map and TMK Location Map respectively).

B. PAST AND PRESENT LAND USE

County of Maui records dating back to 1959 show the owners of the property at that time to be James K. and Emma M. H. Branco. In 1995 the property was purchased by David Patterson. On May 5, 2009 the applicant purchased the vacant undeveloped property from Mr. Patterson and it has since remained in its current state.
By all personal accounts and records, onsite improvements have been limited to grubbing only.

Conversations with local Kupuna reveal that the original subdivision of the property was completed in the 1920’s or 1930’s.

Offsite improvements include existing curb and gutter along Mahalo Place, a drainage catch basin in the center of Mahalo Place, an 8 inch water line and one fire hydrant along Mahalo Place, both served by the County of Maui Department of Water Supply, an 8 inch sewer line along Mahalo Place served by the County of Maui Wastewater Reclamation Division, and a 2 ½ inch waterline on Makaena Place fronting the property served by County of Maui Department of Water Supply

Currently, there are no chemicals and fertilizers being used on the property.

C. LAND USE DESIGNATIONS

State Land Use Classification:	Urban (See: Figure No.4, State Land Use Map)
Moloka'i Community Plan:	Single Family (See: Figure No.5, Community Plan Map)
County Zoning:	Interim
Flood Zone Designation:	Zone A (area of 100-year flooding) and Zone X
Special Designations	None

D. PURPOSE AND NEED

The Applicant is applying for a Community Plan Amendment from Single-Family to Multi-Family designation and a Change in Zoning from Interim to A-1, Residential District to address conditions and meet requirements for the intended use of subject property as the Chopra Hale 16-unit Multi-Family apartments in order to increase the inventory of affordable apartment rentals on Molokai.

The Chopra Hale 16-unit Multi-Family apartments will comply with the Federal Fair Housing Act - Title VIII of the Civil Rights Act of 1968 and will be available for Maui County’s Section 8 Rental Assistance Program.

It should be noted that the intended use of the subject property will be for long-term occupancy (more than 180 days per year) by tenants and will not be utilized for transient vacation rentals or any other short-term use.

E. OPERATIONS AND MANAGEMENT

The operation of the Chopra Hale 16-Unit apartments shall be contracted to a licensed property management agency.

As indicated on the architectural drawings, there will be off street parking available consisting of 32 vehicle parking stalls and two handicapped parking stalls. (See Figure No. 6 Site Plan)

Any chemicals and fertilizers used for the operation of the 16 Unit apartments will be on an as needed basis, used in accordance with the labeled instructions and will be deployed in a manner consistent with best management practices.

Any application of restricted chemicals will be performed by properly licensed professionals in accordance with all Federal, State and County regulations.

F. DEVELOPMENT SCHEDULE

From the date of all the approvals and obtaining building permits, construction will commence within 2 years. The duration of the project once begun is anticipated to be 2 years.

G. ALTERNATIVES CONSIDERED

1. No Action

Analysis. As previously noted, the subject property is located in the State Urban District and is designated for Single Family land use and Interim zoning by the Moloka'i Community Plan and Maui County zoning, respectively. The proposed request seeks to amend the Community Plan designation from Single Family to Multi-Family and Change the Zoning from Interim to A-1, Residential District to address conditions and meet requirements for the intended use of subject property as Multi-Family apartment in order to increase the inventory of affordable apartment rentals on Molokai. Under the "No

Action" alternative, the existing Community Plan designation would not allow the construction of a Multi-Family dwelling, thereby keeping the inventory of affordable apartment rentals on Molokai at the same level. This alternative was not deemed a viable option and was therefore eliminated from consideration.

2. Deferred Action

Analysis. This option would have similar consequences as the "No Action" alternative in that implementation of the project would be deferred indeterminately. Further strain would be placed on the affordable rental market as available inventory remains at the same level. Additionally, fluctuating interest loan rates and market conditions could be determining factors in proceeding with the development of the subject property.

3. Other Alternatives

Analysis. A summary of other alternatives that were examined is presented below:

Subdivision of Subject Property. This option would take significantly longer to complete and in the end would provide fewer affordable rental units. This alternative was not deemed a viable option and was therefore eliminated from consideration.

Sale of Subject Property. This option is contrary to the intention of the owner of subject property and was not deemed a viable option and was therefore eliminated from consideration.

III. DESCRIPTION OF THE EXISTING ENVIRONMENT, POTENTIAL IMPACTS AND MITIGATION MEASURES

A. PHYSICAL ENVIRONMENT

1. Land Use

Existing Conditions. From a sub-regional perspective, the subject property is situated in an area of mixed land uses. In the vicinity of the property, lands designated for urban use are both *makai* and *mauka* of Kamehameha V Highway, while rural and agricultural uses are *mauka* of the highway.

This settlement pattern is consistent with the land uses established for the area by the Moloka'i Community Plan. For example, the community plan designates the coastal lands *makai* of Kamehameha V Highway and a number of parcels *mauka* of the highway for single-family residential use. The Manila Camp Subdivision is located in an area designated for Urban use by the State Land Use Map and is surrounded by Agricultural Land, as designated by the State Land Use Map and Community Plan Map, on all sides.

Potential Impacts and Mitigation Measures. From a regional planning perspective, urban land uses usually occur in areas that possess compatible land uses and possess infrastructure and public services that can accommodate such development.

The subject property is located in an area of existing urban development. The subject property is located in proximity to existing properties that are designated for single-family use by the Moloka'i Community Plan. A supporting off-site water and waste-water system served by the County of Maui is already in existence. Power and phone line access is available from MECO and Hawaiian Telcom respectively. Existing public services are deemed adequate and are capable of serving the subject property.

2. Topography and Soils

Existing Conditions. The terrain of the subject property is relatively level and free of vertical landforms. Onsite elevations range from approximately 15.9 to 18.2 feet above mean sea level (amsl).

According to the "Custom Soil Resource Report for Island of Molokai, Hawaii" prepared by the United States Department of Agriculture, Natural Resources Conservation Service *August 2010* (See Figure No. 8, Soils Map) and the "Soil Survey of the Islands of Kauai, Oahu, Maui, Moloka'i, and Lana'i, State of Hawaii" prepared by the U.S. Department of Agriculture, Soil Conservation Service (August 1972), the soil associated with the subject property is Mala silty clay, 0 to 3 percent slopes (MmA).-This soil is on fans along the coastal plains. In a representative profile the surface layer, about 7 inches thick, is dark reddish-brown silty clay that has platy structure. It is underlain by stratified layers of dark reddish-brown and very dark gray alluvium that is mostly silty clay. These layers are 47 to more than 59 inches thick. The soil is slightly acid to neutral in the surface layer and in the upper part of the subsoil and moderately alkaline in the lower part of the subsoil. Permeability is moderate. Runoff is slow, and the erosion hazard is no more than slight. The available water capacity is about 1.4 inches per foot of soil. In places roots penetrate to a depth of 5 feet or more. In low areas this soil is subject to flooding for short periods during heavy rains. Many shallow wells have been dug in this soil. The water is brackish, and care is required if it is used for irrigation purposes. The soil is easily compacted, and subsoiling may be necessary.

Potential Impacts and Mitigation Measures. Site work for the property will involve grubbing, excavation, and embankment for building pads, driveway aprons, utility connections, and domestic & wastewater connections.

Modifications to the existing landform will unavoidably occur as a result of ground altering construction activities; however, this change is not expected to have a significant impact upon the existing topography. To the extent possible, earthwork will be kept to a minimum and cut and fill quantities will be balanced to reduce site work

costs and maintain the existing drainage pattern. Erosion control measures and Best Management Practices prepared in accordance with the Maui County grading ordinance (Chapter 20.08) will also be implemented during construction activities to minimize soil loss and sedimentation.

3. Flood and Tsunami Zone

Existing Conditions. As reflected by the Federal Emergency Management Agency's flood insurance rate map for this part of the island, the property lies in both Zone "A", an area of 100 year flooding with no base flood elevations determined and Zone “X” an area determined to be outside the 0.2% annual chance floodplain. (See Figure No. 8, Flood Hazard Assessment Report).

The subject parcel is outside the tsunami inundation area as indicated by the County of Maui, Tsunami Flood Zone Evacuation Map, Molokai Map 3, for this part of the island. (See Figure No. 9, Tsunami Evacuation, Molokai, Map 3 & 4)

Potential Impacts and Mitigation Measures. The elevation of the subject property is above the flood levels determined for the surrounding area and is outside of the established tsunami flood zone. There are not expected to be any significant impacts due to flooding or tsunami.

4. Flora and Fauna

Existing Conditions. Except for the improvements cited in Chapter I, the subject property is undeveloped and has experienced no alterations to its natural state other than grubbing. Plant life on the subject property primarily consists of scattered trees and scrub vegetation. Animal life typically found in the area include cats, mice, rats, and mongoose, while avifauna includes the common mynah, house finch, barred dove, spotted dove, and Japanese white-eye.

Potential Impacts and Mitigation Measures. There are no known rare, threatened or endangered species of flora and fauna located on the subject property.

5. Air Quality

Existing Conditions. Air quality refers to the presence or absence of pollutants in the atmosphere. It is the combined result of the natural conditions (e.g. dust from wind erosion) and emissions from a variety of pollution sources (e.g. automobiles, power generating facilities). The impact of land development activities on air quality in the area of a development project differs by project phase (site preparation, construction and occupancy) and project type. The air quality on Moloka'i is relatively good. Non-point source emissions (automobile) are not significant enough to generate a high concentration of pollutants. The good air quality can also be attributed to the region's exposure to wind, which quickly disperses concentration of emissions. The island of Moloka'i is currently in attainment of all criteria pollutants established by the Clean Air Act, as well as State of Hawaii Air Quality Standards.

Potential Impacts and Mitigation Measures. Air quality refers to the presence or absence of pollutants in the atmosphere. It is the combined result of the natural conditions (e.g. dust from wind erosion) and emissions from a variety of pollution sources (e.g. automobiles, power generating facilities). The impact of land development activities on air quality in the proposed development's locale differs by project phase (site preparation, construction and occupancy) and project type. Air quality impacts attributed to the intended use could include dust generated by construction-related activities. Site work, such as grubbing, grading, and building construction could generate airborne particulates. Adequate dust control measures that comply with the applicable provisions of Hawaii Administrative Rules, Chapter 11-60.1, "Air Pollution Control," will be implemented during all phases of construction. Dust control measures, including but not limited to the following, will implemented during construction activities.

- Providing an adequate water source prior to start-up of construction for use in dust control.
- Landscaping and rapid covering of bare areas, including slopes, beginning with the initial grubbing and grading phase.
- Controlling of dust from shoulders, project entrances and other access roads.
- Providing adequate dust control measures during weekends, after hours and prior to daily start-up of construction activities.
- Controlling of dust from debris hauled away from the project site.

- Erecting a dust fence to shield nearby properties.

In addition, non-potable or reclaimed/ recycled water will be used for dust control purposes during the construction phase to the extent practicable. In the long term, vehicles owned by Chopra Hale Apartment residents may result in a slight increase in the volume of traffic in the region, which would increase vehicular emissions such as carbon monoxide. However, this increase is not considered significant when compared to ambient air quality conditions and the overall number of vehicles in the Central Moloka'i area. As such, the proposed action is not anticipated to be detrimental to local air quality.

6. Noise Characteristics

Existing Conditions. The level of background noise is an important indicator of environmental quality. In an urban environment, noise is due primarily to vehicular traffic, air traffic, heavy machinery, and heating, ventilation, and air-conditioning equipment. Invasive noise levels and the types of activities occurring in an area may affect health conditions and the overall appeal of an area or neighborhood. Ambient noise in the project area is relatively low and is generally attributable to vehicle traffic along Mahalo Place, Makaena Place, Kamehameha V Highway and other nearby roadways.

Potential Impacts and Mitigation Measures. In the short-term, the intended use could generate potentially adverse impacts during construction. Noise from heavy construction equipment, such as bulldozers, front-end loaders, and material-carrying trucks and trailers, would be the dominant source of noise during the construction period. To minimize construction-related impacts on nearby residences, the Applicant will limit construction to normal daylight hours and comply with Chapter 11-46 of the Hawaii Administrative Rules pertaining to Community Noise Control. From a long-term perspective, the 16-unit apartment is not expected to have a significant impact upon noise levels in the area due to the small volume of traffic generated by the project.

7. Archaeological/Cultural Resources

Existing Conditions. The subject property is the result of a previous subdivision. Since there were no significant archaeological/cultural resources discovered during the initial subdivision it is unlikely that significant historic sites are present.

Potential Impacts and Mitigation Measures. The construction of Chopra Hale 16-unit apartment is not expected to have an adverse impact upon historic and cultural resources. In the unlikely event that cultural deposits or human remains are encountered during ground altering construction activities, work will stop in the immediate vicinity of the find and the find will be protected from further disturbance. The SHPD will be promptly notified to determine the significance of the find and establish appropriate mitigation measures if required.

Pre-consultation comments from the State of Hawaii Department of Land and Natural Resources State Historic Preservation Division (see Appendix C) are addressed below:

- DLNR SHPD has determined that there will be no effect to historic properties by this project.
- Based upon this determination it is unlikely that this inland parcel would contain any traditional beach and mountain access trails which may be required for public access.

Pre-consultation comments from the Office of Hawaiian Affairs (OHA) were requested but never received.

8. Visual Resources

Existing Conditions. The subject property is an inland parcel approximately 1/2 mile mauka of the shoreline. The terrain of the property is relatively level with elevations ranging from 15.9 feet to 18.2 feet above mean sea level (amsl).

Plant life on the subject property primarily consists of scattered trees and scrub vegetation. The subject property has been grubbed in the past.

Depending on your location on the site, single family homes can be seen to the east, south and west of the subject property while the County of Maui Puu Haoule Park and Moloka'i uplands can be observed to the north.

Potential Impacts and Mitigation Measures. Visual resources will not be adversely impacted by the intended use, as the subject property does not contain any features of scenic importance. While the Chopra Hale apartment will alter the visual character of the site upon completion, the 30-foot building height limitation for the A-1, Residential Zoning District combined with the effective use of landscape plantings will help moderate changes to the pre-development condition of the site.

9. Agricultural Uses

Existing Conditions. The subject property is zoned for interim uses and designated Single-Family by the Molokai Community Plan and Urban by the State Land Use Map. Since it is not an agricultural parcel, not in agricultural production and lies vacant, the proposed action will have no effect upon the agricultural use of the property.

B. SOCIO-ECONOMIC ENVIRONMENT

1. Population

Existing Conditions. The County of Maui experienced relatively strong population growth during the past decade with the 2000 resident population reaching 128,241, a 27.6% increase over the 1990 population of 100,504. Population growth is expected to continue as the resident population for the year 2010 is projected to reach 151,269 an increase of 18% (SMS Research and Marketing Services, Inc., June 2002).

From 1990 to 2000, the island of Molokai experienced a slower growth rate as evidenced by a 10.2% increase in its resident population. During this period, the population increased from 6,717 in 1990 to 7,404 in 2000. For the year 2014, the population on Molokai is projected to increase to 7,500.

Potential Impacts and Mitigation Measures. Using national demographic multipliers of standard housing types for total household size (American Housing Survey, 1987), the Chopra Hale 16-unit apartment building may increase the region's population by approximately 51 persons (3.18 multiplier x 16 homes = 50.9 or 51). In terms of impacts, this gain is minimal as it represents only 0.7% of the island's current population and is not expected to adversely alter population and demographic characteristics.

2. Economy

Existing Conditions. Kaunakakai, the island's major population and commercial center is located midway along the southern coast, approximately ½ mile east of the subject property. Pineapple cultivation was once a dominant force behind Moloka'i's economy. However, the island's economy was deeply affected by the closure of Dole's pineapple operations in 1976 followed by the termination of Del Monte's activities in 1983. Today, the local economy is rooted in tourism, government, small businesses, and diversified agriculture (seed corn, commercial, organic, conventional & cattle ranching).

Potential Impacts and Mitigation Measures. On a short-term basis, the development of the apartment complex will support the economy through direct and indirect construction related employment and the purchase of materials and services. In the long term, the property owner will contribute to the economy through the payment of property taxes and the residents of the apartment complex will contribute to the economy through the payment of general excise taxes and the purchase of goods and services from local businesses.

3. Housing

Existing Conditions. The intent of Maui County's housing policy is to ensure that the housing needs of its residents are addressed in accordance with the Maui County General Plan. This housing policy applies to zoning changes that establish land use designations under which a *"residential housing project"* is developed. As defined by the policy, a *"residential housing project"* is a project that provides ten (10) or more long-

term residential housing units or lots. The policy is also used as a guideline for commenting and/or reviewing other land use related requests.

For a *"residential housing project,"* County affordable housing requirements may be addressed through various means such as: 1) the sale or rent of affordable housing units to income qualified households; or 2) a monetary contribution based upon the equivalent number of affordable units which would have otherwise been provided by the Applicant; or 3) the provision of developable lands; or 4) the provision of in-kind services which are approved by the Housing Director.

Potential Impacts and Mitigation Measures. The intended use is a *"residential housing project"* and is intended to address the County affordable housing requirements by increasing the inventory of affordable rentals that are available for residential use and occupancy.

The Chopra Hale 16-unit Multi-Family apartments will comply with the Federal Fair Housing Act - Title VIII of the Civil Rights Act of 1968 and will be available for Maui County's Section 8 Rental Assistance Program.

C. PUBLIC SERVICES

1. Recreational Facilities

Existing Conditions. The County Department of Parks and Recreation (DPR) operates and maintains a well-developed park system on Moloka'i that consists of ten (10) parks totaling 41.5 acres. These facilities are spread out across the island and include five (5) community parks, four (4) neighborhood parks, and one (1) special area park. Since population centers are dispersed across the island, communities generally share park facilities. The Moloka'i community has access to nine (9) sports fields, six (6) tennis courts, four (4) tot lots, and three (3) sports courts. (RM. Towill, July 2002).

Potential Impacts and Mitigation Measures. The 16 unit apartment is not expected to

have a significant impact upon recreational facilities. County parks in the Manila Camp area include Puu Hauole Park, which is located north adjacent to the subject property, and Kaunakakai Lighthouse/Malama Park, which is situated approximately ¼ mile to the south of the property. Puu Haoule Park encompasses 1.3 acres and provides 5 picnic tables, one water tap, 2 water fountains and roadside parking along the length of the park. Kaunakakai Lighthouse/Malama Park covers 3.3 acres and has an ADA accessible comfort station, water tap, water fountains and a pay phone.

Pursuant to Section 18.16.320 of the Maui County Code, a subdivider must: 1) provide or dedicate land for park and playground purposes; or 2) provide a monetary contribution to the County, or 3) improve a park in the community plan area, or 4) provide an equivalent combination of the foregoing. Proposals for the satisfaction of park assessment requirements are subject to the review and approval of the Parks Director. The contribution of land or cash is based upon an assigned value per lot (unit) for each lot (unit) in excess of three (3) lots (units) resulting from the subdivision. For land, this value is 500 square feet per lot (unit), while for cash, the value is the park assessment fee per lot (unit) for the appropriate community plan region. For example, the land requirement for the 16-unit apartment would be 6,500 square feet (16 lots (units) - 3 lots (units) = 13 lot (unit) X 500 SF = 6,500 SF). Based upon the DPR's fee schedule for fiscal year 2010, the park assessment for the Moloka'I Community Plan area is $2,035.00 per lot (unit). For the 16-unit apartment, the park assessment fee would be $26,455.00 (16 lots (units) - 3 lots (units) = 13 lots (units) X $2,035.00).
To address this requirement, the Applicant will remit the park assessment fee ($26,455.00) to the DPR prior to final Community Plan Amendment and Change in Zoning approval.

Pre-consultation comments from the County of Maui Department of Parks & Recreation Division (see Appendix C) are addressed below:

- The Department of Parks & Recreation has no comments at this time.

2. Police and Fire Protection

Existing Conditions. The Maui Police Department (MPD) is responsible for the preservation of the public peace, prevention of crime, and protection of life and property. The department's Moloka'i patrol district is headquartered in Kaunakakai and is budgeted for 28 uniformed officers. The district is divided into two (2) motorized routes with each beat patrolled by a single officer (RM. Towill, July 2002). In addition to regular patrols, the Moloka'i patrol district provides a community-oriented policing program and a D.A.R.E. officer, a school resource officer, and a criminal investigation detective.

The mandate of the Maui Fire Department is to protect life, property, and the environment from fires, hazardous material releases and other life-threatening emergencies. The department has 14 stations throughout the County including three (3) stations on Moloka'i. The Kaunakakai Station is responsible for a portion of Central Moloka'i, including Kaunakakai and the subject property. The Ho'olehua Station handles West Moloka'i and part of Central Moloka'i, while the Puko'o Station covers East Moloka'i (R.M. Towill, July 2002).

Potential Impacts and Mitigation Measures. In light of the scope of the intended use and the projected population growth for Moloka'i, the Chopra Hale 16-unit apartment will not result in a significant increase in the resident population nor will it extend the existing service area limits for the police and fire departments. In this light, the intended use is not expected to have an adverse impact upon existing police and fire protection services.

Pre-consultation comments from the Police Department County of Maui (see Appendix C) are addressed below:

- Appropriate cautions and traffic safety measures will be taken during the construction of the proposed action with special attention paid to pedestrians and children walking along the roadway to catch the bus to school on the corner of makaena Place and Mahalo Street. In addition there will be an individual to assist

children walking past the construction site both on their way to the school bus in the morning and returning in the afternoon.

- In the event traffic control officers are needed, police personnel will be requested to work off-duty to help with any traffic issues.

- Neighboring residences concerns regarding dust will be addressed by utilizing best management practices. Adequate dust control measures that comply with the applicable provisions of Hawaii Administrative Rules, Chapter 11-60.1, "Air Pollution Control," will be implemented during all phases of construction. Dust control measures, including but not limited to the following, will implemented during construction activities.
    - Providing an adequate water source prior to start-up of construction for use in dust control.
    - Landscaping and rapid covering of bare areas, including slopes, beginning with the initial grubbing and grading phase.
    - Controlling of dust from shoulders, project entrances and other access roads.
    - Providing adequate dust control measures during weekends, after hours and prior to daily start-up of construction activities.
    - Controlling of dust from debris hauled away from the project site.
    - Erecting a dust fence to shield nearby properties.
- In addition, non-potable or reclaimed/ recycled water will be used for dust control purposes during the construction phase to the extent practicable.

- Neighboring residences concerns regarding noise will be addressed by utilizing best management practices. To minimize construction-related impacts on nearby residences, the Applicant will limit construction to normal daylight hours and comply with Chapter 11-46 of the Hawaii Administrative Rules pertaining to Community Noise Control.

- Neighboring residences concerns regarding children in the area of the park and the east corner of Mahalo Street and Makaena Place to catch the bus for school will be addressed by utilizing best management practices and employing

appropriate cautions and traffic safety measures.

Conclusion: Approval of the project is recommended by the Police Department if the issues regarding traffic, dust and noise are properly addressed.

3. Schools

Existing Conditions. The island of Moloka'i is served by several public schools including Maunaloa, Kaunakakai, Kualapu'u, and Kilohana Elementary Schools, as well as Moloka'i Intermediate School and Moloka'i High School. Moloka'i's two (2) private schools, Moloka'i Mission School and Moloka'i Christian Academy, serve students from Kindergarten through Grade 8 (R.M. Towill, July 2002).

Potential Impacts and Mitigation Measures. Using national demographic multipliers of standard housing types for school age children (American Housing Survey, 1987), the 16-unit apartment may increase the student population in area schools by the following: Grades K to 6: 16 students; Grades 7 to 8: 4 students; and Grades 9 to 12: 4 students.

In terms of the projected population growth for Moloka'i and the scale of the intended use, the 16-unit apartment will have a minimal effect on the resident population and is not expected to create a demand for new school facilities or additional educational services. As such, the intended use is not expected to have an adverse impact upon existing educational facilities.

4. Medical Facilities

Existing Conditions. Moloka'i General Hospital, a 30-bed rural health care facility, provides the only emergency room and urgent care clinic for residents and visitors. In addition, several private care physicians on the island provide medical care and out patient services. Emergency medical care is provided by a 24-hour ambulance facility located in Kaunakakai (R.M. Towill, July 2002).

Potential Impacts and Mitigation Measures. When considering the scope of the intended use in light of the projected population growth for Moloka'i, the 16-unit apartment will not result in a significant population increase, nor will it generate a demand for new or additional health care facilities or extend the existing service area limits for emergency medical care. In this context, the intended use is not anticipated to have an adverse impact upon existing medical facilities.

5. Solid Waste

Existing Conditions. The Naiwa Landfill encompasses nearly 12 acres of a 25-acre parcel that is owned by the County of Maui. The landfill, which accepts solid waste for the entire island, receives approximately 17 tons of refuse per day and has an estimated capacity of 580,000 cubic yards. The 25-acre site includes composting and recycle drop-off facilities. An adjacent 10-acre parcel to the southwest of the landfill is available for future expansion (R.M. Towill, July 2002). The County's solid waste collection program collects and disposes of residential refuse in (3) major districts; Wailuku (including Kahului and South Maui), Makawao (including Haiku, Kula, Paia, and Pukalani) and Lahaina (West Maui). Refuse collections in Hana, Lana'i, and Moloka'i are conducted by the County of Maui Solid Waste Division of the Department of Environmental Management.

Potential Impacts and Mitigation Measures. During the construction phase of the intended use, remnant construction waste will be transported to the Naiwa Landfill for disposal. After completion, Island Refuse Service crews will handle residential refuse collection and disposal. Refuse containers will be scheduled for once weekly collection.

In the context of the intended use and the projected population growth for Moloka'i, refuse generated by the 16-unit apartment will not adversely affect solid waste collection and disposal services and facilities.

Pre-consultation comments from the County of Maui Department of Environmental Management Solid Waste Division (see Appendix C) are addressed below:

- Where practical, recyclable solid waste will be collected and transported to the Naiwa Landfill recycling center.
- Since the proposed project will be new construction there is no plan to re-use any existing materials.

D. INFRASTRUCTURE

1. Water

Existing Conditions. The County Department of Water Supply (DWS) provides domestic water service to the following areas of Moloka'i: Kawela-Kaunakakai, Ualapue, Kalae, and Halawa areas of Moloka'i. The State Department of Hawaiian Home Lands provides service to homestead lands on the island, while the Moloka'I Irrigation System and the State Department of Agriculture systems in Central Moloka'I serve agricultural users. Kaluakoi, Moloka'i Ranch, and Alpha, Inc. operate independent water systems that serve privately owned lands in West Moloka'i. The total sustainable yield for the island of Moloka'i is 81 million gallons per day (RM. Towill, May 2003).

Potential Impacts and Mitigation Measures. The existing off-site water system includes an 8 inch water line and and one fire hydrant along Mahalo Place (east) and a 2 ½ inch waterline along Makaena Place (south of the property).

Based on 16 units, the potable water demand for the 16-unit apartment is estimated to range between 3,012 gallons per day (gpd) to 9,600 gpd. Utilizing the domestic consumption guideline for estimating average daily demand (State of Hawaii, Water System Standards, 1985), this projection is based upon the gallons per acre standard (1.004 acres X 3,000 gals/acre = 3,012 gpd) , as well as the gallons per unit standard (16 units)(600 gallons/unit = 9,600 gpd).

The 16-unit apartment is not expected to have an adverse impact upon the potable water source, storage, and distribution network that serves the Central Moloka'i area. Domestic water service for the apartment building will be provided by the completed water system improvements, which were designed in accordance with DWS rules and regulations.

Pre-consultation comments from the County of Maui Department of Water Supply (see Appendix C) are addressed below:

- Source Availability
    - The proposed project will be in compliance with Maui County Ordinance No. 3502 as required.
- System Infrastructure
    - The water system infrastructure will be upgraded, if required, to comply with the new zoning change. The proposed project with comply with Ordinance 3502 to receive water service.
    - A DWS approved back-flow prevention device will be installed at the water meter as required.
- Pollution Prevention
    - Mitigation measures and best management practices for construction will be applied during construction.
- Conservation
  The applicant will consider the following conservation measures in the project design, as well as during construction:
    - Utilize reclaimed or non-potable water for dust control, irrigation, and other non-potable uses.
    - Water after 7:00 p.m. at night and before 10:00 a.m. in the morning.
    - Utilize low-flow fixtures and devices - Maui County Code Subsection 16.20A.680 requires the use of low-flow fixtures and devices in faucets, showerheads, urinals, water closets, and hose bibs.
    - Prevent over-watering by automated systems - Provide rain-sensors on all automated irrigation controllers. Check and reset controllers at least once a month to reflect monthly changes in evaporation rates at the site. As an alternative, provide more automated, soil-moisture sensors on controllers.
    - Maintain fixtures to prevent leaks - A simple, regular program of repair and maintenance can prevent the loss of hundreds or even thousands of gallons per day.

- Limit irrigated turf - Low-water use shrubs and ground cover can be equally attractive and require substantially less water than turf.
- Select climate adapted native plant species for landscaping – Native plants adapted to the area conserve water and protect the watershed from degradation due to invasive alien species.
- Look for opportunities to conserve water - Here are a few examples:
  1) When cleaning debris, use a broom instead of a hose and water;
  2) Check for leaks in pipes, faucets, and toilets.

2. Wastewater

Existing Conditions. There is an existing 8 inch sewer line along Mahalo Place served by the County of Maui Wastewater Reclamation Division.

The County of Maui operates public sewer systems in Kaunakakai and Kualapu'u. Sewage from the Kaunakakai system is conveyed to the Kaunakakai Wastewater Reclamation Facility for treatment; treated effluent is used for irrigation and the excess is disposed of via injection wells. Wastewater collected by the Kualapu'u system flows to a private wastewater treatment facility owned by Moloka'i Ranch (R.M. Towill, May 2003).

Potential Impacts and Mitigation Measures.

As the existing Maui County Wastewater system currently serves over 110 homes in the Manila Camp area, the addition of 16 units is not expected to significantly impact the current wastewater system.

Pre-consultation comments from the County of Maui Department of Environmental Management Wastewater Division (see Appendix C) are addressed below:

- Although wastewater system capacity is currently available, the owner is aware that wastewater system capacity cannot be ensured until the issuance of the building permit.
- Wastewater calculations will be provided to the department before issuance of the building permit.

- The owner will fund any necessary off-site improvements to the collection system and wastewater pump stations.
- Minimum slope of new sewer laterals as well as a property sewer service manhole near the property line will be indicated on the appropriate drawings.
- There will be no commercial kitchen associated with the property.
- Non-contact cooling water and condensate will not drain to the wastewater system.

3. Drainage

Existing Conditions. Offsite improvements include existing curb and gutter along Mahalo Place and a drainage catch basin in the center of Mahalo Place.

The property is characterized by level topography with elevations ranging from 15.9 feet to 18.2 feet above mean sea level throughout the property.(amsl)
A Preliminary Engineering and Drainage Report (See Appendix A) has been prepared in support of the proposed action.

Potential Impacts and Mitigation Measures. The existing off-site drainage pattern will be maintained and the incremental increase between pre- and post-development runoff will be retained on site. Erosion control measures and Best Management Practices prepared in accordance with the Maui County grading ordinance (Chapter 20.08) will be implemented during construction activities to minimize soil loss and sedimentation, as well as adverse impacts to coastal water quality and the near-shore marine environment.

4. Roadways

Existing Conditions. Kamehameha V Highway is the only roadway linking East, Central, and West Moloka'i. This State highway is configured as a two-way facility with paved shoulders and one (1) travel lane in each direction. The posted speed limit in the

vicinity of the subject property is 35 miles per hour.

Makaena Place intersects with Kamehameha V Highway 0.2 miles west of town and is the only point of access for the Manila Camp Subdivision. This road is configured as a two way facility with paved shoulders and one (1) travel lane in each direction.

Mahalo Place intersects with Makaena Place after 0.3 miles. This road is configured as a two way facility with curb and gutter on both sides. Access to the intended use will be via Mahalo Place.

A *Traffic Impact Assessment Report* was prepared by Phillip Rowell and Associates. The findings of the study are summarized in this section; the report is attached as Appendix F. The study included a description of the existing traffic conditions along the highway near the proposed project and evaluated future conditions at the project's proposed driveway to Mahalo Place. Future projections are through 2015 at the completion of the project.

Project Location and Description.

The proposed action is the construction of 16 condominium units on a parcel located in the northwest quadrant of the intersection of Manila Place and Mahalo Place. Attachment A is a copy of the project site plan indicating the locations of buildings, parking spaces and driveway.

The project will be connected to Maunaloa Highway (SR 460) via existing roadways. These roadways are Mahalo Place, Manila Place and Makaena Place.

For purposes of this traffic report, it has been assumed that the project will be completed and occupied by 2015.

Description of Existing Streets and Intersection Controls

In the vicinity of the project, Maunaloa Highway is a two-lane, two-way highway with an east-west orientation. Maunaloa Highway is a State Highway. Makaena Place is a two-lane, two-way roadway with a north-south orientation. Makaena Place is a County roadway.

