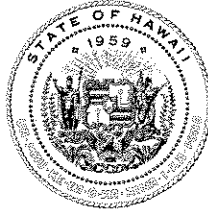
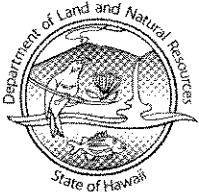


LINDA LINGLE  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
OFFICE OF CONSERVATION AND COASTAL LANDS  
POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

PETER T. YOUNG  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
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ROBERT K. MASUDA  
DEPUTY DIRECTOR - LAND

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HISTORIC PRESERVATION  
KAIHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

REF:OCCL:DH

FILE NO: CDUA KA-3309

Acceptance Date: May 15, 2006  
180-Day Exp. Date: November 11, 2006

RECEIVED  
AUG 10 2006  
05 AUG 10 04:22  
OFFICE OF ENVIRONMENTAL  
QUALITY CONTROL

**MEMORANDUM**

TO: Ms. Genevieve Salmonson, Director  
Office of Environmental Quality Control

FROM: Samuel J. Lemmo, Administrator  
Office of Conservation and Coastal Lands

SUBJECT: Conservation District Use Application (CDUA) KA-3309 for the Browning  
Single Family Residence (SFR), Haena District, Island of Kauai, TMK: (4) 5-9-  
005:029

The Department has reviewed the CDUA KA-3309, and Final Environmental Assessment (FEA) for the Browning proposed Single Family Residence (SFR) located in the Haena District, Island of Kauai, Subject Parcel TMK: (4) 5-9-005:029.

The DEA was published in OEQC's June 8, 2006 issue of the Environmental Notice for the subject project. The FEA is being submitted to OEQC. The FEA is being submitted to OEQC for the August 10, 2006 Environmental Notice. We have determined that this project will not have significant environmental effects, and have therefore issued a **FONSI**. However, the Department notes two issues are still outstanding regarding: 1) the possible change to the location of the Browning's proposed Single Family Residence (SFR) after the pending Shoreline Certification has been approved by the Chairperson of the Board of Land and Natural Resources; and 2) the construction of the proposed lava rock wall, which would terminate at the certified shoreline.

Shoreline Setback

The OCCL is committed to protection and preservation of coastal resources. The applicant is proposing to set the SFR 61 feet back from the pending Certified Shoreline. However, based on the department's analysis of the EKNA study, this setback is not sufficient to protect the homeowner from future erosion hazards. A large buffer is also required between any structures and the shoreline to protect the public from future damages.

For the purpose of establishing setback the use of the beach toe is utilized since it is thought to be a better indicator of long-term shoreline change that cannot be manipulated as the vegetation can be. Using the beach toe as the Shore Reference Feature (SRF), and based on the information provided, the OCCL calculated the shoreline set back at approximately 130 feet.

Lava Rock Wall

The OCCL notes the construction of the proposed lava rock wall, which would terminate at the certified shoreline, is of concern. Although a rock wall would prevent trespassers and unsanitary practices of beachgoers, the OCCL notes a less permanent structure (chain link fence) and/or flora (hedges) could be used to deter the above uses, and protect the subject parcel.

We have enclosed four copies of the FEA and CDUA KA-3280 for the project. The OEQC Bulletin Publication Form will be emailed to you. Comments on the draft EA were sought from relevant agencies and the public, and were included in the FEA.

Please contact Dawn Hegger of our Office of Conservation and Coastal Lands staff at 587-0380 if you have any questions on this matter.

2006-08-23- KA- FEA- BROWNING SINGLE-FAMILY RESIDENCE

AUG 23 2006

FILE COPY

# Final Environmental Assessment Browning Single-Family Residence

TMK (4) 5-9-05: 029  
Ha'ena, Kauai, Hawaii

Submitted by:  
**Kent Browning**  
August 2006

RECEIVED  
OFFICE OF CONSERVATION  
AND COASTAL LANDS  
2006 AUG -14 P 4: 09  
DEPT. OF LAND &  
NATURAL RESOURCES  
STATE OF HAWAII

*In Accordance with the Requirements of Chapter 343, HRS and  
Chapter 200 of Title II, Administrative Rules  
Department of Health, State of Hawai'i*

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DFO, OF ENVIRONMENTAL  
QUALITY FORUM



**LANDMARK**  
CONSULTING

# ATTENTION:

## REGARDING REVISIONS

### FINAL ENVIRONMENTAL ASSESSMENT

This Final Environmental Assessment (FEA) for the proposed Browning Single Family Residence (SFR) has been amended to reflect the comments that were received from various agencies after their review of the Draft Environmental Assessment (DEA) during the statutory 30-day public comment period which ended on July 10<sup>th</sup>, 2006. The revised FEA addresses each recommendation and/or concern which was raised by those agencies which commented on the proposed actions. Documentation of the comments that were received and responses thereto are included herewith in Appendix 9 and referenced throughout the FEA where applicable. All changes and/or additions to the content of the FEA are *highlighted throughout the document for ease of recognition by the use of an emboldened and italicized script*.

The following have been added to the Final EA:

- Exhibit 17 Landscape Plan
- Exhibit 18 Copy of June 8<sup>th</sup>, 2006 Publication in the OEQC Environmental Notice
- Appendix 9 Documentation of Draft EA Agency Comments

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## Exhibits

Exhibit 1	Location Map – Island of Kauai
Exhibit 2	Vicinity Map – Ha'ena
Exhibit 3	Tax Map of Subject Parcel
Exhibit 4	State Conservation District Subzone Map
Exhibit 5	County Zoning Map
Exhibit 6	Plot Plan
Exhibit 7	Flood Zone Map
Exhibit 8	Engineer's Elevation Certificate
Exhibit 9	Proposed Residential Site Plan
Exhibit 10	Proposed Garden Level Floor Plan
Exhibit 11	Proposed Upper Level Floor Plan
Exhibit 12	Proposed Roof Plan
Exhibit 13	Proposed South & East Elevations
Exhibit 14	Proposed North & West Elevations
Exhibit 15	Site Photos
Exhibit 16	Special Management Area (SMA) Exemption Letter
Exhibit 17 (Added)	Landscape Plan
Exhibit 18 (Added)	Copy of June 8 <sup>th</sup> , 2006 Publication in OEQC Notice

## Appendices

Appendix 1	Documentation of Pre-Assessment Consultation
Appendix 2	Archaeological Inventory Survey
Appendix 3	Cultural Impact Assessment
Appendix 4	Floral & Faunal Survey
Appendix 5	Historical Shoreline Erosion Study Prepared by EKNA Services, Inc.
Appendix 6	Professional Opinion of Shoreline Setback Distance Prepared by EKNA Services, Inc.
Appendix 7	Shoreline Certification Survey & Accompanying Data
Appendix 8	Documentation of CDUA Correspondence with OCCL
Appendix 9 (Added)	Documentation of Draft EA Agency Comments

**SECTION I**  
**PROJECT DESCRIPTION**

**A. OWNER / APPLICANT**

Kent Browning  
64 Saddleback Road  
Rolling Hills, CA 90274

**Consultant for Applicant:**

Landmark Consulting Services  
Contact: Ben Welborn  
P.O. Box 915  
Hanalei, HI 96714  
Phone: (808) 828-6332  
Fax: (808) 828-6242  
Email: welborn@aloha.net

**B. APPROVING AGENCY**

State of Hawaii  
Board of Land and Natural Resources (BLNR)  
P.O. Box 621  
Honolulu, HI 96813

**C. PROPOSED ACTION**

The Applicant, Kent Browning, proposes to construct a four (4) bedroom Single-Family Residence (SFR) of approximately 3,480 square feet, on the subject 23,714 square foot parcel. The structure will be constructed on piers, elevated from 10'4" to 15'0" above the existing grade to conform to applicable County and Federal flood standards. The lowest horizontal structural member of the residence will have a minimum elevation of 30 feet above Mean Sea Level (MSL). The 3,480 square foot structure will be comprised of approximately 2,785 square feet of interior living space and 695 square feet of covered lanai (deck) areas. In addition to the four (4) bedrooms, there will be a kitchen, four (4) bathrooms, a "great room", a laundry room, a stairwell, and various storage closets. Refer to Exhibits 9-14 for architectural details and exterior elevation perspectives of the proposed residence.

The architecture of the building is of a simple contemporary tropical style, which takes full advantage of the beautiful ocean and mountain views that the parcel has to offer. *Exterior colors and finishes of all structures, including roof colors, shall be limited to medium to dark earth tones or other colors compatible with the area's natural surroundings. Use of reflective materials or colors shall be prohibited. The proposed color scheme shall be submitted to the County of Kauai Planning Department for review and approval prior to building permit approval. Furthermore, in order to*

*minimize adverse impacts on the Federally Listed Threatened Species, Newell's Shearwater and other seabirds, all external lighting shall be only of the following types: shielded lights, cut-off luminaries, or indirect lighting. Spotlights aimed upward or spotlighting of structures or physical features shall be prohibited.*

Minimal site grading will occur, primarily for the driveway, the septic system and within the footprint of the home site itself. The maximum height of the proposed structure is to be 30'0" feet above existing grade.

Landscaping will be used to soften the visual impact of the proposed structure from adjoining property owners, the beach, and public roadways. *Landscaping will consist of native species, Polynesian introductions and other common landscape varieties which are known to be compatible with the soils and climate of the area. A representative sampling of landscape plants is included on the Landscape Plan (Exhibit 17). Other compatible species may be used in addition to those shown on the plan.*

A 6 ft. high lava rock wall is proposed along the property boundaries that are contiguous with Road E and Kuhio Highway, a lower 3 ft. high section of the wall is proposed in a radius at the southeast corner of the parcel to give it a more appealing visual impact (refer to Exhibit 9 – Site Plan for wall layout). *Due to the fact that the subject parcel is located adjacent to a busy vehicular and pedestrian public right-of-way to the beach (Roadway E), the Applicants are requesting that the BLNR allow for the construction of the proposed lava rock wall which would terminate at the certified shoreline. This rock wall would replace the existing fence line. The boundary wall would be heavily landscaped on the interior/backside to soften its visual impact and to provide a buffer between the Browning residence and the public right-of-way (a benefit to both the homeowners and the general public). Aesthetically this will be far superior to the "barracks" appearance of a wire fence. A primary concern in this boundary matter is the lack of public restroom facilities in the immediate vicinity of the beach access and the common practice of people "using the bushes" to relieve themselves. This poses a significant public health concern. Other concerns include the heightened shoreline erosion which is caused by the heavy foot traffic of beachgoers along the shoreline reach of the right-of-way. A rock wall would prevent the trespass of beachgoers onto the Browning parcel and the associated acceleration of erosion along the seaward edge of their property. Liability and security risks associated with the public right-of-way further justify this boundary wall. If the proposed rock wall is approved by the BLNR, then a County shoreline setback variance will be applied for.*

D. ANTICIPATED DETERMINATION

EIS REQUIRED \_\_\_\_\_

NOT REQUIRED  X



**E. PROJECT SITE LOCATION**

The subject parcel is located in Haena, approximately 7.2 miles west of Hanalei town on the northern coastal plain of Kauai. Refer to Exhibits for a graphic representation of the site location and characteristics.

TMK:	(4) 5-9-05: 029
Island:	Kauai
District:	Hanalei
Zoning:	Conservation
State Land Use:	Conservation (Limited Subzone)
County General Plan:	Conservation; Open / Special Management Area (SMA)
Current Land Use:	Vacant Undeveloped Land
Proposed Land Use:	Single-Family Residence
Adjacent Land Use:	Residential Development & Vacant Parcels

**F. NECESSARY PERMITS AND ENVIRONMENTAL REQUIREMENTS**

- 1. State Conservation District Use Permit (CDUP)**  
Department of Land and Natural Resources, Planning Branch
- 2. Environmental Assessment**  
State Office of Environmental Quality Control  
Department of Health
- 3. County of Kauai Building Permit**  
Department of Public Works (with approval from other County agencies)
- 4. Special Management Area (SMA)**  
Determination of Exempt Status for Single-Family Residence  
County of Kauai Planning Department  
(Enclosed – Exhibit 16)
- 5. Individual Wastewater System (IWS) Permit**  
State Department of Health

G. **AGENCIES CONSULTED IN PREPARING ENVIRONMENTAL ASSESSMENT**

The following agencies and affected parties were consulted and provided with an opportunity to comment upon the proposed project prior to the preparation of this Final Environmental Assessment:

- DLNR, Land Division
- DLNR, Office of Conservation & Coastal Land
- DLNR, Division of State Parks
- DLNR, Division of Forestry and Wildlife
- DLNR, State Historic Preservation Division
- DLNR, Division of Aquatic Resources
- State Department of Health, Environmental Health Division
- State Department of Health, Environmental Planning Office
- Hanalei Community Association
- Office of Environmental Quality Control
- Office of Hawaiian Affairs
- County of Kaua'i Planning Dept.
- The Sierra Club, Kauai Chapter
- Department of the Army (a.k.a. The Army Corps of Engineers)
- Karen Sherwood & Michael Olanolan – Neighboring Property Owner
- Tamera Painter - Neighboring Property Owner
- Troy Eckert - Neighboring Property Owner
- Jess Jackson - Neighboring Property Owner
- Diane Faye - Neighboring Property Owner
- Nan Guslander - Neighboring Property Owner
- Edward Hayes - Neighboring Property Owner
- Germain Chandler - Neighboring Property Owner
- Ruth Chang - Neighboring Property Owner
- Langwith Berry - Neighboring Property Owner

All pre-assessment comments to the Draft EA that were received and responses thereto are included in Appendix 1. Where applicable, agency requirements and recommendations have been addressed and incorporated into both the Draft and Final EA. *Substantive additional comments to the Draft EA were received from the following agencies during the public comment period:*

- *DLNR, State Historic Preservation Division*
- *DLNR, Division of Aquatic Resources*
- *DLNR, Office of Conservation and Coastal Land*
- *County of Kauai, Planning Department*

*Responses to these comments are included in Appendix 9 and incorporated into the body of the Final EA.*

## H. PUBLIC POLICIES

### 1. STATE LAND USE LAW

The project site is situated within a Limited Subzone of the State Conservation District. The proposed action is therefore subject to the land use regulations and permit application review process of Chapter 13-5, Hawaii Administrative Rules, as administered by the Department of Land and Natural Resources.

The Applicant is proposing an identified use within the Limited Subzone. A Board Permit is being requested.

### 2. COUNTY GENERAL PLAN

The Kauai County's General Plan designates the project area as Conservation /Open Space. This represents the County's desire to manage large development within the vicinity and to promote open spaces, recreational uses, and natural landscapes wherever possible.

The Applicant is proposing to develop within a footprint of approximately 3,300 square feet on the 23,714 square foot parcel, which is equivalent to approximately 14% of the net area of the parcel. The remaining 86% of the parcel will be kept in open space, in a naturally landscaped setting consistent with the intent of the County's General Plan.

### 3. COUNTY ZONING

Conservation / Open

### 4. SPECIAL MANAGEMENT AREA

The project site is located within the Coastal Zone Special Management Area (SMA); as administered by the SMA Rules and Regulations of the County of Kauai. However, the construction of a Single-Family Residence is typically exempt from obtaining an SMA permit. A letter from the County of Kauai Planning Department confirming exempt status of the proposed action from SMA Permitting requirements is attached hereto as Exhibit 16. The proposed action shall not have a significant long-term or detrimental impact upon the coastal ecosystems, marine resources, beaches, shoreline, or flora and fauna of the area. Nor shall it impact scenic or open space resources in a negative manner. The project will not create any additional coastal hazards such as heightened erosion, subsidence, and/or pollution. The proposed residence is not part of a larger development planned for the area.

I. **PROJECT CHARACTERISTICS**

1. **GENERAL CHARACTERISTICS**

Refer to Section III – “Proposed Action” for a general description of the proposal.

2. **TECHNICAL CHARACTERISTICS**

Technically this action will authorize the Applicant to:

- Construct a Single-Family Residence and appurtenant infrastructure on the subject parcel.
- Construct a 6 ft. high dry stack lava rock wall as depicted on the Site Plan in Exhibit 9 and as described herein.
- Perform the necessary grading and grubbing work in preparing the parcel for construction, pursuant to the issuance of all additionally required permits.

3. **ECONOMIC CHARACTERISTICS**

Significant long-term economic impacts are not anticipated as a result of the proposed action. Should the proposal meet the approval of the Board, there would be a short-term benefit upon the local construction industry, and an increase in real-property tax values. Money paid into the construction industry would most likely generate income in other sectors of the local economy.

4. **SOCIAL CHARACTERISTICS**

There are no significant social benefits or negative impacts that are anticipated as a result of the proposed action. The Applicant will apply Best Management Practices (BMP) during the development of the parcel. Landscaping will be used to screen the proposed structure. The proposed use will not displace any exiting residences. The project site is currently vacant. A single new household in the area will not overburden existing public services or facilities.

5. **ENVIRONMENTAL CHARACTERISTICS**

The proposed action is not anticipated to have any significant long-term negative or beneficial impacts upon the environment. The proposed residence will not displace any existing agricultural or recreational land uses. No prime or unique lands of the State of Hawaii or its residents will be adversely affected by the proposed action. Section II of this Final EA, reviews in greater detail the potential

environmental impacts of the proposed action, and where applicable suggests measures for the mitigation of potentially negative outcomes.

6. TIME FRAME OF PROJECT

*The completion of project design and permitting is anticipated in the 4<sup>th</sup> Quarter of 2006. Construction of the residence is expected to commence shortly thereafter, most likely during the drier summer months of 2007. Barring any unforeseeable events, completion is anticipated for approximately 12 - 18 months thereafter, toward the end of 2008.*

7. FUNDING AND SOURCE

Development of the residence and appurtenant infrastructure is estimated to cost approximately \$1,050,000, which is roughly calculated as \$300.00 per square foot multiplied by the proposed 3,480 square feet of development area. The Applicant will privately fund the development of the project.