The intersection of Maunaloa Highway and Makaena Place is STOP sign controlled T-

intersection. The Makaena Place approach is an optional left or right turn lane and is the STOP sign controlled approach. The eastbound and westbound approaches are Maunaloa Highway and are free flow. There are no separate left or right turn lanes.

Summary and Recommendations

1. The proposed action is the construction of 16 condominium units on a parcel located in the northwest quadrant of the intersection of Manila Place and Mahalo Place. Access and egress will be via Mahalo Place, Manila Place Makaena Place and Maunaloa Highway (SR 460). All traffic to and from the project and all traffic to and from the surrounding subdivision will be via the intersection of Maunaloa Highway and Makaena Place. This is intersection where the project's traffic impacts will be greatest.

2. It is anticipated that the project will be completed and occupied by 2015.

3. State of Hawaii Department of Transportation traffic counts completed in 2010 determined that the AM peak hour along Maunaloa Highway is between 7:00 AM and 8:00 AM and the afternoon peak hour is between 3:00 PM and 4:00 PM. The total AM peak hour volume is 556 vehicles per hour and the total PM peak hour volume is 524 vehicles per hour. The total weekday volume is 6,218 vehicles per day.

4. The trip generation analysis concluded that the project will generate a total of 7 trips during the morning peak hour and 8 trips during the afternoon peak hour. The number of total peak hour trips is the same whether the peak hour of the street or the peak hour of the generator. Project generated traffic will increase the morning and afternoon peak hour traffic volumes at the intersection of Maunaloa Highway and Makaena Place 1.1% and 1.4%, respectively.

5. An assessment of the need for a separate left turn lane for left turns from eastbound Maunaloa Highway to northbound Makaena Place was performed using Federal Highway Administration standards. This assessment determined that a separate left turn lane was not warranted. Therefore, the level-of-service analysis was performed for the existing intersection configuration.

6. The level-of-service analysis concluded that the eastbound approach of Maunaloa Highway to Makaena Place will operate at Level-of-Service A during the morning and afternoon peak hours, without and with project generated traffic. The Makaena Place approach will operate at Level-of-Service B during both peak hours, without and with project generated traffic. The westbound approach of Maunaloa Highway to Makaena Place

is uncontrolled. The HCM methodology does not calculate levels-of-service for uncontrolled lane groups There is no change in the level-of-service of any controlled lane groups as a result of project generated traffic.

7. Since all controlled movements will operate at Level-of-Service B, or better, without or with project generated traffic, no mitigation is recommended.

Potential Impacts and Mitigation Measures. Given its limited size and low-density, the 16-unit apartment is not expected to have an adverse effect upon the existing roadway system nor is it anticipated to result in any significant traffic impacts.

Pre-consultation comments from the County of Maui Department of Public Works (see Appendix C) are addressed below:

1. Any requirements for right of way improvements for the adjoining half of Makaena Place/Mahalo Place shall be completed as applicable.

2. The owner will be responsible for all required improvements as required by Hawaii Revised Statutes, Maui County Code and rules and regulations.

3. As applicable, construction plans shall be designed in conformance with Hawaii Standard Specifications for Road and Bridge Construction dated 2005 and Standard Details for Public Works Construction, 1984, as amended.

4. As applicable, worksite traffic-control plans/devices shall conform to Manual on Uniform traffic Control Devices for Streets and Highways, 2003.

5. The solid waste statement has been corrected.

6. Although Figure No. 2, TMK Location Map is the only map available from the County of Maui, it is outdated and incorrectly lists the street names. Please refer to Figure No. 10, Topographic Map for the correct street names and descriptions.

7. Proposed access to the subject property from Mahalo Place would be via a driveway apron connecting the subject property to Mahalo Place utilizing a portion of lot 21A.

Pre-consultation comments from the County of Maui Department of Transportation (see Appendix C) are addressed below:

- The Department of Transportation has no comments at this time.

5. Electrical and Telephone Service

Existing Conditions. Maui Electric Company and Hawaiian Telcom provide electrical and telephone service for Moloka'i. In the project area, overhead utility lines located on the *mauka* side of Makaena Place provide these services to area residents.

Potential Impacts and Mitigation Measures. The installation of power and phone line extensions to serve the 16-unit apartment will be coordinated with Maui Electric Company and Hawaiian Telcom.

Pre-consultation comments from Maui Electric Company, Ltd. (see Appendix C) are addressed below:

- The owner shall grant all easements and access for MECO facilities to serve the subject project site as necessary.

IV. RELATIONSHIP TO GOVERNMENTAL PLANS, POLICIES, AND CONTROLS

A. CHAPTER 343, HAWAII REVISED STATUTES (HRS)

Approval and construction of the proposed project would involve an amendment to the Molokai Community Plan. Application for a Community Plan Amendment triggers an Environmental Assessment as set forth by Chapter 343, Hawaii Revised Statutes (HRS). The relationship of the proposed project to the Environmental Assessment Significance Criteria set forth in Chapter 343, HRS, is discussed in Section VI of this document, below.

B. STATE LAND USE LAW

The rules of the State Land Use Commission are set forth in Chapter 205, Hawaii Revised Statutes (HRS). These rules establish four (4) land use districts in the State of Hawaii into which all lands in the State are placed: Urban, Rural, Agricultural, and Conservation. The subject property is located in the State Urban District. (See Figure 4, State Land Use Map). The use of this land for the 16-unit apartment is consistent with the Urban designation for the property. In addition, amending the Community Plan (from Single Family to Multi Family) and re-zoning of the subject property (from Interim to the A-1, Residential District) would establish consistency with the State land use Commission's Urban designation for the property.

C. GENERAL PLAN OF THE COUNTY

The General Plan of the County of Maui includes the Countywide Policy Plan and the individual Community Plans and provides long-term goals, objectives, and policies directed toward improving living conditions in the County.

Countywide goals, objectives, policies, and actions

E. Expand Housing Opportunities for Residents

Goal:

Quality, island-appropriate housing will be available to all residents.

Objective:

1. Reduce the affordable housing deficit for residents.

Policies:

a. Ensure that an adequate and permanent supply of affordable housing, both new and existing units, is made available for purchase or rental to our resident and/or workforce population, with special emphasis on providing housing for low- to moderate-income families, and ensure that all affordable housing remains affordable in perpetuity.

b. Seek innovative ways to lower housing costs without compromising the quality of our island lifestyle.

c. Seek innovative methods to secure land for the development of low- and moderate-income housing.

k. Ensure residents are given priority to obtain affordable housing units developed in their communities, consistent with all applicable regulations.

l. Establish pricing for affordable housing that is more reflective of Maui County's workforce than the United States Housing and Urban Development's median-income estimates for Maui County.

q. Support the opportunity to age in place by providing accessible and appropriately designed residential units.

Objective:

2. Increase the mix of housing types in towns and neighborhoods to promote sustainable land use planning, expand consumer choice, and protect the County's rural and small-town character.

Policies:

b. Design neighborhoods to foster interaction among neighbors.

c. Encourage a mix of social, economic, and age groups within neighborhoods.

d. Promote infill housing in urban areas at scales that capitalize on existing infrastructure, lower development costs, and are consistent with existing or desired patterns of development.

e. Encourage the building industry to use environmentally sustainable materials, technologies, and site planning.

f. Develop workforce housing in proximity to job centers and transit facilities.

Implementing Actions:

a. Revise laws to support neighborhood designs that incorporate a mix of housing types that are appropriate for island living.

Objective:

3. Increase and maintain the affordable housing inventory.

Policies:

a. Recognize housing as a basic human need, and work to fulfill that need.

b. Prioritize available infrastructure capacity for affordable housing.

c. Improve communication, collaboration, and coordination among housing providers and social-service organizations.

f. Streamline the review process for high-quality, affordable housing developments that implement the goals, objectives, and policies of the General Plan.

g. Minimize the intrusion of housing on prime, productive, and potentially productive agricultural lands and regionally valuable agricultural lands.

h. Encourage long-term residential use of existing and future housing to meet residential needs.

F. Strengthen the Local Economy

Goal:
Maui County's economy will be diverse, sustainable, and supportive of community values.

Objective:

1. Promote an economic climate that will encourage diversification of the County's economic base and a sustainable rate of economic growth.

Policies:

a. Support economic decisions that create long-term benefits.

c. Invest in infrastructure, facilities, and programs that foster economic diversification.

d. Support and promote locally produced products and locally owned operations and businesses that benefit local communities and meet local

demand.

e. Support programs that assist industries to retain and attract more local labor and facilitate the creation of jobs that offer a living wage.

f. Encourage work environments that are safe, rewarding, and fulfilling to employees.

h. Encourage businesses that promote the health and well-being of the residents, produce value-added products, and support community values.

i. Foster an understanding of the role of all industries in our economy.

j. Support efforts to improve conditions that foster economic vitality in our historic small towns.

Implementing Actions:

b. Monitor the carrying capacity of the islands' social, ecological, and infrastructure systems with respect to the economy.

I. Improve Physical Infrastructure

Goal:
Maui County's physical infrastructure will be maintained in optimum condition and will provide for and effectively serve the needs of the County through clean and sustainable technologies.

Objective:

4. Direct growth in a way that makes efficient use of existing infrastructure and to areas where there is available infrastructure capacity.

Policies:

a. Capitalize on existing infrastructure capacity as a priority over infrastructure expansion.

c. Utilize appropriate infrastructure technologies in the appropriate locations.

d. Promote land use patterns that can be provided with infrastructure and public facilities in a cost-effective manner.

Implementing Actions:

b. Identify appropriate areas for urban expansion of existing towns where infrastructure and public facilities can be provided in a cost-effective manner.

J. Promote Sustainable Land Use and Growth Management

Goal:
Community character, lifestyles, economies, and natural assets will be preserved by managing growth and using land in a sustainable manner.

Objective:

1. Improve land use management and implement a directed-growth strategy.

Policies:

b. Direct urban and rural growth to designated areas.

h. Direct new development in and around communities with existing infrastructure and service capacity, and protect natural, scenic, shoreline, and cultural resources.

The intended use is consistent with the Goals and Objectives of the Countywide Policy Plan.

D. MOLOKA'I COMMUNITY PLAN

Maui County has adopted nine (9) community plans. Each community plan examines the conditions and needs of the planning region and outlines objectives, policies, planning standards, and implementing actions to guide future growth and development in accordance with the Maui County General Plan. Each community plan serves as a relatively detailed agenda for implementing the objectives and policies of the General Plan.

The subject property is located within the Moloka'i Community Plan region and is designated for Single Family use by the community plan's land use map (See Figure 5, Community Plan Map). The updated community plan was adopted by Ordinance No. 3022 and went into effect on December 19, 2001.

The following goals, objectives, policies, and planning standards of the Moloka'I Community Plan are applicable to the proposed action.

C. Goals, Objectives, Policies and Implementing Actions

LAND USE

GOAL

Enhance the unique qualities of the island of Moloka'i to provide future generations the opportunity to experience rural and traditional lifestyles.

OBJECTIVES AND POLICIES

1. Require all zoning, discretionary land uses, and development approvals to be consistent with the community plan and be subject to public review.

6. Retain Kaunakakai Town as the population center of the island

20. Require infrastructure concurrency for all new development including but not limited to: school and park facilities, fire and police protection, roadways, water, and wastewater systems.

HOUSING

GOAL

Housing opportunities which are affordable, safe, and environmentally and culturally compatible for the residents of Moloka'i.

OBJECTIVES AND POLICIES

5. Allow the development of multi-family housing in Kaunakakai and Maunaloa to provide local residents a choice in housing type and affordability.

8. Designate sufficient land area for affordable residential development in appropriate areas near established infrastructure.

DESIGN

GOAL

Harmony between the natural and man-made environments to ensure that the natural beauty and character of Moloka'i is preserved.

D. Planning Standards.

DESIGN

1. Limit building height throughout the island to two stories or thirty-five feet above grade ....

4. Encourage the siting of buildings so that the roofline is in context with surrounding terrain.

5. Consider existing topographical features in building design, building bulk, and height.

Approval of the proposed action of a Community Plan Amendment from Single-Family to Multi-Family for the intended use of the subject property as a 16-unit apartment would bring into consonance the land use designated for the site by the amended Moloka'i Community Plan. In addition, the rezoning of the property from County Interim to the A-1, Residential District will provide overall consistency with the State land use and amended community plan designations for the site and facilitate the development of the 16-unit apartment.

E. COUNTY ZONING

The subject property is zoned for Interim uses by the County of Maui. Interim Zoning provides interim regulations for the appropriate use of land pending the establishment of comprehensive zoning for the property. Under Interim Zoning, permitted land uses include: 1) one-family dwellings; 2) one- or two-story duplex dwellings; 3) hospitals, sanitariums, convalescent homes; 4) day care nurseries, museums, churches, libraries, schools; 4) publicly-owned buildings; 5) public utility uses; 6) expansion of existing parks, playgrounds, community centers; and 7) agricultural uses.

The Applicant is seeking to change the County zoning of the subject property from Interim to the A-1, Residential District in order to establish State land use, community plan, and zoning consistency for the property. In accordance with this request, the Applicant submits that the proposed action meets the following criteria for a zoning change as set forth in Section 19.510.040 of the Maui County Code.

1. *The proposed request meets the intent of the general plan and objectives and policies of the community plans of the County.*

Analysis: As described in Sections B and C of Chapter IV, the proposed request meets

the intent of the Maui County General Plan and the objectives and policies of the Moloka'i Community Plan.

2. *The proposed request is consistent with the applicable community plan land use map of the County.*

Analysis: The Moloka'i Community Plan land use map identifies areas of future growth and development in the region and was adopted by Ordinance No. 3022, which went into effect on December 19, 2001. The subject property is designated for Single Family uses by the community plan land use map. The change in zoning would establish conformity with the proposed change from Single-Family to Multi-Family designation to be established for the site by the amended community plan land use map.

3. *The proposed request meets the intent and purpose of the district being requested.*

Analysis: Pursuant to Chapter 19.08 of the Maui County Code pertaining to Residential Districts, this change in zoning request meets the purpose and intent of Chapter 19.08, is in consonance with residential land uses in the surrounding area, and conforms to the Maui County General Plan and Moloka'i Community Plan. The granting of the proposed request would establish zoning consistency with the State land use (Urban) and proposed Moloka'i Community Plan amendment (Multi-Family) land use designations for the subject property.

4. *The application, if granted, would not adversely affect or interfere with public or private schools, parks, playgrounds, water systems, sewage and solid waste disposal, drainage, roadway and transportation systems, or other public requirements, conveniences and improvements.*

Analysis: As discussed in Sections C and D of Chapter III, the 16-unit apartment will not significantly impact public or private services, facilities, and infrastructure systems nor is it expected to adversely affect or interfere with public requirements, conveniences, and improvements.

5. *The application, if granted would not adversely impact the social cultural, economic, environmental, and ecological character and quality of the surrounding area.*

Analysis: As discussed in Chapter III, the proposed action will not adversely impact the social, cultural, economic, environmental, and ecological character and quality of the surrounding area.

6. *If the application for change in zoning involves the establishment of an agricultural district with a minimum lot size of two acres, an agricultural feasibility study shall be required and reviewed by the Department of Agriculture and the U.S. Soil Conservation Service.*

Analysis: Not applicable.

V. CHAPTER 343, HRS ENVIRONMENTAL ASSESSMENT SIGNIFICANCE CRITERIA

In accordance with Title 11, Department of Health, Chapter 200 and Subchapter 6, Section 11-200-12, Environmental Impact Statement Rules, and based on the detailed analysis contained within this document, the following conclusions are supported.

1. The proposed action will *not* involve an irrevocable commitment to loss or destruction of any natural or cultural resource.

Analysis. As documented in this report, the proposed project will not involve the loss or destruction of any natural or cultural resource (**See:** Section III.A).

2. The proposed action will *not* curtail the range of beneficial uses of the environment.

Analysis. The subject property is within the State's Urban District, is designated Single Family by the Molokai Community Plan and zoned interim by the County of Maui. The request for a Community Plan Amendment and Change in Zoning requests are for an intensification of residential use and are in consonance with the current land use of the existing residential subdivision. There are no unique or important environmental or natural resources on the property, the use of which would be negatively impacted by the project. Thus, the proposed action will not curtail the range of beneficial uses of the environment.

3. The proposed action will *not* conflict with the state's long-term environmental policies or goals and guidelines as expressed in chapter 344, HRS, and any revisions thereof and amendments thereto, court decisions, or executive orders.

Analysis. The project is being developed in compliance with the State's long term environmental goals. As documented in this report, appropriate mitigation measures will be implemented to minimize the potential for negative impacts to the environment. The project will not have any impact on flora and fauna, and is not expected to have a negative impact on archeological or cultural resources.

4. The proposed action will *not* substantially affect the economic welfare, social welfare, and cultural practices of the community or State.

Analysis. Short-term economic impacts may result from the increase in activity associated with the construction of the project. Based on the above, the proposed action will not substantially affect the economic or social welfare and activities of the community, County or State.

5. The proposed action will *not* substantially affect public health.

Analysis. There are no special or unique aspects of the project that will have a direct

impact on public health.

6. The proposed action will *not* involve substantial secondary impacts, such as population changes or effects on public facilities.

Analysis. As described in section III.B.1., the proposed project is a 16-unit apartment building and may increase the neighborhood population by approximately 51 persons. In terms of impacts this gain is minimal as it represents only 0.7% of the island's current population. Of particular note: the proposed action is meant to increase affordable housing options for current Molokai families and therefore is not anticipated to increase the overall island population. As described in section III.C., public facilities are deemed adequate. The level of these impacts is minimal and will not substantially affect population changes or public facilities.

7. The proposed action will *not* involve substantial degradation of environmental quality.

Analysis. Mitigation measures will be implemented during the construction phase in order to minimize negative impacts on the environment. Other environmental resources such as endangered species of flora and fauna, air and water quality, and archeological resources will not be significantly impacted by the subject project because there are no known rare, threatened or endangered species of flora and fauna or archaeological resources located on the subject property.

8. The proposed project will not produce cumulative impacts and does *not* have considerable effect upon the environment or involve a commitment for larger actions.

Analysis. The proposed project does not involve a commitment for larger action on behalf of the applicant or any public agency. The subject property is State and County zoned and community planned for urban development, and as such, is part of the planned future growth of the region. As described in this report, the project will not significantly impact public infrastructure and services including roadways, drainage facilities, water systems, sewers and educational facilities. In addition, the project is not anticipated to induce an increase in population growth and will therefore not produce considerable effect on the environment nor require a commitment for larger actions by governmental agencies.

9. The proposed project will *not* affect a rare, threatened, or endangered species, or its habitat.

Analysis. As described in Section III. A. 4. of this report, there are no rare, threatened, or endangered species of flora and fauna at the project site.

10. The proposed action will *not* detrimentally affect air or water quality or ambient noise levels.

Analysis. As described in Sections III.A.5 and III.A.6 of this report, there is a potential for negative impacts to air quality and ambient noise levels related to short-term construction activities. Air, noise and dust impacts will be mitigated through implementation of standard mitigation measures as identified previously in this report. It is not anticipated that there will be significant long term impacts to air or water quality and ambient noise levels due to the operation phase of the development.

11. The proposed action will *not* substantially affect or be subject to damage by being located in an environmentally sensitive area, such as flood plain, shoreline, tsunami zone, erosion-prone areas, estuary, fresh waters, geologically hazardous land or coastal waters.

Analysis. As discussed in Section III.A.3 of this report, the project site is situated in Flood Zones "A", an area of 100 year flooding with no base flood elevations determined and Zone "X" an area determined to be outside the 0.2% annual chance floodplain (See Figure No. 8, Flood Hazard Assessment Report) and is outside the tsunami inundation area as indicated by the County of Maui. The elevation of the subject property is above the flood levels determined for the surrounding area and is outside of the established tsunami flood zone. The subject property is not expected to be impacted by flood, tsunami, or other coastal-related hazards.

12. The proposed action will *not* substantially affect scenic vistas or view planes identified in county or state plans or studies.

Analysis. As described in Section III.A.8 of this report, the subject property is an inland parcel and will have little or no effect on *makai* views. Therefore, the proposed project is not expected to have any adverse effects on scenic vistas or view planes identified in county or state plans or studies.

13. The proposed action will not require substantial energy consumption

Analysis. Upon build-out of the project, energy consumption will increase marginally. However, given existing levels of usage in the area, the increase is considered insignificant. Thus, it is not anticipated that the resultant increase in energy consumption will be significant in the context of existing levels of energy usage in the region, and on Molokai

VI. FINDINGS AND CONCLUSIONS

This HRS Chapter 343 Draft Environmental Assessment and application for a Community Plan Amendment (CPA) and Change in Zoning (CIZ) request has examined the environmental and socio-economic impacts associated with the proposed Chopra Hale Multi-Family Affordable Housing project to ultimately construct 2 (two) 8-unit apartment buildings on a 1.004 acre parcel of land, TMK Parcel No. (2) 5-3-004:028, in the area known as Manila Camp near Central Moloka'i to increase the inventory of affordable housing rentals on the island of Molokai.

The analysis concludes that the project should not result in significant impacts to surrounding properties, natural resources, or archaeological and historic resources on the site or in the immediate area. With the incorporation of the mitigation measures identified in this document, public infrastructure and services including roadways, sewer and water systems will not be significantly impacted by the project.

Onsite improvements such as grubbing and grading, power and phone line extensions, the construction of the units and the installation of driveway aprons will be implemented once the proposed actions have been approved, all requirements met and all permits have been secured.

The subject property is located in the State Urban District and is designated for Single Family and Interim uses by the Moloka'i Community Plan and Maui County zoning, respectively.

Due to the inconsistency between the State land use, community plan, and zoning designations for the property, the Applicant proposes to amend the community plan designation of subject property from Single-Family to Multi-Family and change the County zoning of the parcel from Interim to the County A-1, Residential District to bring all land designations and zoning into consonance.

In context of the proposed action, the existing physical and socio-economic environment

has been described in the preceding chapters of this report. Similarly, potential impacts and appropriate mitigation measures have also been discussed and evaluated. In terms of secondary impacts, which are indirect effects that are caused by an action and occur later in time or are farther removed in distance, the proposed action is not expected to induce significant changes in development or land use patterns, nor is it anticipated to increase property values, generate new demands for housing, public services, and infrastructure or affect population density or growth rate.

After build out, the Chopra Hale 16-unit apartment is not expected to have an adverse impact upon the physical environment (surrounding land uses, topography and soils, flora and fauna, environmentally sensitive areas, air and noise quality, historic and cultural resources, views and open space), the socio-economic environment (population, the economy), public services (parks, schools, health care, police and fire protection, refuse collection and disposal), and infrastructure (water, sewer, roadway, electrical, and telephone systems).

In light of the foregoing, the proposed land use reclassification for the Chopra Hale 16-unit apartment is not expected to result in any significant impacts to the physical and socio-economic environment nor is it anticipated to adversely affect public services and infrastructure systems.

A Finding of No Significant Impact is anticipated.

VII. REFERENCES

Burchell, Robert W., David Listokin, et al. *Development Impact Assessment Handbook.* Washington, D.C. ULI- The Urban Land Institute, 1994.

County of Maui, Department of Planning. *Public Facilities Assessment Update, County of Maui.* July 15, 2002. Wilson Okamoto & Associates, Inc.

County of Maui, Department of Planning. *Infrastructure Assessment Update, County of Maui.* May 2003. Wilson Okamoto & Associates, Inc.

County of Maui, Department of Planning. *Maui County Community Plan Update Program: Socio-Economic Forecast, Phase I Report.* June 14, 2003. Prepared by SMS.

County of Maui, Office of Economic Development. 2007. *Maui County Data Book.*

County of Maui, March 2005. *Shoreline Access Inventory Update – Final Report*

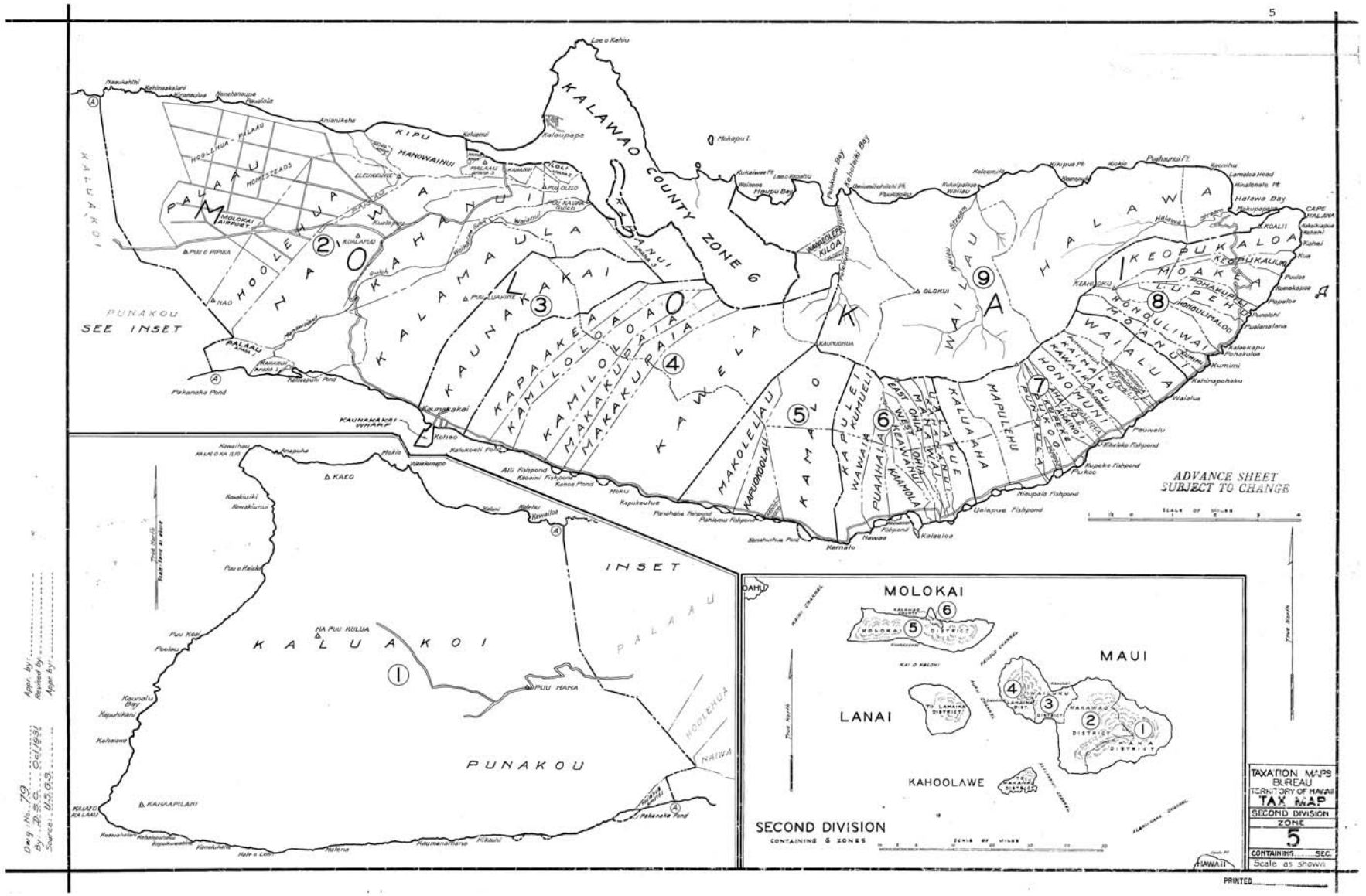
County of Maui, Department of Planning. March 24, 2010. *County of Maui 2030 General Plan Countywide Policy Plan.*

County of Maui, Department of Planning. December 19, 2001. *Moloka'i Community Plan.*

State of Hawaii, Water System Standards, 1985. *Domestic Consumption Guideline, Average Daily Demand*

U.S. Department of Agriculture, Soil Conservation Service in Cooperation with the University of Hawaii, Agricultural Experiment Station. 1972. *Soil Survey of the Islands of Kauai, Oahu, Maui, Moloka'i, and Lana'i, State of Hawaii.*

Figure No. 1 Regional Location Map



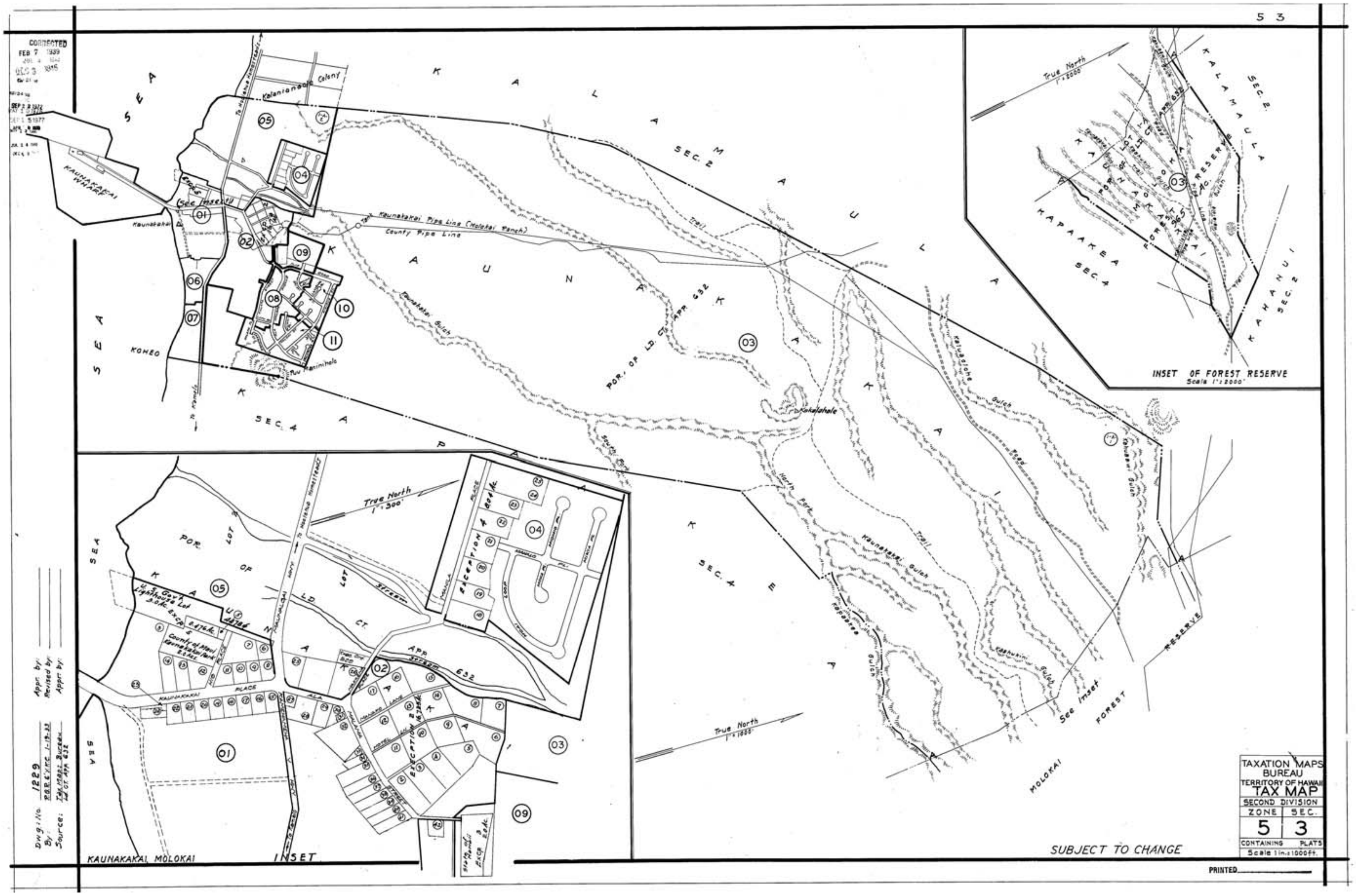

5 3
CORRECTED
FEB 7 1939
SEA
KAUNAKAKAI WHARF
Kaunakakai
(See Inset)
Kalanianaole Colony
KOHEO
Puu Maninikolo
SEC. 4
SEC. 2
Kaunakakai Pipe Line (Molokai Ranch)
County Pipe Line
Kaunakakai Gulch
POR. OF LD. CT. APP. 632
Trail
Kakalahale
South Fork
North Fork
Kaunakakai Gulch
Kaluaaiohe Gulch
Kahuaawi Gulch
Kaahukini Gulch
Road
See Inset
MOLOKAI FOREST RESERVE
True North 1" = 1000'
INSET OF FOREST RESERVE
Scale 1" = 2000'
True North 1" = 2000'
KALAMAULA SEC. 2
KAPAAKEA SEC. 4
KAHANUI SEC. 2
POR. OF LOT 1-A CT. APP. 632
FOREST RESERVE 965 Ac.
True North 1" = 300'
POR. OF LOT 1 OF LD. CT. APP. 632
U.S. Govt. Lighthouse Lot 3.0 Ac. EXCP. 5
0.476 Ac.
County of Maui Kaunakakai Park 2.0 Acs.
KAUNAKAKAI PLACE
ALA
MALAMA STREET
EXCEPTION 2 16.725 Ac.
EXCEPTION 4 8.04 Ac.
Stream
632
State of Hawaii EXCP. 3 2.0 Ac.
KAUNAKAKAI, MOLOKAI
INSET
Dwg. No. 1229
By: PBR E'YPC 1-19-33
Source: Tax Maps Bureau Ld. Ct. App. 632
Appr. by:
Revised by:
Appr. by:
SUBJECT TO CHANGE
TAXATION MAPS BUREAU
TERRITORY OF HAWAII
TAX MAP
SECOND DIVISION
ZONE 5
SEC. 3
CONTAINING PLATS
Scale 1in. = 1000 ft.
PRINTED

Figure No. 10 Topographic Map

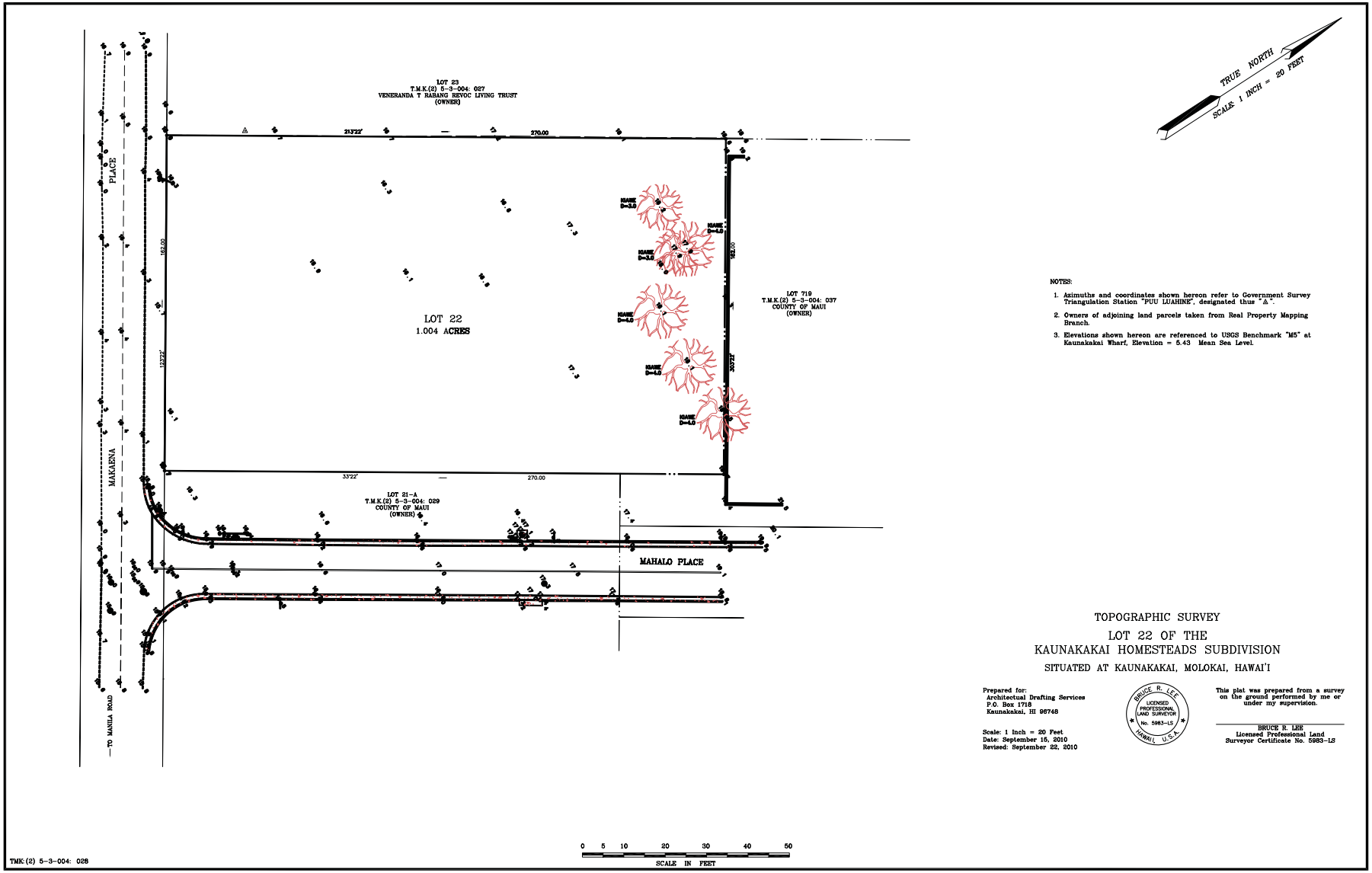


Figure No. 2 TMK Location Map

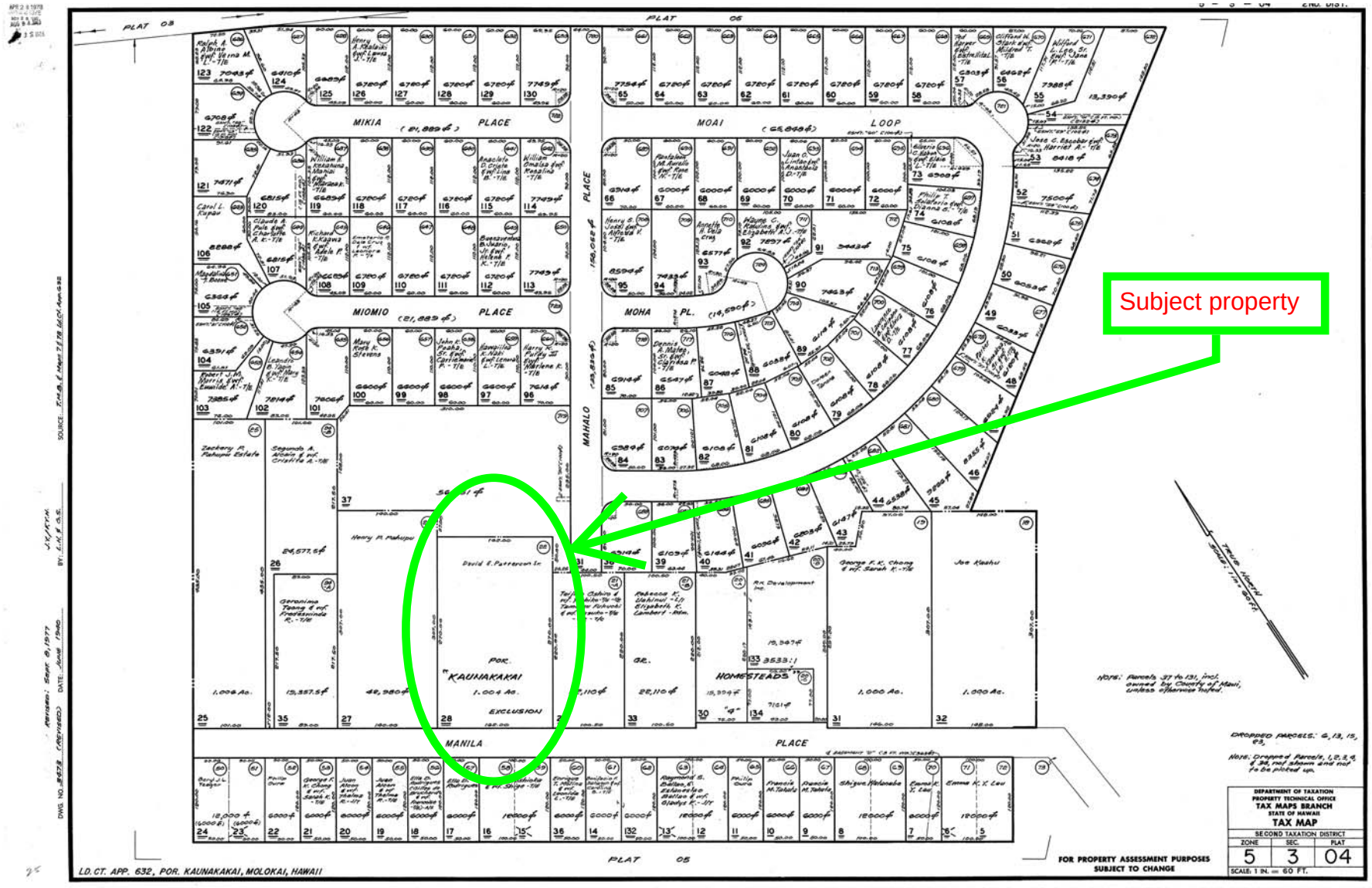


Figure No. 3 Site Photographs - SW looking N

September 2010

Figure No. 3 Site Photographs - SW Looking N Alt. View

September 2010

Figure No. 3 Site Photographs - SW Looking E

September 2010

Figure No. 3 Site Photographs - SE Looking W

September 2010

Figure No. 3 Site Photographs - SE Looking N

Figure No. 3 Site Photographs - NE Looking S

September 2010

Figure No. 3 Site Photographs - NE Looking W

September 2010

Figure No. 3 Site Photographs - NW Looking E

Figure No. 3 Site Photographs - NW Looking S

September 2010

Figure No. 3 Site Photographs - Puu Hauoli Park North Adjacent September 2010

Figure No. 4 State Land Use Map

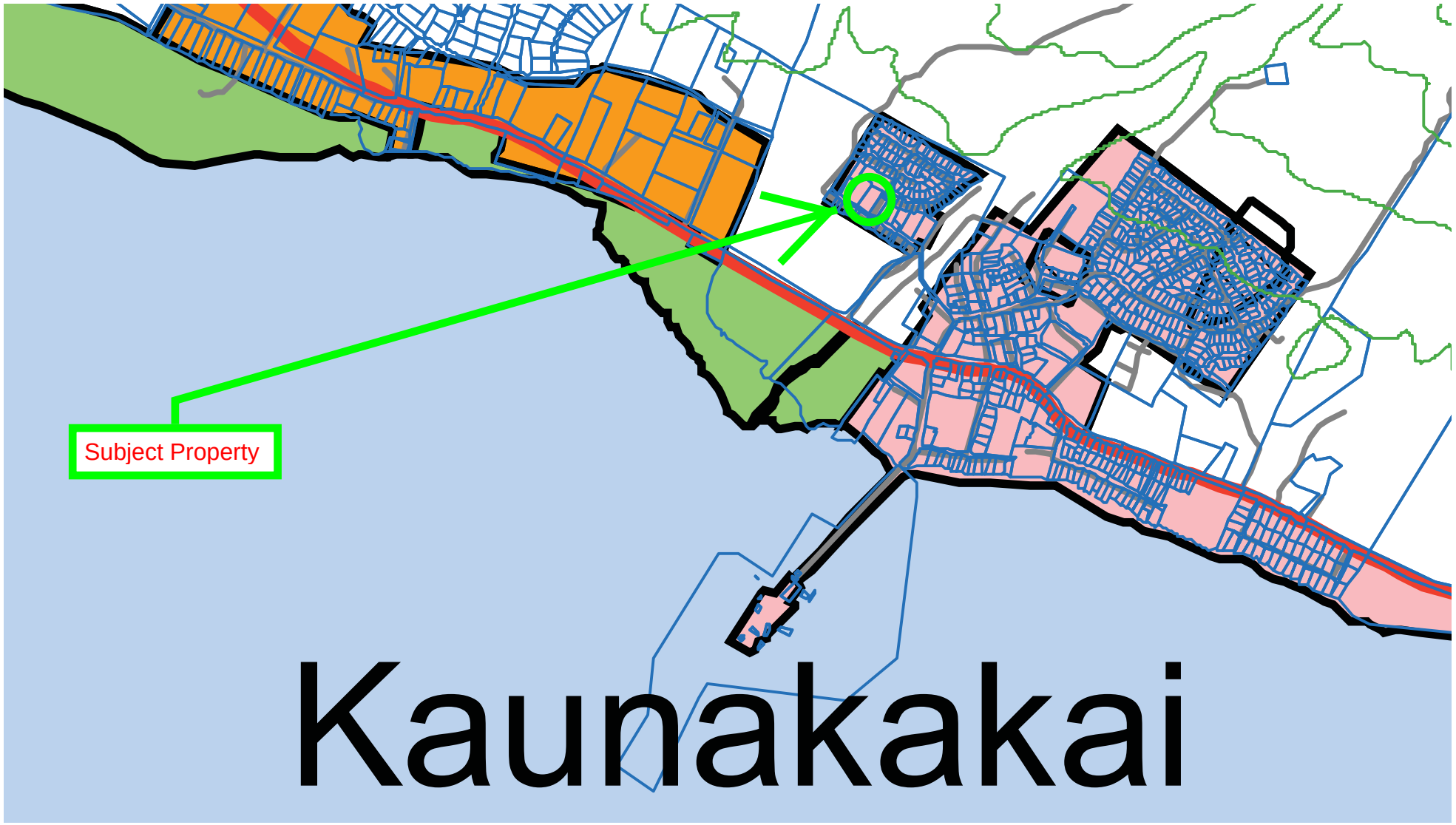


Figure No. 5 Community Plan Map

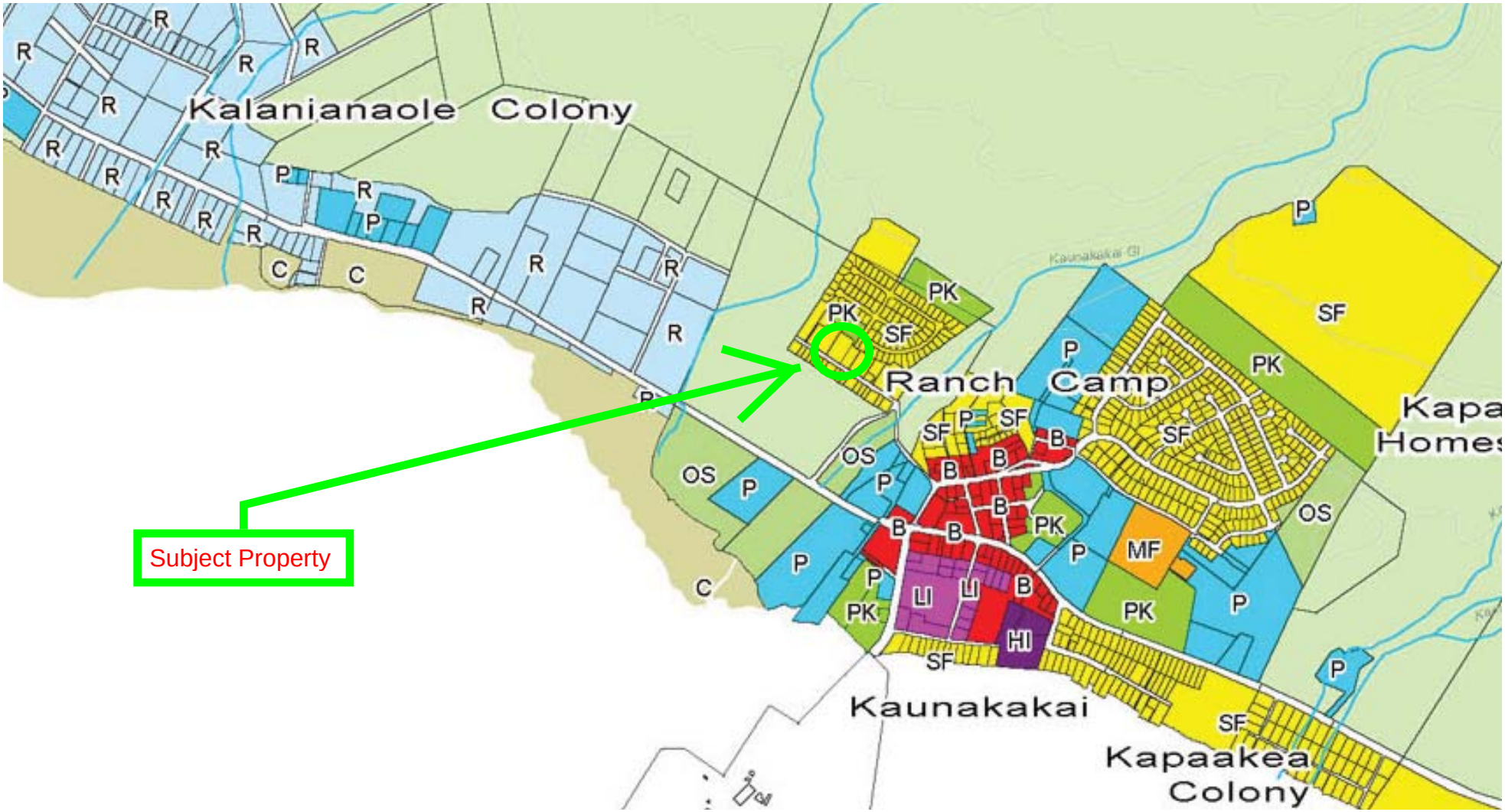
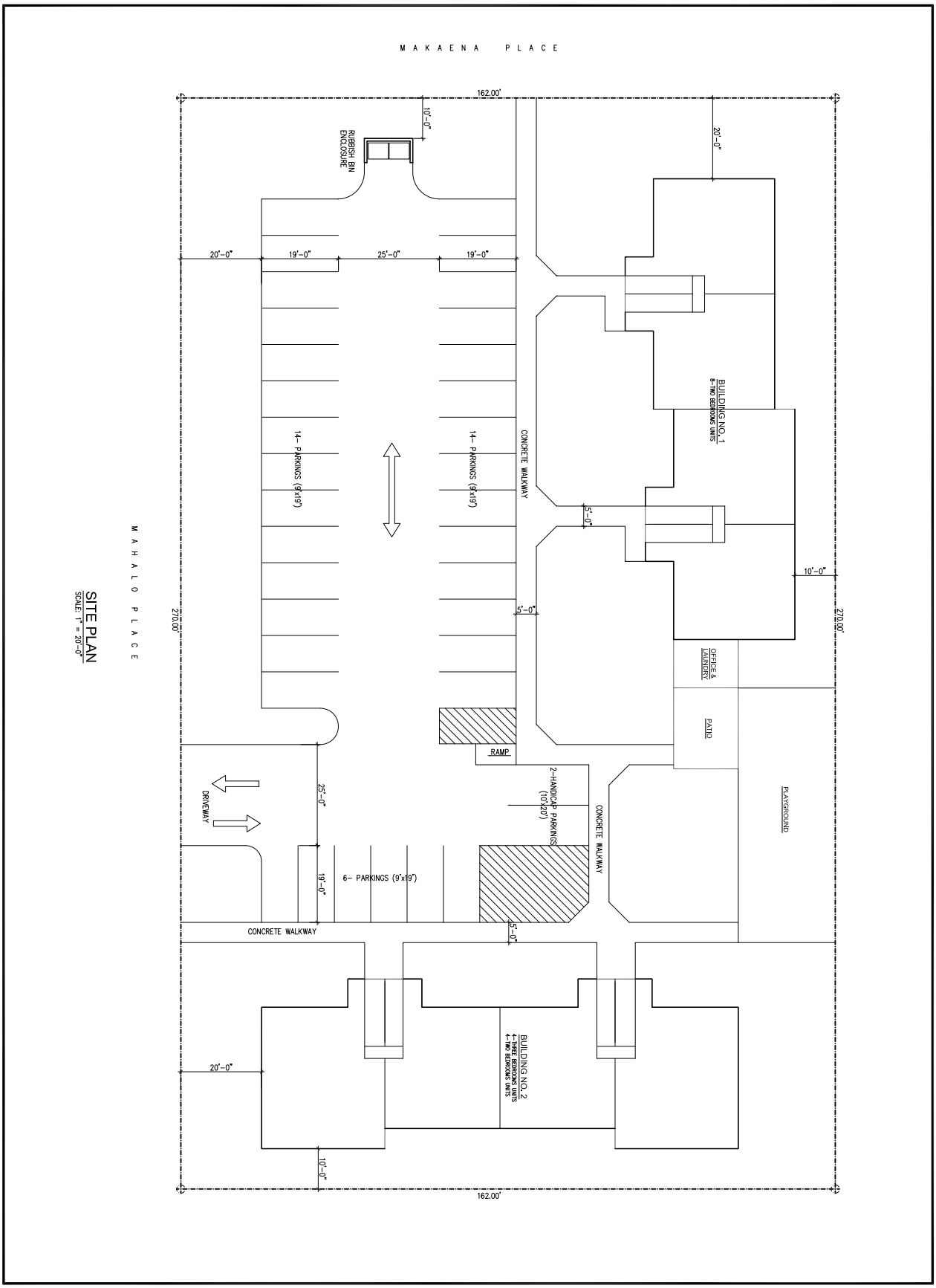


Figure No. 6 Site Plan



Date	SEPT. 2010
Scale	AS NOTED
Drawn	DP
Check by	LM
Job	CHOPRA
Sheet No	T-1
of Sheets	

PROPOSED PROJECT FOR:
HALE CHOPRA APARTMENT
190 MAKAENA PLACE
KAUNAKAKAI, HAWAII 96748

ADS
Architectural Drafting Service
P.O. BOX 1718
Kaunakakai, Hawaii 96748
Tel. No. (808) 553-9045
Fax. No. (808) 553-3952

EDWARD A. FELSH — LICENSED PROFESSIONAL ARCHITECT — No. 3239 — HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION, AND CONSTRUCTION OF THIS PROJECT WILL BE OBSERVED BY ME OR MY SUPERVISION.

SIGNATURE

EXPIRATION DATE 4/30/12

REVISION	BY

Figure No. 7 Soils Report

United States Department of Agriculture

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Island of Molokai, Hawaii

Chopra Hale - Manila Camp

August 18, 2010

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://soils.usda.gov/sqi/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://soils.usda.gov/contact/state_offices/).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Soil Data Mart Web site or the NRCS Web Soil Survey. The Soil Data Mart is the data storage site for the official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means

for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the

individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Units

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other

Special Line Features
- Gully
- Short Steep Slope
- Other

Political Features
- Cities

Water Features
- Oceans
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

MAP INFORMATION

Map Scale: 1:720 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 4N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Island of Molokai, Hawaii
Survey Area Data: Version 6, Dec 31, 2006

Date(s) aerial images were photographed: Data not available.

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Island of Molokai, Hawaii (HI950)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
MmA	Mala silty clay, 0 to 3 percent slopes	1.1	100.0%
Totals for Area of Interest		**1.1**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Island of Molokai, Hawaii

MmA—Mala silty clay, 0 to 3 percent slopes

Map Unit Setting

Elevation: 0 to 100 feet
Mean annual precipitation: 10 to 25 inches
Mean annual air temperature: 73 to 75 degrees F
Frost-free period: 365 days

Map Unit Composition

Mala and similar soils: 100 percent

Description of Mala

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread, rise
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Alluvium

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Calcium carbonate, maximum content: 99 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 4.0 mmhos/cm)
Available water capacity: Low (about 6.0 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability (nonirrigated): 6c

Typical profile

0 to 7 inches: Silty clay
7 to 40 inches: Stratified silty clay
40 to 60 inches: Sand

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://soils.usda.gov/

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://soils.usda.gov/

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://soils.usda.gov/

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://soils.usda.gov/

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.glti.nrcs.usda.gov/

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://soils.usda.gov/

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://soils.usda.gov/

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210.

Figure No. 8 Flood Hazard Assessment Report

State of Hawaii

FLOOD HAZARD ASSESSMENT REPORT

NATIONAL FLOOD INSURANCE PROGRAM

FLOOD ZONE DEFINITIONS

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD – The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zone A, AE, AH, AO, V, and VE. The Base Flood Elevation (BFE) is the water-surface elevation of the 1% annual chance flood. Mandatory flood insurance purchase applies in these zones:

- **Zone A:** No BFE determined.
- **Zone AE:** BFE determined.
- **Zone AH:** Flood depths of 1 to 3 feet (usually areas of ponding); BFE determined.
- **Zone AO:** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined.
- **Zone V:** Coastal flood zone with velocity hazard (wave action); no BFE determined.
- **Zone VE:** Coastal flood zone with velocity hazard (wave action); BFE determined.
- **Zone AEF:** Floodway areas in Zone AE. The floodway is the channel of stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without increasing the BFE.

NON-SPECIAL FLOOD HAZARD AREA – An area in a low-to-moderate risk flood zone. No mandatory flood insurance purchase requirements apply, but coverage is available in participating communities.

- **Zone XS (X shaded):** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
- **Zone X:** Areas determined to be outside the 0.2% annual chance floodplain.

OTHER FLOOD AREAS

- **Zone D:** Unstudied areas where flood hazards are undetermined, but flooding is possible. No mandatory flood insurance purchase requirements apply, but coverage is available in participating communities.

PROPERTY INFORMATION

COUNTY:	MAUI
TMK NO:	(2) 5-3-004:028
PARCEL ADDRESS:	190 MAKAENA PL
FIRM INDEX DATE:	SEPTEMBER 25, 2009
LETTER OF MAP CHANGE(S):	NONE
FEMA FIRM PANEL(S):	1500030190E
PANEL EFFECTIVE DATE:	SEPTEMBER 25, 2009

PARCEL DATA FROM:	APRIL 2009
IMAGERY DATA FROM:	MAY 2005

IMPORTANT PHONE NUMBERS

County NFIP Coordinator	
County of Maui	
Francis Cerizo, CFM	(808) 270-7771
State NFIP Coordinator	
Carol Tyau-Beam	(808) 587-0267

Disclaimer: The Department of Land and Natural Resources assumes no responsibility arising from the use of the information contained in this report. Viewers/Users are responsible for verifying the accuracy of the information and agree to indemnify the Department of Land and Natural Resources from any liability, which may arise from its use.

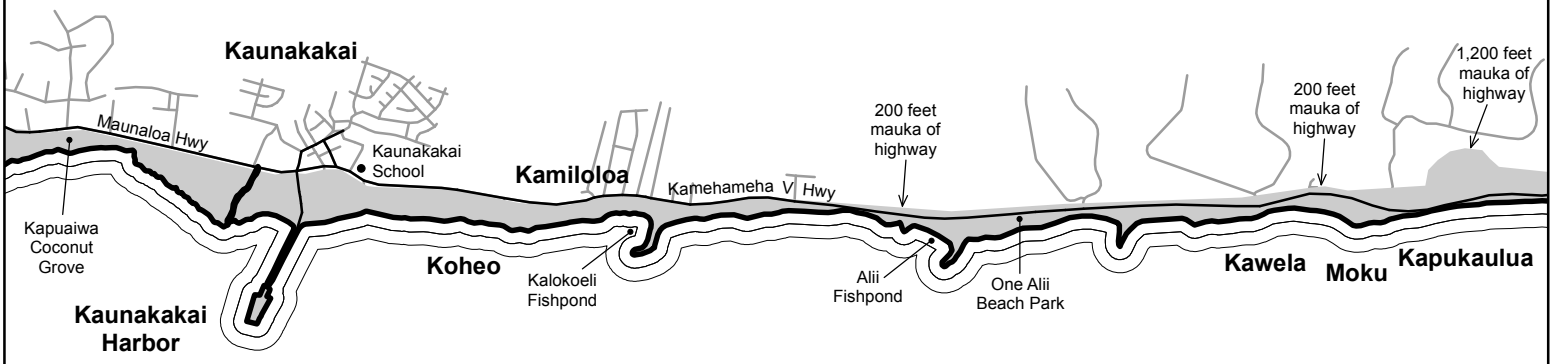
Preliminary DFIRM Disclaimer: If this map has been identified as "PRELIMINARY", please note that it is being provided for commenting purposes only and is not to be use for official/legal decisions or regulatory compliance.

Figure No. 9 Tsunami Evacuation Molokai Map 3 & 4

EVACUATE ALL SHORELINES AND SHADED AREAS

(If outside the tsunami evacuation areas, avoid non-essential travel.)

TSUNAMI EVACUATION MOLOKAI MAP 3: KAPUKAULUA TO KAMILOLOA TO KAUNAKAKAI

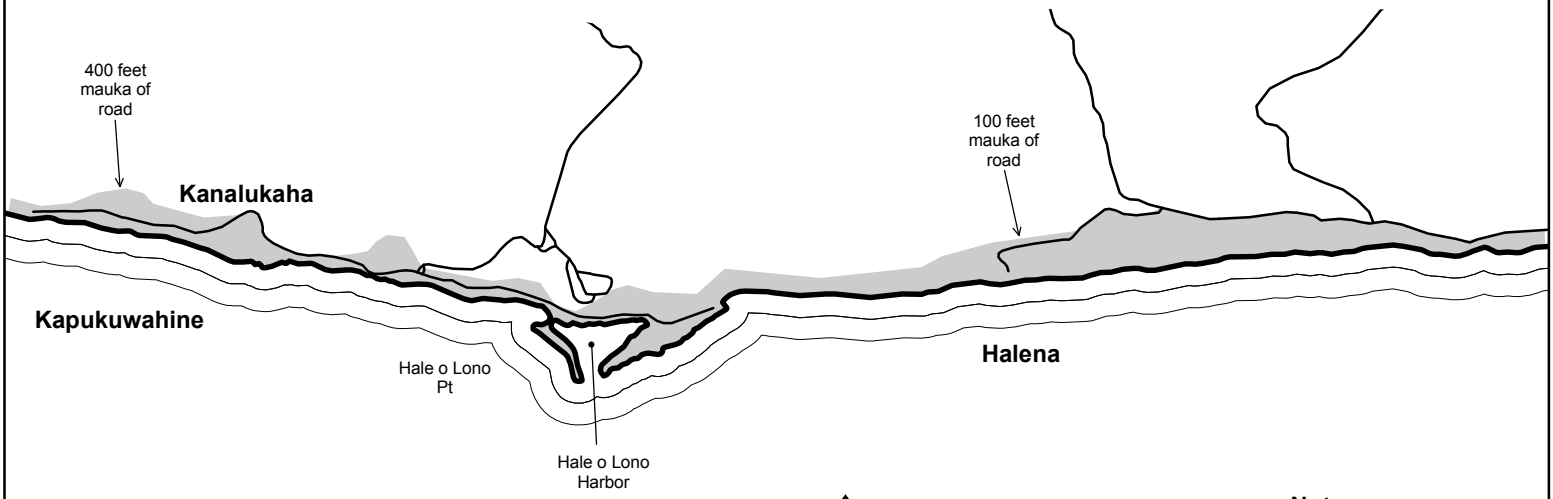


Note
Secure, remove or put to sea all vessels in harbors due to the probability of strong currents and wave action.

N

Note
When evacuation boundaries are drawn along streets and roadways, they are considered to be safe from wave action.

TSUNAMI EVACUATION MOLOKAI MAP 4: HALENA TO HALE O LONO HARBOR TO KAPUKUWAHINE



Note
Secure, remove or put to sea all vessels in harbors due to the probability of strong currents and wave action.

N

Note
When evacuation boundaries are drawn along streets and roadways, they are considered to be safe from wave action.

Appendix A
Preliminary Drainage Report

Appendix A

PRELIMINARY DRAINAGE REPORT

FOR

KAUNAKAKAI APARTMENT PROJECT

Kaunakakai, Molokai, Hawaii

T.M.K.: (2) 5-3-004: 028

Prepared for:

Architectural Drafting Service
P.O. Box 1718
Kaunakakai, Molokai, Hawaii 96748

Prepared by:

OTOMO
ENGINEERING, INC.

CONSULTING CIVIL ENGINEERS
305 SOUTH HIGH STREET, SUITE 102
WAILUKU, MAUI, HAWAII 96793
PHONE: (808) 242-0032
FAX: (808) 242-5779

September 2010

TABLE OF CONTENTS

PRELIMINARY DRAINAGE REPORT
FOR
KAUNAKAKAI APARTMENT PROJECT
T.M.K.: (2) 5-3-004: 028

I. INTRODUCTION

The purpose of this report is to examine both the existing drainage conditions and the proposed drainage system for the project.

II. SITE LOCATION AND PROJECT DESCRIPTION

The subject parcel is identified as T.M.K.: (2) 5-3-004: 028, which encompasses an area of approximately 1.004 acres. It is also Lot 22 of the Kaunakakai Homesteads Subdivision.

The project site is bordered by a County park to the north, Mahalo Place to the east, Makaena Place to the south, and a single family residence to the west.

The proposed project includes two apartment buildings containing a total of 16 two and three bedroom units. There will also be an office/laundry area and a patio. Associated improvements include paved driveways and parking area, utility connections, and landscaping.

III. EXISTING TOPOGRAPHY AND SOIL CONDITIONS

The project site currently undeveloped and covered with weeds and a few Kiawe trees. The parcel slopes down in a northeast to southwest direction from an elevation of approximately 18.5 feet above mean sea level at the northerly boundary to approximately 16 feet above mean sea level at the southerly boundary, averaging approximately 0.9%.