## SECTION II

### Summary Description of the Affected Environment & Identification of Potential Impacts and Proposed Mitigation

#### A. PHYSICAL SITE DESCRIPTION

The subject parcel is located in Haena, in the district of Hanalei, on the northern coastal plain of the Island of Kauai, Hawaii. The parcel is designated by Kauai Tax Map Key No. (4) 5-9-05: 029, and consists of approximately 23,714 square feet of undeveloped land. The location of the parcel is graphically depicted in the Exhibits attached hereto.

The subject parcel has direct vehicular access to Kuhio Highway which shares a common boundary with the property along its southerly border. The subject parcel is bounded to the east by an unnamed Roadway "E" which is owned by the County of Kauai. Roadway "E" provides public access to the beach and shoreline. To the north the property is bounded by the shoreline, and to the west by TMK (4) 5-9-05-028 a privately owned property. Numerous parcels within the vicinity of the subject property have been developed with single-family residences of a comparable size and architectural style.

#### B. EXISTING LAND USE

The project parcel is currently vacant and undeveloped.

#### C. TOPOGRAPY

The topography of the subject parcel rises fairly abruptly along its seaward edge (a.k.a. "the shoreline") to the top of what appears to be an old sand dune formation. The proposed shoreline is located near the top of this dune formation, a reasonable distance back from the leading edge of vegetation (Appendix 7). The top of the dune is approximately 21 feet above Mean Sea Level. From this high point, heading further inland, the property slopes gradually downward to its lowest elevation of approximately 14.8 feet above MSL near Kuhio Highway. The existing grade within the footprint of the proposed residence (which is located 61 feet back from the proposed shoreline) ranges from approximately 15'0" to 19'8" above MSL, with the higher elevations being closer to the ocean.

The topography of the parcel will be negligibly impacted within the footprint of the proposed SFR and along the course of the proposed driveway. Excavation will also occur within the area of the Individual Wastewater System (IWS). However, once the IWS is installed the area will be returned to the pre-existing grade. No other significant site grading will occur.

#### **D. FLORA AND FAUNA**

The subject parcel was surveyed by David W. Bender, Ecologist and Environmental Consultant in December of 2005. Attached hereto in Appendix 4 is Mr. Bender's Floral and Faunal survey of the subject parcel. The survey did not locate any plant or animal species that are Federally Listed as Threatened or Endangered. Nor did it identify any species that are candidates for Federal Listing. According to Bender "none of the species on the site could even be described as rare." Therefore, we can surmise that there are no rare or endangered native plants and/or animals present on the subject parcel that would suffer substantial negative impacts as a result of the proposed development of the Browning residence.

It is the Applicant's intention to retain many of the plants that are currently growing on the parcel and to supplement these with additional landscape varieties.

#### **E. SOILS**

According to the Soil Survey of the Island of Kauai, State of Hawaii, prepared by the U.S. Soil Conservation Service, Department of Agriculture, the project parcel is located on land characterized by *Mr - Mokuleia fine sandy loam* type soils. *Mr* soils have a moderately rapid permeability in the surface layer and rapid permeability in the subsoil. Runoff is very slow, and the erosion hazard is slight.

#### **F. CLIMATE**

Rainfall is estimated to be between approximately 70 and 100 inches per year. The proposed action should not affect the local or macro climates in any manner.

#### **G. AIR QUALITY**

The air quality in the project area is excellent. The rural character of the site, the prevailing tradewinds, and a close proximity to the ocean all combine to buffer the area against significant airborne pollutants.

During construction, minimal short-term impacts on air quality will result from dust-generated grading activities. The impacts will be temporary and relatively insignificant. Best Management Practices (BMP), including the sprinkling of exposed soils, will be employed to further minimize the impact of airborne dust. The inconvenience of dust associated with the proposed action is therefore anticipated to be negligible.

## H. NOISE IMPACT

The project parcel and adjoining properties are currently impacted by vehicular traffic noise along the frontage of Kuhio Highway. Other predominant sources of noise within the vicinity of the project include that associated with overhead tour helicopters, and the more pleasant sounds generated by the wind and sea. By and large, the project area has a very low and pleasant noise level, as one would expect of such a rural site.

Noise levels are anticipated to temporarily increase with the onset of construction. Increased noise will be associated with the use of heavy machinery during grading, as well as with the use of power tools and hammers during construction of the residence. Once the house is completed, the construction-related noise will cease. Mitigative measures will be implemented to lessen the impact of the short-term noise generated by construction. This shall include the use of muffling devices on all gasoline or diesel-powered equipment. Furthermore, construction activities shall be restricted to the working hours between 7:30 AM and 5:30 PM.

Long-term noise resulting from the proposed action will be similar to that which is generated by other Single-Family Residences within the surrounding area. The proposed activities will not violate any State regulations regarding noise levels.

## I. ARCHAEOLOGICAL AND HISTORICAL SITES

As required by the State Historic Preservation Division (SHPD), an Archaeological Inventory Survey was conducted on the subject parcel by *T.S. Dye & Colleagues, Archaeologists, Inc.* in order to determine the presence or absence of archaeological features on the subject property and to assess their significance. Investigative trenching was carried out by the archaeologists. There were no findings of cultural deposits or burials. Upon review of the assessment report, the SHPD in a letter dated November 30, 2005, determined the survey work and accompanying report to be acceptable. SHPD further recommended that archaeological monitoring take place during all subsurface construction work. As requested by SHPD, an archaeological monitoring plan *shall be* submitted on the Applicant's behalf to satisfy this requirement. The Monitoring Plan shall comply with the following specifications:

1. *A qualified archaeological monitor shall be present during all ground-altering activities which are conducted in the project area in order to document any historic properties which may be encountered and to provide mitigation measures as necessary.*
2. *An archaeological monitoring plan will be prepared and submitted to the SHPD for review and approval prior to the commencement of any ground-altering activities. The archaeological monitoring plan will contain the following:*
  - a) *The kinds of remains that are anticipated and where in the construction area the remains are likely to be found.*
  - b) *The manner in which the remains and deposits will be documented.*
  - c) *The manner in which the expected types of remains will be treated.*



- d) Provide that the archaeologist conducting the monitoring will have the authority to halt construction in the immediate area of the find(s) in order to carry out the plan requirements.
  - e) Provide that a coordination meeting between the archaeologist and the construction crew take place prior to ground-altering activities so that the construction team is aware of the monitoring plan and its requirements.
  - f) Specify what laboratory work will be done on the remains which are collected.
  - g) Provide a schedule of report preparation.
  - h) Provide details concerning the archiving of any collections that are made.
  - i) Submit an acceptable report documenting the findings of the monitoring activities to the State Historic Preservation Division for review following the completion of the proposed undertaking.
3. The State Historic Preservation Division (O`ahu Office) shall be notified via facsimile at 808-692-8020 upon the on-set and completion of the proposed project.
4. If burials are discovered during construction activities, then a burial treatment plan (BTP) shall be prepared and submitted to the SHPD for review and approval. The BTP shall be prepared following consultation with native Hawaiians, the Kauai/Niihau Islands Burial Council, and the Office of Hawaiian Affairs. The BTP shall adhere to the procedures outlined in Chapter 6E-43, HAR.

Refer to Appendix 2 for full documentation of the archaeological report & SHPD response. There are no historic or archaeological sites listed on the State or Federal Registers for the subject parcel.

In the event that human burials are inadvertently discovered during construction activities, the owner/Applicant understands that all work must immediately stop within the vicinity of the burials, and the SHPD as well as the police shall be promptly contacted to determine the jurisdiction and proper mitigation protocol for the burials.

#### J. CULTURAL IMPACTS

See attached Cultural Impact Assessment – Appendix 3

#### K. VISUAL IMPACTS

The proposed residence will be situated in a partially developed rural residential neighborhood. Homes in the area are a mix of both old and new. The construction of a single new residence will blend in with the existing residential development and the surrounding environment. Earth tone colors will be used on all exterior surfaces. Landscaping and lava rock walls will be used to soften the visual impact of the new residence as it is viewed from the adjoining roadways and nearby parcels. The proposed residence will be setback approximately 61 feet from the shoreline; therefore it will not

be readily visible from the beach. The residence will not obstruct any views toward significant landmarks or vistas, either from the beach or other public vantage points.

#### **L. NATURAL HAZARDS**

The area of proposed impact is situated within Flood Zone VE 30 as designated on the Federal Flood Insurance Rate Map (FIRM) - - refer to FIRM Map # 1500020030 D dated October 18, 2002 (Exhibit 7). Zone VE is defined as a coastal flood area with a velocity hazard due to its potential susceptibility to inundation by tsunami. County and Federal regulations regarding structures located within this coastal high-hazard area require a "base flood elevation" for the lowest horizontal structural member of the proposed residence to be 30 ft. above mean sea level (MSL). The design of the proposed residence is in compliance with these County and Federal flood regulations.

As with all coastal development, the impact of cumulative shoreline erosion can pose a long-term threat to structures which are constructed too near to the shoreline. Therefore in order to accurately determine a reasonable shoreline setback distance for the proposed residence, the Applicant contracted with EKNA Services, Inc., a Honolulu based firm with coastal engineering expertise. Elaine Tamaye, President of EKNA Services conducted a Historical Shoreline Erosion Study for the parcel and adjacent shoreline reaches which relied upon aerial photographic data dating back to 1950 (Appendix 5). Based upon this analysis, EKNA calculated an average annual erosion rate for the subject property of 0.22 feet/year. Following the recommendations of the State of Hawaii, Coast Hazard Mitigation Guidebook (*Guidebook*), EKNA further adjusted the average annual erosion rate to account for error (20%) and for accelerated sea level rise (10%). The resulting adjusted erosion rate for the parcel is 0.29 feet/year. The *Guidebook* recommends a 70-year useful lifespan for new structures. Applying this 70-year lifespan to the adjusted annual erosion rate for the parcel, the erosion zone is determined to be 20.3 feet ( $70 \times 0.29 \text{ ft/yr.} = 20.3 \text{ feet}$ ). The *Guidebook* further recommends a storm event buffer of 20 ft., plus a safety/design buffer of 20 ft., resulting in a total recommended setback distance of 60.3 feet. Based upon these studies, the Applicant is proposing to set the residence 61 feet back from the certified shoreline. Appendices 5 & 6 contain detailed information to support this decision. Notwithstanding shoreline erosion, other erosion concerns for the subject property are negligible due to the relatively flat topography of the parcel, and the high permeability of its sandy soils.

Kauai is the oldest of the major Hawaiian Islands; therefore, there are no active or dormant volcanoes which pose a threat to the parcel.

#### **M. LAND USE CLASSIFICATIONS & COMPATIBILITY WITH SURROUNDING ENVIRONMENT**

The State Land Use Commission designates the subject property as Conservation. The County General Plan classifies the property and surrounding areas as Conservation/Open.

No land use or zoning changes are required as a result of the proposed action. The construction of a single family residence is consistent with and supportive of both the State's and the County's allowable land uses as well as the intent of the Haena Hui.

#### **N. PUBLIC SERVICES AND FACILITIES**

The construction of the proposed Single-Family Residence on the parcel shall not place an unreasonable additional burden upon public agencies or public utility providers servicing the area.

##### **1. ACCESS**

The parcel is provided with vehicular access via Kuhio Highway.

##### **2. WATER**

County water is available to the parcel. No additional source or storage facilities are required for the proposed action.

##### **3. WASTEWATER**

Residential and public wastewater within the project vicinity is treated through the use of individual septic systems. There are no municipal treatment plant facilities or public sewer pipelines associated with the project area, nor are any planned for the future. Prior to the construction of the proposed SFR, the Applicant will be required to apply for a building permit from the County of Kauai. A component of the building permit application is a State Department of Health approved Individual Wastewater System (IWS) plan in accordance with the Department of Health's Administrative Rules, Chapter 11-62, "Wastewater Systems".

##### **4. SOLID WASTE**

Residential solid waste is collected at curbside along Kuhio Highway on a weekly basis. Collected waste is compacted and transported to the Kekaha landfill for disposal. Recycling of aluminum, glass, cardboard and junk mail are all available at the Princeville transfer station. Green waste will be composted on site.

##### **5. FIRE PROTECTION**

Fire protection is provided by the County of Kauai. The nearest fire station is in Princeville with an estimated response time of approximately 15 minutes to the subject parcel. Under extreme emergency conditions, both the Kapaa and Lihue fire stations are prepared to respond to calls within the project area.

6. **EMERGENCY MEDICAL SERVICE**

Emergency medical service is provided by the Princeville fire station in conjunction with American Medical Response (AMR) a private medic firm, which is contracted with the State Department of Health. Response time is approximately 15 minutes to the subject property.

7. **POLICE PROTECTION**

Police protection is provided by the Kauai Police Department. The closest substation is located in Princeville, approximately 15 minutes from the project parcel.

8. **PUBLIC SCHOOLS**

Public schools servicing the Haena area are Hanalei School (Grades K-6), Kapaa Middle School (Grades 7 & 8), and Kapaa High School (Grades 9 – 12). Private schools provide another alternative.

9. **UTILITIES**

Electrical power is provided by the Kauai Island Utility Cooperative (KIUC) and telephone service is provided by GTE Hawaiian Telephone. Utilities are supplied via overhead distribution lines along Kuhio Highway. All utility easements are in place.

O. **AQUATIC RESOURCES**

The subject parcel is contiguous with the shoreline. No shoreline improvements or alterations are proposed. Rather, the proposed residence will be set back approximately 61 feet from the State certified shoreline.

1. **Waterbody Type and Class** - - As defined by Hawaii Administrative Rules, Chapter 11-54-2, the waters adjacent to the subject parcel are classified as Class AA Open Coastal Marine Waters with bottom subtypes being a mixture of Sand Beaches and Reef Flats.
2. **National Pollutant Discharge Elimination System (NPDES) General Permit** -- the proposed actions do not trigger the criteria for a NPDES general permit. Specifically:
  - . Construction activities, including clearing, grading, and excavation will not result in the disturbance of equal to or greater than one (1) acre of total land area. The subject parcel is approximately 23,714 square feet in size (equivalent to approximately 0.54 acres) and the proposed action is for the construction of a residence of approximately 3,480 square feet. Ground disturbance outside of the immediate footprint of the proposed residence will be minimal and shall be limited primarily to excavation for an Individual Wastewater System. No grading, grubbing, or excavation shall occur within close proximity to the shoreline.
  - . As a component of the proposed action, we do not intend nor do we anticipate the need to undertake any hydro testing or any discharge associated therewith.

. No discharge of construction dewatering effluent into the adjacent oceanic waters is planned.

3. **NPDES, Individual Permit** – once again, based upon the proposed project characteristics an Individual NPDES permit will not be necessary. It is anticipated that there will be no wastewater discharged into the State waters as a result of the proposed actions.
4. **Impaired Waters in the State of Hawaii** – The proposed action will not affect any bodies of water that appear on the current *List of Impaired Waters in Hawaii*.
5. **Best Management Practices** – the following measures shall be implemented to contain fugitive dust and runoff on the project site:
  - Construction activities shall be restricted to areas of least impact.
  - *Ground-altering activities will be restricted to periods of minimal rainfall and/or low runoff.*
  - *Areas denuded of vegetation or susceptible to erosion shall be re-stabilized through the planting of new vegetation and the use of silt retention measures (where necessary).*
  - *Precautions shall be take to prevent debris, landscaping chemicals, eroded soil, petroleum products and other potential contaminants from flowing, blowing or leaching into the coastal waters.*
  - Job site clean-up shall occur regularly to contain and properly dispose of dust and debris generated by construction activities.

**SECTION III**  
**SUMMARY OF MAJOR IMPACTS &**  
**ALTERNATIVES CONSIDERED TO THE PROPOSED ACTION**

**A. SUMMARY OF MAJOR IMPACTS**

The subject parcel is currently characterized by undeveloped land. The proposed action will result in the construction of a Single-Family Residence, which will occupy a footprint of approximately 14% of the total net parcel area. The remainder of the lot (approximately 86%) will be landscaped and kept in open space. Site grading will be minimal in the vicinity of the footprint, access driveway and septic system for the proposed structure (refer to Site Plan, Exhibit 9). The residential design and construction materials shall be compatible with the natural environment and existing development in the area.

Long-term impacts of the proposed action shall include an incremental increase in traffic along Kuhio Highway and the perpetual increase in the demand for associated public utilities. Short-term impacts associated with the development of the proposed residence will include construction noise, minor dust, and construction related traffic along Kuhio Highway. Cumulative shoreline erosion poses the most significant long term impact potential, however the proposed residence is set conservatively back from the shoreline so as to mitigate this concern. Other erosion impacts are negligible due to the gentle slopes of the parcel and the permeability of the sandy soils characteristic of the area.

**B. ALTERNATIVES CONSIDERED**

**1. NO ACTION**

A "No Action" alternative would result in no construction of a residence on the subject parcel. There would be no construction activity and related employment prospects. There would be no increase in the land value or associated government revenues from higher property taxes. Moreover, the owners will not be able to use the property for their personal and preferred use. For these reasons, a no-action alternative is not favorable.

**2. ALTERNATIVE LOCATION**

The location of the proposed structure on the subject parcel, as graphically depicted in the Residential Site Plan (Exhibit 9), is limited by the width dimension of the parcel and the preferred view orientation of the residence. Situating the proposed residence further back from the ocean is undesirable from the standpoint of the Applicant and unwarranted by the findings of the Historical Shoreline Erosion Analysis conducted by EKNA services. The proposed 61-foot shoreline setback is conservative and relies upon an accurate scientific interpretation of historical data.