According to the "Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii (August, 1972)," prepared by the United States Department of Agriculture Soil Conservation Service, the soil within the project site is classified as Mala silty clay, 0 to 3 percent slopes (MmA). Mala silty clay is characterized as having moderate permeability, slow runoff, and no more than slight erosion hazard. This soil is found on fans along the coastal plains.

IV. EXISTING DRAINAGE CONDITIONS

There is an existing drainage system on Mahalo Place which has concrete curb and gutters. There are a couple of curb-inlet catch basins on Mahalo Place located near the upper third of the project site. However, very little runoff sheet flows from the project site into the catch basins. Most of the onsite runoff sheet

flows in a northeast to southwest direction onto Makena Place. Makena Place does not have concrete curb and gutters.

It is estimated that the existing 50-year, 1-hour storm runoff from the project site is 1.02 cfs. The corresponding runoff volume generated is 1,286 cubic feet.

V. FLOOD AND TSUNAMI ZONE

According to Panel Number 150003 0190E of the Flood Insurance Rate Map, revised September 25, 2009, prepared by the United States Federal Emergency Management Agency, the makai one-third of the subject parcel is situated in Flood Zone A. The mauka tow-thirds of the parcel is situated in Flood Zone X Protected by Levee. Flood Zone A represents areas of special flood hazard with no base flood elevations determined. Flood Zone X Protected by Levee represents areas of 0.2% chance annual chance flood; areas of 1% chance flood with average depths of less than 1 foot or with areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

VI. PROPOSED DRAINAGE PLAN

The proposed drainage plan is to maintain the existing drainage pattern of the onsite runoff. Runoff sheet flowing across the project site toward Makaena Place will be collected by grated catch basins within the paved driveways and landscape areas and conveyed to onsite detention basins located within the landscape areas. Runoff sheet flowing through the landscaped areas will be directed into the detention basins by vegetated swales. The detention basins will be sized, at a minimum, to accommodate the increase in runoff from the 50-year, 1-hour storm generated from the project site.

It is estimated that the post development runoff from the project site will be 2.56 cfs, an increase of 1.54 cfs from existing conditions. The associated runoff volume generated from the developed condition runoff is 3,078 cubic feet. Based on the County drainage standards, the project's drainage system must mitigate the increase in runoff from the site for a 50-year, 1-hour storm, which is 1,792 cubic feet (3,078 cubic feet - 1,286 cubic feet). The proposed onsite detention basins will be sized to accommodate, at a minimum, the increase runoff volume generated from the 50-year, 1-hour storm.

The drainage design criteria will be to minimize any alterations to the natural pattern of the existing onsite surface runoff. The proposed drainage plan meets the requirements of Chapter 4, "Rules for the Design of Storm Drainage Facilities in the County of Maui."

VII. HYDROLOGIC CALCULATIONS

The hydrologic calculations are based on the "Drainage Master Plan for the County of Maui," and the "Rainfall Frequency Atlas of the Hawaiian Islands," Technical Paper No. 43, U.S. Department of Commerce, Weather Bureau.

Rational Formula Used: $Q = CIA$

Where Q = rate of flow (cfs)

C = rainfall coefficient

I = rainfall intensity for a duration equal to the time of concentration (inches/hour)

A = drainage area (Acres)

See Appendix A for Hydrologic Calculations

VIII. CONCLUSION

The proposed development will generate an additional runoff from the 50-year, 1-hour storm of 1.54 cfs and an additional runoff volume of 1,792 cubic feet. The onsite runoff will be collected by grated catch basins within the paved driveways and conveyed to onsite detention basins. The detention basins will be sized to accommodate, at a minimum, the increase in runoff and runoff volume from the 50-year, 1-hour storm.

It is our professional opinion that the proposed development will not have an adverse effect on the adjoining or downstream properties.

IX. REFERENCES

A. 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.

B. Erosion and Sediment Control Guide for Hawaii, prepared by U.S. Department of Agriculture, Soil Conservation Service, March, 1981.

C. Rainfall-Frequency Atlas of the Hawaiian Islands, Technical Paper No. 43, U.S. Department of Commerce, Weather Bureau, 1962.

D. Flood Insurance Rate Maps of the County of Maui, September, 2009.

E. Chapter 4, Rules for the Design of Storm Drainage Facilities in the County of Maui, prepared by the Department of Public Works and Waste Management, County of Maui, 1995.

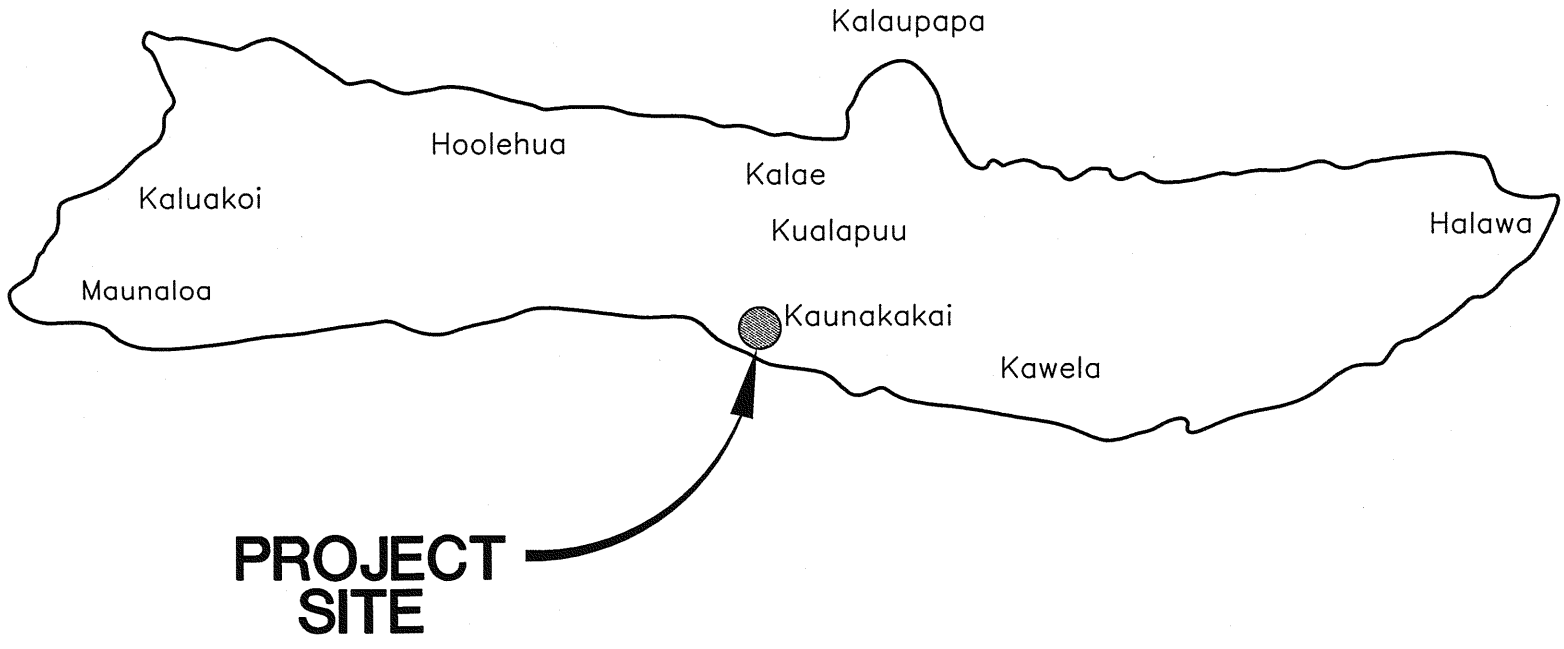
EXHIBITS

1 Location Map

2 Vicinity Map

3 Soil Survey Map

4 Flood Insurance Rate Map

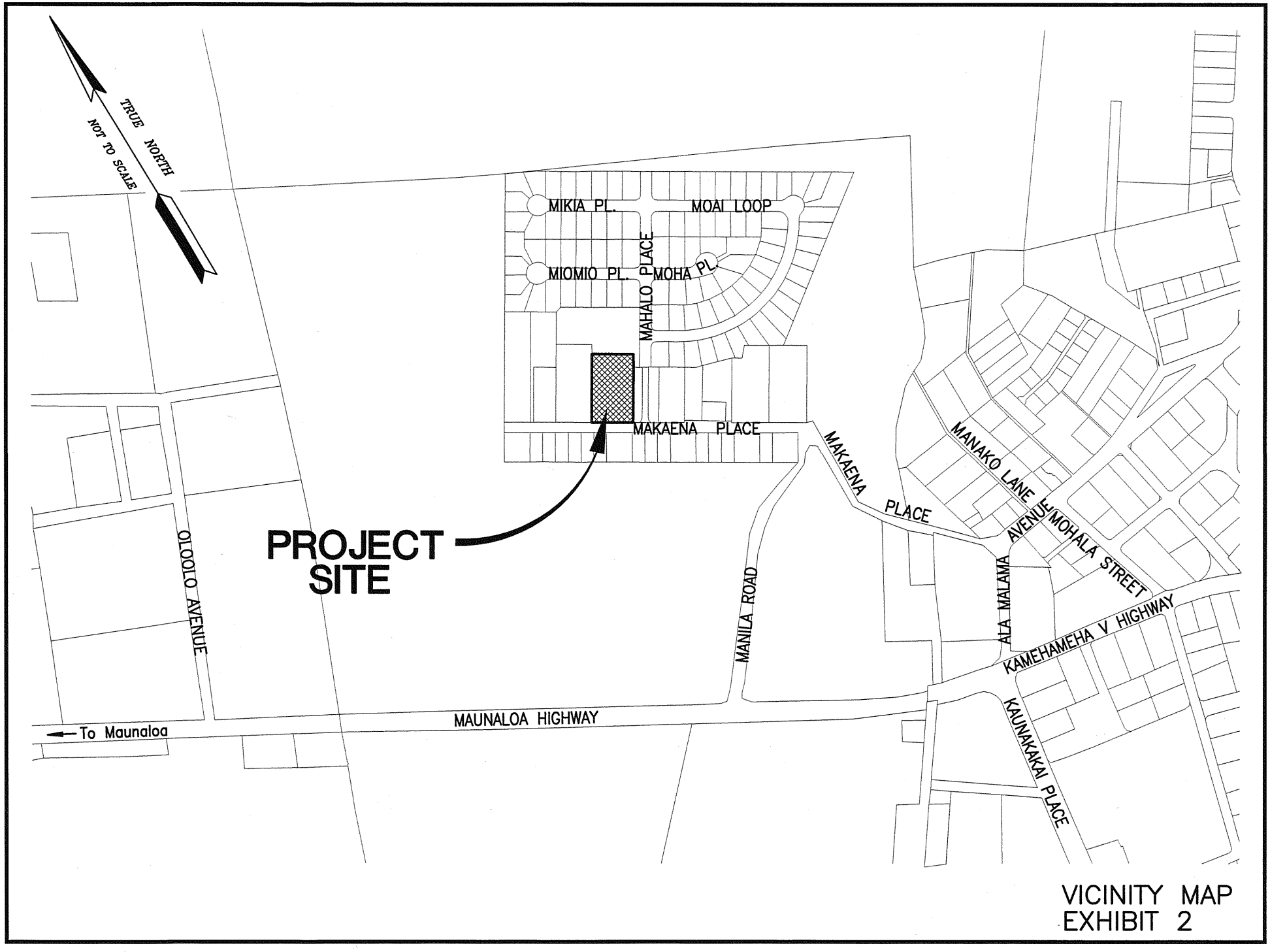


N

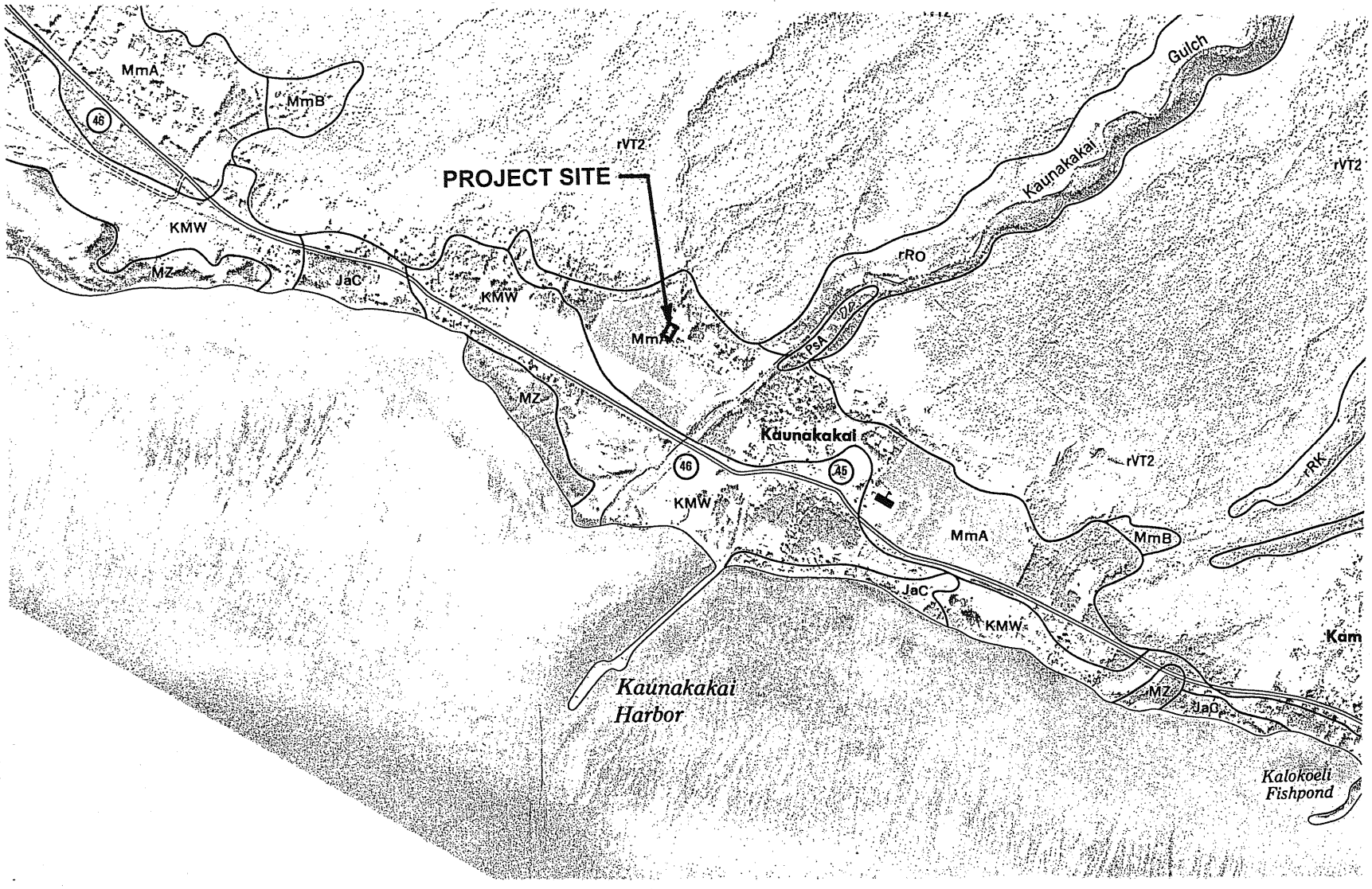
ISLAND OF MOLOKAI

NOT TO SCALE

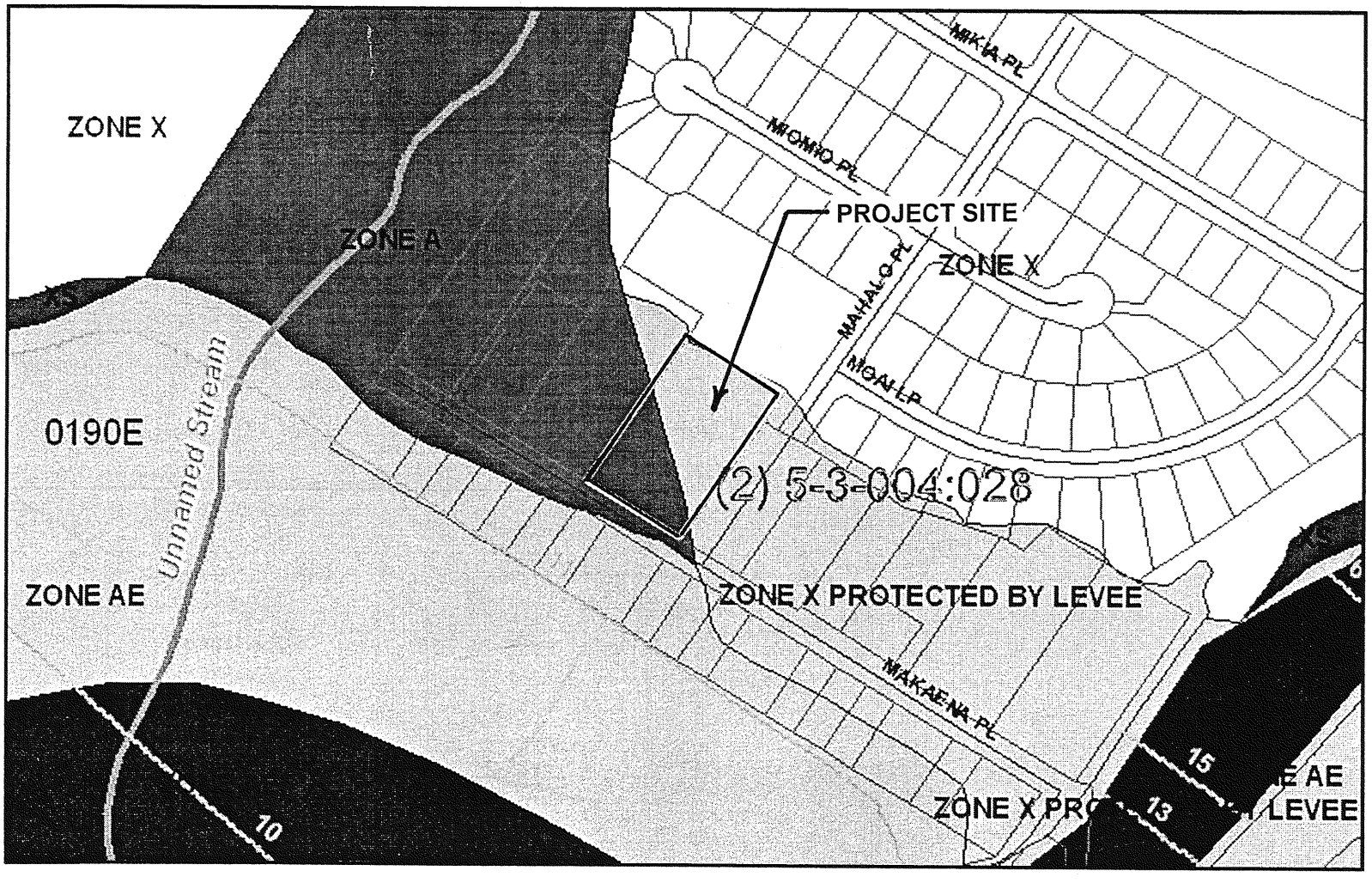
LOCATION MAP
EXHIBIT 1



VICINITY MAP
EXHIBIT 2



SOIL SURVEY MAP
EXHIBIT 3



FLOOD INSURANCE
RATE MAP
EXHIBIT 4

APPENDIX A

HYDROLOGIC CALCULATIONS

Hydrologic Calculations

Purpose: Determine the increase in onsite surface runoff due to the development of the project site based on a 50-year, 1-hour storm.

A. Determine the Runoff Coefficient (C):

DRAINAGE AREA CHARACTERISTICS:

ROOF AREAS:

Infiltration (Negligible)	=	0.20
Relief (Hilly)	=	0.06
Vegetal Cover (None)	=	0.07
Development Type (Roof)	=	0.55
C	=	0.88

PAVEMENT AREAS:

Infiltration (Negligible)	=	0.20
Relief (Flat)	=	0.00
Vegetal Cover (None)	=	0.07
Development Type (Pavement)	=	0.55
C	=	0.82

LANDSCAPE AREAS:

Infiltration (Medium)	=	0.07
Relief (Flat)	=	0.00
Vegetal Cover (Good)	=	0.03
Development Type (Landscape)	=	0.15
C	=	0.25

EXISTING CONDITION:

Undeveloped Area = 1.004 Acres
WEIGHTED C = 0.25

DEVELOPED CONDITION:

Roof Area = 0.16 Acres
Paved Area = 0.22 Acres
Landscaped Area = 0.62 Acres
WEIGHTED C = 0.48

B. Determine the 50-year 1-hour rainfall:

i_{50} = 2.5 inches

Adjust for time of concentration to compute Rainfall Intensity (I):

Existing Condition:

T_c = 21 minutes

I = 4.08 inches/hour

Developed Condition:

T_c = 10 minutes

I = 5.34 inches/hour

C. Drainage Area (A) = 1.00 Acre

D. Compute the 50-year storm runoff volume (Q):

Q = CIA

Existing Conditions:

Q = (0.25)(4.08)(1.00)

= 1.02 cfs

Developed Conditions:

Q = (0.48)(5.34)(1.00)

= 2.56 cfs

The increase in runoff from a 50-year, 1-hour storm is expected to be 2.56 cfs - 1.02 cfs = 1.54 cfs due to the development of the proposed project. The corresponding storage volume is 3,078 cubic feet - 1,286 cubic feet = 1,792 cubic feet.

Hydrograph Plot

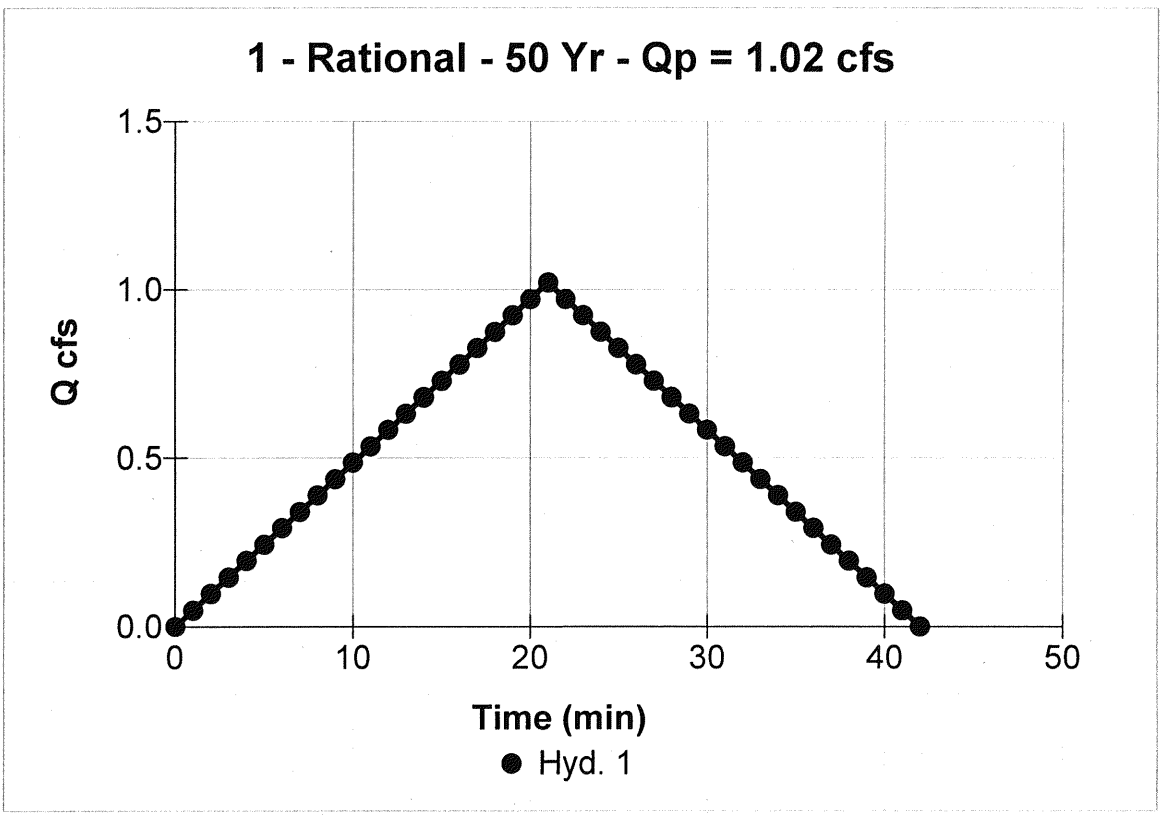
English

Hyd. No. 1

EXISITNG CONDITION

Hydrograph type	= Rational	Peak discharge	= 1.02 cfs
Storm frequency	= 50 yrs	Time interval	= 1 min
Drainage area	= 1.0 ac	Runoff coeff.	= 0.25
Intensity	= 4.08 in	Time of conc. (Tc)	= 21 min
I-D-F Curve	= 2-5.IDF	Reced. limb factor	= 1

Total Volume = 1,286 cuft



Hydrograph Plot

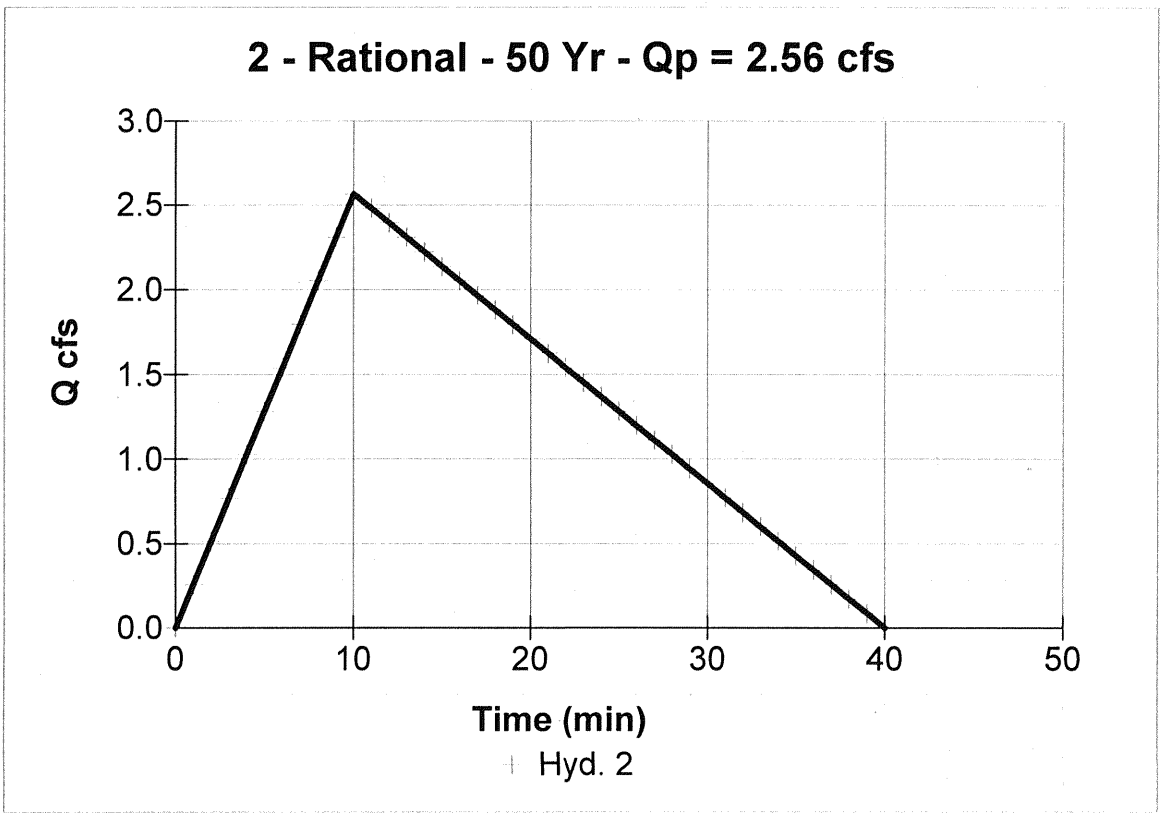
English

Hyd. No. 2

DEVELOPED CONDITION

Hydrograph type	= Rational	Peak discharge	= 2.56 cfs
Storm frequency	= 50 yrs	Time interval	= 1 min
Drainage area	= 1.0 ac	Runoff coeff.	= 0.48
Intensity	= 5.34 in	Time of conc. (Tc)	= 10 min
I-D-F Curve	= 2-5.IDF	Reced. limb factor	= 3

Total Volume = 3,078 cuft



Appendix B
Pre-Consultation Request Letters

ARCHITECTURAL DRAFTING SERVICE
P.O. BOX 1718
KAUNAKAKAI, HI 96748
Phone: (808) 553-9045 - Fax: (808) 553-3952 - Mobile: (808) 870-3499
Email: luigis@hawaiiantel.biz

March 22, 2011

County of Maui, Department of Environmental Management
Kyle Ginoza, Director
Michael Miyamoto, Deputy Director
2200 Main St.
One Main Plaza Bldg Suite 100
Wailuku, HI 96793-2155

Subject: **DRAFT ENVIRONMENTAL ASSESSMENT FOR PROPOSED COMMUNITY PLAN AMENDMENT CHOPRA HALE APARTMENTS, LDE GROUP, LLC 190 MAKAENA PLACE, KAUNAKAKAI, HI 96748, TMK (2) 5-3-004:028**

To Whom It May Concern:

In compliance with HRS 343-5 (a) (6), Architectural Drafting Service is preparing a Draft Environmental Assessment for the applicant, LDE Group, LLC, for a proposed Community Plan Amendment from Single Family to Multi Family land use designation for the above listed project.

To that end, and enclosed in this packet, we submit the following items to you for review and comments.

- Chopra Hale CPA Application
- Chopra Hale Assessment Report with Figures
- Chopra Hale Preliminary Drainage Report
- Chopra Hale Architectural Drawing Package

Please note:

- The Owner/Applicant purchased the subject property on May 5, 2009 and it has remained in its undeveloped state.
- The subject property is a result of a previous subdivision that created the "Manila Camp" subdivision.
- Previous onsite improvements have been limited to grubbing.

Please call me (808) 553-9045, (808) 870-3499 or email luigis@hawaiiantel.biz should you have any questions.

Sincerely,

Luigi Manera, Agent

ARCHITECTURAL DRAFTING SERVICE
P.O. BOX 1718
KAUNAKAKAI, HI 96748
Phone: (808) 553-9045 - Fax: (808) 553-3952 - Mobile: (808) 870-3499
Email: luigis@hawaiiantel.biz

March 22, 2011

County of Maui, Department of Fire and Public Safety
Jeffrey A. Murray, Fire Chief
Robert M. Shimada, Deputy Fire Chief
200 Dairy Road
Kahului, HI 96733

Subject: **DRAFT ENVIRONMENTAL ASSESSMENT FOR PROPOSED COMMUNITY PLAN AMENDMENT CHOPRA HALE APARTMENTS, LDE GROUP, LLC 190 MAKAENA PLACE, KAUNAKAKAI, HI 96748, TMK (2) 5-3-004:028**

To Whom It May Concern:

In compliance with HRS 343-5 (a) (6), Architectural Drafting Service is preparing a Draft Environmental Assessment for the applicant, LDE Group, LLC, for a proposed Community Plan Amendment from Single Family to Multi Family land use designation for the above listed project.

To that end, and enclosed in this packet, we submit the following items to you for review and comments.

- Chopra Hale CPA Application
- Chopra Hale Assessment Report with Figures
- Chopra Hale Preliminary Drainage Report
- Chopra Hale Architectural Drawing Package

Please note:

- The Owner/Applicant purchased the subject property on May 5, 2009 and it has remained in its undeveloped state.
- The subject property is a result of a previous subdivision that created the "Manila Camp" subdivision.
- Previous onsite improvements have been limited to grubbing.

Please call me (808) 553-9045, (808) 870-3499 or email luigis@hawaiiantel.biz should you have any questions.

Sincerely,

Luigi Manera, Agent

ARCHITECTURAL DRAFTING SERVICE
P.O. BOX 1718
KAUNAKAKAI, HI 96748
Phone: (808) 553-9045 - Fax: (808) 553-3952 - Mobile: (808) 870-3499
Email: luigis@hawaiiantel.biz

March 22, 2011

County of Maui, Department of Housing and Human Concerns
Jo-Ann T. Ridao, Director
Janice Shishido, Deputy Director
2200 Main St.
One Main Plaza Bldg, Suite 546
Wailuku, HI 96793

Subject: **DRAFT ENVIRONMENTAL ASSESSMENT FOR PROPOSED COMMUNITY PLAN AMENDMENT CHOPRA HALE APARTMENTS, LDE GROUP, LLC 190 MAKAENA PLACE, KAUNAKAKAI, HI 96748, TMK (2) 5-3-004:028**

To Whom It May Concern:

In compliance with HRS 343-5 (a) (6), Architectural Drafting Service is preparing a Draft Environmental Assessment for the applicant, LDE Group, LLC, for a proposed Community Plan Amendment from Single Family to Multi Family land use designation for the above listed project.