3. ALTERNATIVE USE

The Applicant has not identified any alternative uses for the subject parcel which would satisfy his needs. The construction of a residence was the primary reason for the purchase of the property from its previous owner.

C. SUMMARY OF MITIGATIVE MEASURES

The major impacts of the proposed action will occur during the construction of the proposed residence. As described herein, the primary impacts will be construction related noise and dust, as well as a temporary increase in construction related traffic along Kuhio Highway.

The Applicant will implement all of the mitigative measures describe herein to prevent or reduce anticipated construction related impacts. Best Management Practices will be employed during construction to minimize airborne pollutants and dust. The heavy equipment that will be used for site grading will be properly maintained and equipped with exhaust systems and muffling devices to minimize their emissions and noise levels. Construction activities will be limited to the working hours between 7:30 AM and 5:30 PM. Noise levels shall comply with the State of Hawaii, Department of Health noise regulations. Furthermore, the Applicant agrees to adhere to any additional measures that the Board may recommend to insure against environmental degradation.

## SECTION IV

### EXPECTED DETERMINATION & SIGNIFICANCE CRITERIA

**A. DETERMINATION:**

This Final Environmental Assessment concludes that **no significant negative impacts** upon the environment, be they primary, secondary or cumulative, will result due to the implementation of the proposed action. Furthermore, the action does not have any associated hidden long-term environmental or social costs. The proposed construction of a Single-Family Residence is an identified land use within the Limited Subzone of the Conservation District. As such, in compliance with HRS 343 11-200-11, a **Finding of No Significant Impact (FONSI)** is anticipated. Therefore it is the Applicant's opinion that the manageable impacts of the project do not warrant the preparation of an Environmental Impact Statement.

**B. SIGNIFICANCE CRITERIA:**

Chapter 200 of Title 11, Administrative Rules of the department of Health which is entitled "Environmental Impact Statement Rules" establishes significance criteria for evaluating the impacts of a proposed action upon the environment. The relationship of the proposed **Browning Single-Family Residence** to each of these criteria is reviewed below:

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

The proposed action will not involve a loss or destruction of any natural or cultural resources.

2. **Curtails the range of beneficial uses of the environment.**

The proposed action will not curtail the range of beneficial uses of the environment. Long-term negative environmental impacts are not anticipated as a result of the proposed action. All development is proposed to occur on private property.



3. **Conflicts 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.**  
The project does not conflict with the State's long-term environmental policies, goals and guidelines.
4. **Substantially affects the economic or social welfare of the community or State.**  
The project will not have a significant impact upon either the economic or social welfare of the community or State.
5. **Substantially affects public health.**  
The proposed action is not anticipated to substantially or negatively impact public health. The air quality and noise impacts that will result during the construction of the proposed residence will be of a *short-term* and insubstantial nature.
6. **Involves substantial secondary impacts, such as population changes or effects on public facilities.**  
The proposed action will not involve substantial secondary impacts. The development of a Single-Family Residence in an area which is already characterized by similar residential development will not create any additional pressures of a substantial nature.
7. **Involves a substantial degradation of the environmental quality.**  
The proposed action is not anticipated to have a negative impact upon the environment.
8. **Is individually limited, but cumulatively has considerable effect upon the environment or involves a commitment for larger actions.**  
The proposed project will not create a commitment for any larger action, nor will it contribute to a cumulative negative effect upon the environment. The proposed action is a stand-alone development project for the construction of a Single-Family Residence.
9. **Substantially affects a rare, threatened, or endangered species or habitat.**  
The project area is devoid of any rare, threatened or endangered species. The project will not place any nearby habitat at risk.

**10. Detrimently affects air or water quality or ambient noise levels.**

As identified in the text of this Environmental Assessment, air quality and noise levels will be affected throughout the various phases of project construction. Nevertheless, measures are proposed herein which will help to mitigate the extent of such impacts. No long-term negative impacts will result upon the air or water quality or upon ambient noise levels as a result of the proposed action.

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

The project is situated in Zone VE 30 as designated on the Federal Flood Insurance Rate Map (FIRM) prepared by the National Flood Insurance Program. Zone VE is defined as a coastal flood area with a velocity hazard (wave action) susceptible to tsunami inundation. County and Federal regulations regarding structures located within this coastal high hazard area require a base flood elevation for the lowest horizontal structural member of the proposed residence to be 30 ft. above mean sea level. The design of the proposed residence is entirely compliant with these FIRM guidelines.

**12. Substantially affects scenic vistas and viewplains identified in County or State plans or studies.**

The proposed action will not substantially affect scenic vistas and/or public view plains. The proposed residence will not be readily visible from Kuhio Highway or the beach. The Applicant proposes to landscape the parcel with appropriate vegetation to soften the visual impact of the development from adjacent roadways and parcels.

**13. Requires substantial energy consumption.**

The proposed Single-Family Residence will not consume substantial or undue amounts of energy.

## SECTION V

### PERMITS, VARIANCES, AND APPROVALS

**A. SPECIAL MANAGEMENT AREA USE PERMIT**

Since the project site is located within the Special Management Area (SMA), it is subject to the SMA Rules and Regulations of the County of Kauai; however, because the project is a Single-Family Residence, it is exempt from the SMA requirements. A letter from the County of Kauai Planning Department confirming SMA exempt status is included as Exhibit 16.

**B. SHORELINE SETBACK CERTIFICATION / VARIANCE**

A shoreline survey has been submitted to the State DLNR, Land Division for review and certification. *This shoreline survey was later appealed and is currently undergoing the appeal process. Copies of the proposed shoreline survey & submittal materials are included herewith as Appendix 7. As soon as the shoreline is determined a setback distance may be calculated. Since the time is running out toward the November 11<sup>th</sup>, 180-day Expiration Date for CDUA KA-3309 we ask that the DLNR move on the appeal process as soon as possible.*

**C. OTHER DEPARTMENTAL PERMITS**

Additional construction related permits shall be obtained from both County and State agencies as is required of the Building Permit process which is administered by the Department of Public Works, County of Kauai. This shall include among other things a Department of Health approval for an Individual Wastewater System (IWS), and Public Works approval for grading, grubbing and structural design.

# **EXHIBITS**

## **Browning Single Family Residence Final Environmental Assessment**

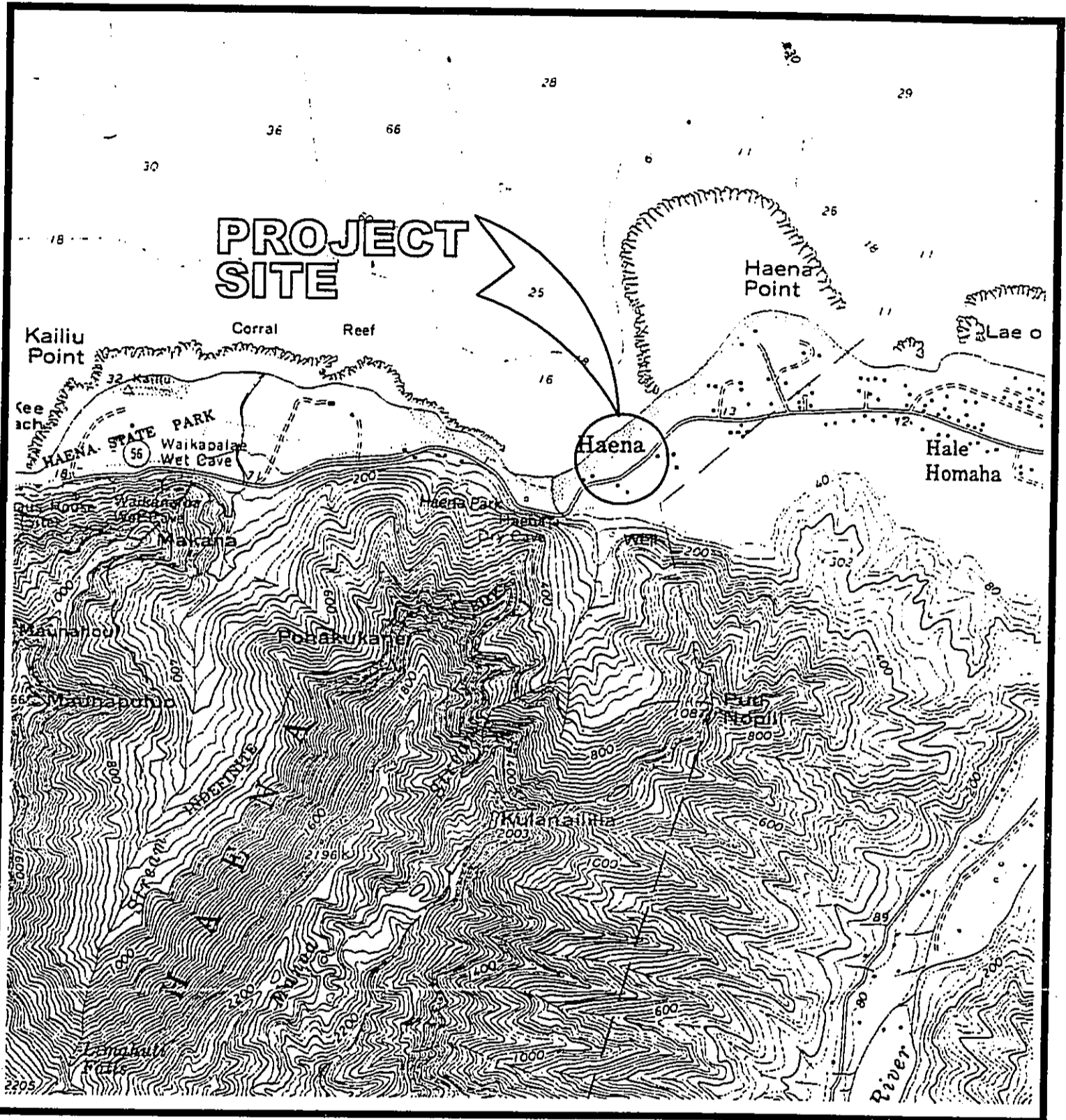
**TMK (4) 5-9-05: 029  
Ha`ena, Kaua`i, Hawai`i**





Wagner Engineering Services, Inc.  
 P.O. Box 851 Hanalei, HI 96714 (808) 826-7256

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VICINITY MAP  
 BROWNING SINGLE FAMILY RESIDENCE  
 HAENA, KAUAI, HAWAII  
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EXHIBIT 2



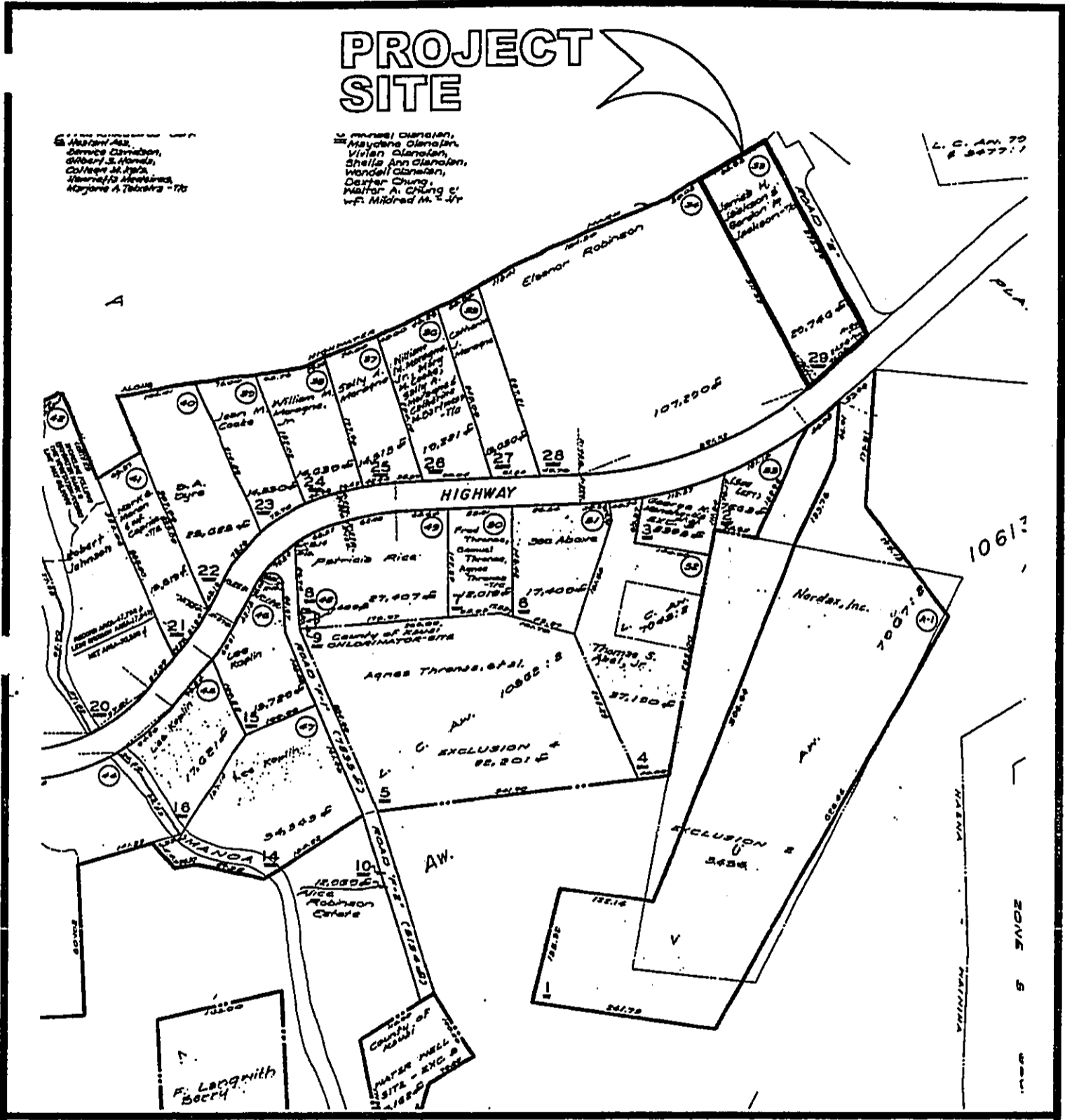
Wagner Engineering Services, Inc.  
P.O. Box 851 Hanalei, HI 96714 (808) 826-7256

# PROJECT SITE

5. Nelson A. Lee,  
Service Commission,  
Gilbert S. Hanks,  
College M. Hanks,  
Harriet M. Hanks,  
Marjorie A. Tabara - 76

6. Ernest Olanoff,  
Maylene Olanoff,  
Vivian Olanoff,  
Shelia Ann Olanoff,  
Wendell Olanoff,  
Dexter Chung,  
Milton A. Chung C,  
w/ Mildred M. C. Jr

L. C. Am. 70  
# 347711



TAX MAP (4) 5-9 -05:29  
BROWNING SINGLE FAMILY RESIDENCE  
HAENA, KAUAI, HAWAII

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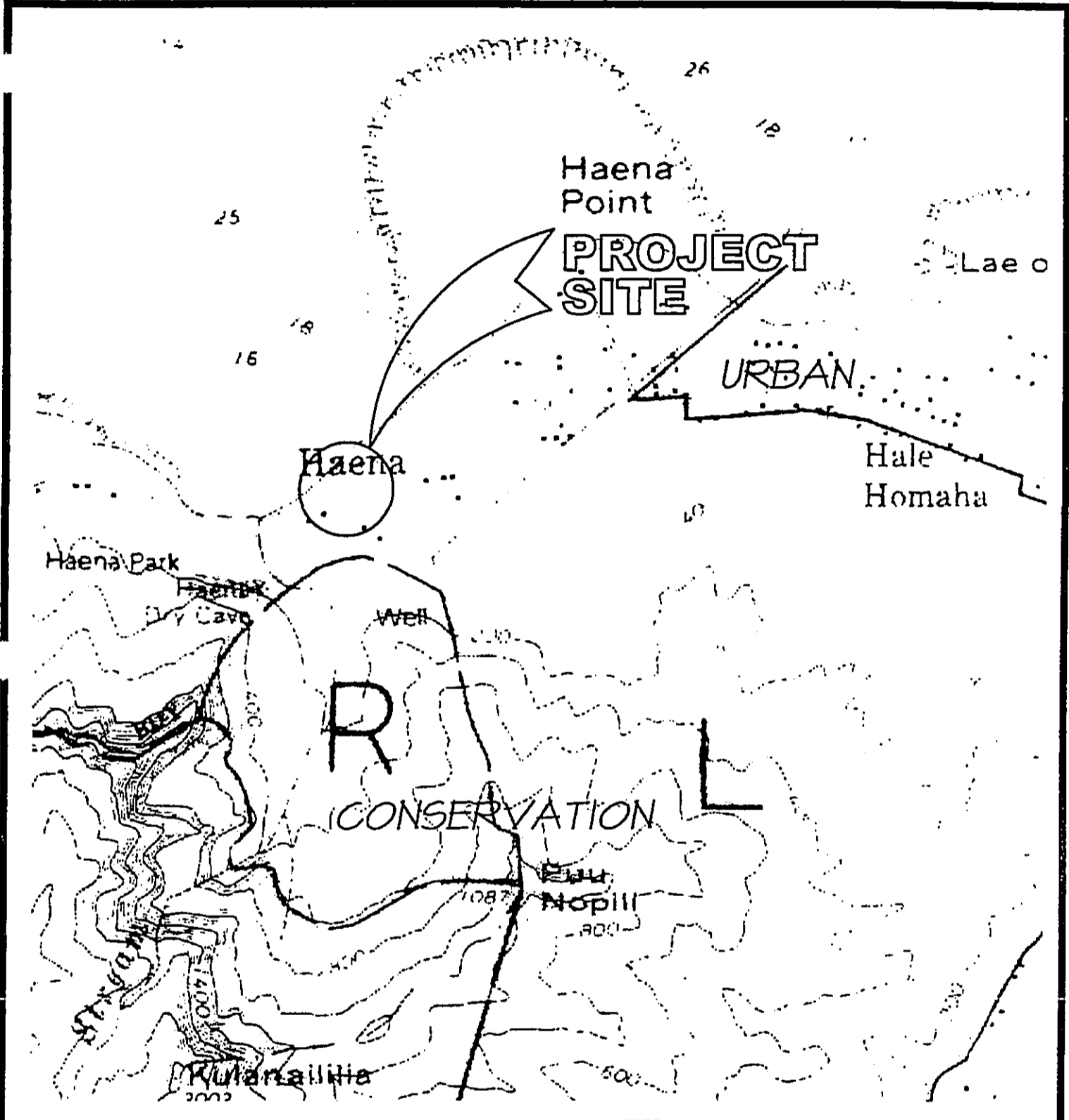
EXHIBIT 3