To that end, and enclosed in this packet, we submit the following items to you for review and comments.

- Chopra Hale CPA Application
- Chopra Hale Assessment Report with Figures
- Chopra Hale Preliminary Drainage Report
- Chopra Hale Architectural Drawing Package

Please note:

- The Owner/Applicant purchased the subject property on May 5, 2009 and it has remained in its undeveloped state.
- The subject property is a result of a previous subdivision that created the "Manila Camp" subdivision.
- Previous onsite improvements have been limited to grubbing.

Please call me (808) 553-9045, (808) 870-3499 or email luigis@hawaiiantel.biz should you have any questions.

Sincerely,

Luigi Manera, Agent

ARCHITECTURAL DRAFTING SERVICE
P.O. BOX 1718
KAUNAKAKAI, HI 96748
Phone: (808) 553-9045 - Fax: (808) 553-3952 - Mobile: (808) 870-3499
Email: luigis@hawaiiantel.biz

March 22, 2011

County of Maui, Department of Parks & Recreation
Glenn Correa, Director
Patrick Matsui, Deputy Director
700 Halia Nakoa St.
War Memorial Complex
Wailuku, HI 96793

Subject: **DRAFT ENVIRONMENTAL ASSESSMENT FOR PROPOSED COMMUNITY PLAN AMENDMENT CHOPRA HALE APARTMENTS, LDE GROUP, LLC 190 MAKAENA PLACE, KAUNAKAKAI, HI 96748, TMK (2) 5-3-004:028**

To Whom It May Concern:

In compliance with HRS 343-5 (a) (6), Architectural Drafting Service is preparing a Draft Environmental Assessment for the applicant, LDE Group, LLC, for a proposed Community Plan Amendment from Single Family to Multi Family land use designation for the above listed project.

To that end, and enclosed in this packet, we submit the following items to you for review and comments.

- Chopra Hale CPA Application
- Chopra Hale Assessment Report with Figures
- Chopra Hale Preliminary Drainage Report
- Chopra Hale Architectural Drawing Package

Please note:

- The Owner/Applicant purchased the subject property on May 5, 2009 and it has remained in its undeveloped state.
- The subject property is a result of a previous subdivision that created the "Manila Camp" subdivision.
- Previous onsite improvements have been limited to grubbing.

Please call me (808) 553-9045, (808) 870-3499 or email luigis@hawaiiantel.biz should you have any questions.

Sincerely,

Luigi Manera, Agent

ARCHITECTURAL DRAFTING SERVICE
P.O. BOX 1718
KAUNAKAKAI, HI 96748
Phone: (808) 553-9045 - Fax: (808) 553-3952 - Mobile: (808) 870-3499
Email: luigis@hawaiiantel.biz

March 22, 2011

County of Maui, Planning Department
William Spence, Director
Michele Chouteau McLean, Deputy Director
250 S. High St
Kalana Pakui Bldg Ste 200
Wailuku, HI 96793

Subject: **DRAFT ENVIRONMENTAL ASSESSMENT FOR PROPOSED COMMUNITY PLAN AMENDMENT CHOPRA HALE APARTMENTS, LDE GROUP, LLC 190 MAKAENA PLACE, KAUNAKAKAI, HI 96748, TMK (2) 5-3-004:028**

To Whom It May Concern:

In compliance with HRS 343-5 (a) (6), Architectural Drafting Service is preparing a Draft Environmental Assessment for the applicant, LDE Group, LLC, for a proposed Community Plan Amendment from Single Family to Multi Family land use designation for the above listed project.

To that end, and enclosed in this packet, we submit the following items to you for review and comments.

- Chopra Hale CPA Application
- Chopra Hale Assessment Report with Figures
- Chopra Hale Preliminary Drainage Report
- Chopra Hale Architectural Drawing Package

Please note:

- The Owner/Applicant purchased the subject property on May 5, 2009 and it has remained in its undeveloped state.
- The subject property is a result of a previous subdivision that created the "Manila Camp" subdivision.
- Previous onsite improvements have been limited to grubbing.

Please call me (808) 553-9045, (808) 870-3499 or email luigis@hawaiiantel.biz should you have any questions.

Sincerely,

Luigi Manera, Agent

ARCHITECTURAL DRAFTING SERVICE
P.O. BOX 1718
KAUNAKAKAI, HI 96748
Phone: (808) 553-9045 - Fax: (808) 553-3952 - Mobile: (808) 870-3499
Email: luigis@hawaiiantel.biz

March 22, 2011

County of Maui, Police Department
Gary Yabuta, Chief of Police
Clayton Tom, Deputy Chief of Police
55 Mahalani Street
Wailuku, HI 96793

Subject: **DRAFT ENVIRONMENTAL ASSESSMENT FOR PROPOSED COMMUNITY PLAN AMENDMENT CHOPRA HALE APARTMENTS, LDE GROUP, LLC 190 MAKAENA PLACE, KAUNAKAKAI, HI 96748, TMK (2) 5-3-004:028**

To Whom It May Concern:

In compliance with HRS 343-5 (a) (6), Architectural Drafting Service is preparing a Draft Environmental Assessment for the applicant, LDE Group, LLC, for a proposed Community Plan Amendment from Single Family to Multi Family land use designation for the above listed project.

To that end, and enclosed in this packet, we submit the following items to you for review and comments.

- Chopra Hale CPA Application
- Chopra Hale Assessment Report with Figures
- Chopra Hale Preliminary Drainage Report
- Chopra Hale Architectural Drawing Package

Please note:

- The Owner/Applicant purchased the subject property on May 5, 2009 and it has remained in its undeveloped state.
- The subject property is a result of a previous subdivision that created the "Manila Camp" subdivision.
- Previous onsite improvements have been limited to grubbing.

Please call me (808) 553-9045, (808) 870-3499 or email luigis@hawaiiantel.biz should you have any questions.

Sincerely,

Luigi Manera, Agent

ARCHITECTURAL DRAFTING SERVICE
P.O. BOX 1718
KAUNAKAKAI, HI 96748
Phone: (808) 553-9045 - Fax: (808) 553-3952 - Mobile: (808) 870-3499
Email: luigis@hawaiiantel.biz

March 22, 2011

County of Maui, Department of Public Works
David Goode, Director of Public Works
Rowena Dagdag-Andaya, Deputy of Public Works
200 South High St.
Kalana O Maui Bldg 4th Floor
Wailuku, HI 96793

Subject: **DRAFT ENVIRONMENTAL ASSESSMENT FOR PROPOSED COMMUNITY PLAN AMENDMENT CHOPRA HALE APARTMENTS, LDE GROUP, LLC 190 MAKAENA PLACE, KAUNAKAKAI, HI 96748, TMK (2) 5-3-004:028**

To Whom It May Concern:

In compliance with HRS 343-5 (a) (6), Architectural Drafting Service is preparing a Draft Environmental Assessment for the applicant, LDE Group, LLC, for a proposed Community Plan Amendment from Single Family to Multi Family land use designation for the above listed project.

To that end, and enclosed in this packet, we submit the following items to you for review and comments.

- Chopra Hale CPA Application
- Chopra Hale Assessment Report with Figures
- Chopra Hale Preliminary Drainage Report
- Chopra Hale Architectural Drawing Package

Please note:

- The Owner/Applicant purchased the subject property on May 5, 2009 and it has remained in its undeveloped state.
- The subject property is a result of a previous subdivision that created the "Manila Camp" subdivision.
- Previous onsite improvements have been limited to grubbing.

Please call me (808) 553-9045, (808) 870-3499 or email luigis@hawaiiantel.biz should you have any questions.

Sincerely,

Luigi Manera, Agent

ARCHITECTURAL DRAFTING SERVICE
P.O. BOX 1718
KAUNAKAKAI, HI 96748
Phone: (808) 553-9045 - Fax: (808) 553-3952 - Mobile: (808) 870-3499
Email: luigis@hawaiiantel.biz

March 22, 2011

County of Maui, Department of Transportation
Jo Anne Johnson, Director
Marc Takamori, Deputy Director
2145 Kaohu St.
David Trask Bldg Ste 102
Wailuku, HI 96793

Subject: **DRAFT ENVIRONMENTAL ASSESSMENT FOR PROPOSED COMMUNITY PLAN AMENDMENT CHOPRA HALE APARTMENTS, LDE GROUP, LLC 190 MAKAENA PLACE, KAUNAKAKAI, HI 96748, TMK (2) 5-3-004:028**

To Whom It May Concern:

In compliance with HRS 343-5 (a) (6), Architectural Drafting Service is preparing a Draft Environmental Assessment for the applicant, LDE Group, LLC, for a proposed Community Plan Amendment from Single Family to Multi Family land use designation for the above listed project.

To that end, and enclosed in this packet, we submit the following items to you for review and comments.

- Chopra Hale CPA Application
- Chopra Hale Assessment Report with Figures
- Chopra Hale Preliminary Drainage Report
- Chopra Hale Architectural Drawing Package

Please note:

- The Owner/Applicant purchased the subject property on May 5, 2009 and it has remained in its undeveloped state.
- The subject property is a result of a previous subdivision that created the "Manila Camp" subdivision.
- Previous onsite improvements have been limited to grubbing.

Please call me (808) 553-9045, (808) 870-3499 or email luigis@hawaiiantel.biz should you have any questions.

Sincerely,

Luigi Manera, Agent

ARCHITECTURAL DRAFTING SERVICE
P.O. BOX 1718
KAUNAKAKAI, HI 96748
Phone: (808) 553-9045 - Fax: (808) 553-3952 - Mobile: (808) 870-3499
Email: luigis@hawaiiantel.biz

March 22, 2011

County of Maui, Department of Water Supply
Dave Taylor, Director
Paul Meyer, Deputy Director
200 S. High St
Kalana O Maui Bldg. 5th Floor
Wailuku, HI 96793-2155

Subject: **DRAFT ENVIRONMENTAL ASSESSMENT FOR PROPOSED COMMUNITY PLAN AMENDMENT CHOPRA HALE APARTMENTS, LDE GROUP, LLC 190 MAKAENA PLACE, KAUNAKAKAI, HI 96748, TMK (2) 5-3-004:028**

To Whom It May Concern:

In compliance with HRS 343-5 (a) (6), Architectural Drafting Service is preparing a Draft Environmental Assessment for the applicant, LDE Group, LLC, for a proposed Community Plan Amendment from Single Family to Multi Family land use designation for the above listed project.

To that end, and enclosed in this packet, we submit the following items to you for review and comments.

- Chopra Hale CPA Application
- Chopra Hale Assessment Report with Figures
- Chopra Hale Preliminary Drainage Report
- Chopra Hale Architectural Drawing Package

Please note:

- The Owner/Applicant purchased the subject property on May 5, 2009 and it has remained in its undeveloped state.
- The subject property is a result of a previous subdivision that created the "Manila Camp" subdivision.
- Previous onsite improvements have been limited to grubbing.

Please call me (808) 553-9045, (808) 870-3499 or email luigis@hawaiiantel.biz should you have any questions.

Sincerely,

Luigi Manera, Agent

ARCHITECTURAL DRAFTING SERVICE
P.O. BOX 1718
KAUNAKAKAI, HI 96748
Phone: (808) 553-9045 - Fax: (808) 553-3952 - Mobile: (808) 870-3499
Email: luigis@hawaiiantel.biz

March 22, 2011

County of Maui, Department of Economic Development
Teena Rasmussen, OED Coordinator
2200 Main St.
One Main Plaza Bldg Ste. 305
Wailuku, HI 96793

Subject: **DRAFT ENVIRONMENTAL ASSESSMENT FOR PROPOSED COMMUNITY PLAN AMENDMENT CHOPRA HALE APARTMENTS, LDE GROUP, LLC 190 MAKAENA PLACE, KAUNAKAKAI, HI 96748, TMK (2) 5-3-004:028**

To Whom It May Concern:

In compliance with HRS 343-5 (a) (6), Architectural Drafting Service is preparing a Draft Environmental Assessment for the applicant, LDE Group, LLC, for a proposed Community Plan Amendment from Single Family to Multi Family land use designation for the above listed project.

To that end, and enclosed in this packet, we submit the following items to you for review and comments.

- Chopra Hale CPA Application
- Chopra Hale Assessment Report with Figures
- Chopra Hale Preliminary Drainage Report
- Chopra Hale Architectural Drawing Package

Please note:

- The Owner/Applicant purchased the subject property on May 5, 2009 and it has remained in its undeveloped state.
- The subject property is a result of a previous subdivision that created the "Manila Camp" subdivision.
- Previous onsite improvements have been limited to grubbing.

Please call me (808) 553-9045, (808) 870-3499 or email luigis@hawaiiantel.biz should you have any questions.

Sincerely,

Luigi Manera, Agent

ARCHITECTURAL DRAFTING SERVICE
P.O. BOX 1718
KAUNAKAKAI, HI 96748
Phone: (808) 553-9045 - Fax: (808) 553-3952 - Mobile: (808) 870-3499
Email: luigis@hawaiiantel.biz

March 22, 2011

Department of Land and Natural Resources
State Historic Preservation Division
601 Kamokila Boulevard
Kapolei, Hawai`i, 96707

Subject: **DRAFT ENVIRONMENTAL ASSESSMENT FOR PROPOSED COMMUNITY PLAN AMENDMENT CHOPRA HALE APARTMENTS, LDE GROUP, LLC 190 MAKAENA PLACE, KAUNAKAKAI, HI 96748, TMK (2) 5-3-004:028**

To Whom It May Concern:

In compliance with HRS 343-5 (a) (6), Architectural Drafting Service is preparing a Draft Environmental Assessment for the applicant, LDE Group, LLC, for a proposed Community Plan Amendment from Single Family to Multi Family land use designation for the above listed project.

To that end, and enclosed in this packet, we submit the following items to you for review and comments.

- Chopra Hale CPA Application
- Chopra Hale Assessment Report with Figures
- Chopra Hale Preliminary Drainage Report
- Chopra Hale Architectural Drawing Package

Please note:

- The Owner/Applicant purchased the subject property on May 5, 2009 and it has remained in its undeveloped state.
- The subject property is a result of a previous subdivision that created the "Manila Camp" subdivision.
- Previous onsite improvements have been limited to grubbing.

Please call me (808) 553-9045, (808) 870-3499 or email luigis@hawaiiantel.biz should you have any questions.

Sincerely,

Luigi Manera, Agent

ARCHITECTURAL DRAFTING SERVICE
P.O. BOX 1718
KAUNAKAKAI, HI 96748
Phone: (808) 553-9045 - Fax: (808) 553-3952 - Mobile: (808) 870-3499
Email: luigis@hawaiiantel.biz

March 22, 2011

Office of Hawaiian Affairs
711 Kapi'olani Blvd., Ste. 500
Honolulu, HI 96813

Subject: **DRAFT ENVIRONMENTAL ASSESSMENT FOR PROPOSED COMMUNITY PLAN AMENDMENT CHOPRA HALE APARTMENTS, LDE GROUP, LLC 190 MAKAENA PLACE, KAUNAKAKAI, HI 96748, TMK (2) 5-3-004:028**

To Whom It May Concern:

In compliance with HRS 343-5 (a) (6), Architectural Drafting Service is preparing a Draft Environmental Assessment for the applicant, LDE Group, LLC, for a proposed Community Plan Amendment from Single Family to Multi Family land use designation for the above listed project.

To that end, and enclosed in this packet, we submit the following items to you for review and comments.

- Chopra Hale CPA Application
- Chopra Hale Assessment Report with Figures
- Chopra Hale Preliminary Drainage Report
- Chopra Hale Architectural Drawing Package

Please note:

- The Owner/Applicant purchased the subject property on May 5, 2009 and it has remained in its undeveloped state.
- The subject property is a result of a previous subdivision that created the "Manila Camp" subdivision.
- Previous onsite improvements have been limited to grubbing.

Please call me (808) 553-9045, (808) 870-3499 or email luigis@hawaiiantel.biz should you have any questions.

Sincerely,

Luigi Manera, Agent

ARCHITECTURAL DRAFTING SERVICE
P.O. BOX 1718
KAUNAKAKAI, HI 96748
Phone: (808) 553-9045 - Fax: (808) 553-3952 - Mobile: (808) 870-3499
Email: luigis@hawaiiantel.biz

March 22, 2011

Maui Electric Company
Kaui Awai-Dickson
PO Box 398
Kahului, HI 96733

Subject: **DRAFT ENVIRONMENTAL ASSESSMENT FOR PROPOSED COMMUNITY PLAN AMENDMENT CHOPRA HALE APARTMENTS, LDE GROUP, LLC 190 MAKAENA PLACE, KAUNAKAKAI, HI 96748, TMK (2) 5-3-004:028**

To Whom It May Concern:

In compliance with HRS 343-5 (a) (6), Architectural Drafting Service is preparing a Draft Environmental Assessment for the applicant, LDE Group, LLC, for a proposed Community Plan Amendment from Single Family to Multi Family land use designation for the above listed project.

To that end, and enclosed in this packet, we submit the following items to you for review and comments.

- Chopra Hale CPA Application
- Chopra Hale Assessment Report with Figures
- Chopra Hale Preliminary Drainage Report
- Chopra Hale Architectural Drawing Package

Please note:

- The Owner/Applicant purchased the subject property on May 5, 2009 and it has remained in its undeveloped state.
- The subject property is a result of a previous subdivision that created the "Manila Camp" subdivision.
- Previous onsite improvements have been limited to grubbing.

Please call me (808) 553-9045, (808) 870-3499 or email luigis@hawaiiantel.biz should you have any questions.

Sincerely,

Luigi Manera, Agent

ARCHITECTURAL DRAFTING SERVICE
P.O. BOX 1718
KAUNAKAKAI, HI 96748
Phone: (808) 553-9045 - Fax: (808) 553-3952 - Mobile: (808) 870-3499
Email: luigis@hawaiiantel.biz

March 22, 2011

Hawaiian Telcom
Attn: Engineering Department
1177 Bishop Street
Honolulu, HI 96813

Subject: **DRAFT ENVIRONMENTAL ASSESSMENT FOR PROPOSED COMMUNITY PLAN AMENDMENT CHOPRA HALE APARTMENTS, LDE GROUP, LLC 190 MAKAENA PLACE, KAUNAKAKAI, HI 96748, TMK (2) 5-3-004:028**

To Whom It May Concern:

In compliance with HRS 343-5 (a) (6), Architectural Drafting Service is preparing a Draft Environmental Assessment for the applicant, LDE Group, LLC, for a proposed Community Plan Amendment from Single Family to Multi Family land use designation for the above listed project.

To that end, and enclosed in this packet, we submit the following items to you for review and comments.

- Chopra Hale CPA Application
- Chopra Hale Assessment Report with Figures
- Chopra Hale Preliminary Drainage Report
- Chopra Hale Architectural Drawing Package

Please note:

- The Owner/Applicant purchased the subject property on May 5, 2009 and it has remained in its undeveloped state.
- The subject property is a result of a previous subdivision that created the "Manila Camp" subdivision.
- Previous onsite improvements have been limited to grubbing.

Please call me (808) 553-9045, (808) 870-3499 or email luigis@hawaiiantel.biz should you have any questions.

Sincerely,

Luigi Manera, Agent

ARCHITECTURAL DRAFTING SERVICE
P.O. BOX 1718
KAUNAKAKAI, HI 96748
Phone: (808) 553-9045 - Fax: (808) 553-3952 - Mobile: (808) 870-3499
Email: luigis@hawaiiantel.biz

March 22, 2011

Oceanic Time Warner Cable
Attn: Engineering Department
200 Akamainui St.
Mililani, HI 96789

Subject: **DRAFT ENVIRONMENTAL ASSESSMENT FOR PROPOSED COMMUNITY PLAN AMENDMENT CHOPRA HALE APARTMENTS, LDE GROUP, LLC 190 MAKAENA PLACE, KAUNAKAKAI, HI 96748, TMK (2) 5-3-004:028**

To Whom It May Concern:

In compliance with HRS 343-5 (a) (6), Architectural Drafting Service is preparing a Draft Environmental Assessment for the applicant, LDE Group, LLC, for a proposed Community Plan Amendment from Single Family to Multi Family land use designation for the above listed project.

To that end, and enclosed in this packet, we submit the following items to you for review and comments.

- Chopra Hale CPA Application
- Chopra Hale Assessment Report with Figures
- Chopra Hale Preliminary Drainage Report
- Chopra Hale Architectural Drawing Package

Please note:

- The Owner/Applicant purchased the subject property on May 5, 2009 and it has remained in its undeveloped state.
- The subject property is a result of a previous subdivision that created the "Manila Camp" subdivision.
- Previous onsite improvements have been limited to grubbing.

Please call me (808) 553-9045, (808) 870-3499 or email luigis@hawaiiantel.biz should you have any questions.

Sincerely,

Luigi Manera, Agent

Appendix C
Preliminary Comment Letters

ALAN M. ARAKAWA
Mayor

KYLE K. GINOZA, P.E.
Director

MICHAEL M. MIYAMOTO
Deputy Director

TRACY TAKAMINE, P.E.
Solid Waste Division

ERIC NAKAGAWA, P.E.
Wastewater Reclamation Division

COUNTY OF MAUI
DEPARTMENT OF
ENVIRONMENTAL MANAGEMENT
2200 MAIN STREET, SUITE 100
WAILUKU, MAUI, HAWAII 96793

June 1, 2011

Mr. Luigi Manera
Architectural Drafting Service
P.O. Box 1718
Kaunakakai, Hawaii 96748

SUBJECT: **CHOPRA HALE APARTMENTS**
DRAFT ENVIRONMENTAL ASSESSMENT

We reviewed the subject application and have the following comments:

1. Solid Waste Division comments:

    a. Address construction waste disposal/recycling/reuse.

2. Wastewater Reclamation Division (WWRD) comments:

    a. Although wastewater system capacity is currently available as of 4/1/11, the developer should be informed that wastewater system capacity cannot be ensured until the issuance of the building permit.
    b. Wastewater contribution calculations are required before building permit is issued.
    c. Developer is not required to pay assessment fees for this area at the current time
    d. Developer is required to fund any necessary off-site improvements to collection system and wastewater pump stations.
    e. Show or list minimum slope of new sewer lateral(s).
    f. Plans shall show a property sewer service manhole near the property line.
    g. Commercial kitchen facilities within the proposed project shall comply with pre-treatment requirements (including grease interceptors, sample boxes, screens etc.)
    h. Non-contact cooling water and condensate should not drain to the wastewater system.

If you have any questions regarding this memorandum, please contact Michael Miyamoto at 270-8230.

Sincerely,

KYLE K. GINOZA, P.E.
Director of Environmental Management

ALAN M. ARAKAWA
Mayor

GLENN T. CORREA
Director

PATRICK T. MATSUI
Deputy Director

(808) 270-7230
FAX (808) 270-7934

DEPARTMENT OF PARKS & RECREATION

700 Hali'a Nakoa Street, Unit 2, Wailuku, Hawaii 96793

May 5, 2011

Luigi Manera, Agent
Architectural Drafting Service
PO Box 1718
Kaunakakai, Hawaii 96748

Dear Mr. Manera:

SUBJECT: Draft Environmental Assessment for the Proposed Community Plan Amendment, Chopra Hale Apartments, LDE Group, LLC, 190 Makaena Place, Kaunakakai, Molokai, Hawai'i, TMK (2)5-3-004:028

Thank you for the opportunity to review and comment on the subject project. The Department of Parks & Recreation has reviewed the above and has no comments at this time, and looks forward to reviewing the Environmental Assessment when it is available.

Please feel free to contact me or Robert Halvorson, Chief of Planning and Development, at 270-7931, should you have any questions.

Sincerely,

GLENN T. CORREA
Director of Parks & Recreation

c: Robert Halvorson, Chief of Planning and Development, TA

GTC:RH:as

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

GARY A. YABUTA
CHIEF OF POLICE

CLAYTON N.Y.W. TOM
DEPUTY CHIEF OF POLICE

May 19, 2011

Mr. Luigi Manera, Agent
Architectural Drafting Service
P.O. Box 1718
Kaunakakai, HI 96748

Dear Mr. Manera:

SUBJECT: DEA for Proposed Community Plan Amendment Chopra Hale Apartments, LDE Group, LLC; TMK (2) 5-3-004:028

Thank you for your letter of March 22, 2011, requesting comments on the above subject.

We have reviewed the traffic control plans and have enclosed our comments and recommendations. Thank you for giving us the opportunity to comment on the proposed project.

Very truly yours,

Assistant Chief Danny Matsuura
for: Gary A. Yabuta
Chief of Police

Enclosure

c: William Spence, Maui County Planning Department

COPY

TO : GARY YABUTA, CHIEF OF POLICE, MAUI COUNTY

VIA : CHANNELS Ac D. Nakamura 5/13/11

FROM : LONNIE KA'AI, C.P.O., DISTRICT V

SUBJECT : ENVIRONMENTAL ASSESEMENT FOR THE PROPOSED CHOPRA HALE APARTMENTS

SYNOPSIS:

I was assigned by Sgt. L. KAUPALOLO to submit this communication regarding the proposed construction of the Chopra Hale Apartments located at 190 Makaena Place in Kaunakakai Town, Molokai(TMK (2) 5-3-004:028). Luigi MANERA, Project Planner, has requested said early assessment.

PROPERTY:

Owner: LDE Group LLC
Location: 190 Makaena Place in Kaunakakai Town, Molokai (TMK (2) 5-3-004:028).

ROAD ASSESEMENT:

Appropriate precautions should be taken as Makaena Place is the only road in and out of the Manila Camp area. Also, children walk along the roadway to catch the bus to school on the east corner of Makaena Place and Mahalo Street.

POLICE ASSISTANCE:

In the event traffic control officers are needed, police personnel may be requested to work off-duty to help with any traffic issues.

NEIGHBORING PROPERTIES:

I contacted residence of the following neighboring properties to make checks on public concerns.

Rosita RAGONTON
200 Makaena Place
Kaunakakai, HI. 96748

Leonita MOLINA
175 Makaena Place
Kaunakakai, HI. 96748

Fredes WINDA
210 Makaena Place
Kaunakakai, HI. 96748

Sunny Stevens
191 Makaena Place
Kaunakakai, HI. 96748

Mary RAWLINS
171 Makaena Place
Kaunakakai, HI. 96748

Mathew MCGUIRE
195 Makaena Place
Kaunakakai, HI. 96748

NEIGHBORING PROPERTIES: (CONTINUED)

All residences stated they have concerns regarding dust, noise, traffic issues, and children in the area of the park and the east corner of Mahalo Street and Makaena Place to catch the bus for school. No other concerns were related.

PROJECT PLANNER:

Luigi MANERA, Project Planner, may be contacted at (808) 553-9045, (808) 870-3499, or email luigis@hawaiiantel.biz.

FINAL ASSESSMENT:

After making checks in the above mentioned area, if the issues regarding traffic, dust and noise are properly addressed, the project should be able to proceed as planned. Suggest project assessment be approved.

FILE + REVIEW COMPLETED
COMMUNITY CONCERNS APPEAR
OKAY FOR PROJECT.
SGT. L. KAPAHUA
05/09/11 @ 1345.

Officer Lonnie KA'AI E-3263
Community Police Officer
Molokai Patrol Division
050911 @ 1314 hours

NOTED
JT 4786
5-9-11 @ 1630 HRS..

NOTED - FORWARD
FINDINGS TO
DEPT. OF PLANNING.

Capt. W
5/10/11

ALAN M. ARAKAWA
Mayor

DAVID C. GOODE
Director

ROWENA M. DAGDAG-ANDAYA
Deputy Director

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

COUNTY OF MAUI
DEPARTMENT OF PUBLIC WORKS
200 SOUTH HIGH STREET, ROOM NO. 434
WAILUKU, MAUI, HAWAII 96793

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

CARY YAMASHITA, P.E.
Engineering Division

BRIAN HASHIRO, P.E.
Highways Division

May 17, 2011

Mr. Luigi Manera, Agent
ARCHITECTURAL DRAFTING SERVICE
P. O. Box 1718
Kaunakakai, Molokai, Hawaii 96748

Dear Mr. Manera:

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT FOR PROPOSED COMMUNITY PLAN AMENDMENT FOR CHOPRA HALE APARTMENTS; TMK: (2) 5-3-004:028

We reviewed the subject application and have the following comments:

1. A road-widening lot may be required for the adjoining half of Makaena Place/Mahalo Place to provide for future 56/44 foot wide 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. Development Services Administration shall determine whether the aforementioned are enforceable by Maui County Code. If applicable, said lot shall be dedicated to the County upon completion of the improvements.

2. The applicant shall be responsible for all required improvements as required by Hawaii Revised Statutes, Maui County Code and rules and regulations.

3. As applicable, construction plans shall be designed in conformance with Hawaii Standard Specifications for Road and Bridge Construction dated 2005 and Standard Details for Public Works Construction, 1984, as amended.

4. As applicable, worksite traffic-control plans/devices shall conform to Manual on Uniform Traffic Control Devices for Streets and Highways, 2003.

5. The Chopra Hale Assessment Report on Solid Waste states that refuse collection in Hana, Lana`I, and Molokai is conducted by the County's Highways Division. Please note that County-collected refuse in these areas and on the island of Maui is provided by the County of Maui Solid Waste Division of the Department of Environmental Management.

6. Please clarify the name of the roadway adjacent to the southeast border of Lot 22. This roadway is identified as Manila Place on Figure No. 2, TMK Location Map, but is identified as Makaena Place on Figure No. 10, Topographic Map.

7. Please clarify the location of the proposed access to the subject property. As stated in the report, access to the subject property would be provided via Mahalo Place. Figure No. 2, TMK Location Map and Figure No. 10, Topographic Map suggest however, that access to Lot 22 via Mahalo Place would be restricted by Lot 21A.

Please call Rowena M. Dagdag-Andaya at (808) 270-7845 if you have any questions regarding this letter.

Sincerely,

DAVID C. GOODE
Director of Public Works

DCG:RMDA:ls
xc: Highways Division
Engineering Division
S:\LUCA\CZM\prop_chopra_hale_apt_dea_53004028_ls.wpd

ALAN M. ARAKAWA
Mayor

JO ANNE JOHNSON WINER
Director
MARC I. TAKAMORI
Deputy Director
Telephone (808) 270-7511

DEPARTMENT OF TRANSPORTATION

COUNTY OF MAUI
200 South High Street
Wailuku, Hawaii, USA 96793-2155

April 15, 2011

Mr. Luigi Manera
Architectural Drafting Services
P.O. Box 1718
Kaunakakai, Hawaii 96748

Subject: EA Proposed Community Plan Amendment for Chopra Hale Apartments

Dear Mr. Manera,

Thank you for the opportunity to comment on this project. We have no comments to make at this time.

Please feel free to contact me if you have any questions.

Sincerely,

Jo Anne Johnson Winer

Jo Anne Johnson Winer
Director

ALAN M. ARAKAWA
Mayor

DAVID TAYLOR, P.E.
Director

PAUL J. MEYER
Deputy Director

DEPARTMENT OF WATER SUPPLY
COUNTY OF MAUI
200 SOUTH HIGH STREET
WAILUKU, MAUI, HAWAII 96793-2155
www.mauiwater.org

April 11, 2011

Mr. Luigi Manera
Architectural Drafting Service
P.O. Box 1718
Kauankakai, HI 96748

Dear Mr. Manera:

RE: Project Name: Draft Environmental Assessment for Proposed Community Plan Amendment for Chopra Hale Apartments
Applicant: Luigi Manera, Agent for LDE Group, LLC
TMK: (2) 5-3-004:028

Thank you for the opportunity to comment on this DEA and proposed CPA.

Source Availability
The proposed project site is served by the Kaunakakai-Kawela system. Water for the system comes from the Kualapu'u aquifer which has a sustainable yield of 5 million gallons per day.

The *Project Assessment Report for Community Plan Amendment and Change in Zoning Requests* for Chopra Hale Apartments, dated October 2010, includes the applicant's intention to obtain a Change in Zoning from Interim to A-1. The zoning change to A-1 will require the applicant to comply with Maui County *Ordinance No. 3502*, commonly known as "show me the water bill". Please find attached *Ordinance 3502*.

System Infrastructure
The site is served by an 8-inch waterline and FH#99 along Mahalo Street; the site has no water meter. Storage is provided by the one-million gallon Kaunakakai tank.

The intention to obtain a Change in Zoning from Interim to A-1 will require the following:

- Upgrade the water system infrastructure, if required, to comply with the new zoning change;
- Comply with Ordinance 3502 to receive water service.

The applicant must also install a DWS approved back-flow prevention device at the water meter. The device must be installed by a certified backflow preventer assembly tester recognized by the County of Maui, Department of Water Supply. Additional information on back-flow prevention devices may be obtained by contacting the DWS Backflow and Cross-Connection Control at (808) 270-6132 or FAX (808) 270-7544.