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STATE CONSERVATION DISTRICT SUBZONE MAP

BROWNING SINGLE FAMILY RESIDENCE  
 HAENA, KAUAI, HAWAII  
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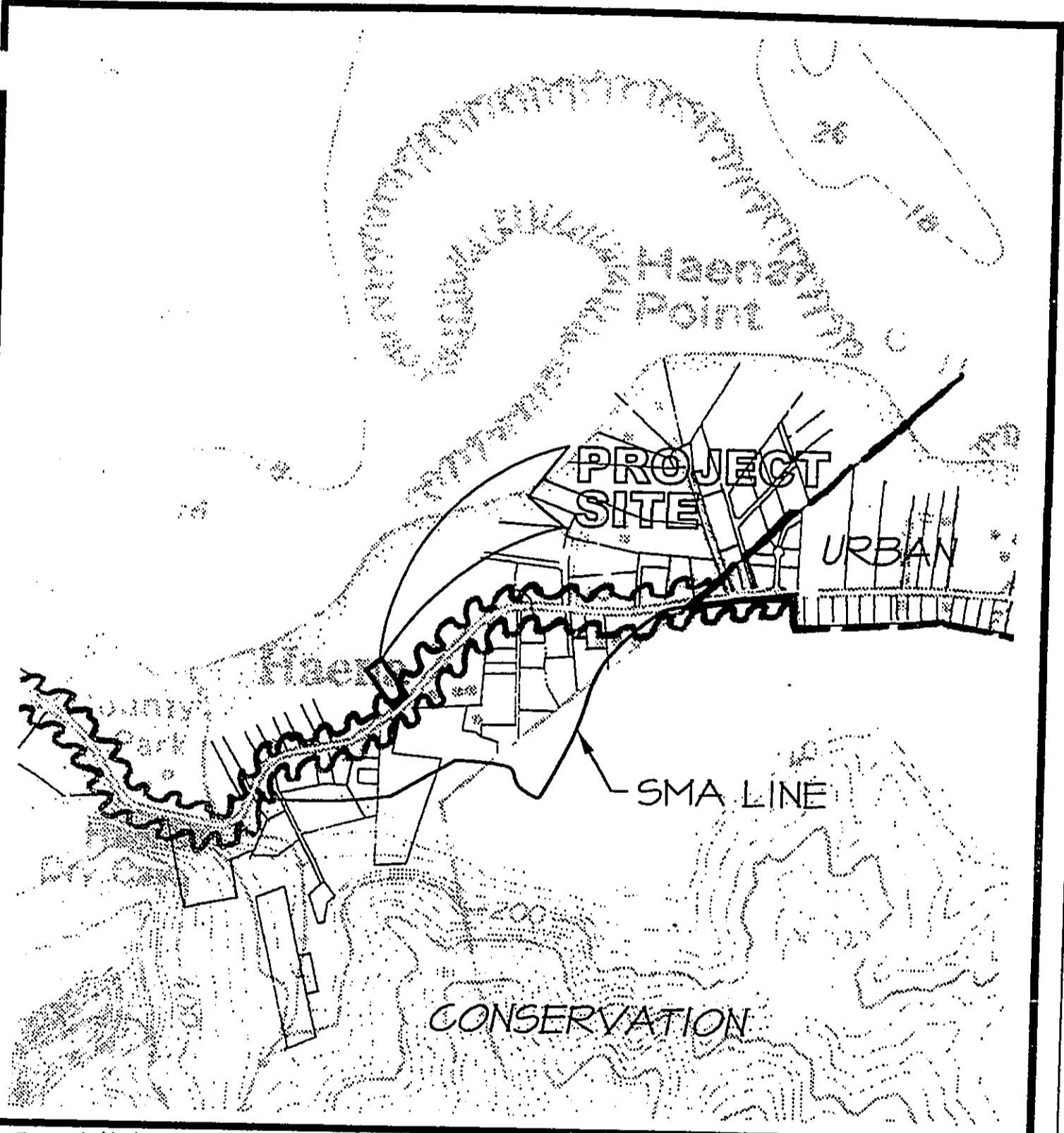
EXHIBIT 4





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COUNTY ZONING MAP

BROWNING SINGLE FAMILY RESIDENCE  
 HAENA, KAUAI, HAWAII

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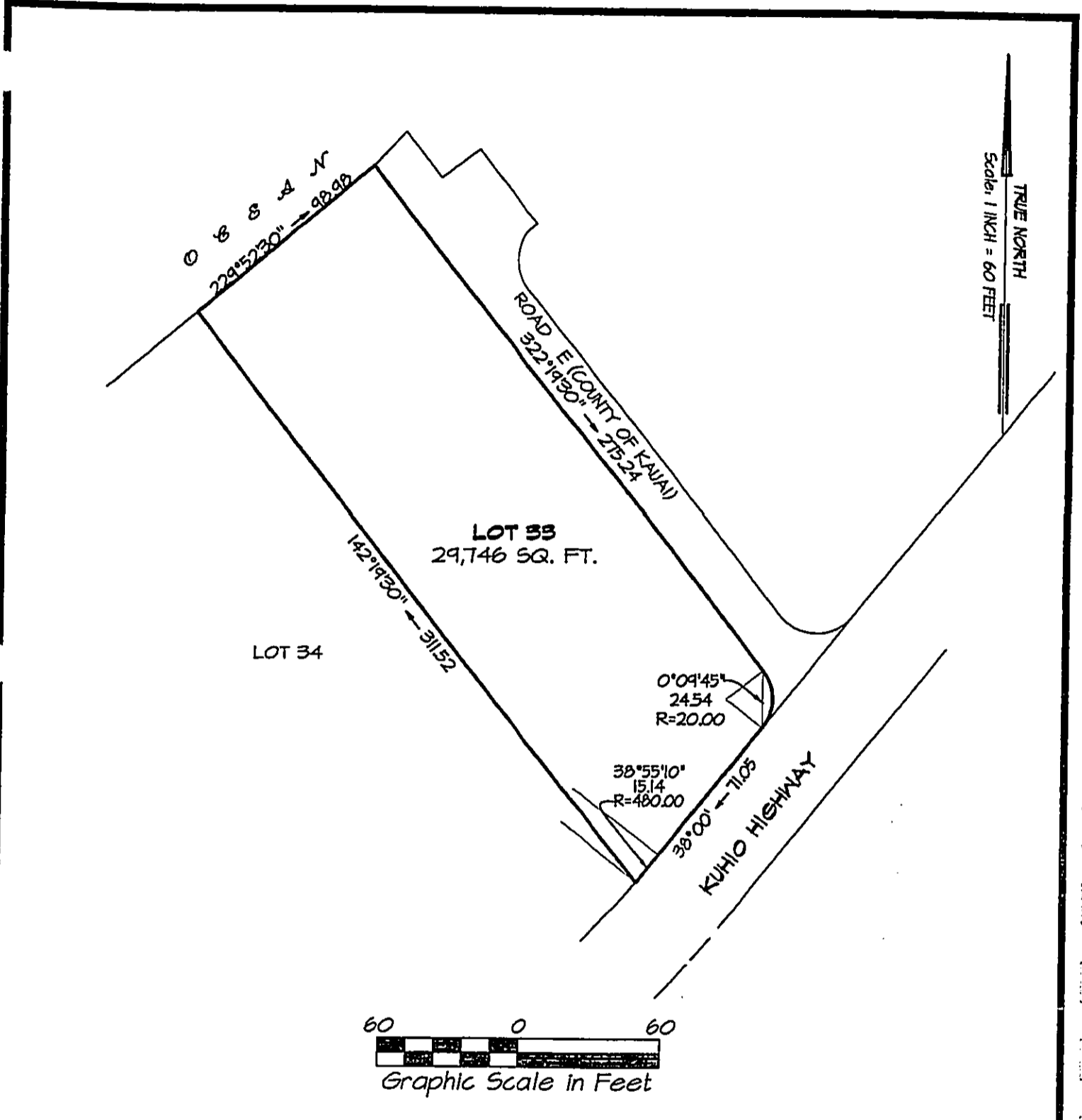
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EXHIBIT 5



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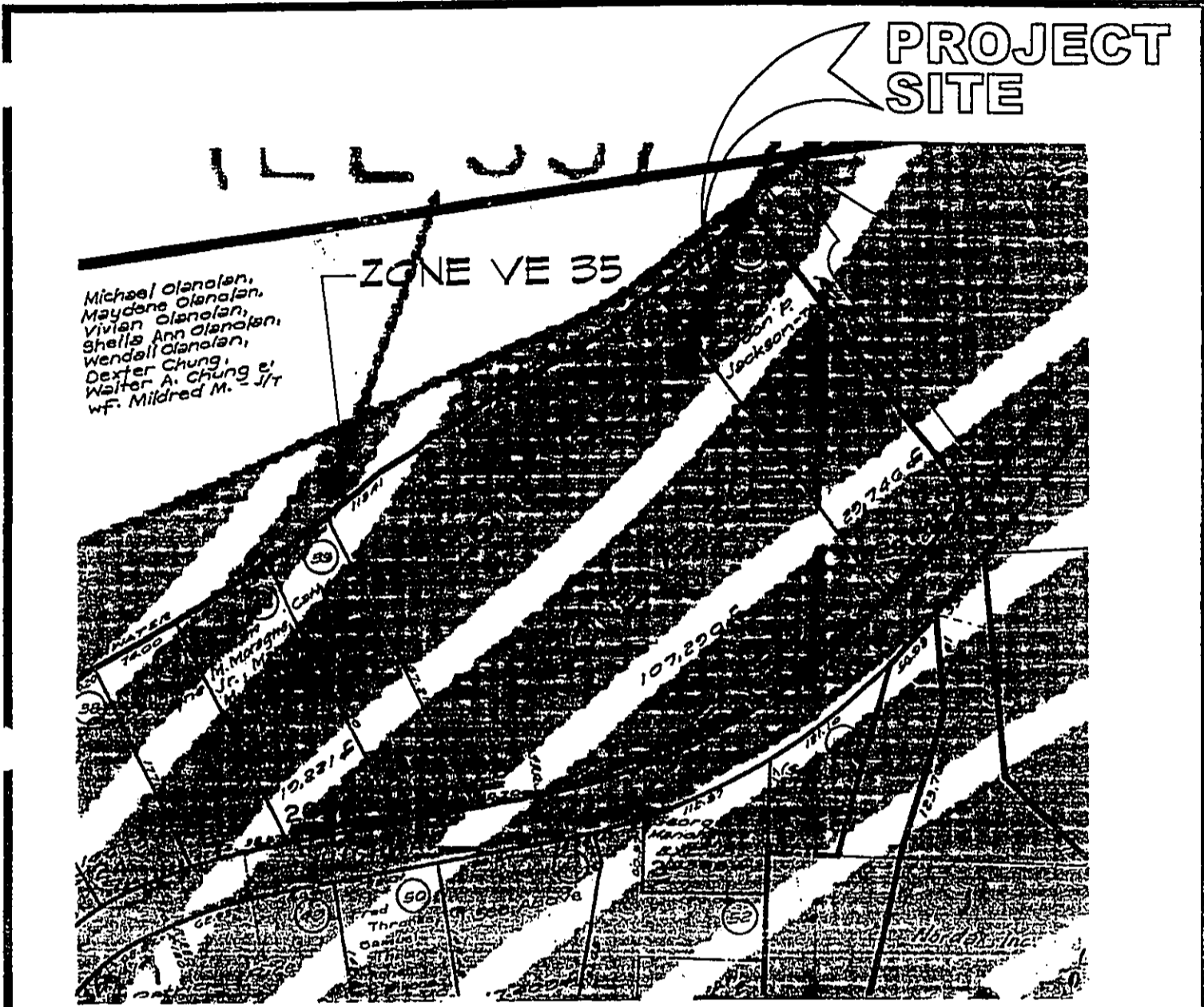
**PLOT PLAN**  
 BROWNING SINGLE FAMILY RESIDENCE  
 HAENA, KAUAI, HAWAII  
 T.M.K. (4) 5-9-05:29

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EXHIBIT 6



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SUBJECT PARCEL LIES WITHIN FLOOD ZONE VE 24, VE 30, AND VE 34, COASTAL HIGH HAZARD AREA SUSCEPTIBLE TO TSUNAMI INUNDATION PER FIRM MAP # 1500020030 D DATED OCTOBER 18, 2002

FLOOD ZONE

BROWNING SINGLE FAMILY RESIDENCE  
 HAENA, KAUAI, HAWAII  
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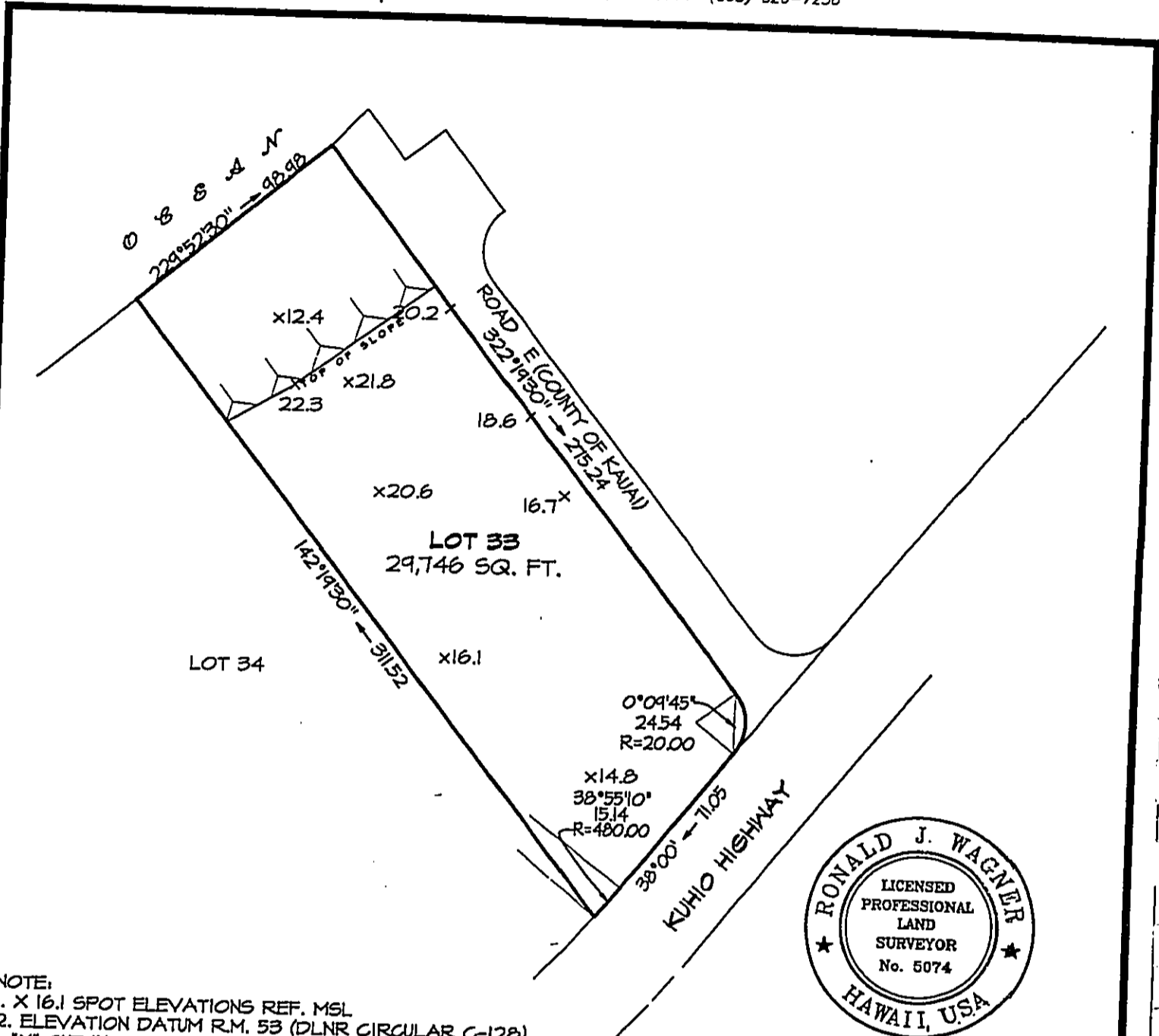
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EXHIBIT 7

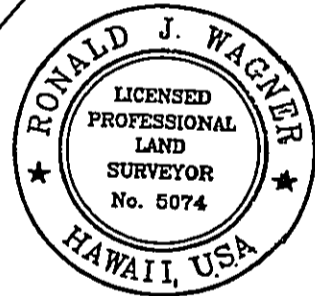
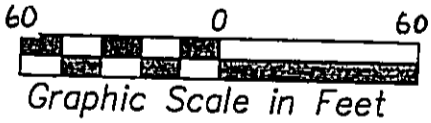
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NOTE:  
 1. X 16.1 SPOT ELEVATIONS REF. MSL  
 2. ELEVATION DATUM R.M. 53 (DLNR CIRCULAR C-128)  
 "X" CUT IN CONC. SLAB, HAENA BEACH PARK  
 ELEVATION = 16.41'



This map was prepared by me  
 or under my direct supervision.

*Ronald J. Wagner*  
 RONALD J. WAGNER  
 Licensed Professional Land Surveyor  
 Certificate Number 5074.

# ELEVATION CERTIFICATE

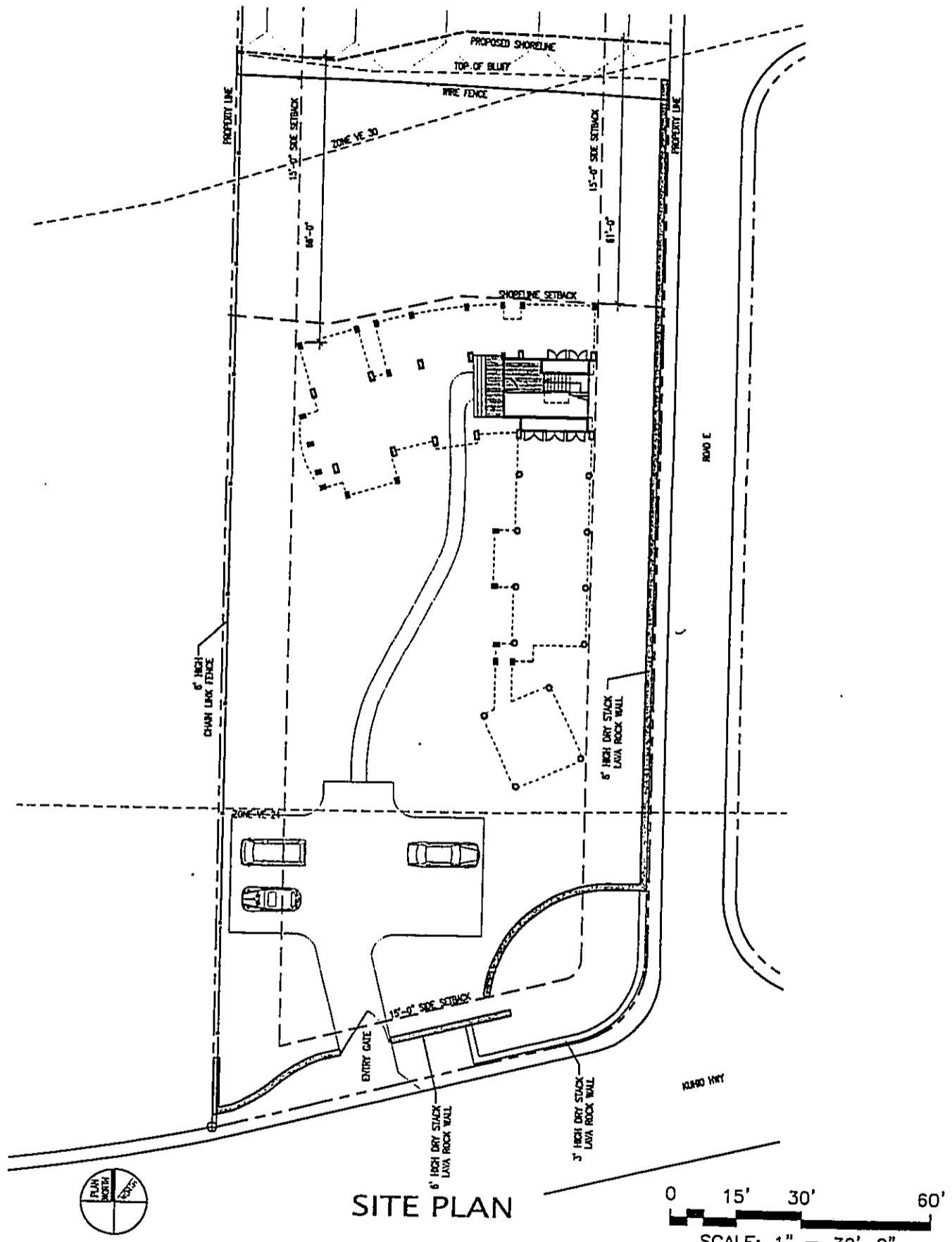
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EXHIBIT 8

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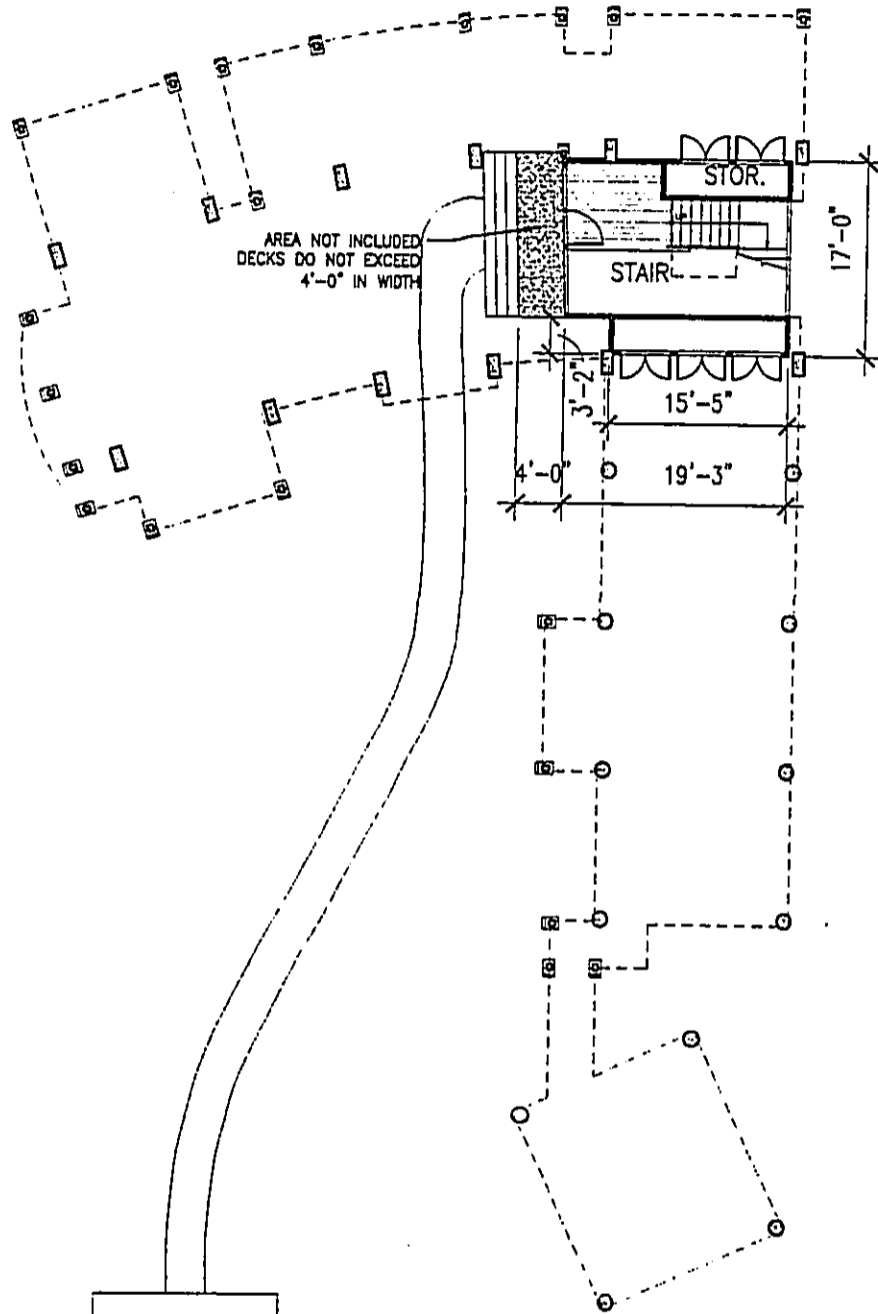


### SITE PLAN

 **De Jesus**  
ARCHITECTURE  
& DESIGN

**BROWNING SINGLE FAMILY RESIDENCE**  
HAENA, KAUAI, HAWAII  
TMK: (4) 5-9-05, 29

**Exhibit #9**  
CATEGORY SEQUENCE

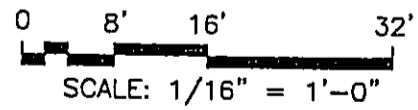


DEVELOPMENT AREA GARDEN LEVEL: 319 Sq Ft.

NOTE: SQUARE FOOTAGE CALCULATIONS ARE MADE FROM CAD DRAWINGS AND ARE EXACT.



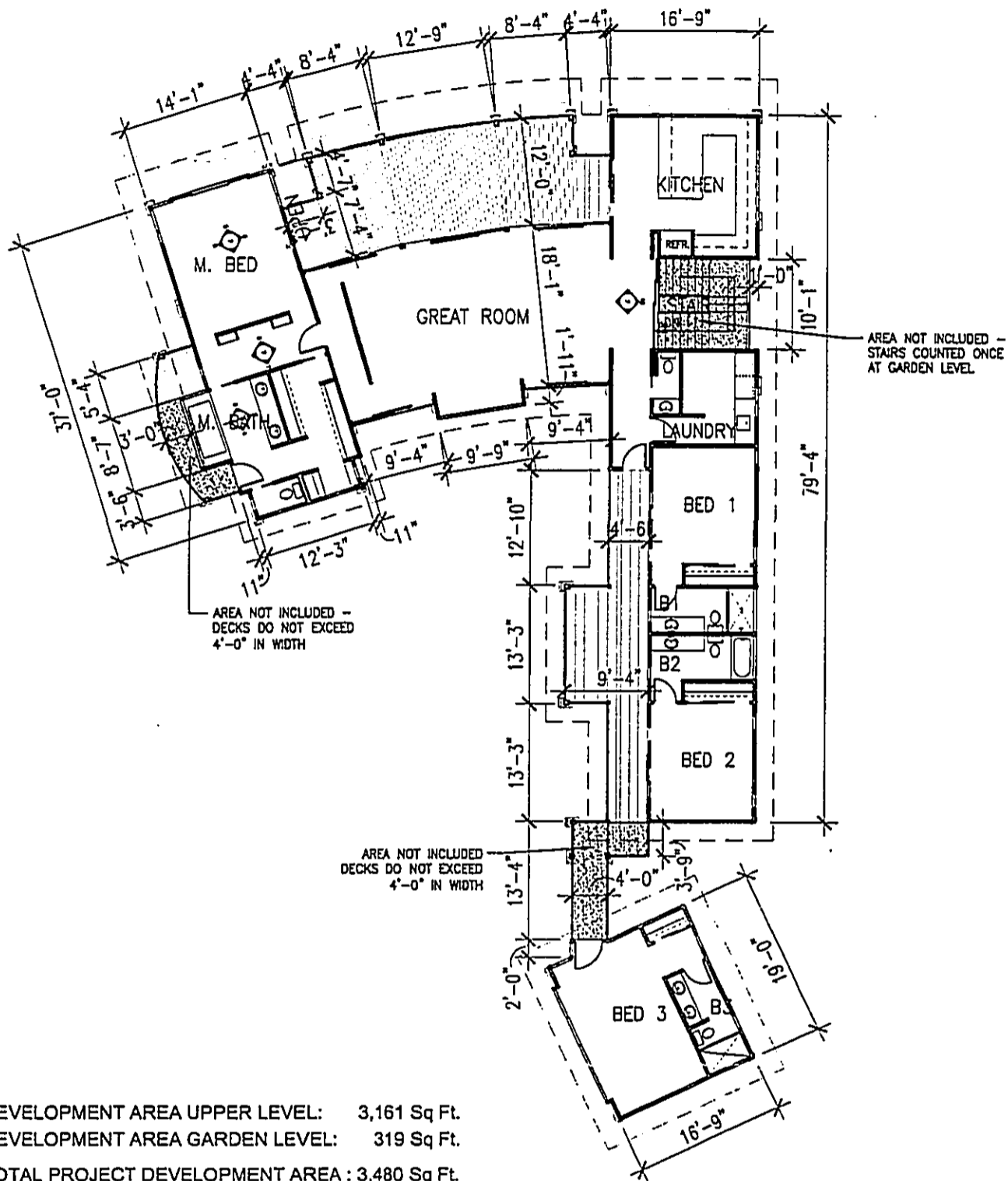
### GARDEN LEVEL PLAN



**De Jesus**  
ARCHITECTURE  
& DESIGN

BROWNING SINGLE FAMILY RESIDENCE  
HAENA, KAUAI, HAWAII  
TMK: (4) 5-9-05, 29

**Exhibit #10**  
CATEGORY SEQUENCE

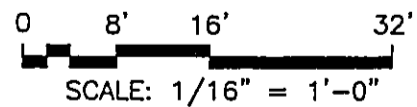


DEVELOPMENT AREA UPPER LEVEL: 3,161 Sq Ft.  
 DEVELOPMENT AREA GARDEN LEVEL: 319 Sq Ft.  
 TOTAL PROJECT DEVELOPMENT AREA : 3,480 Sq Ft.

NOTE: SQUARE FOOTAGE CALCULATIONS ARE MADE FROM CAD DRAWINGS AND ARE EXACT.