Pollution Prevention
The project site overlies the Kamiloa aquifer. The Department of Water Supply's goal is to protect the integrity of surface and groundwater resources. To achieve this, mitigation measures must be implemented to prevent any potential water pollution related impacts. Best management practices for construction should, therefore, be applied during construction.

Conservation
The Department of Water Supply (DWS) encourages the applicant to consider the following conservation measures in the project design, as well as during construction:

- Utilize reclaimed or non-potable water for dust control, irrigation, and other non-potable uses.
- Water after 7:00 p.m. at night and before 10:00 a.m. in the morning.
- Utilize low-flow fixtures and devices – Maui County Code Subsection 16.20A.680 requires the use of low-flow fixtures and devices in faucets, showerheads, urinals, water closets, and hose bibs. Even more efficient and consumer tested models are available. Check WaterSense listings at: http://www.epa.gov/watersense/pp/index.htm for efficient fixture listings when buying or replacing fixtures.
- Prevent over-watering by automated systems – Provide rain-sensors on all automated irrigation controllers. Check and reset controllers at least once a month to reflect monthly changes in evaporation rates at the site. As an alternative, provide more automated, soil-moisture sensors on controllers.
- Maintain fixtures to prevent leaks – A simple, regular program of repair and maintenance can prevent the loss of hundreds or even thousands of gallons per day.
- Limit irrigated turf – Low-water use shrubs and ground cover can be equally attractive and require substantially less water than turf.

- Select climate adapted native plant species for landscaping – Native plants adapted to the area conserve water and protect the watershed from degradation due to invasive alien species.
- Look for opportunities to conserve water – Here are a few examples:
    1) When cleaning debris, use a broom instead of a hose and water;
    2) Check for leaks in pipes, faucets, and toilets.

Should you have any questions, please contact our Water Resources & Planning Division at (808) 244-8550 or FAX (808)244-6701.

Sincerely,

David Taylor, P.E., Director
ayi
attachment: Maui County Ordinance 3502
c: DWS Engineering Division
WRPD Project File

NEIL ABERCROMBIE
GOVERNOR OF HAWAII

WILLIAM J. AILA, JR.
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

GUY KAULUKUKUI
FIRST DEPUTY

WILLIAM M. TAM
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
601 KAMOKILA BOULEVARD, ROOM 555
KAPOLEI, HAWAII 96707

April 6, 2011

Luigi Manera, Agent
Architectural Drafting Service
PO Box 1718
Kaunakakai, Hawaii 96748

LOG NO: 2010.3344
DOC NO: 1104MD05
Archaeology

Dear Mr. Manera:

SUBJECT: Chapter 6E-42 Historic Preservation Review –
LDE Group, LLC "Chopra Hale" Proposed Apartments
Kaunakakai Ahupua'a, Moloka'i District, Island of Moloka'i
TMK: (2) 5-3-004:028

Thank you for the opportunity to comment on the aforementioned project, which we received on September 29, 2010. We apologize for the delay in our reply. A search of our records indicates that there has not been an archaeological inventory survey of this property. This application is for construction of new apartments on a one-acre parcel located at 190 Makaena Place.

Due to the lack of records at SHPD, staff conducted a site visit to the proposed parcel on April 4, 2011. During the site visit it was found that no historic properties are present within the proposed location. This parcel was previously grubbed/graded, and utilities, sewer and sidewalks are already in place.

Based on the information above, we determine that there will be **no effect to historic properties** by this project. In the event that historic properties, including concentrations of artifacts, human skeletal remains, subsurface cultural deposits, or structural remnants over 50 years in age are identified during the grubbing activities, please stop all work in the vicinity of the find, protect the find from additional disturbance, and contact the State Historic Preservation Division, Maui Island Section immediately at (808) 243-1285. If you have questions about this letter please contact me at (808) 243-5169 or via email to: morgan.e.davis@hawaii.gov.

Aloha,

Morgan E. Davis
Lead Archaeologist, Maui Island Section
State Historic Preservation Division

Cc:

County of Maui DSA via fax to: (808) 270-7972
Maui County CRC, Department of Planning, 250 S. High Street, Wailuku, Hawaii 96793
Mikal Torgerson, Moloka'i Planner via fax to: (808) 270-7634

NEIL ABERCROMBIE
GOVERNOR OF HAWAII

WILLIAM J. AILA, JR.
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

GUY KAULUKUKUI
FIRST DEPUTY

WILLIAM M. TAM
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
601 KAMOKILA BOULEVARD, ROOM 555
KAPOLEI, HAWAII 96707

April 26, 2011

Luigi Manera, Agent
Architectural Drafting Service
PO Box 1718
Kaunakakai, Hawaii 96748

LOG NO: 2011.0896
DOC NO: 1104MD33
Archaeology

Dear Mr. Manera:

SUBJECT: **Chapter 6E-42 Historic Preservation Review –**
Draft Environmental Assessment for the Proposed "Chopra Hale" Apartments
Kaunakakai Ahupua'a, Kona District, Island of Moloka'i
TMK: (2) 5-3-004:028

Thank you for the opportunity to comment on the aforementioned project, which we received on March 30, 2011. This draft Environmental Assessment is for construction of new apartments on a one-acre parcel located at 190 Makaena Place.

SHPD staff conducted a site visit to the proposed parcel on April 4, 2011. During the site visit it was found that no historic properties are present within the proposed location. This parcel was previously grubbed/graded, and utilities, sewer and sidewalks are already in place. As a result we determined that there would be no historic properties affected for the permits proposed for this project (*Log No. 2010.3344, Doc No. 1104MD05*).

Based on the information above, we determine that there will be **no effect to historic properties** by this project. In the event that historic properties, including concentrations of artifacts, human skeletal remains, subsurface cultural deposits, or structural remnants over 50 years in age are identified during the grubbing activities, please stop all work in the vicinity of the find, protect the find from additional disturbance, and contact the State Historic Preservation Division, Maui Island Section immediately at (808) 243-1285. If you have questions about this letter please contact me at (808) 243-5169 or via email to: morgan.e.davis@hawaii.gov.

Aloha,

Morgan E. Davis
Lead Archaeologist, Maui Island Section
State Historic Preservation Division

Cc:

County of Maui DSA via fax to: (808) 270-7972
Maui County CRC, Department of Planning, 250 S. High Street, Wailuku, Hawaii 96793
Mikal Torgerson, Moloka'i Planner via fax to: (808) 270-7634

Maui Electric Company, Ltd. • 210 West Kamehameha Avenue • PO Box 398 • Kahului, Maui, HI 96733-6898 • (808) 871-8461

April 1, 2011

Mr. Luigi Manera, Agent
Architectural Drafting Service
P.O. Box 1718
Kaunakakai, Hawaii, 96748

Subject: Draft Environmental Assessment for Proposed Community Plan Amendment
Chopra Hale Apartments
190 Makaena Place
Kaunakakai, Molokai, Hawaii
Tax Map Key: (2) 5-3-004:028

Dear Mr. Manera,

Thank you for allowing us to comment on the Draft Environmental Assessment for the subject project.

In reviewing our records and the information received, Maui Electric Company may 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 the electrical demand requirements and project time schedule as soon as practical so that service can be provided on a timely basis.

Should you have any questions or concerns, please call me at 871-2341.

Sincerely,

Kyle Tamori
Staff Engineer

Appendix D
Replies to Preliminary Comment Letters

ARCHITECTURAL DRAFTING SERVICE
P.O. BOX 1718
KAUNAKAKAI, HI 96748
Phone: (808) 553-9045 - Fax: (808) 553-3952 - Mobile: (808) 870-3499
Email: luigis@hawaiiantel.biz

July 12, 2011

County of Maui, Department of Environmental Management
Kyle Ginoza, Director
Michael Miyamoto, Deputy Director
2200 Main St.
One Main Plaza Bldg Suite 100
Wailuku, HI 96793-2155

Subject: **DRAFT ENVIRONMENTAL ASSESSMENT FOR PROPOSED COMMUNITY PLAN AMENDMENT CHOPRA HALE APARTMENTS, LDE GROUP, LLC 190 MAKAENA PLACE, KAUNAKAKAI, HI 96748, TMK (2) 5-3-004:028**

Dear Mr. Ginoza,

Thank you for your letter dated June 1, 2011.

We have incorporated your comments into the Draft EA and offer the following responses:

1. Solid Waste Division Comments:
- Where practical, recyclable solid waste will be collected and transported to the Naiwa Landfill recycling center.
- Since the proposed project will be new construction there is no plan to re-use any existing materials.

2. Wastewater Reclamation Division (WWRD) comments:
- Although wastewater system capacity is currently available, the owner is aware that wastewater system capacity cannot be ensured until the issuance of the building permit.
- Wastewater calculations will be provided to the department before issuance of the building permit.
- The owner will fund any necessary off-site improvements to the collection system and wastewater pump stations.
- Minimum slope of new sewer laterals as well as a property sewer service manhole near the property line will be indicated on the appropriate drawings.
- There will be no commercial kitchen associated with the property.
- Non-contact cooling water and condensate will not drain to the wastewater system.

ARCHITECTURAL DRAFTING SERVICE
P.O. BOX 1718
KAUNAKAKAI, HI 96748
Phone: (808) 553-9045 - Fax: (808) 553-3952 - Mobile: (808) 870-3499
Email: luigis@hawaiiantel.biz

Please call me (808) 553-9045, (808) 870-3499 or email luigis@hawaiiantel.biz should you have any questions.

Sincerely,

Luigi Manera, Agent

ARCHITECTURAL DRAFTING SERVICE
P.O. BOX 1718
KAUNAKAKAI, HI 96748
Phone: (808) 553-9045 - Fax: (808) 553-3952 - Mobile: (808) 870-3499
Email: luigis@hawaiiantel.biz

July 12, 2011

County of Maui, Police Department
Gary A. Yabuta, Chief of Police
Danny Matsuura, Assistant Chief of Police
55 Mahalani Street
Wailuku, HI 96793

Subject: **DRAFT ENVIRONMENTAL ASSESSMENT FOR PROPOSED COMMUNITY PLAN AMENDMENT CHOPRA HALE APARTMENTS, LDE GROUP, LLC 190 MAKAENA PLACE, KAUNAKAKAI, HI 96748, TMK (2) 5-3-004:028**

Dear Mr. Matsuura,

Thank you for your letter dated May 19, 2011.

We have incorporated your comments into the Draft EA and offer the following responses:

- Appropriate cautions and traffic safety measures will be taken during the construction of the proposed action with special attention paid to pedestrians and children walking along the roadway to catch the bus to school.
- In the event traffic control officers are needed, police personnel will be requested to work off-duty to help with any traffic issues.
- Neighboring residences concerns regarding dust will be addressed by utilizing best management practices. Adequate dust control measures that comply with the applicable provisions of Hawaii Administrative Rules, Chapter 11-60.1, "Air Pollution Control," will be implemented during all phases of construction. Dust control measures, including but not limited to the following, will implemented during construction activities.
    - Providing an adequate water source prior to start-up of construction for use in dust control.
    - Landscaping and rapid covering of bare areas, including slopes, beginning with the initial grubbing and grading phase.
    - Controlling of dust from shoulders, project entrances and other access roads.
    - Providing adequate dust control measures during weekends, after hours and prior to daily start-up of construction activities.

ARCHITECTURAL DRAFTING SERVICE
P.O. BOX 1718
KAUNAKAKAI, HI 96748
Phone: (808) 553-9045 - Fax: (808) 553-3952 - Mobile: (808) 870-3499
Email: luigis@hawaiiantel.biz

  - Controlling of dust from debris hauled away from the project site.
  - Erecting a dust fence to shield nearby properties.

- In addition, non-potable or reclaimed/ recycled water will be used for dust control purposes during the construction phase to the extent practicable.
- Neighboring residences concerns regarding noise will be addressed by utilizing best management practices. To minimize construction-related impacts on nearby residences, the Applicant will limit construction to normal daylight hours and comply with Chapter 11-46 of the Hawaii Administrative Rules pertaining to Community Noise Control.
- Neighboring residences concerns regarding children in the area of the park and the east corner of Mahalo Street and Makaena Place to catch the bus for school will be addressed by utilizing best management practices and employing appropriate cautions and traffic safety measures.

Please call me (808) 553-9045, (808) 870-3499 or email luigis@hawaiiantel.biz should you have any questions.

Sincerely,

Luigi Manera, Agent

ARCHITECTURAL DRAFTING SERVICE
P.O. BOX 1718
KAUNAKAKAI, HI 96748
Phone: (808) 553-9045 - Fax: (808) 553-3952 - Mobile: (808) 870-3499
Email: luigis@hawaiiantel.biz

July 12, 2011

County of Maui, Department of Public Works
David Goode, Director of Public Works
Rowena Dagdag-Andaya, Deputy of Public Works
200 South High St.
Kalana O Maui Bldg 4th Floor
Wailuku, HI 96793

Subject: **DRAFT ENVIRONMENTAL ASSESSMENT FOR PROPOSED COMMUNITY PLAN AMENDMENT CHOPRA HALE APARTMENTS, LDE GROUP, LLC 190 MAKAENA PLACE, KAUNAKAKAI, HI 96748, TMK (2) 5-3-004:028**

Dear Mr. Goode,

Thank you for your letter dated May 17, 2011.

We have incorporated your comments into the Draft EA and offer the following responses:

1. Any requirements for right of way improvements for the adjoining half of Makaena Place/Mahalo Place shall be completed as applicable.

2. The owner will be responsible for all required improvements as required by Hawaii Revised Statutes, Maui County Code and rules and regulations.

3. As applicable, construction plans shall be designed in conformance with Hawaii Standard Specifications for Road and Bridge Construction dated 2005 and Standard Details for Public Works Construction, 1984, as amended.

4. As applicable, worksite traffic-control plans/devices shall conform to Manual on Uniform traffic Control Devices for Streets and Highways, 2003.

5. The solid waste statement has been corrected.

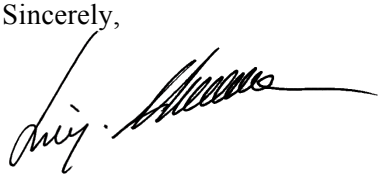
6. Although Figure No. 2, TMK Location Map is the only map available from the County of Maui, it is outdated and incorrectly lists the street names. Please refer to Figure No. 10, Topographic Map for the correct street names and descriptions.

7. Proposed access to the subject property from Mahalo Place would be via a driveway apron connecting the subject property to Mahalo Place utilizing a portion of lot 21A.

ARCHITECTURAL DRAFTING SERVICE
P.O. BOX 1718
KAUNAKAKAI, HI 96748
Phone: (808) 553-9045 - Fax: (808) 553-3952 - Mobile: (808) 870-3499
Email: luigis@hawaiiantel.biz

Please call me (808) 553-9045, (808) 870-3499 or email luigis@hawaiiantel.biz should you have any questions.

Sincerely,



Luigi Manera, Agent

ARCHITECTURAL DRAFTING SERVICE
P.O. BOX 1718
KAUNAKAKAI, HI 96748
Phone: (808) 553-9045 - Fax: (808) 553-3952 - Mobile: (808) 870-3499
Email: luigis@hawaiiantel.biz

July 12, 2011

County of Maui, Department of Water Supply
Dave Taylor, Director
Paul Meyer, Deputy Director
200 S. High St
Kalana O Maui Bldg. 5th Floor
Wailuku, HI 96793-2155

Subject: **DRAFT ENVIRONMENTAL ASSESSMENT FOR PROPOSED COMMUNITY PLAN AMENDMENT CHOPRA HALE APARTMENTS, LDE GROUP, LLC 190 MAKAENA PLACE, KAUNAKAKAI, HI 96748, TMK (2) 5-3-004:028**

Dear Mr. Taylor,

Thank you for your letter dated April 11, 2011.

We have incorporated your comments into the Draft EA and offer the following responses:

- Source Availability
  - The proposed project will be in compliance with Maui County Ordinance No. 3502 as required.
- System Infrastructure
  - The water system infrastructure will be upgraded, if required, to comply with the new zoning change. The proposed project will comply with Ordinance 3502 to receive water service.
  - A DWS approved back-flow prevention device will be installed at the water meter as required.
- Pollution Prevention
  - Mitigation measures and best management practices for construction will be applied during construction.
- Conservation
  The applicant will consider the following conservation measures in the project design, as well as during construction:
  - Utilize reclaimed or non-potable water for dust control, irrigation, and other non-potable uses.
  - Water after 7:00 p.m. at night and before 10:00 a.m. in the morning.
  - Utilize low-flow fixtures and devices - Maui County Code Subsection 16.20A.680 requires the use of low-flow fixtures and devices in faucets, showerheads, urinals, water closets, and hose bibs.
  - Prevent over-watering by automated systems - Provide rain-sensors on all automated irrigation controllers. Check and reset controllers at least once a month to reflect monthly changes in evaporation rates at the site.

ARCHITECTURAL DRAFTING SERVICE
P.O. BOX 1718
KAUNAKAKAI, HI 96748
Phone: (808) 553-9045 - Fax: (808) 553-3952 - Mobile: (808) 870-3499
Email: luigis@hawaiiantel.biz

As an alternative, provide more automated, soil-moisture sensors on controllers.

- Maintain fixtures to prevent leaks - A simple, regular program of repair and maintenance can prevent the loss of hundreds or even thousands of gallons per day.
- Limit irrigated turf - Low-water use shrubs and ground cover can be equally attractive and require substantially less water than turf.
- Select climate adapted native plant species for landscaping – Native plants adapted to the area conserve water and protect the watershed from degradation due to invasive alien species.
- Look for opportunities to conserve water - Here are a few examples:
  1) When cleaning debris, use a broom instead of a hose and water;
  2) Check for leaks in pipes, faucets, and toilets.

Please call me (808) 553-9045, (808) 870-3499 or email luigis@hawaiiantel.biz should you have any questions.

Sincerely,

Luigi Manera, Agent

ARCHITECTURAL DRAFTING SERVICE
P.O. BOX 1718
KAUNAKAKAI, HI 96748
Phone: (808) 553-9045 - Fax: (808) 553-3952 - Mobile: (808) 870-3499
Email: luigis@hawaiiantel.biz

July 12, 2011

Maui Electric Company
Kaui Awai-Dickson
PO Box 398
Kahului, HI 96733

Subject: **DRAFT ENVIRONMENTAL ASSESSMENT FOR PROPOSED COMMUNITY PLAN AMENDMENT CHOPRA HALE APARTMENTS, LDE GROUP, LLC 190 MAKAENA PLACE, KAUNAKAKAI, HI 96748, TMK (2) 5-3-004:028**

Dear Mr. Tamori,

Thank you for your letter dated April 1, 2011.

We have incorporated your comments into the Draft EA and offer the following response:

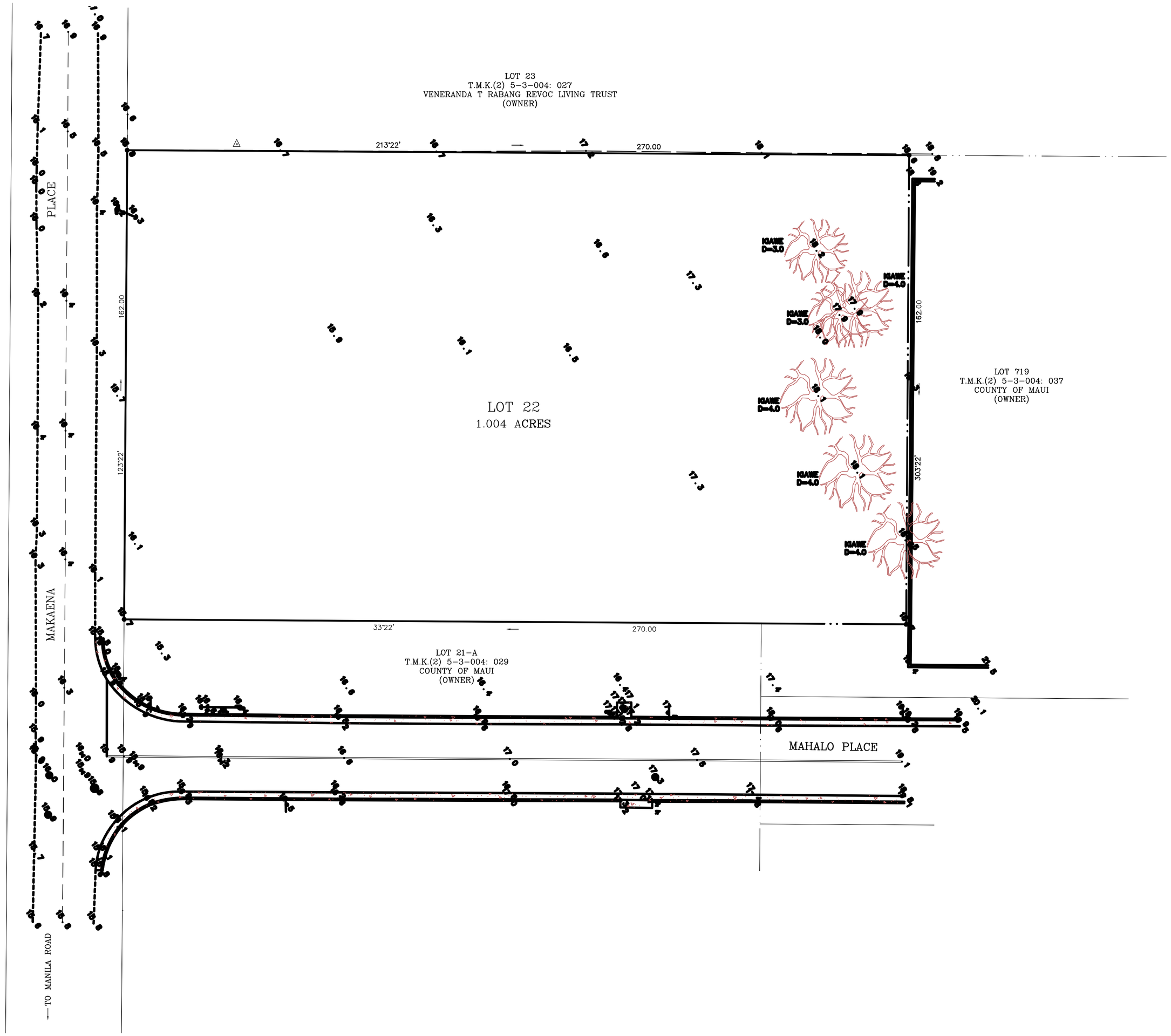
- The owner shall grant all easements and access for MECO facilities to serve the subject project site as necessary.

Please call me (808) 553-9045, (808) 870-3499 or email luigis@hawaiiantel.biz should you have any questions.

Sincerely,

Luigi Manera, Agent

Appendix E
Architectural Drawings



NOTES:

1. Azimuths and coordinates shown hereon refer to Government Survey Triangulation Station "PUU LUAHINE", designated thus "△".
2. Owners of adjoining land parcels taken from Real Property Mapping Branch.
3. Elevations shown hereon are referenced to USGS Benchmark "M5" at Kaunakakai Wharf, Elevation = 5.43 Mean Sea Level.

TOPOGRAPHIC SURVEY
LOT 22 OF THE KAUNAKAKAI HOMESTEADS SUBDIVISION
SITUATED AT KAUNAKAKAI, MOLOKAI, HAWAI'I

Prepared for:
Architectual Drafting Services
P.O. Box 1718
Kaunakakai, HI 96748

Scale: 1 Inch = 20 Feet
Date: September 15, 2010
Revised: September 22, 2010

BRUCE R. LEE
LICENSED PROFESSIONAL LAND SURVEYOR
No. 5983-LS
HAWAII, U.S.A.

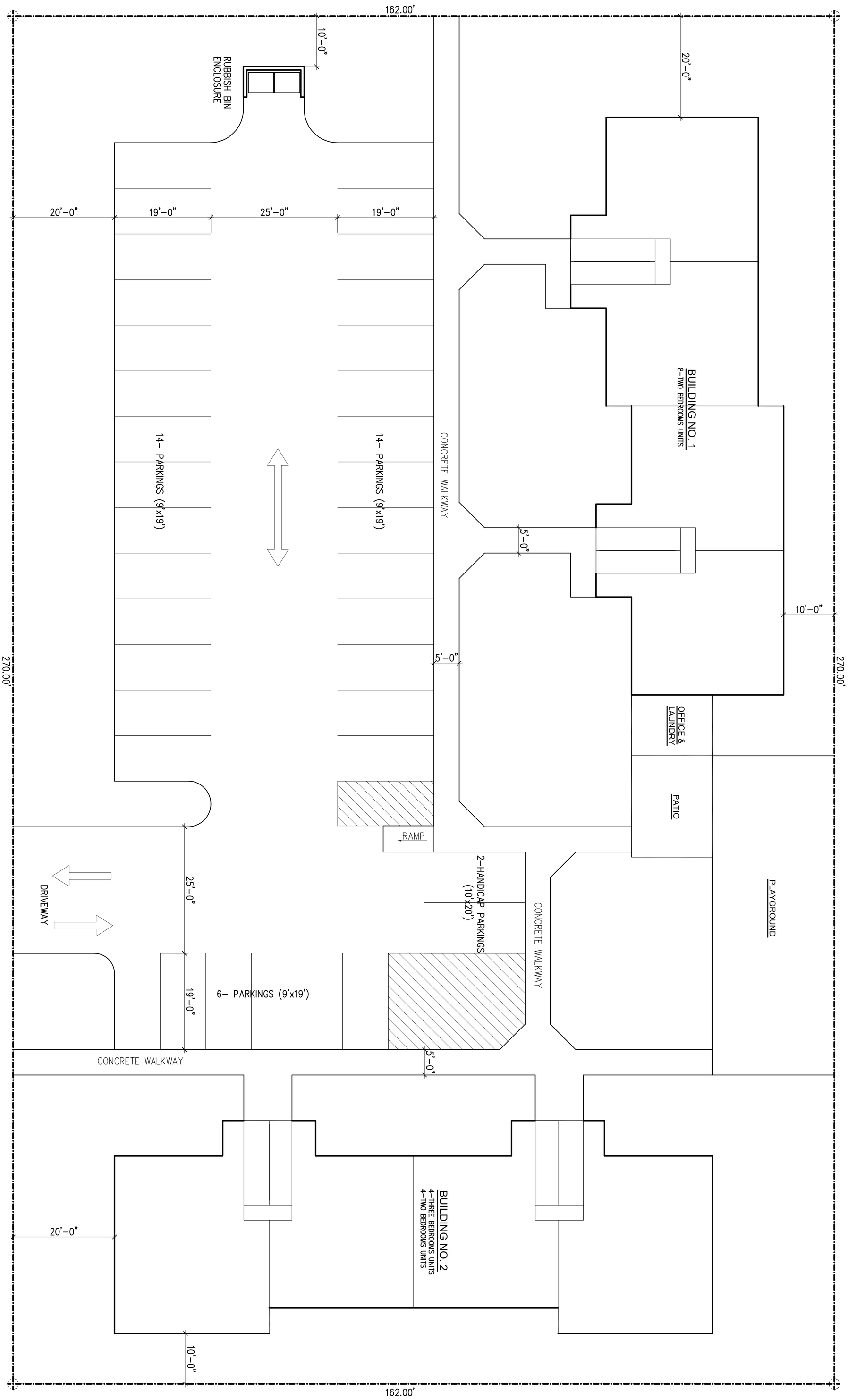
This plat was prepared from a survey on the ground performed by me or under my supervision.

BRUCE R. LEE
Licensed Professional Land Surveyor Certificate No. 5983-LS

TMK:(2) 5-3-004: 028

22" X 34" = 5.2 SQ. FT.

MAKAENA PLACE



MAHALO PLACE

SITE PLAN

SCALE: 1" = 20'-0"

PROPOSED PROJECT FOR:

HALE CHOPRA APARTMENT

190 MAKAENA PLACE
KAUNAKAKAI, HAWAII 96748

ADS
Architectural Drafting Service
P.O. BOX 1718
Kaunakakai, Hawaii 96748
Tel. No. (808) 553-9045
Fax. No. (808) 553-3952

THIS WORK WAS PREPARED BY ME OR UNDER MY OBSERVATION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION

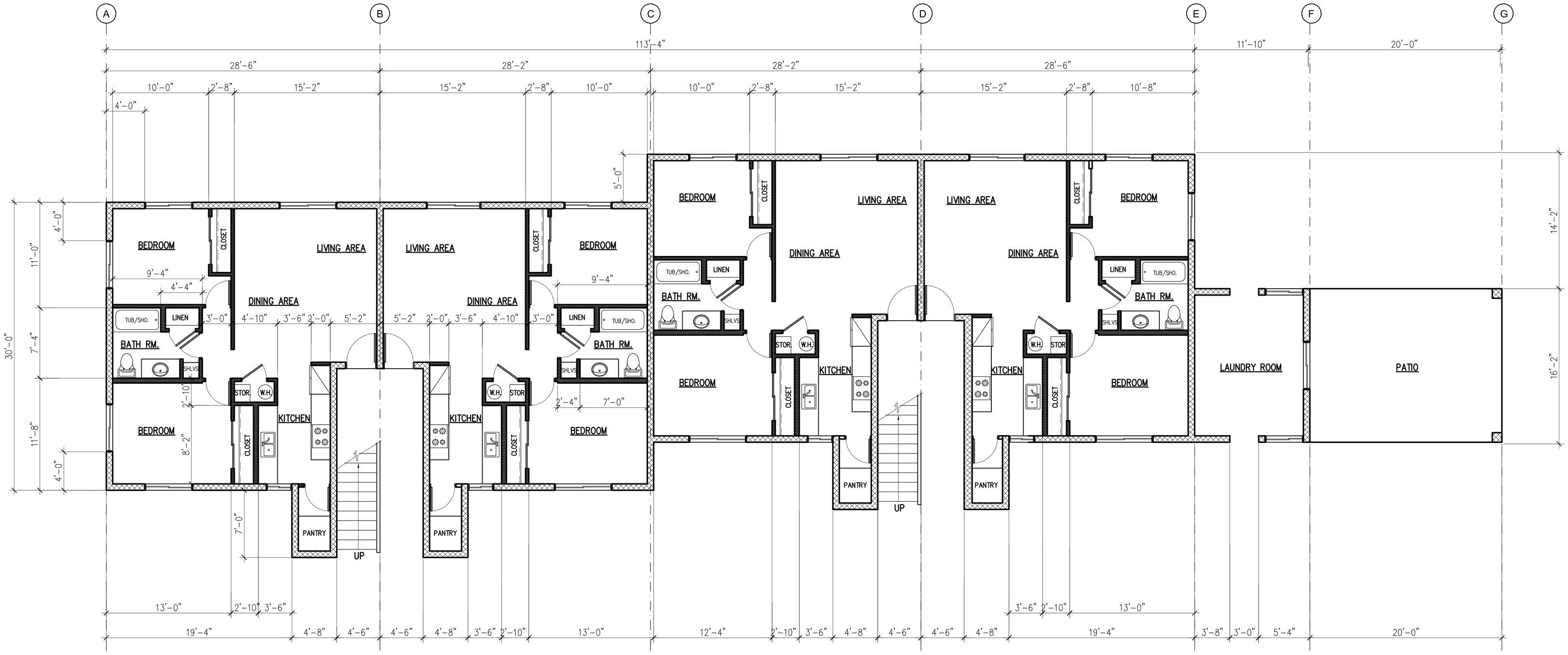
SIGNATURE

EXPIRATION DATE 4-30-2

EDWARD A. REISH
LICENSED PROFESSIONAL ARCHITECT
No. 3239
HAWAII, U.S.A.