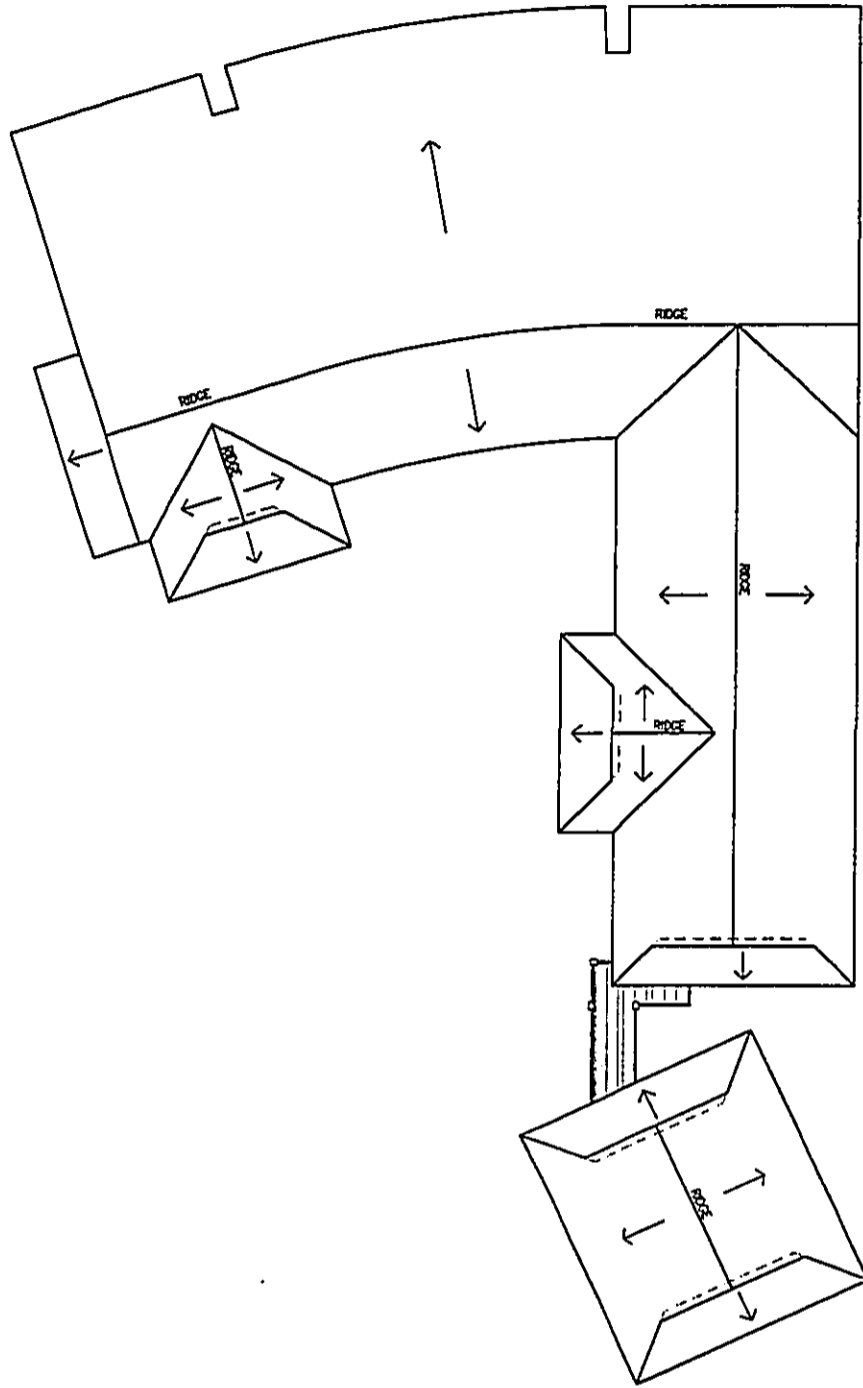


### UPPER LEVEL PLAN

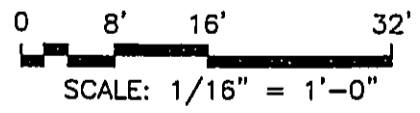


BROWNING SINGLE FAMILY RESIDENCE  
 HAENA, KAUAI, HAWAII  
 TMK: (4) 5-9-05, 29

**Exhibit #11**  
 CATEGORY SEQUENCE



**ROOF PLAN**

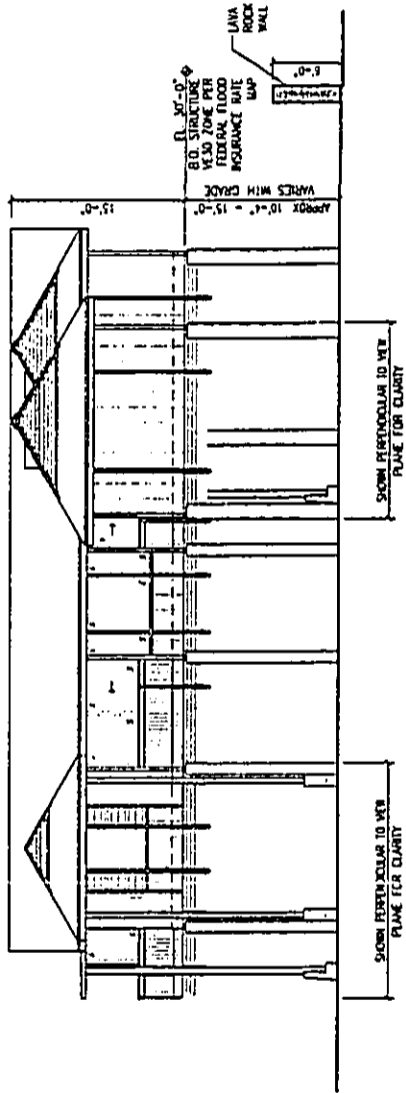


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& DESIGN

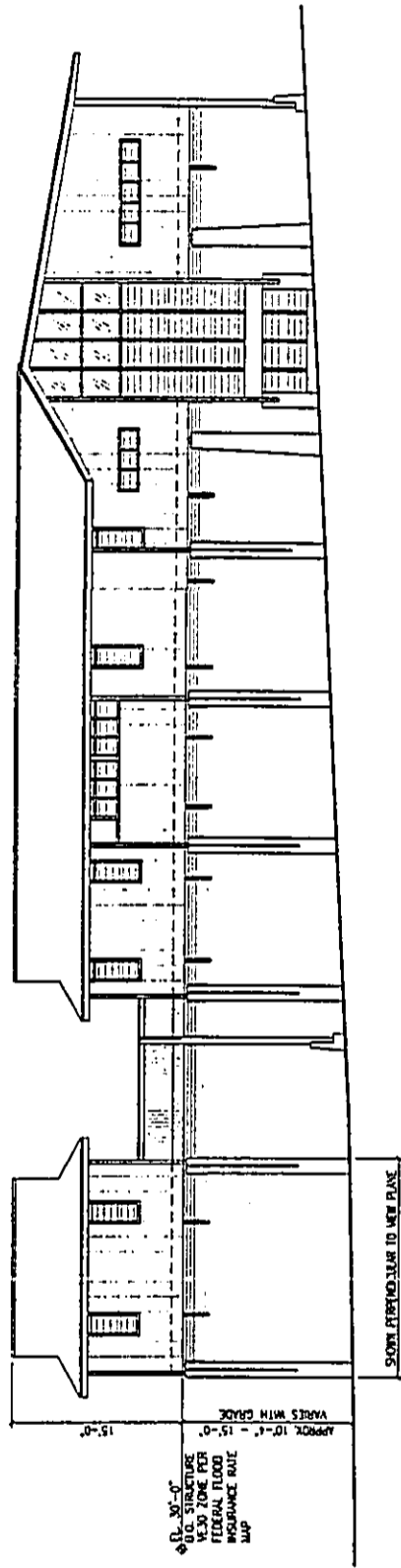
BROWNING SINGLE FAMILY RESIDENCE  
HAENA, KAUAI, HAWAII  
TMK: (4) 5-9-05, 29

**Exhibit #12**  
CATEGORY SEQUENCE

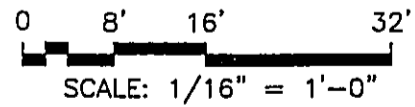




SOUTH ELEVATION



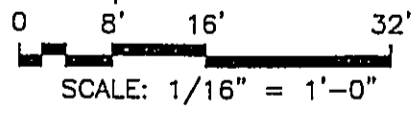
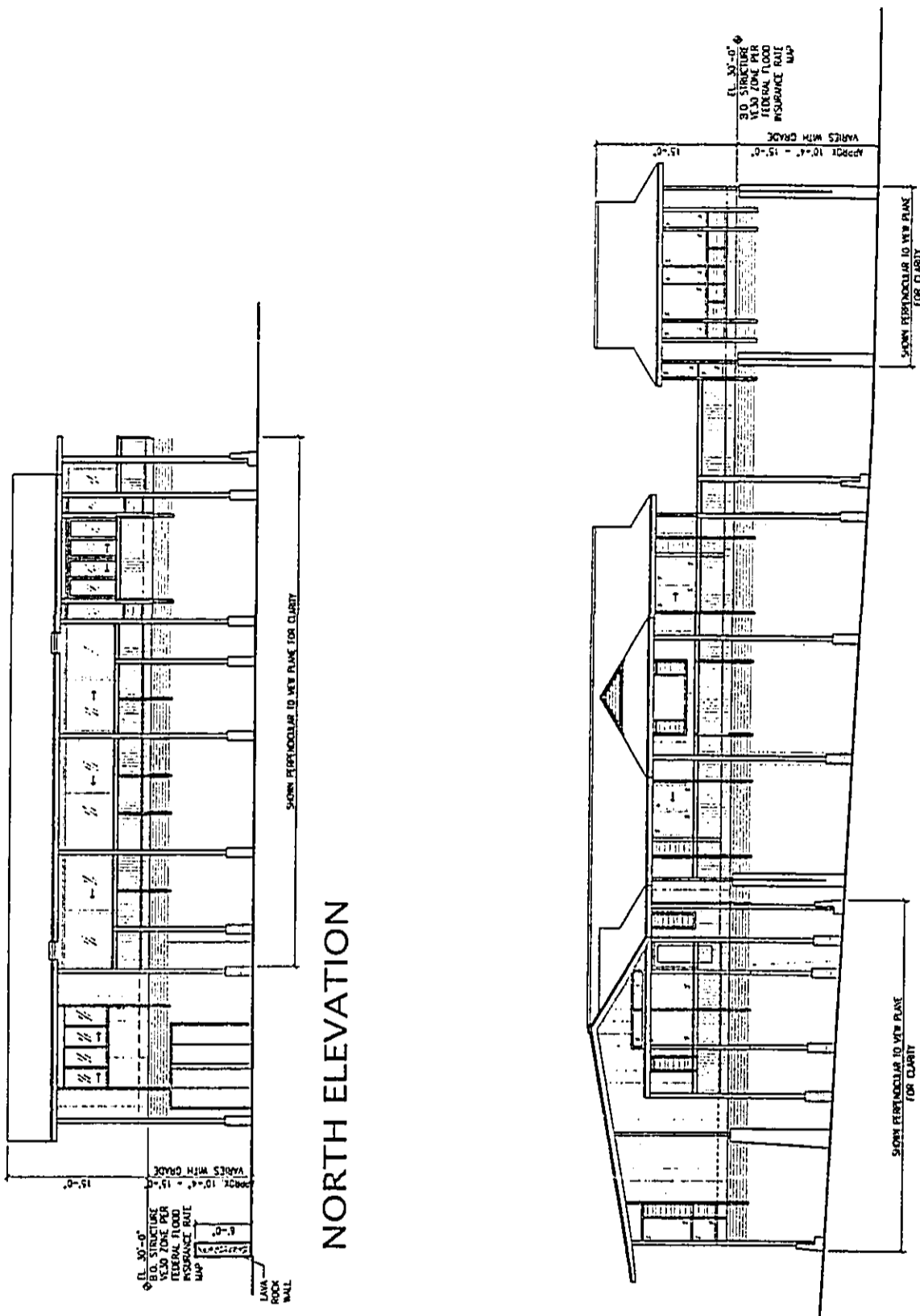
EAST ELEVATION



**De Jesus**  
ARCHITECTURE  
& DESIGN

BROWNING SINGLE FAMILY RESIDENCE  
HAENA, KAUAI, HAWAII  
TMK: (4) 5-9-05, 29

**Exhibit #13**  
CATEGORY SEQUENCE



**De Jesus**  
ARCHITECTURE  
& DESIGN

BROWNING SINGLE FAMILY RESIDENCE  
HAENA, KAUAI, HAWAII  
TMK: (4) 5-9-05, 29

**Exhibit #14**  
CATEGORY SEQUENCE

**Exhibit 15**  
**SITE PHOTOS**



Photo 1 - View Toward Ocean



Photo 2 - Edge of Vegetation



Photo 3 - View Toward South



Photo 4 - View Toward West



Photo 5 - Edge of Vegetation

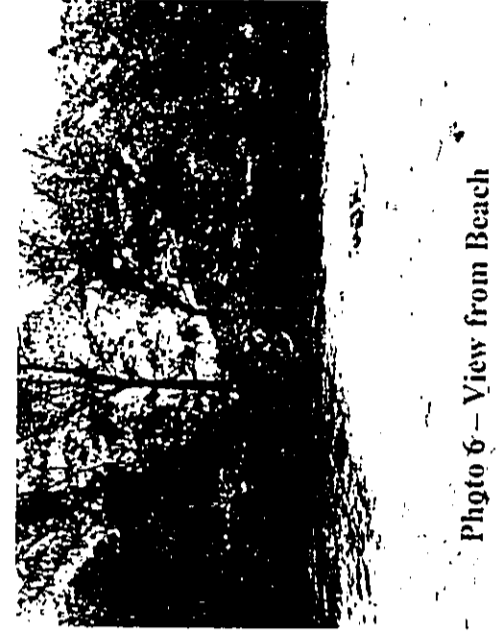


Photo 6 - View from Beach



Photo 7 - Edge of Vegetation

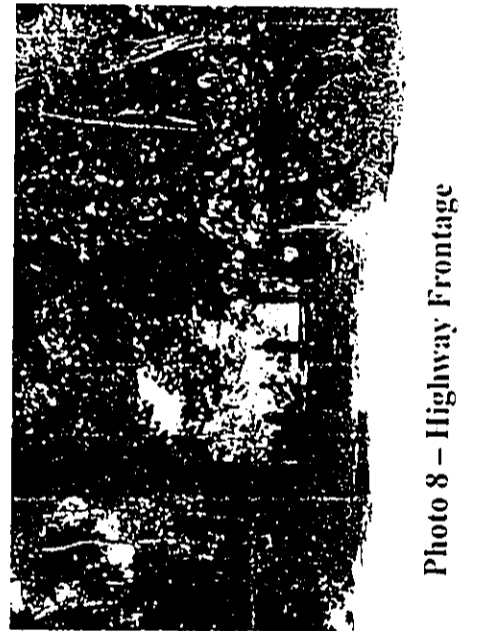


Photo 8 - Highway Frontage



Photo 9 - Edge of Vegetation

**BRYAN J. BAPTISTE**  
MAYOR

**GARY K. HEU**  
ADMINISTRATIVE ASSISTANT



**IAN K. COSTA**  
DIRECTOR OF PLANNING

**GARY L. HENNIGH**  
DEPUTY DIRECTOR OF PLANNING

**COUNTY OF KAUA'I  
PLANNING DEPARTMENT**

Kapule Building  
4444 Rice Street, Suite A473  
Lihu'e, Hawai'i, 96766-1326

TELEPHONE: 808.241.6677  
FAX: 808.241.6699

February 2, 2005

Ben Wellborn  
Landmark Consulting  
P. O. Box 915  
Hanalei, HI 95714

Subject: Construction of one single family dwelling  
TMK:5-9-02:67, Haena  
Construction of one single family dwelling  
TMK:5-9-05:29, Haena

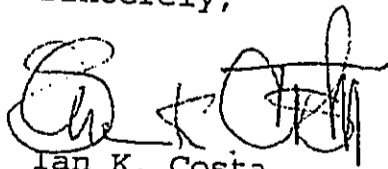
Dear Mr. Wellborn:

This letter is being sent to confirm that the construction of one single family residence on each of the above identified properties, located within the Special Management Area (SMA) in Haena, will not require an SMA Permit. As you have noted, according to the County of Kauai SMA Rules and Regulations Section 1.4.H(2)a), development does not include construction of a single family residence that is not a part of a larger development. Therefore, the subject proposals are not considered development and do not require an SMA Permit.

Please be advised that there will be other agency requirements, and it is the applicant's responsibility to resolve those requirements with the respective agencies.

Feel welcome to contact George Kalisik of my staff at 241-6677 if you have any questions.

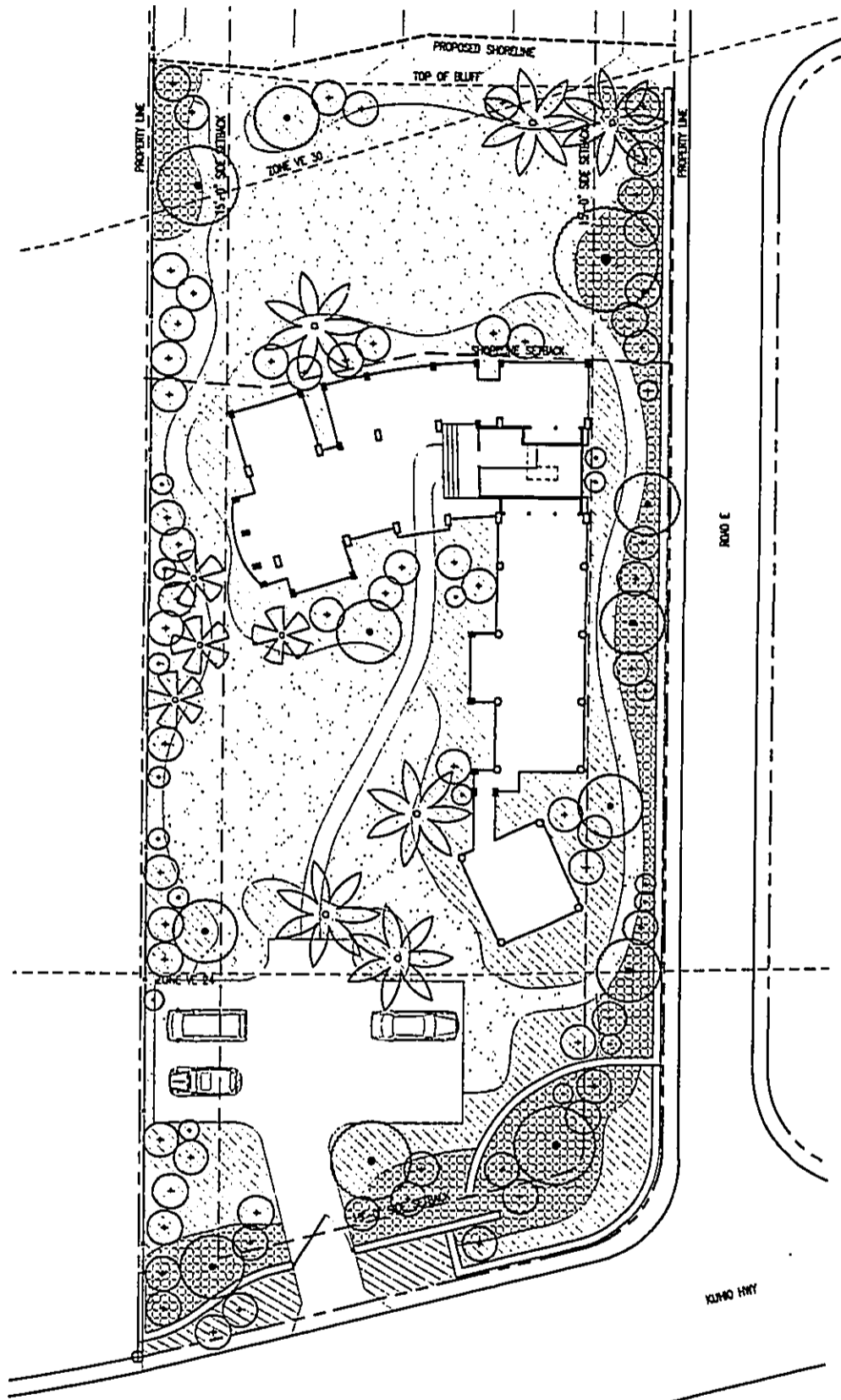
Sincerely,



Ian K. Costa  
Planning Director

**EXHIBIT 16**

AN EQUAL OPPORTUNITY EMPLOYER



- REPRESENTATIVE SAMPLING OF NATIVE, POLYNESIAN INTRODUCED AND COMMONLY USED LANDSCAPE SPECIES:
- |  |  |
|--|--|
|  | <b>TREES</b><br>KOU TREE<br>KAHAIKI TREE<br>FALSE KAWAI<br>HALA<br>BEACH HELITROPE<br>PLUMERIA<br>PUA KENIKENI<br>YLANG YLANG<br>TONGA TABOO<br>ROYAL POINCIANA<br>PAK LAN |
|  | <b>PALMS</b><br>LOULU (PRITCHARDIA)<br>MANILA<br>FOX TAIL<br>COCONUT   |
|  | <b>SHRUBS</b><br>NAUPAKA<br>NAIOPAPA<br>SPIDER LILY<br>TIARE GARDENIA<br>TARO (APE)<br>RED & GREEN TI<br>CROTON<br>MONSTERA<br>GINGER<br>BOUGAINVILLEA                     |
|  | <b>SMALL SHRUBS &amp; PALMS</b><br>POHINAHINA<br>AKOKO<br>MAO<br>'AKIA<br>GARDENIA<br>XANADU PHLOENDRON<br>BEGONIA<br>IMPATIENS<br>RAFIUS PALM<br>PHOENIX PALM             |
|  | <b>GRASS &amp; GROUND COVERS</b><br>SEASHORE PASPALUM<br>LAWA'E FERN<br>MONDO GRASS<br>LARIOPH<br>HEMIGRAPHIS<br>OTACANTHUS<br>DIANTHUS                                    |
- EXISTING AREAS OF PREDOMINANTLY INTRODUCED AND INVASIVE SPECIES. PHASED REMOVAL AND PRUNING OF THESE INVASIVE SPECIES TO MAKE WAY FOR NATIVE AND PREFERRED LANDSCAPE SPECIES OVER TIME.

LANDSCAPE PLAN

BROWNING SINGLE FAMILY RESIDENCE  
HAENA, KAUAI, HAWAII  
TMK: (4) 5-9-05, 29

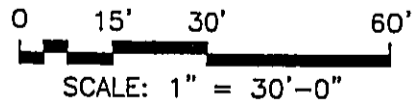
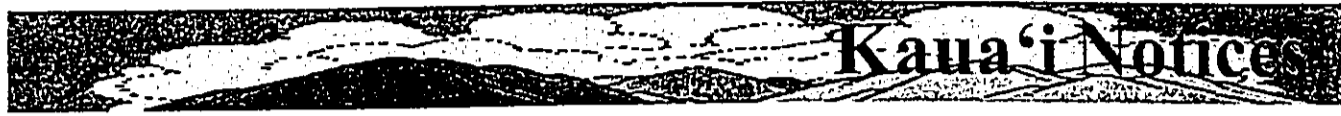


Exhibit #17

CATEGORY SEQUENCE



JUNE 8, 2006

### Browning Single Family Residence (HRS 343 DEA)

**District:** Hanalei  
**TMK:** (4) 5-9-05:029  
**Applicant:** Kent Browning  
 64 Saddleback Rd, Rolling Hills, CA 90274  
 Contact: Ben Welborn (639-7978)

**Approving Agency:** State of Hawaii, BLNR  
 P.O. Box 621, Honolulu, HI 96813  
 Contact: Samuel Lemmo (587-0381)

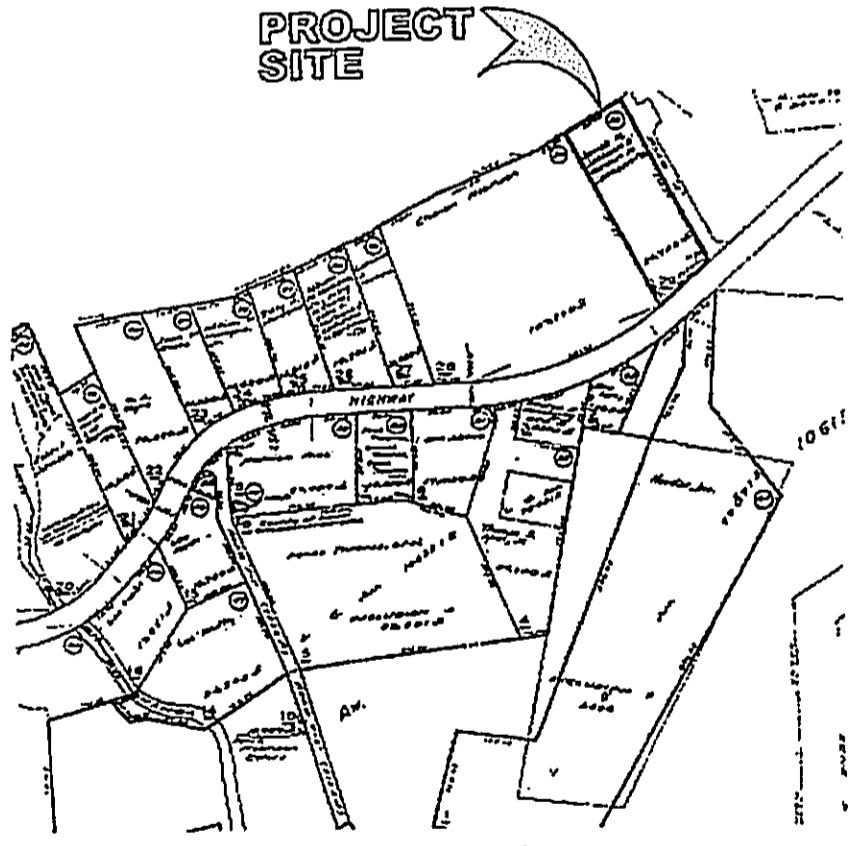
**Consultant:** Landmark Consulting Services  
 P.O. Box 915, Hanalei, HI 96714  
 Contact: Ben Welborn (639-7978)  
 email: welborn@aloha.net

The proposed residence will be setback 61 feet from the State Certified Shoreline in accordance with the guidelines set forth in the *State of Hawai'i, Coast Hazard Mitigation Guidebook*. A copy of the Draft Environmental Assessment will be available for public review at the Princeville Public Library, the findings of which indicate that as a result of the proposed actions there will be no significant negative environmental impacts, be they primary, secondary or cumulative. A Finding of No Significant Impact (FONSI) is anticipated.

**Public Comment**  
**Deadline:** July 10, 2006  
**Status:** Draft environmental assessment (DEA) notice pending 30-day public comment. Address comments to the applicant with copies to the approving agency, consultant and OEQC.

**Permits Required:** CDUP, SMA Exemption (Included), County of Kauai: Building Permit, State DOH: Individual Wastewater System (IWS) Permit

The proposed action is for the construction of a 3,482 square foot single-family residence in an established rural residential neighborhood located in Ha'ena on Kaua'i's North Shore. The proposed residence will be of a contemporary island style design elevated on piers to conform to applicable County regulations regarding the National Flood Insurance Program for coastal high hazard areas. The Applicant in this action is requesting that the Board of Land and Natural Resources grant approval for a 5 foot height variance for the proposed residence due to the flood zoning characteristics of the parcel. Therefore, if approved as proposed, the highest point of the roof structure would be approximately 30 feet above existing grade. This height variance is entirely consistent with the County of Kaua'i's zoning ordinance and is typical of existing residential development throughout the greater Ha'ena/Wainiha community.



Tax Map Key Location Map

EXHIBIT 13

DOCUMENT CAPTURED AS RECEIVED

# **APPENDICES**

## **Browning Single Family Residence Final Environmental Assessment**

**TMK (4) 5-9-05: 029  
Ha`ena, Kaua`i, Hawai`i**

# Appendix 1

Documentation of Pre-Assessment Consultation  
for  
Draft Environmental Assessment

Proposed Browning Residence  
TMK (4) 5-9-05: 029



LINDA LINGLE  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
DIVISION OF AQUATIC RESOURCES  
1151 PUNCHBOWL STREET  
HONOLULU, HAWAII 96813

November 7, 2005

Landmark Consulting Services  
P.O. Box 915  
Hanalei, HI 96714

Re: Kent Browning Single Family Residence CDUA

The applicant proposes to construct a 3,500 square foot single-family residence on a shoreline parcel, within the Conservation District, 1/2 mile from Haena Beach Park on the North Shore of Kauai.

We will review the DEA when it is completed and comment on any significant impacts adverse to aquatic resource values at a later date.

Although the letter we received describes briefly the proposed project, we suggest the forthcoming EA discuss in detail potential short term impacts and propose specific means for averting or minimizing adverse effects, and provide possible mitigation for unavoidable damage to natural resource values.

Any proposed shoreline improvements or modifications should be adequately described in the DEA and the Department should have the opportunity to review all activities that may limit, restrict or discourage the public use of State shoreline land in this vicinity.

Finally, precautions should be taken to prevent construction material, debris, petroleum products, chemicals and other potential contaminants from entering the aquatic environment.

Yours truly,

*Dan Polhemus*  
Dan Polhemus, Administrator  
Division of Aquatic Resources

PETER T. YOUNG  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT

ROBERT K. MASUDA  
DEPUTY DIRECTOR - LAND

DEAN NAKANO  
ACTING 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



**LANDMARK**  
CONSULTING

January 30, 2006

Dan Polhemus, Administrator  
DLNR, Division of Aquatic Resources  
1151 Punchbowl Street  
Honolulu, HI 96813

**Re: Proposed Browning Single Family Residence – CDUA  
TMK (4) 5-9-05: 029  
Haena, Kauai, Hawaii**

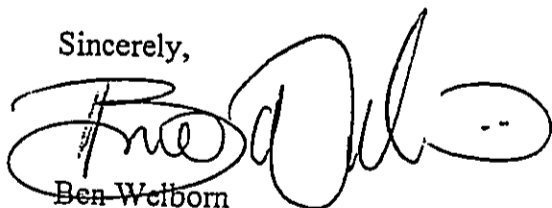
Dear Mr. Polhemus,

Thank you for your comments in your letter dated November 7<sup>th</sup>, 2005 regarding the proposed construction of the Browning Single Family Residence within a portion of the Conservation District in Ha'ena, Kaua'i.

A copy of the Draft Environmental Assessment will be circulated to your office for review. As suggested in your correspondence, the Draft EA proposes specific means for averting and/or minimizing adverse impacts to aquatic and natural resources within the project vicinity. There are no shoreline improvements or modifications associated with the proposed action. The proposed residence will be set back approximately 61 feet from the State certified shoreline. Furthermore, measures will be taken during development to ensure that no construction materials, debris, petroleum products, chemicals or other potential contaminants enter the aquatic environment.

We welcome your further input as merited by the information contained in the Draft EA.

Sincerely,

  
Ben Weiborn



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

REPLY TO  
ATTENTION OF

October 24, 2005

Regulatory Branch

File No. POH-2005-593

Mr. Ben Welborn  
Project Consultant  
Landmark Consulting Services  
P.O. Box 915  
Hanalei, Hawaii 96714

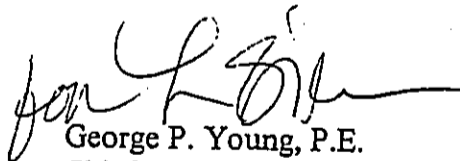
Dear Mr. Welborn:

This responds to your notice dated October 21, 2005 regarding the proposed Kent Browning Single Family Residence Project at Haena, County of Kauai (TMK(4) 5-9-05: 29). The Corps requests to be placed on the mailing list to receive a copy of the draft Environmental Assessment (dEA). An evaluation of the information to be presented in the dEA will enable us to determine if wetlands, or other waters of the U.S. are present at the location of the proposed project area and to examine the relationship of the proposed construction to adjacent drainage ways and aquatic ecosystems.

Following evaluation of that information, the Corps would be able to inform you whether a Department of Army (DA) permit will, or will not be required for any future ground disturbing, construction, or land alteration activity or structure associated with the project.

Please contact Mr. Farley Watanabe of my staff at 438-7701, or facsimile (438-4060) if you have any questions or need additional information. Refer to the above file number in any future correspondence with us regarding this project.

Sincerely,



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

Copy furnished:

Mr. David Higa, Commission on Water Resource Management, DLNR  
Mr. Edward Chen, Clean Water Branch, DoH  
Mr. John Nakagawa, Coastal Zone Management Program Office, DBEDT



**LANDMARK**  
CONSULTING

January 30, 2006

George P. Young, P.E.  
Chief Regulatory Branch  
Department of the Army  
U.S. Army Engineer District, Honolulu  
Ft. Shafter, HI 96858-5440

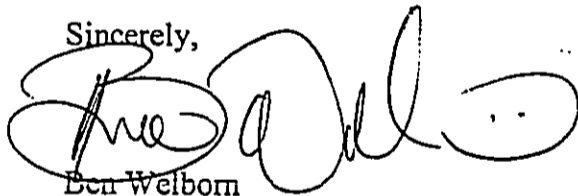
**Re: Proposed Browning Single Family Residence – CDUA  
Army Corps File no. POH-2005-593  
TMK (4) 5-9-05: 029  
Haena, Kauai, Hawaii**

Dear Mr. Young,

Thank you for your comments in your letter dated October 24<sup>th</sup>, 2005 regarding the proposed construction of the Browning Single Family Residence within a portion of the Conservation District in Ha'ena, Kauai.

As per your request, a copy of the Draft Environmental Assessment will be circulated to your office for review. We welcome your further input as merited by the information contained therein.

Sincerely,



Ben Welborn

LINDA LINGLE  
GOVERNOR OF HAWAII



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

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

In reply, please refer to:  
EPO-05-109

November 21, 2005

Mr. Ben Welborn  
Landmark Consulting Services  
Hanalei, Hawaii 96714

Dear Mr. Welborn:

SUBJECT: Pre-Assessment Consultation for Proposed Kent Browning Single Family  
Residence CUDA and Draft EA in Haena, Kauai, Hawaii  
TMK: (4) 5-9-05:029

Thank you for allowing us to review and comment on the subject request. The request was routed to the various branches of the Environmental Health Administration. We have the following Wastewater Branch and Environmental Planning Office comments.

Wastewater Branch

We have reviewed the request for pre-assessment consultation regarding a proposal to develop a 3,500 square foot single-family residence in Haena, Kauai, Hawaii.

The subject project is located in the Critical Wastewater Disposal Area (CWDA) as determined by the Kauai County Wastewater Advisory Committee where no new cesspools will be allowed. Domestic wastewater generation and disposal have not been addressed. As there are no public sewers available in this area, an onsite wastewater system will be required. Each individual wastewater system (IWS) such as septic tank system, can only serve a maximum of five (5) bedrooms or bedroom-like rooms.

All wastewater plans must conform to applicable provisions of the Department of Health's Administrative Rules, Chapter 11-62, "Wastewater System." We do reserve the right to review the detailed wastewater plans for conformance to applicable rules. Should you have any questions, please contact the Planning & Design Section of the Wastewater Branch at (808) 586-4294.

Environmental Planning Office

Please note that some of the following issues may not apply to your particular proposed project or requested action. Should you have any questions about the applicability of the listed concerns

Mr. Welborn  
November 21, 2005  
Page 2

or the particular environmental programs administered by our office, please feel free to contact us.

To facilitate TMDL development and implementation, and to assist with our assessment of the potential impact of proposed actions upon water quality, pollutant loading, and biological resources in receiving waters, we suggest that environmental review documents, permit applications, and related submittals include the following standard information and analyses. Please note that these comments are also listed on our website: [www.state.hi.us/health/environmental/env-planning/landuse/landuse.html](http://www.state.hi.us/health/environmental/env-planning/landuse/landuse.html). We suggest that you also review other Standard Comments on this website.

#### **Waterbody type and class**

1. Identify the waterbody type and class, as defined in Hawaii Administrative Rules Chapter 11-54 (<http://www.state.hi.us/health/about/rules/11-54.pdf>), of all potentially affected water bodies. Potentially affected water bodies means those in which proposed project activity would take place and any others that could receive water discharged by the proposed project activity or water flowing down from the proposed site. These waterbodies can be presented as a chain of receiving waters whose top link is the project site upslope and whose bottom link is in Pacific Ocean "oceanic waters," with all receiving waters named according to conventions established by Chapter 11-54 and the *List of Impaired Waters in Hawaii Prepared under Clean Water Act § 303(d)*. For example, a recent project proposed for Nuhelewai Stream, Oahu (a tributary of Kapalama Canal) might potentially affect Nuhelewai Stream, Kapalama Canal, Honolulu Harbor and Shore Areas, and the Pacific Ocean.

#### **Existing water quality management actions**

2. Identify any existing National Pollutant Discharge Elimination System (NPDES) permits and related connection permits (issued by permittees) that will govern the management of water that runs off or is discharged from the proposed project site or facility. Please include NPDES and other permit numbers; names of permittees, permitted facilities, and receiving waters (including waterbody type and class as in 1. above); diagrams showing drainage/discharge pathways and outfall locations; and note any permit conditions that may specifically apply to the proposed project.
3. Identify any planning documents, groups, and projects that include specific prescriptions for water quality management at the proposed project site and in the potentially affected waterbodies. Please note those prescriptions that may specifically apply to the proposed project.

**Pending water quality management actions**

4. Identify all potentially affected water bodies that appear on the current *List of Impaired Waters in Hawaii Prepared under Clean Water Act §303(d)* including the listed waterbody, geographic scope of listing, and pollutant(s) (See Table 5 at <http://www.hawaii.gov/health/environmental/env-planning/wqm/303dpcfinal.pdf>).
5. If the proposed project involves potentially affected water bodies that appear on the current *List of Impaired Waters in Hawaii Prepared under Clean Water Act §303(d)*, identify and quantify expected changes in the following site and watershed conditions and characteristics
  - surface permeability
  - hydrologic response of surface (timing, magnitude, and pathways)
  - receiving water hydrology
  - runoff and discharge constituents
  - pollutant concentrations and loads in receiving waters
  - aquatic habitat quality and the integrity of aquatic biota

Where TMDLs are already established they include pollutant load allocations for the surrounding lands and point source discharges. In these cases, we suggest that the submittal specify how the proposed project would contribute to achieving the applicable load reductions.

Where TMDLs are yet to be established and implemented, a first step in achieving TMDL objectives is to prevent any project-related increases in pollutant loads. This is generally accomplished through the proper application of suitable best management practices in all phases of the project and adherence to any applicable ordinances, standards, and permit conditions. In these cases we suggest that the submittal specify how the proposed project would contribute to reducing the polluted discharge and runoff entering the receiving waters, including plans for additional pollutant load reduction practices in future management of the surrounding lands and drainage/discharge systems.