REVISION	BY

Date	SEPT. 2010
Scale	AS NOTED
Drawn	DP
Check by	LM
Job	CHOPRA
Sheet No	T-1
of	Sheets



FIRST FLOOR PLAN - BUILDING NO. 1

SCALE: 3/16"=1'-0"

REVISION	BY

EDWARD A. RESH
LICENSED PROFESSIONAL ARCHITECT
No. 3239
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY OBSERVATION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

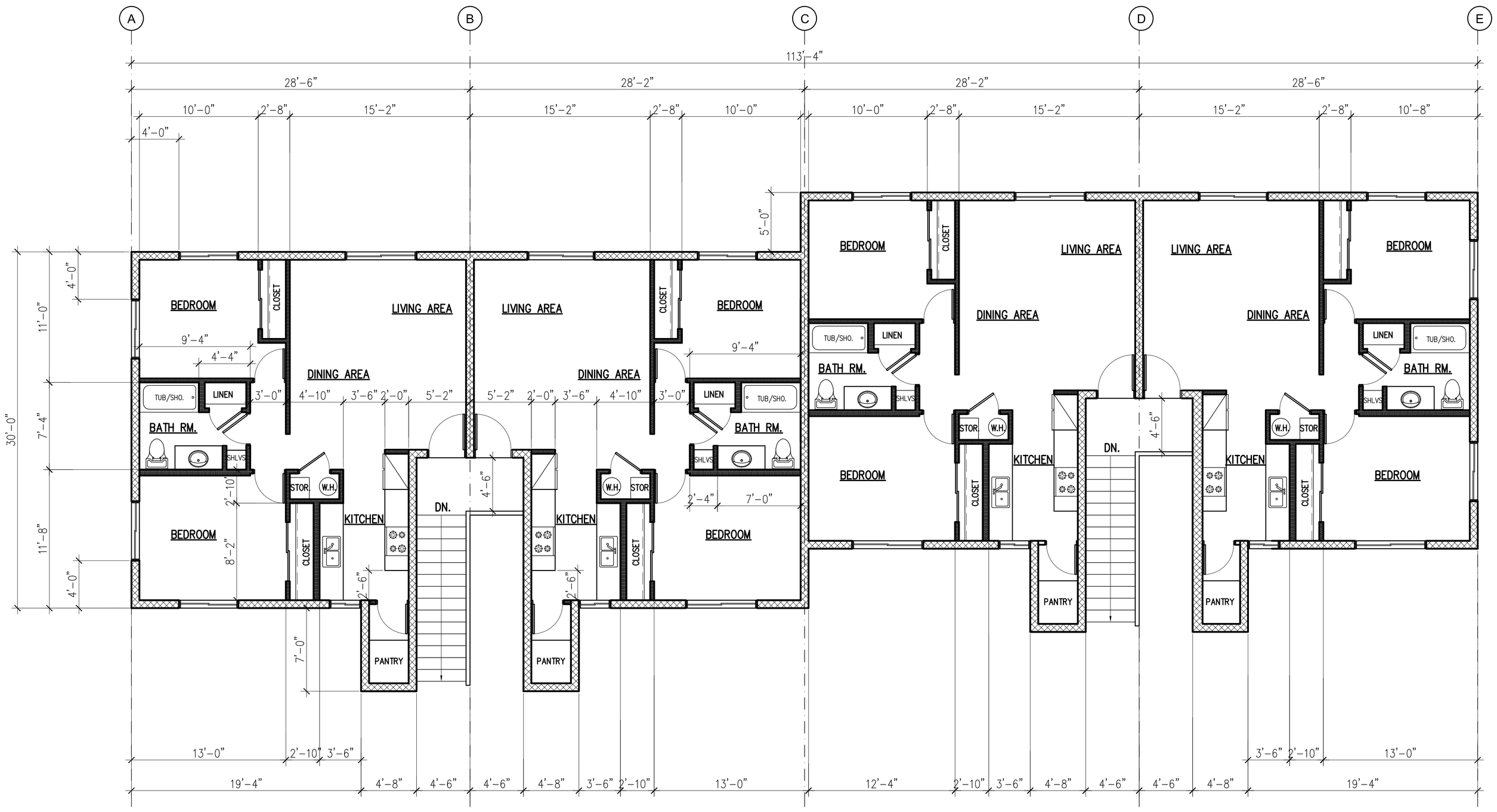
SIGNATURE

EXPIRATION DATE 4-30-12

ADS
Architectural Drafting Service
P.O. BOX 1718
Kaunakakai, Hawaii 96748
Tel. No. (808) 553-9045
Fax. No. (808) 553-3952

PROPOSED PROJECT FOR:
HALE CHOPRA APARTMENT
190 MAKAENA PLACE
KAUNAKAKAI, HAWAII 96748

Date	SEPT. 2010
Scale	AS NOTED
Drawn	DP
Check by	LM
Job	CHOPRA
Sheet No	A-1
of	Sheets



SECOND FLOOR PLAN - BUILDING NO. 1

SCALE: 3/16"=1'-0"

REVISION	BY

EDWARD A. RESH
LICENSED PROFESSIONAL ARCHITECT
No. 3239
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY OBSERVATION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

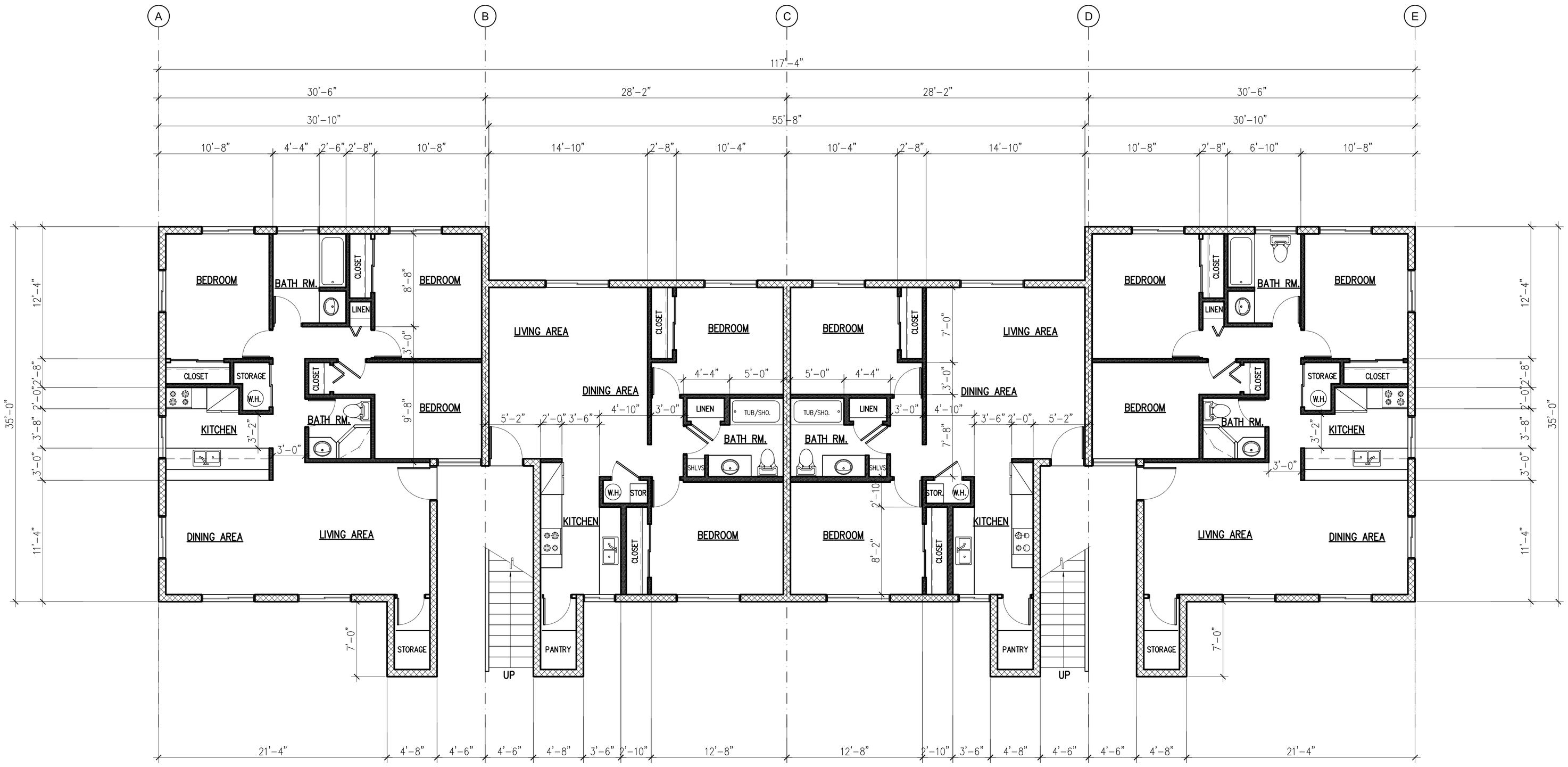
SIGNATURE

EXPIRATION DATE 4-30-12

ADS
Architectural Drafting Service
P.O. BOX 1718
Kaunakakai, Hawaii 96748
Tel. No. (808) 553-9045
Fax. No. (808) 553-3952

PROPOSED PROJECT FOR:
HALE CHOPRA APARTMENT
190 MAKAENA PLACE
KAUNAKAKAI, HAWAII 96748

Date	SEPT. 2010
Scale	AS NOTED
Drawn	DP
Check by	LM
Job	CHOPRA
Sheet No	A-2
of	Sheets



FIRST FLOOR PLAN - BUILDING NO. 2

SCALE: 3/16"=1'-0"

REVISION	BY

EDWARD A. RESH
LICENSED PROFESSIONAL ARCHITECT
No. 3239
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY OBSERVATION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

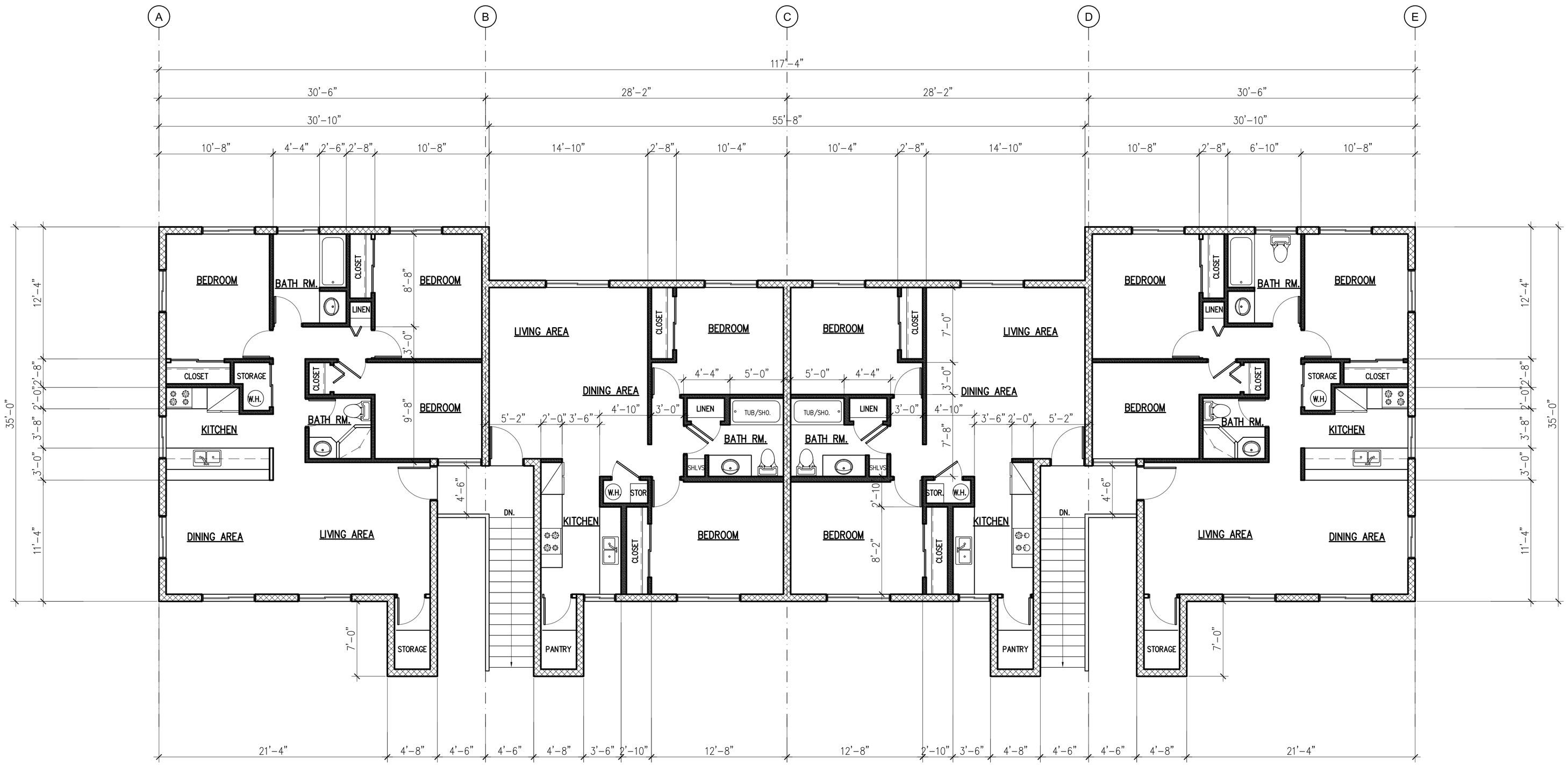
SIGNATURE

EXPIRATION DATE 4-30-12

ADS
Architectural Drafting Service
P.O. BOX 1718
Kaunakakai, Hawaii 96748
Tel. No. (808) 553-9045
Fax. No. (808) 553-3952

PROPOSED PROJECT FOR:
HALE CHOPRA APARTMENT
190 MAKAENA PLACE
KAUNAKAKAI, HAWAII 96748

Date	SEPT. 2010
Scale	AS NOTED
Drawn	DP
Check by	LM
Job	CHOPRA
Sheet No	A-3
of	Sheets



SECOND FLOOR PLAN - BUILDING NO. 2

SCALE: 3/16"=1'-0"

REVISION	BY

EDWARD A. RESH
LICENSED PROFESSIONAL ARCHITECT
No. 3239
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY OBSERVATION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

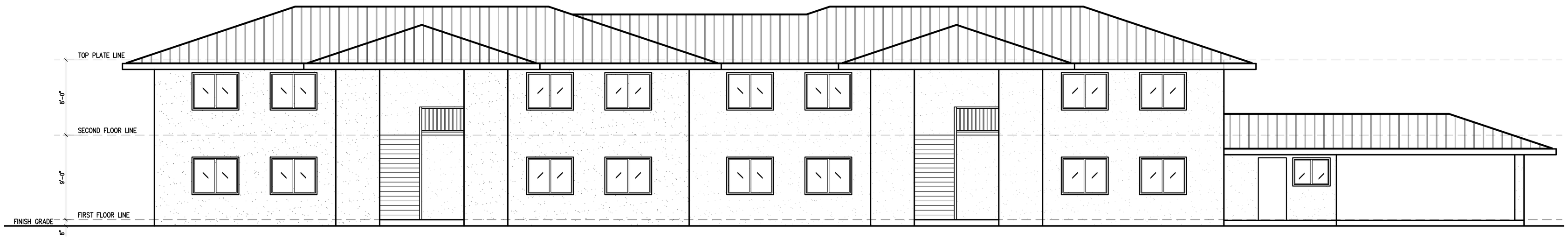
SIGNATURE

EXPIRATION DATE 4-30-12

ADS
Architectural Drafting Service
P.O. BOX 1718
Kaunakakai, Hawaii 96748
Tel. No. (808) 553-9045
Fax. No. (808) 553-3952

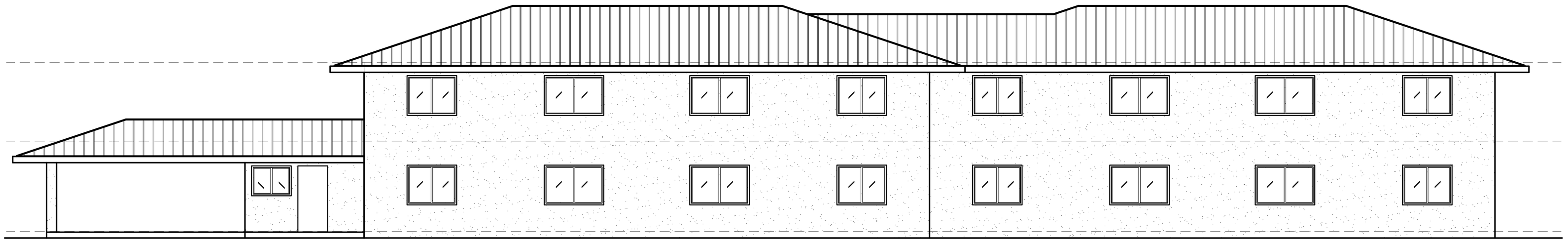
PROPOSED PROJECT FOR:
HALE CHOPRA APARTMENT
190 MAKAENA PLACE
KAUNAKAKAI, HAWAII 96748

Date	SEPT. 2010
Scale	AS NOTED
Drawn	DP
Check by	LM
Job	CHOPRA
Sheet No	A-4
of	Sheets



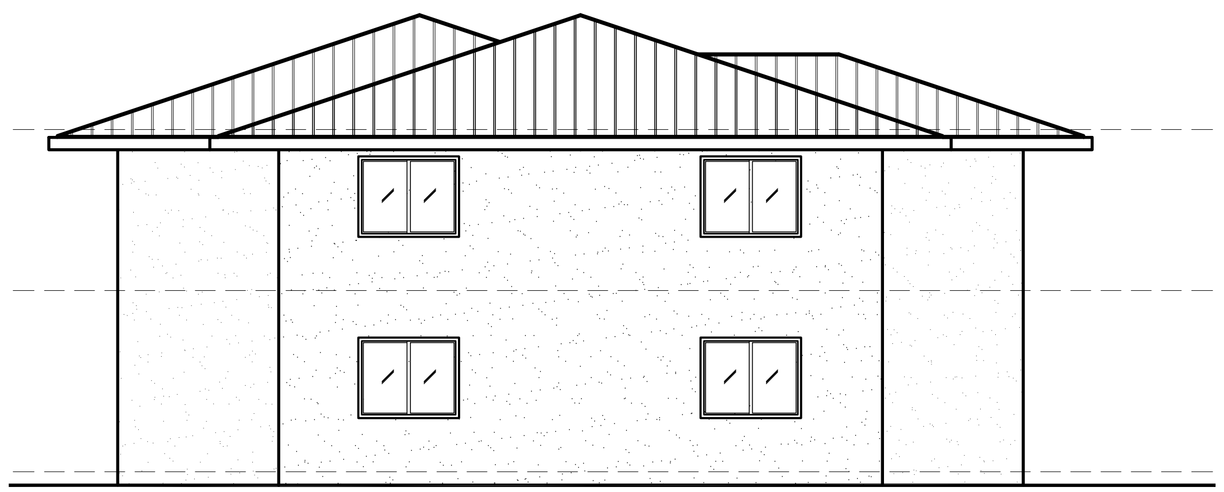
FRONT ELEVATION - BUILDING NO. 1

SCALE: 3/16"=1'-0"



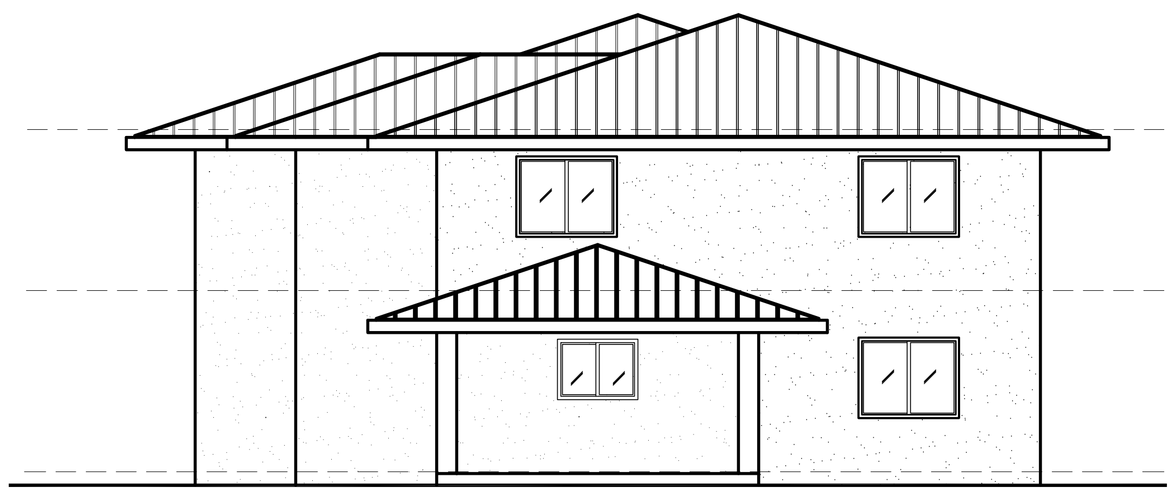
REAR ELEVATION - BUILDING NO. 1

SCALE: 3/16"=1'-0"



LEFT SIDE ELEVATION - BUILDING NO. 1

SCALE: 3/16"=1'-0"



RIGHT SIDE ELEVATION - BUILDING NO. 1

SCALE: 3/16"=1'-0"

REVISION	BY

EDWARD A. RESH
LICENSED PROFESSIONAL ARCHITECT
No. 3239
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY OBSERVATION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

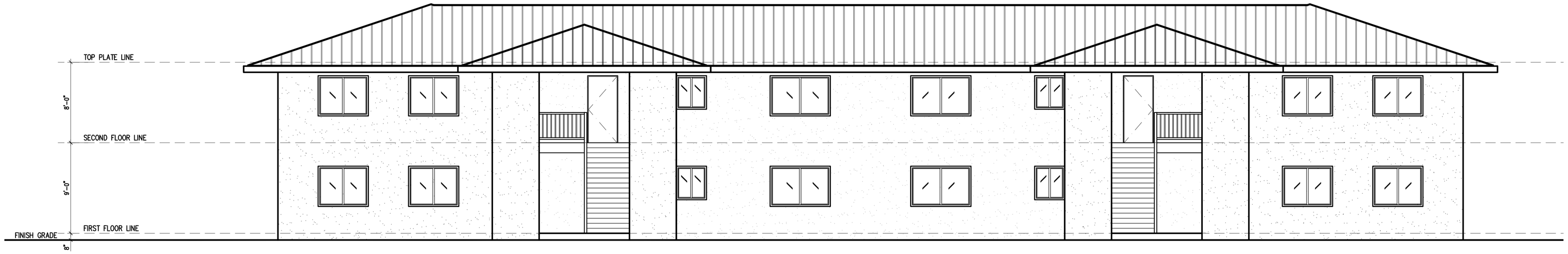
SIGNATURE

EXPIRATION DATE 4-30-12

ADS
Architectural Drafting Service
P.O. BOX 1718
Kaunakakai, Hawaii 96748
Tel. No. (808) 553-9045
Fax. No. (808) 553-3952

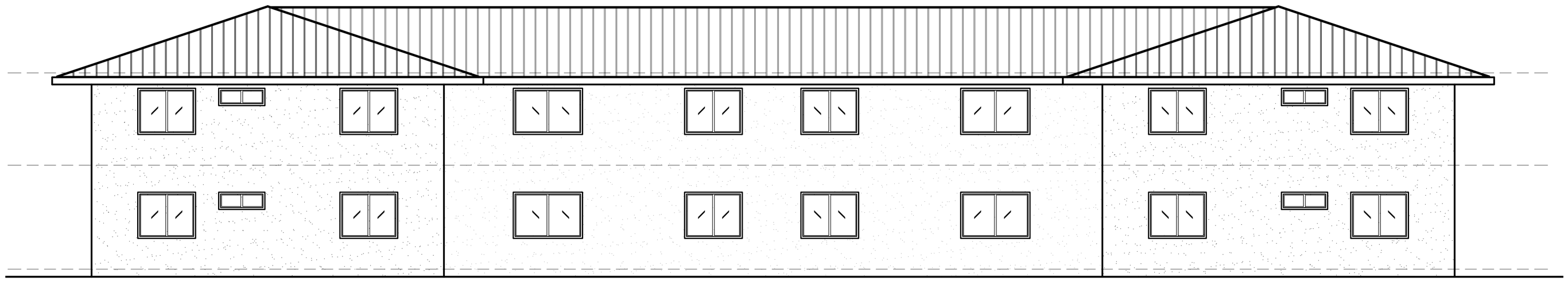
PROPOSED PROJECT FOR:
HALE CHOPRA APARTMENT
190 MAKAENA PLACE
KAUNAKAKAI, HAWAII 96748

Date	SEPT. 2010
Scale	AS NOTED
Drawn	DP
Check by	LM
Job	CHOPRA
Sheet No	A-5
of	Sheets



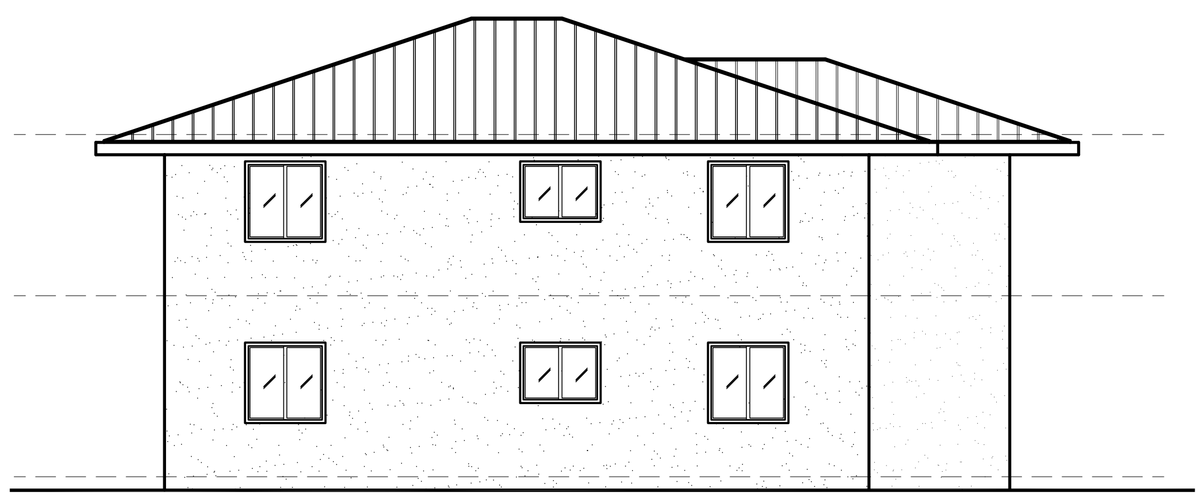
FRONT ELEVATION - BUILDING NO. 2

SCALE: 3/16"=1'-0"



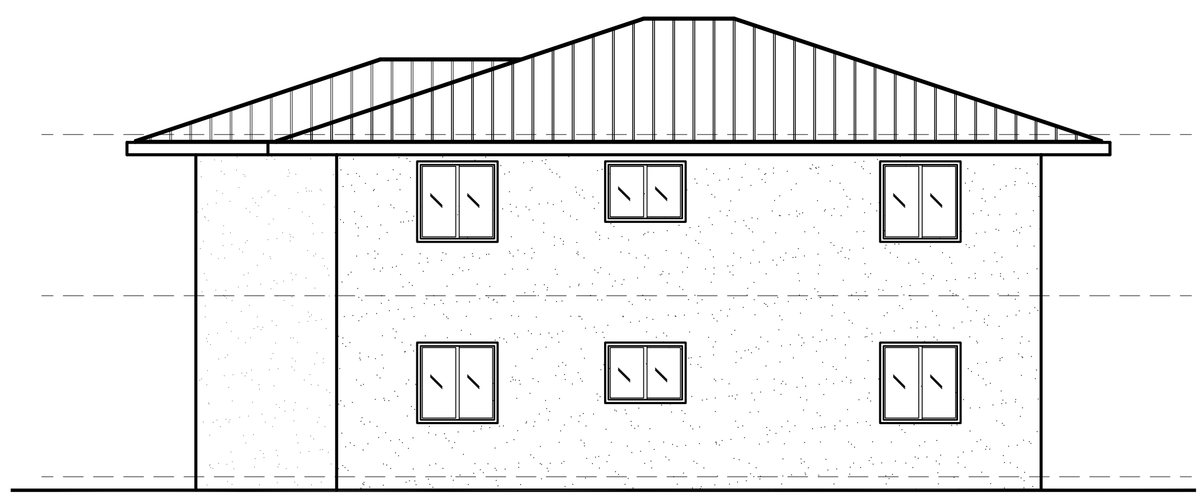
REAR ELEVATION - BUILDING NO. 2

SCALE: 3/16"=1'-0"



LEFT SIDE ELEVATION - BUILDING NO. 2

SCALE: 3/16"=1'-0"



RIGHT SIDE ELEVATION - BUILDING NO. 2

SCALE: 3/16"=1'-0"

REVISION	BY

EDWARD A. RESH
LICENSED PROFESSIONAL ARCHITECT
No. 3239
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY OBSERVATION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

SIGNATURE

EXPIRATION DATE 4-30-12

ADS
Architectural Drafting Service
P.O. BOX 1718
Kaunakakai, Hawaii 96748
Tel. No. (808) 553-9045
Fax. No. (808) 553-3952

PROPOSED PROJECT FOR:
HALE CHOPRA APARTMENT
190 MAKAENA PLACE
KAUNAKAKAI, HAWAII 96748

Date	SEPT. 2010
Scale	AS NOTED
Drawn	DP
Check by	LM
Job	CHOPRA
Sheet No	A-6
of	Sheets

Appendix F
Traffic Impact Assessment Report

Phillip Rowell and Associates
47-273 'D' Hui Iwa Street Kaneohe, Hawaii 96744 Phone: (808) 239-8206 FAX: (808) 239-4175 Email:prowell@hawii.rr.com

January 25, 2013

Mr. Dilip S. Gunawardena
872 Newport Circle
Redwood Shores, CA 94065

Re: Traffic Impact Assessment Report
Hale Chopra, Kaunakaukai, Molokai, Hawaii

Dear David:

Phillip Rowell and Associates have completed the following Traffic Impact Assessment Report (TIAR) for Hale Chopra, a proposed residential condominium development in Kaunakaukai area of Molokai. The report is presented in the following format:

A. Project Location and Description
B. Purpose and Objective of Study
C. Study Approach
D. Description of Existing Streets and Intersection Controls
E. Existing Peak Hour Traffic Volumes
F. Level-of-Service Concept
G. Existing Levels-of-Service
H. Existing Deficiencies
I. Background Traffic Projections
J. Project Trip Generation
K. Background Plus Project Projections
L. Traffic Impact Assessment
M. Mitigation
N. Summary and Recommendations

A. Project Location and Description

The proposed action is the construction of 16 condominium units on a parcel located in the northwest quadrant of the intersection of Manila Place and Mahalo Place. Attachment A is a copy of the project site plan indicating the locations of buildings, parking spaces and driveway.

The project will be connected to Maunaloa Highway (SR 460) via existing roadways. These roadways are Mahalo Place, Manila Place and Makaena Place. Attachment B is a schematic of the access route to the project.

For purposes of this traffic report, it has been assumed that the project will be completed and occupied by 2015.

B. Purpose and Objective of Study

The objective of this traffic assessment is to confirm that any traffic operational problems in the immediate vicinity of the project are identified, assessed and mitigated as needed to provide acceptable access and egress levels-of-service for the project.

C. Study Approach

1. A preliminary trip generation analysis was performed to determine the scope of the traffic analysis required and the intersections to be studied. This analysis estimated that the project could generate 7 trips during the morning peak hour and 8 trips during the afternoon peak hour. This implies that the scope of work should be limited to an "access location and design review."

   Discussion with State of Hawaii Department of Transportation concluded that the intersection of Maunaloa Highway (SR 460) and Makaena Place should be assessed relative to the need for a separate left turn lane for left turns from eastbound Maunaloa Highway to northbound Makaena Place. Accordingly, the intersections of Maunaloa Highway at Makaena Place and the project's driveway along Mahalo Place were assessed. The remaining intersections between Maunaloa Highway and the project will accommodate much lower traffic volumes and therefore will have levels-of-service better than the intersection of Maunaloa Highway and Makaena Place.

2. A field reconnaissance was performed to confirm existing roadway cross-sections, intersection lane configurations, traffic control devices, and surrounding land uses.

3. Peak hour traffic that the proposed project will generate was estimated using trip generation analysis procedures recommended by the Institute of Transportation Engineers. Project generated traffic was distributed and assigned to the adjacent roadway network.

4. A level-of-service analysis for future traffic conditions with traffic generated by the study project was performed to confirm that there will be no operational deficiencies as a result of project generated traffic. Any traffic operational deficiencies were identified and described.

5. An assessment of the need for a separate left turn lane at the intersection of Maunaloa Highway and Makaena Place was performed.

6. A report documenting the conclusions of the analyses performed and recommendations was prepared.

D. Description of Existing Streets and Intersection Controls

In the vicinity of the project, Maunaloa Highway is a two-lane, two-way highway with an east-west orientation. Maunaloa Highway is a State Highway. Makaena Place is a two-lane, two-way roadway with a north-south orientation. Makaena Place is a County roadway.

The intersection of Maunaloa Highway and Makaena Place is STOP sign controlled T-intersection. The Makaena Place approach is an optional left or right turn lane and is the STOP sign controlled approach. The eastbound and westbound approaches are Maunaloa Highway and are free flow. There are no separate left or right turn lanes. See Attachment C.

E. Existing Peak Hour Traffic Volumes

Current weekday peak hour traffic volumes at the intersection of Maunaloa Highway and Makaena Place were estimated from State of Hawaii Department of Transportation traffic counts along Maunaloa Highway in the vicinity and trip estimates for the adjacent development. The latest State of Hawaii Department of Transportation traffic counts along Maunaloa Highway in the vicinity of Makaena Place were performed in Tuesday, September 22, 2010, and are summarized on Attachment B.

F. Level-of-Service Concept

"Level-of-Service" is a term which denotes any of an infinite number of combinations of traffic operating conditions that may occur on a given lane or roadway when it is subjected to various traffic volumes. Level-of-service (LOS) is a qualitative measure of the effect of a number of factors which include space, speed, travel time, traffic interruptions, freedom to maneuver, safety, driving comfort and convenience.

There are six levels-of-service, A through F, which relate to the driving conditions from best to worst, respectively. The characteristics of traffic operations for each level-of-service are summarized in Table 1. In general, LOS A represents free-flow conditions with no congestion. LOS F, on the other hand, represents severe congestion with stop-and-go conditions. *Level-of-service D is typically considered acceptable for peak hour conditions in urban areas.*[1]

Corresponding to each level-of-service shown in the table is a volume/capacity ratio. This is the ratio of either existing or projected traffic volumes to the capacity of the intersection. Capacity is defined as the maximum number of vehicles that can be accommodated by the roadway during a specified period of time. The capacity of a particular roadway is dependent upon its physical characteristics such as the number of lanes, the operational characteristics of the roadway (one-way, two-way, turn prohibitions, bus stops, etc.), the type of traffic using the roadway (trucks, buses, etc.) and turning movements.

[1] Institute of Transportation Engineers, *Transportation Impact Analyses for Site Development: A Recommended Practice*, 2006, page 60

Table 1 Level-of-Service Definitions for Signalized Intersections[1]

Level of Service	Interpretation	Volume-to-Capacity Ratio[2]	Stopped Delay (Seconds)
A, B	Uncongested operations; all vehicles clear in a single cycle.	0.000-0.700	<20.0
C	Light congestion; occasional backups on critical approaches	0.701-0.800	20.1-35.0
D	Congestion on critical approaches but intersection functional. Vehicles must wait through more than one cycle during short periods. No long standing lines formed.	0.801-0.900	35.1-55.0
E	Severe congestion with some standing lines on critical approaches. Blockage of intersection may occur if signal does not provide protected turning movements.	0.901-1.000	55.1-80.0
F	Total breakdown with stop-and-go operation	>1.001	>80.0

Notes:
(1) Source: *Highway Capacity Manual*, 2000.
(2) This is the ratio of the calculated critical volume to Level-of-Service E Capacity.

Like signalized intersections, the operating conditions of intersections controlled by stop signs can be classified by a level-of-service from A to F. However, the method for determining level-of-service for unsignalized intersections is based on the use of gaps in traffic on the major street by vehicles crossing or turning through that stream. The capacity of the controlled legs of an intersection is based on two factors: 1) the distribution of gaps in the major street traffic stream, and 2) driver judgement in selecting gaps through which to execute a desired maneuver. The criteria for level-of-service at an unsignalized intersection is therefore based on delay of each turning movement. Table 2 summarizes the definitions for level-of-service and the corresponding delay.

Table 2 Level-of-Service Definitions for Unsignalized Intersections[1]

Level-of-Service	Expected Delay to Minor Street Traffic	Delay (Seconds)
A	Little or no delay	<10.0
B	Short traffic delays	10.1 to 15.0
C	Average traffic delays	15.1 to 25.0
D	Long traffic delays	25.1 to 35.0
E	Very long traffic delays	35.1 to 50.0
F	See note (2) below	>50.1

Notes:
(1) Source: *Highway Capacity Manual*, 2000.
(2) When demand volume exceeds the capacity of the lane, extreme delays will be encountered with queuing which may cause severe congestion affecting other traffic movements in the intersection. This condition usually warrants improvement of the intersection.

G. Existing Levels-of-Service

The results of the level-of-service analysis of the intersection of Maunaloa Highway and Makaena Place are summarized in Table 3. Shown in the table are the average vehicle delays and levels-of-service of the controlled movements and the weighted delay and corresponding level-of-service of the overall intersection. The *Highway Capacity Manual* does not calculate delays for uncontrolled lane groups, such as the west through and right turn movement.

The level-of-service analysis concluded:

1. The eastbound approach of Maunaloa Highway to Makaena Place operates at Level-of-Service A during both peak periods,

2. The southbound Makaena Place approach to Maunaloa Highway operates at Level-of-Service B during both peak periods, and

3. The overall intersection operates at Level-of-Service A during both peak periods.

Table 3 Existing (2012) Levels-of-Service - Maunaloa Highway and Makaena Place

	AM Peak Hour		PM Peak Hour	
	7:00 AM to 8:00 AM		3:00 PM to 4:00 PM	
Approach and Lane Group	Delay[1)]	LOS[(2)]	Delay	LOS
Overall Intersection	***1.6***	***A***	***1.6***	***A***
Eastbound Left & Thru	0.3	A	1.2	A
Southbound Left & Right	12.8	B	12.4	B

NOTES:
(1) Delay is in seconds per vehicle.
(2) LOS denotes Level-of-Service.
(3) See Attachment D for Level-of-Service Worksheets.

H. Existing Deficiencies

For signalized intersections, Level-of-Service D is the minimum acceptable Level-of-Service[2] and that this standard is applicable to the overall intersection and major through movements. Minor movements, such as left turns, and minor side street approaches may operate at Level-of-Service E or F for short periods of time during the peak hours so that the overall intersection and major movements along the major highway will operate at Level-of-Service D, or better. All volume-to-capacity ratios must be 1.00 or less[3].

A standard has not be established for unsignalized intersections. Therefore, we have used a standard that Level-of-Service D is an acceptable level-of-service for major controlled lane groups, such as left turns from a major street to a minor street. Side street approaches may operate at Level-of-Service E or F for short periods of time. This is determined from the delays of the

[2] Institute of Transportation Engineers, *Transportation Impact Analyses for Site Development: A Recommended Practice*, 2006, page 60.

[3] Transportation Research Board, *Highway Capacity Manual*, Washington, D.C., 2000, p. 16-35.

individual lane groups. If the delay of any of the side street approaches appears to be so long that it will affect the overall level-of-service of the intersection, then mitigation measures should be accessed.

Using the above standards, no existing deficiencies were identified.

I. Background Traffic Projections

Background traffic projections are defined as future background traffic conditions without traffic generated by the proposed project. Typically future background traffic projections are estimated by applying a background growth rate to existing traffic volumes. This background growth rate is typically estimated from historical traffic volumes in the vicinity of the proposed project.

An assessment of 2010 versus 2008 State of Hawaii Department of Transportation traffic counts along Maunaloa Highway determined that traffic volumes had decreased between 2008 and 2010. The morning peak hour volume decreased an average of 0.9%per year and the afternoon peak hour volume decreased an average of 6.8% per year. Therefore, it was deduced that 2015 traffic volumes will be comparable to existing peak hour traffic volumes or less.

J. Project Trip Generation

Future traffic volumes that will be generated by Hale Chopra were estimated using the methodology described in the *Trip Generation Handbook*[4] and data provided in *Trip Generation*[5]. This method uses trip generation equations or rates to estimate the number of trips that the project will generate during the peak hours of the project and along the adjacent street.

The proposed action is the construction of 16 multi-family units. Trip generation rates for residential condominiums/ townhouses were used for the trip generation analysis. *Trip Generation* defines condominiums as follows:

> *Residential condominiums/townhouses are defined as ownership units that have at least one other owned unit within the same building structure*.[6]

The trip generation rates are based on the number of condominium/townhouse units proposed. *Trip Generation* provides rates used to estimate the number of peak hour trips during the peak hours of the adjacent street and the peak hours of the generator, which may or may not coincide. The AM peak hour of the adjacent street is typically between 7:00 AM and 9:00 AM and PM peak hour is between 4:00 PM and 6:00 PM, typical commute hours. *Trip Generation* does not note the peak hours of the generators.

The trip generation rates used for the trip generation analysis and the results are summarized in Table 4. The conclusion of the trip generation analysis is that the project will generate a total of 7 trips during the morning peak hour and 8 trips during the afternoon peak hour. The number of

---

[4] Institute of Transportation Engineers, *Trip Generation Handbook*, Washington, D.C., 2004, p. 7-12

[5] Institute of Transportation Engineers, *Trip Generation, 7th Edition,* Washington, D.C., 2003

[6] Institute of Transportation Engineers, *Trip Generation, 7th Edition*, Washington, D.C., 2003, page 366

total peak hour trips is the same whether the peak hour of the street or the peak hour of the generator.

Table 4 Trip Generation Analysis

Period & Direction		Condominiums (Land Use Code 230)		
		Trips per Unit or Percent[(1)]	Units	Trips
AM Peak Hour of Adjacent Street	Total	0.44	16	7
	Inbound	17%		1
	Outbound	83%		6
PM Peak Hour of Adjacent Street	Total	0.52		8
	Inbound	67%		5
	Outbound	33%		3
AM Peak Hour of Generator	Total	0.44		7
	Inbound	18%		1
	Outbound	82%		6
PM Peak Hour of Generator	Total	0.52		8
	Inbound	64%		5
	Outbound	36%		3

Project trips were distributed and assigned based on existing traffic approach and departure patterns of traffic along Maunaloa Highway in the vicinity of the project.

K. Background Plus Project Projections

Background plus project traffic projections were estimated by superimposing the peak hourly traffic generated by the proposed project on the background (without project) peak hour traffic projections. This assumes that the peak hourly trips generated by the project coincide with the peak hour of the adjacent street. This represents a worse-case condition as it assumes that the peak hours of the intersection approaches and the peak hour of the study project coincide. The resulting background plus project peak hour traffic projections are shown in Attachment E.

L. Traffic Impact Assessment

The need for a separate left turn land for eastbound traffic along Maunaloa Highway at Makaena Place was assessed using FHWA's standard[7]. This standard and the assessment for the intersection is shown as Attachment F. If the intersection of the approaching volume and the opposing volume is left of the calculated or estimated percent of left turns, a left turn lane is not warranted. As shown, the assessment determined that a separate left turn lane is not warranted at the intersection of Maunaloa Highway and Makaena Place.

A level-of-service analysis was performed for "without project" and "with project" conditions to confirm that the intersection will operate at an acceptable level-of-service and that there are no

[7] US Department of Transportation, Federal Highway Administration, *Guidelines for the Control of Direct Access to Arterial Highways*, FHWA-RD-76-86, 1975

traffic operational deficiencies that are the result of project generated traffic. The results of the level-of-service analysis are summarized in Table 5.

The level-of-service analysis concluded that the following:

1. The overall intersection will operate at Level-of-Service A during the morning and afternoon peak hours, without and with project generated traffic.

2. The eastbound approach will operate at Level-of-Service A during the morning and afternoon peak hours, without and with project generated traffic.

3. The southbound approach of Makaena Place will operate at Level-of-Service B during the morning and afternoon peak hour, without and with project generated traffic.

4. There is no change in the level-of-service of any controlled lane groups as a result of project generated traffic.

Also shown in the table are the estimated queue lengths without and will project generated traffic. Synchro reports the queue lengths is feet. The queue lengths shown in the table are estimated vehicles using an average vehicle length of 25 feet.

Table 5 Future (2015) Levels-of-Service - Maunaloa Highway at Makaena Place

	AM Peak Hour						PM Peak Hour					
	Without Project			With Project			Without Project			With Project		
Approach	Delay (1)	LOS(2)	95th Queue	Delay	LOS	95th Queue	Delay	LOS	95th Queue	Delay	LOS	95th Queue
Overall Intersection	**1.6**	**A**	**NC**	**1.7**	**A**	**NC**	**1.6**	**A**	**NC**	**1.6**	**A**	**NC**
Eastbound Left & Thru	0.3	A	<1	0.3	A	<1	1.2	A	<1	1.3	A	<1
Southbound Left & Right	12.8	B	<1	13.0	B	<1	12.4	B	<1	12.6	B	<1

NOTES:
(1) Delay is in seconds per vehicle.
(2) LOS denotes Level-of-Service.
(3) 95th Percentile as reported by Synchro. Assumed vehicle length is 25 feet.
(4) See Attachment D for Level-of-Service Worksheets.

M. Mitigation

Using this standard discussed in Section E, no mitigation is recommended.

N. Summary and Recommendations

1. The proposed action is the construction of 16 condominium units on a parcel located in the northwest quadrant of the intersection of Manila Place and Mahalo Place. Access and egress will be via Mahalo Place, Manila Place Makaena Place and Maunaloa Highway (SR 460). All traffic to and from the project and all traffic to and from the surrounding subdivision will be via the intersection of Maunaloa Highway and Makaena Place. This is intersection where the project's traffic impacts will be greatest.

2. It is anticipated that the project will be completed and occupied by 2015.

3. State of Hawaii Department of Transportation traffic counts completed in 2010 determined that the AM peak hour along Maunaloa Highway is between 7:00 AM and 8:00 AM and the afternoon peak hour is between 3:00 PM and 4:00 PM. The total AM peak hour volume is 556 vehicles per hour and the total PM peak hour volume is 524 vehicles per hour. The total weekday volume is 6,218 vehicles per day.

4. The trip generation analysis concluded that the project will generate a total of 7 trips during the morning peak hour and 8 trips during the afternoon peak hour. The number of total peak hour trips is the same whether the peak hour of the street or the peak hour of the generator. Project generated traffic will increase the morning and afternoon peak hour traffic volumes at the intersection of Maunaloa Highway and Makaena Place 1.1% and 1.4%, respectively.

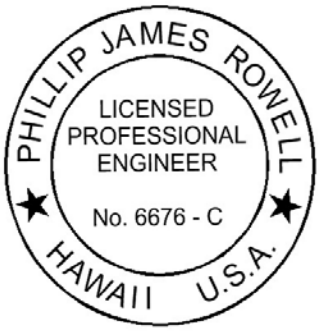
5. An assessment of the need for a separate left turn lane for left turns from eastbound Maunaloa Highway to northbound Makaena Place was performed using Federal Highway Administration standards. This assessment determined that a separate left turn lane was not warranted. Therefore, the level-of-service analysis was performed for the existing intersection configuration.

6. The level-of-service analysis concluded that the eastbound approach of Maunaloa Highway to Makaena Place will operate at Level-of-Service A during the morning and afternoon peak hours, without and with project generated traffic. The Makaena Place approach will operate at Level-of-Service B during both peak hours, without and with project generated traffic. The westbound approach of Maunaloa Highway to Makaena Place is uncontrolled. The HCM methodology does not calculate levels-of-service for uncontrolled lane groups There is no change in the level-of-service of any controlled lane groups as a result of project generated traffic.

7. Since all controlled movements will operate at Level-of-Service B, or better, without or with project generated traffic, no mitigation is recommended.

Respectfully submitted,
PHILLIP ROWELL AND ASSOCIATES

Phillip J. Rowell, P.E.
Principal



EXPIRATION DATE: 30 APRIL 2014

THIS WORK WAS PREPARED BY
ME OR UNDER MY DIRECT SUPERVISION

List of Attachments

A. Project Site Plan

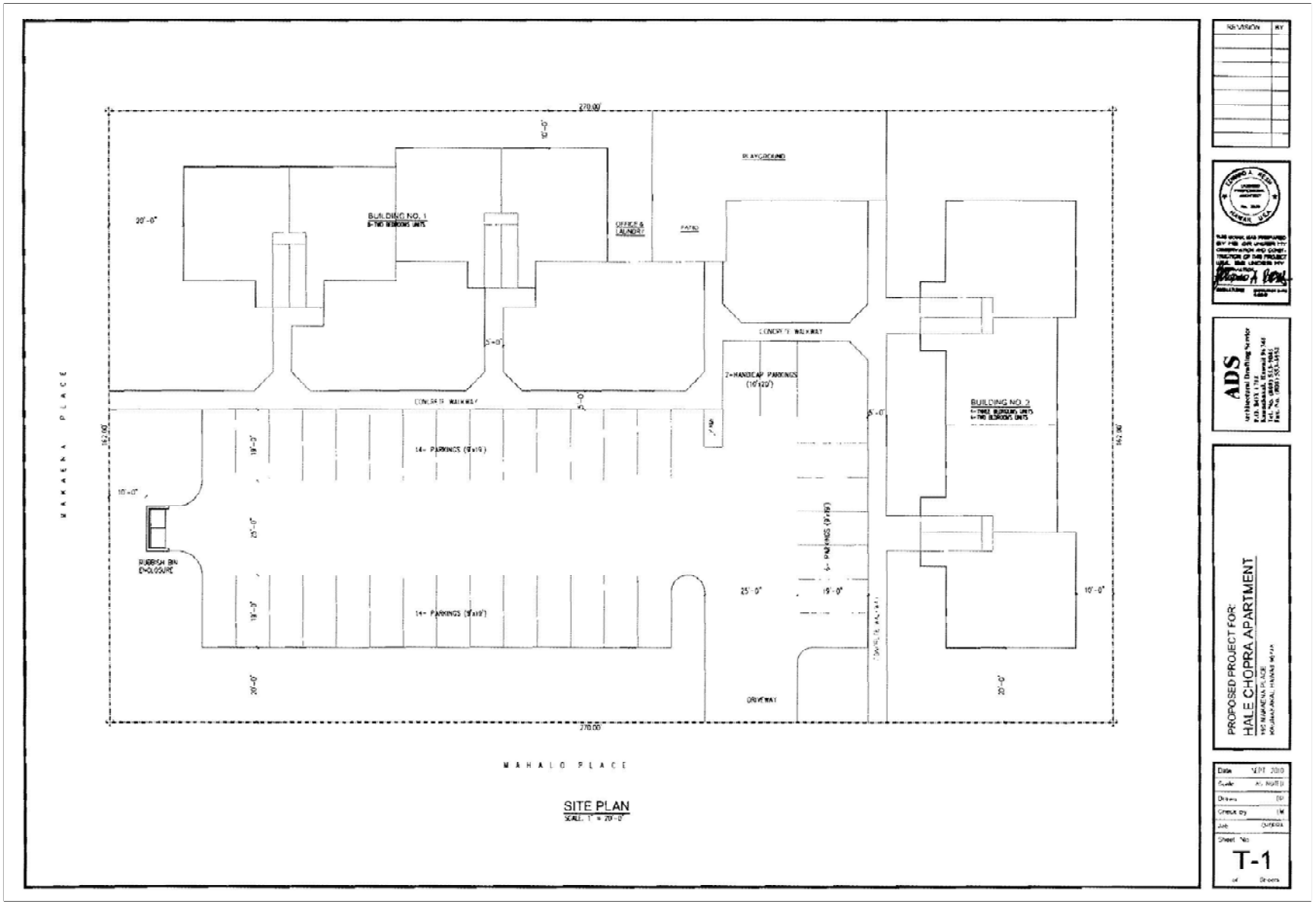
B. Schematic Drawing of Adjacent Street Network and Existing Peak Hour Volumes

C. Aerial Photograph Intersection of Maunaloa Highway and Makaena Plac

D. Level-of-Service Worksheets

E. Project Trip Assignments and 2015 Peak Hour Traffic Projections

F. Volume Warrants for Left Turn Lanes



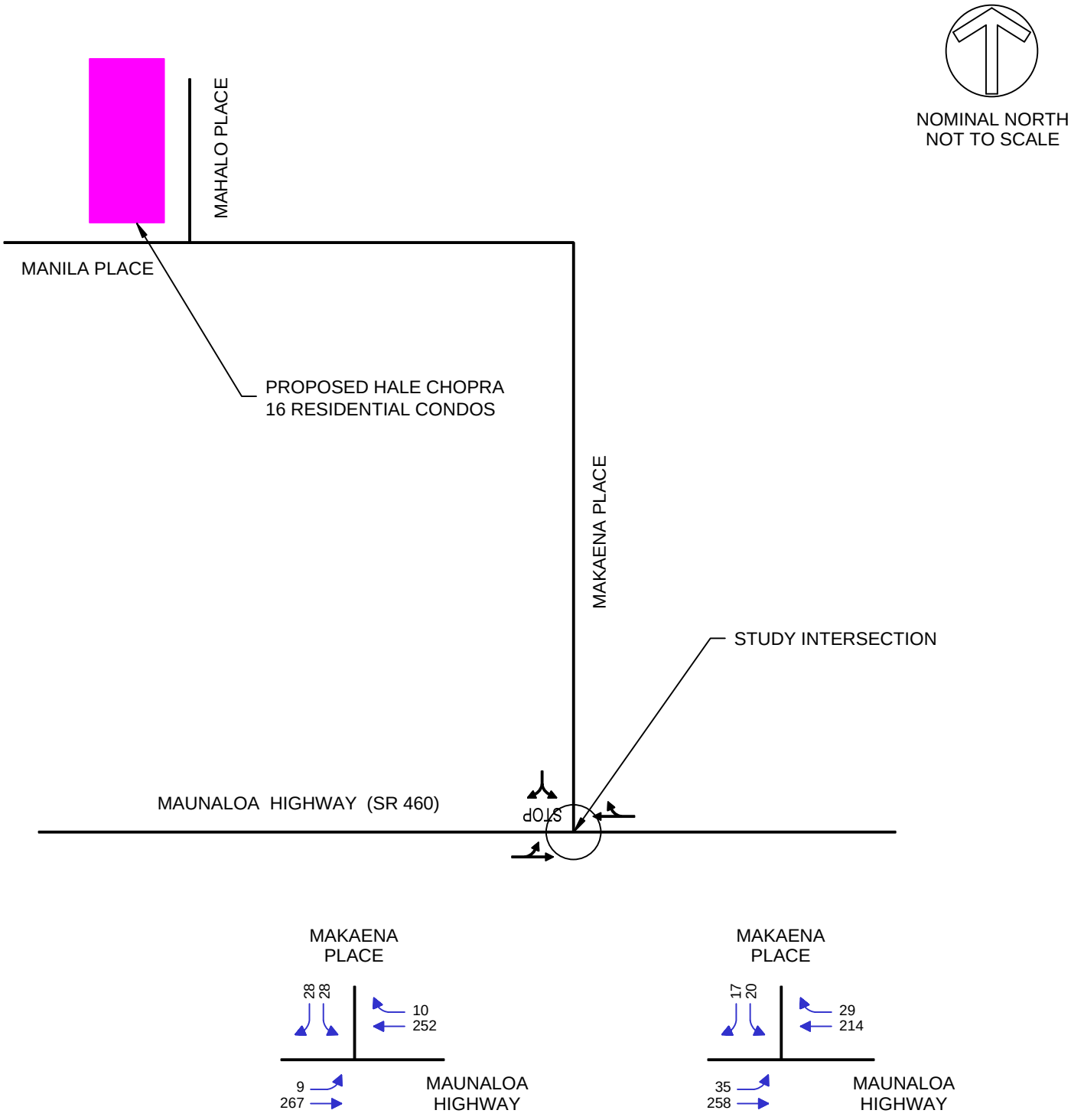
SITE PLAN
SCALE: 1" = 20'-0"

NOMINAL NORTH
NOT TO SCALE

Attachment A
SITE PLAN

HALE CHOPRA TIAR
JANUARY 2013

SOURCE: ADS



2015 BACKGROUND AM PEAK HOUR

2015 BACKGROUND PM PEAK HOUR

Attachment B
SCHEMATIC DRAWING OF ADJACENT STREET NETWORK AND EXISTING PEAK HOUR VOLUMES

HALE CHOPRA TIA
JANUARY 2013

SOURCE: GOOGLE EARTH

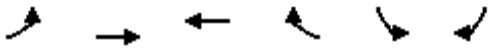
Attachment C

AERIAL PHOTOGRAPH INTERSECTION OF MAUNALOA HIGHWAY AND MAKAENA PLACE

NOMINAL NORTH
NOT TO SCALE

HALE CHOPRA TIAR
JANUARY 2013

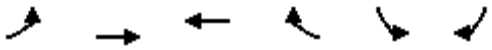
Attachment D
Level-of-Service Worksheets



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	9	267	252	10	28	28
Peak Hour Factor	0.75	0.75	0.90	0.90	0.70	0.70
Hourly flow rate (vph)	12	356	280	11	40	40
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	291				666	286
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	291				666	286
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				90	95
cM capacity (veh/h)	1271				421	753

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	368	291	80
Volume Left	12	0	40
Volume Right	0	11	40
cSH	1271	1700	540
Volume to Capacity	0.01	0.17	0.15
Queue Length 95th (ft)	1	0	13
Control Delay (s)	0.3	0.0	12.8
Lane LOS	A		B
Approach Delay (s)	0.3	0.0	12.8
Approach LOS			B

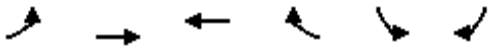
Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	31.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	35	258	214	29	20	17
Peak Hour Factor	0.84	0.84	0.90	0.90	0.70	0.70
Hourly flow rate (vph)	42	307	238	32	29	24
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	270				644	254
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	270				644	254
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				93	97
cM capacity (veh/h)	1293				423	785

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	349	270	53
Volume Left	42	0	29
Volume Right	0	32	24
cSH	1293	1700	537
Volume to Capacity	0.03	0.16	0.10
Queue Length 95th (ft)	2	0	8
Control Delay (s)	1.2	0.0	12.4
Lane LOS	A		B
Approach Delay (s)	1.2	0.0	12.4
Approach LOS			B

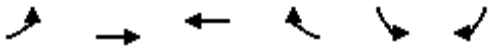
Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	41.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	9	267	252	11	31	31
Peak Hour Factor	0.75	0.75	0.90	0.90	0.70	0.70
Hourly flow rate (vph)	12	356	280	12	44	44
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	292				666	286
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	292				666	286
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				89	94
cM capacity (veh/h)	1269				420	753

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	368	292	89
Volume Left	12	0	44
Volume Right	0	12	44
cSH	1269	1700	540
Volume to Capacity	0.01	0.17	0.16
Queue Length 95th (ft)	1	0	15
Control Delay (s)	0.3	0.0	13.0
Lane LOS	A		B
Approach Delay (s)	0.3	0.0	13.0
Approach LOS			B

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	31.6%	ICU Level of Service	A
Analysis Period (min)	15		

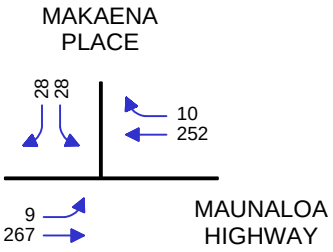


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	37	258	214	30	22	18
Peak Hour Factor	0.84	0.84	0.90	0.90	0.70	0.70
Hourly flow rate (vph)	44	307	238	33	31	26
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	271				650	254
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	271				650	254
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				93	97
cM capacity (veh/h)	1292				419	784

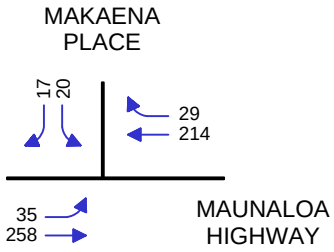
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	351	271	57
Volume Left	44	0	31
Volume Right	0	33	26
cSH	1292	1700	530
Volume to Capacity	0.03	0.16	0.11
Queue Length 95th (ft)	3	0	9
Control Delay (s)	1.3	0.0	12.6
Lane LOS	A		B
Approach Delay (s)	1.3	0.0	12.6
Approach LOS			B

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	42.0%	ICU Level of Service	A
Analysis Period (min)	15		

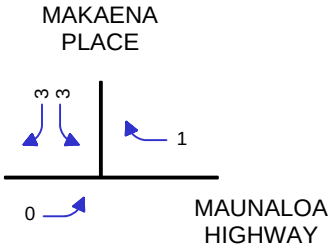
NOMINAL NORTH
NOT TO SCALE



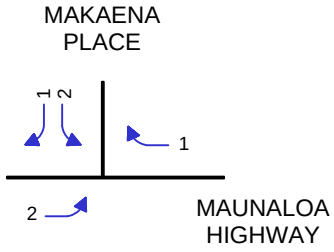
2015 BACKGROUND AM PEAK HOUR



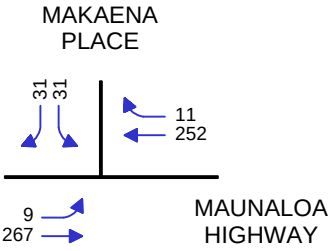
2015 BACKGROUND PM PEAK HOUR



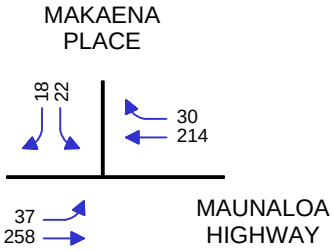
PROJECT TRIP ASSIGNMENTS
AM PEAK HOUR



PROJECT TRIP ASSIGNMENTS
PM PEAK HOUR



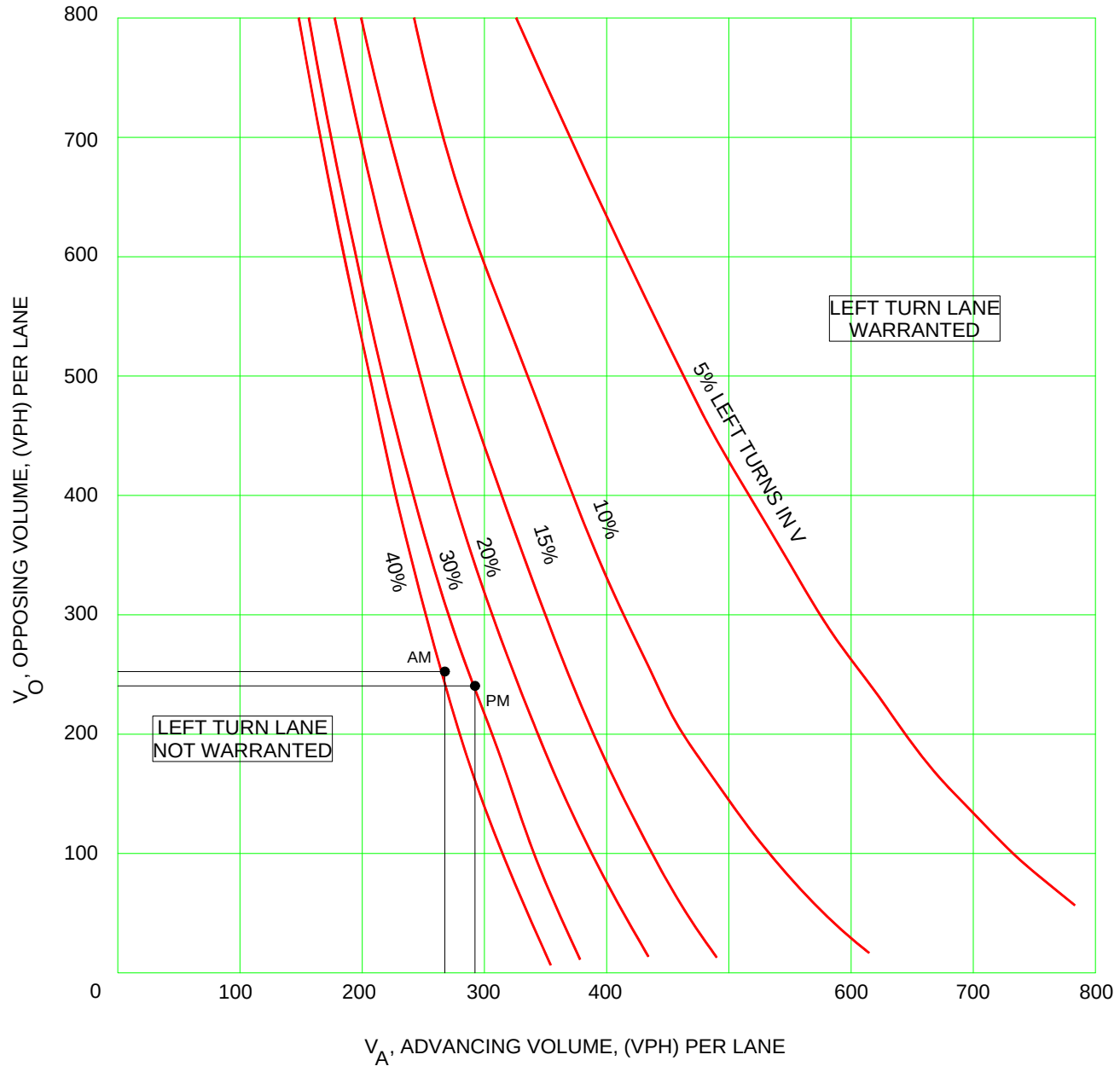
2015 BACKGROUND PLUS PROJECT
AM PEAK HOUR



2015 BACKGROUND PLUS PROJECT
PM PEAK HOUR

Attachment E
PROJECT TRIP ASSIGNMENTS AND 2015 PEAK HOUR TRAFFIC PROJECTIONS

HALE CHOPRA TIAR
JANUARY 2013



Source:
FHWA-RD-76-86
"Guidelines for the Control of Direct Access to Arterial Highways," 1975

Interpretaion:
If the intersection of the approaching volume and the opposing volume intersect right of the percentage of left turns, a left turn lane is recommended.

PEAK HOUR VOLUMES			
2015	ADVANCING	OPPOSING	% LEFT
AM Peak Hour	276 vph	263 vph	3%
PM Peak Hour	295 vph	244 vph	12%

Attachment F
VOLUME WARRANTS FOR LEFT TURN LANES

HALE CHOPRA TIAR
JANUARY 2013