**Proposed Action and Alternatives Considered**

We suggest that each submittal identify and analyze potential project impacts at a watershed scale by considering the potential contribution of the proposed project to cumulative, multi-project watershed effects on hydrology, water quality, and aquatic and riparian ecosystems.

We also suggest that each submittal broadly evaluate project alternatives by identifying more than one engineering solution for proposed projects. In particular, we suggest the consideration of "alternative," "soft," and "green" engineering solutions for channel modifications that would

Mr. Welborn  
November 21, 2005  
Page 4

provide a more environmentally friendly and aesthetically pleasing channel environment and minimize the destruction of natural landscapes.

If there are any questions about these comments please contact Jiacai Liu with the Environmental Planning Office at 586-4346.

Sincerely,



HAROLD LAO, ACTING MANAGER  
Environmental Planning Office

c: WWB  
EH-Kauai  
EPO





## LANDMARK CONSULTING

January 30, 2006

Harold Lao, Acting Manager  
Environmental Planning Office  
Department of Health  
P.O. Box 3378  
Honolulu, HI 96801-3378

**Re: Proposed Browning Single Family Residence – CDUA  
TMK (4) 5-9-05: 029  
Haena, Kauai, Hawaii**

Dear Mr. Lao,

Thank you for your comments in your letter dated November 21<sup>st</sup>, 2005 regarding the proposed construction of the Browning Single Family Residence within a portion of the Conservation District in Ha'ena, Kaua'i.

I will address each of your applicable comments in turn:

### Comments from Wastewater Branch

- 1) Wastewater generated by the proposed single family residence will be treated by an Individual Wastewater System (IWS) in conformance with the Department of Health's Administrative Rules, Chapter 11-62, "Wastewater System". IWS plans will be submitted to the Department of Health for review and approval when a building permit application is submitted to the County of Kauai.

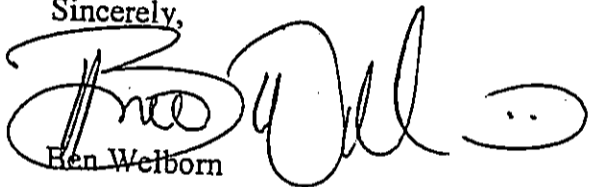
### Comments from Environmental Planning Office

- 1) Waterbody Type and Class - - As defined by Hawaii Administrative Rules, Chapter 11-54-2, the waters adjacent to the subject parcel are classified as Class AA Open Coastal Marine Waters with bottom subtypes being a mixture of Sand Beaches and Reef Flats.
- 2) Regarding the requirement for a National Pollutant Discharge Elimination System (NPDES) General Permit, the proposed action does not trigger the criteria for a general permit. Specifically:
  - i. Construction activities, including clearing, grading, and excavation will not result in the disturbance of equal to or greater than one (1) acre of total land area. The subject parcel is approximately 23,714 square feet in size (equivalent to approximately 0.54 acres) and the proposed action is for the construction of a residence of approximately 3,482 square feet. Ground disturbance outside of the immediate footprint of the proposed residence will be minimal and shall be limited primarily to excavation for an Individual Wastewater System. No grading, grubbing, or excavation shall occur within close proximity to the shoreline.

- ii. As a component of the proposed action, the applicant does not intend or anticipate the need to undertake any hydrotesting or any discharge associated therewith.
  - iii. No discharge of construction dewatering effluent into the adjacent oceanic waters is intended or anticipated.
- 3) Regarding the requirements for an Individual NPDES permit, it is the applicant's understanding that based upon the proposed project characteristics an Individual NPDES permit will not be necessary. It is anticipated that there will be no wastewater discharged into the State waters as a result of the proposed actions.
  - 4) The proposed action will not affect any bodies of water that appear on the current *List of Impaired Waters in Hawaii*.
  - 5) Best Management Practices shall be implemented to contain fugitive dust on the project site. Construction activities shall be restricted to areas of least impact. Job site clean-up shall occur regularly to contain and properly dispose of dust and debris generated by construction activities.

Thank you for your preliminary comments, a copy of the Draft Environmental Assessment will be circulated to your office for review. We welcome your further input as merited by the information contained therein.

Sincerely,

  
Ken Welborn

LINDA LINGLE  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
DIVISION OF FORESTRY AND WILDLIFE  
1151 PUNCHBOWL STREET  
HONOLULU, HAWAII 96813

October 26, 2005

PETER T. YOUNG  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
Robert K. Masuda  
DEPUTY DIRECTOR FOR LAND  
Dean Nakano  
DEPUTY DIRECTOR FOR  
THE COMMISSION ON  
WATER RESOURCE MANAGEMENT

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

Mr. Ben Welborn  
Landmark Consulting Services Inc.  
P.O. Box 915  
Hanalei, Hawaii 96714

Dear Mr. Welborn:

Subject: Pre-Environmental Assessment Consultation, Proposed Kent Browning Single Family Residence CDUA & Draft EA, TMK: (4) 5-9-05: 029.

DOFAW has reviewed your information dated October 19, 2005 regarding the potential impacts your project may have on our management programs and endangered species in particular. Unfortunately based on the information that was provided to us, we cannot comment on your proposed project at Haena, Kauai. We will defer comments until we see your required completion of the draft EA for this project. Thank you for the opportunity to comment on your project.

Sincerely yours,

Paul J. Conry  
Administrator

C: DOFAW Kauai Branch  
OCCL



**LANDMARK**  
CONSULTING

January 30, 2006

Paul J. Conry, Administrator  
DLNR, Division of Forestry and Wildlife  
1151 Punchbowl Street  
Honolulu, HI 96813

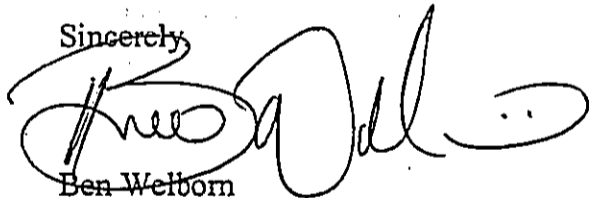
**Re: Proposed Browning Single Family Residence – CDUA  
TMK (4) 5-9-05: 029  
Haena, Kauai, Hawaii**

Dear Mr. Conry,

Thank you for your comments in your letter dated October 26<sup>th</sup>, 2005 regarding the proposed construction of the Browning Single Family Residence within a portion of the Conservation District in Ha'ena, Kaua'i.

A copy of the Draft Environmental Assessment will be circulated to your office for review. We welcome your further input as merited by the information contained therein.

Sincerely,



Ben Welborn

LINDA LINGLE  
GOVERNOR OF HAWAII



GENEVIEVE SALMONSON  
DIRECTOR

STATE OF HAWAII  
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

235 SOUTH BERETANIA STREET  
SUITE 702  
HONOLULU, HAWAII 96813  
TELEPHONE (808) 586-4185  
FACSIMILE (808) 586-4188  
E-mail: oeqc@health.state.hi.us

November 28, 2005

Ben Welborn  
Landmark Consulting  
P.O. Box 915  
Hanalei, HI 96714

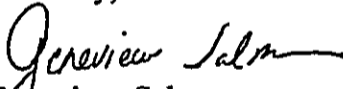
Subject: Kent Browning Single Family Residence Pre-Assessment for  
Draft Environmental Assessment

Dear Mr. Welborn,

We have received your letter dated October 19, 2005 on the proposed Kent Browning Family Residence.

The applicant should solicit comments from neighbors that may be affected by this project. We have no other comments at this time. We will reserve any comments when the documents are submitted. Thank you for the opportunity to review your request. Should you have any questions, please feel free to contact our office at 586-4185.

Sincerely,

  
Genevieve Salmonson  
Director



**LANDMARK**  
CONSULTING

January 30, 2006

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

**Re: Proposed Browning Single Family Residence – CDUA  
TMK (4) 5-9-05: 029  
Haena, Kauai, Hawaii**

Dear Ms. Salmonson,

Thank you for your comments in your letter dated November 28<sup>th</sup>, 2005 regarding the proposed construction of the Browning Single Family Residence within a portion of the Conservation District in Ha'ena, Kaua'i. As suggested in your correspondence, we have solicited comments from the neighboring property owners and local community groups.

A copy of the Draft Environmental Assessment will be submitted shortly for review by the various regulatory agencies. We welcome your further input as merited by the information contained in therein.

Sincerely,



Ben Welborn

PHONE (808) 594-1888



FAX (808) 594-1865

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

HRD05/2096

November 30, 2005

Ben Welborn  
Landmark Consulting Services  
P.O. Box 915  
Hanalei, HI 96714

**RE: Pre-Draft Environmental Assessment for Proposed Kent Browning Single Family Residence, Haena, Kaua'i; TMK: 5-9-005:029**

Dear Ben Welborn,

The Office of Hawaiian Affairs (OHA) is in receipt of your October 19, 2005, request for comments on the above project, which would include the construction of a 3,500-square-foot single family residence between Kuhio Highway and the shoreline, approximately a half mile from Haena Beach Park. OHA apologizes for the delayed response and offers the following comments.

The proposed development site is in a high erosion and wave energy area. Thus, the beach requires maintenance of existing sand. Because of this, a large setback should be required for the property and a good understanding of the geomorphology of the area should be incorporated in the forthcoming Draft Environmental Assessment.

We request that you also contact, if you have not already, our Kaua'i Community Resource Coordinator (name and address below), who can best advise you with whom else you should consult about ground disturbances in this area and the potential for discoveries of iwi kūpuna and Native Hawaiian cultural sites.

Ben Welborn  
November 30, 2005  
Page 2

Thank you for the opportunity to comment at this time. We look forward to the opportunity to review, and comment upon, the forthcoming Draft Environmental Assessment and Conservation District Use Application. If you have any further questions or concerns please contact Heidi Guth at (808) 594-1962 or e-mail her at [heidig@oha.org](mailto:heidig@oha.org).

Sincerely,



Clyde W. Nāmu'o  
Administrator

CC: La France Kapaka-Arboleda  
Community Resource Coordinator  
OHA – Kaua'i Office  
3-3100 Kuhio Highway, Suite C4  
Lihue, HI 96766-1153





**LANDMARK**  
CONSULTING

January 30, 2006

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

**Re: Proposed Browning Single Family Residence – CDUA  
TMK (4) 5-9-05: 029  
Haena, Kauai, Hawaii**

Dear Mr. Namu'o,

Thank you for your comments in your letter dated November 30<sup>th</sup>, 2005 regarding the proposed construction of the Browning Single Family Residence within a portion of the Conservation District in Ha'ena, Kaua'i.

As per your suggestion, the proposed residence will have a conservative 61 foot setback from the State certified shoreline. This setback distance was derived from the findings of a Historical Shoreline Erosion Study, the results of which were applied to the guidelines prescribed in the State of Hawaii's Coastal Hazard Mitigation Guidebook.

Regarding historical preservation concerns, an Archaeological Assessment has been conducted by T.S. Dye & Colleagues. During the subsurface testing phase of the survey, no cultural deposits or burials were discovered on the subject parcel. An archaeological report was subsequently reviewed and approved by SHPD. Approval was granted subject to the condition that monitoring be conducted by a qualified archaeologist during all subsurface construction and grading work. The applicant has also prepared a Cultural Impact Assessment for the proposed action, a copy of which will be included in the Draft Environmental Assessment. The applicant understands that in the event human burials are discovered during construction, work shall immediately cease in the vicinity of the burials and that both the SHPD and the Kauai Island Burial Council shall be contacted to determine the proper protocol for addressing burial concerns (if any).

A copy of the Draft Environmental Assessment will be circulated to your office for review. We welcome your further input as merited by the information contained in therein.

Sincerely,



Ben Welborn

LINDA LINGLE  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
STATE HISTORIC PRESERVATION DIVISION  
KAKUHIHEWA BUILDING, ROOM 555  
KAPOLEI, HAWAII 96707

PETER T. YOUNG  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT

ROBERT T. MASUDA  
DEPUTY DIRECTOR - LAND

DEAN NAKANO  
ACTING DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES  
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CONSERVATION AND COASTAL LAND  
CONSERVATION AND RESOURCES ENFORCEMENT  
ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

November 14, 2005

Mr. Ben Welborn  
Landmark Consulting Services  
P.O. Box 915  
Hanalei, Hawaii 96714

LOG NO: 2005.2420  
DOC NO: 0511NM03

Dear Mr. Welborn:

**SUBJECT: Historic Preservation Concerns: Kent Browning Single Family Residence CDUA  
Haena, Hanalei, Kauai  
TMK: 4-5-9-05: 029**

Thank you for your letter of October 19, 2005. No archaeological inventory surveys have been done for this area; however, we expect to find historic sites in this area, such as habitation sites and burial sites, which we have found in nearby parcels.

We recommend the following conditions be attached to any approved permit, to ensure significant historic sites are properly identified and treated:

- 1) An archaeological inventory survey shall be conducted by a qualified archaeologist prior to well construction. A report documenting the archaeological work shall be submitted to the State Historic Preservation Division for review and approval. This report shall propose significance evaluations and shall propose mitigation treatments for any significant historic sites.
- 2) If significant historic sites are identified and once mitigation commitments are agreed to, the applicant shall develop detailed mitigation plans (scopes of work) and submit these to the State Historic Preservation Division (SHPD) for review and approval. SHPD must verify in writing that these plans have successfully executed prior to any land alteration.
- 3) If burials are discovered during the survey, a burial treatment plan shall be prepared following the procedures outlined in Chapter 6E-43 and its rules. Coordination with the Kauai Island Burial Council is required as part of the approval of burial treatment.

If you have any questions, please call Nancy McMahon 742-7033.

Sincerely,

  
MELANIE A. CHINEN, Administrator  
State Historic Preservation Division

NM:jen

c: LaFrance Kapaka-Arboleda, Chair, Kaua'i / Ni'ihau Islands Burial Council



**LANDMARK**  
CONSULTING

January 30, 2006

Melanie A. Chinen, Administrator  
State of Hawaii, DLNR  
State Historic Preservation Division  
Kakuhihewa Building, Room 555  
Kapolei, HI 96707

**Re: Proposed Browning Single Family Residence – CDUA  
TMK (4) 5-9-05: 029  
Haena, Kauai, Hawaii**

Dear Ms. Chinen,

Thank you for your comments in your letter dated November 14<sup>th</sup>, 2005 regarding the proposed construction of the Browning Single Family Residence within a portion of the Conservation District in Ha'ena, Kaua'i.

Regarding historic preservation concerns, the follow steps have been taken to satisfy the requirements outlined in your letter:

- 1) An Archaeological Assessment has been conducted by T.S. Dye & Colleagues, Archaeologists. During the subsurface testing phase of the survey, no cultural deposits or burials were discovered on the subject parcel. A report was submitted to your office, reviewed and approved (LOG NO: 2005.2593 & DOC NO: 0511NM51). Approval was granted subject to the condition that monitoring be conducted by a qualified archaeologist during all subsurface construction work. A monitoring plan is now being prepared for submittal to your office.
- 2) The applicant has prepared a Cultural Impact Assessment of the subject parcel, a copy of which will be included in the Draft Environmental Assessment.
- 3) The applicant understands that in the event that human burials are discovered during construction, work shall immediately cease in the vicinity of the burials. Furthermore, both the SHPD and the Kauai Island Burial Council shall be contacted to determine the proper protocol for addressing burial concerns.

A copy of the Draft Environmental Assessment will be circulated to your office for review. We welcome your further input as merited by the information contained therein.

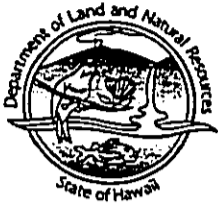
Sincerely,



Ben Welborn

c: LaFrance Kapaka-Arboleda, Chair Kaua'i/Ni'ihau Islands Burial Council

LINDA LINGLE  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES

DIVISION OF STATE PARKS  
POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

November 23, 2005

Ben Welborn  
Landmark Consulting Services Inc.  
P.O. Box 915  
Hanalei, Kaua'I 96714

Dear Mr. Welborn:

Our comments for the pre-assessment consultation of the proposed Kent Browning single family residence at Hā'ena, Kaua'I are that the property is mauka of Hā'ena Beach Park and a distance away from Hā'ena State Park. However, we are interested in reviewing the draft EA for the project.

Sincerely,

A handwritten signature in black ink, appearing to read "Daniel S. Quinn".

Daniel S. Quinn  
State Parks Administrator

PETER T. YOUNG  
CHAIRPERSON  
BOARD OF LAND AND NATURAL  
RESOURCES  
COMMISSION ON WATER RESOURCE  
MANAGEMENT

ROBERT K. MASUDA  
DEPUTY DIRECTOR - LAND

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AQUATIC RESOURCES  
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FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE  
COMMISSION  
LAND  
STATE PARKS



**LANDMARK**  
CONSULTING

January 30, 2006

Daniel S. Quinn, Administrator  
DLNR, Division of State Parks  
P.O. Box 621  
Honolulu, HI 96809

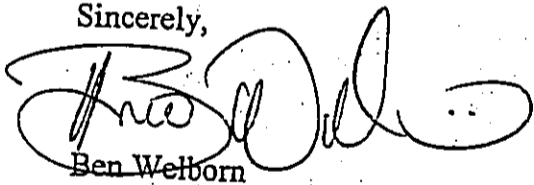
**Re: Proposed Browning Single Family Residence – CDUA  
TMK (4) 5-9-05: 029  
Haena, Kauai, Hawaii**

Dear Mr. Quinn,

Thank you for your comments in your letter dated November 23<sup>rd</sup>, 2005 regarding the proposed construction of the Browning Single Family Residence within a portion of the Conservation District in Ha'ena, Kaua'i.

A copy of the Draft Environmental Assessment will be circulated to your office for review. We welcome your further input as merited by the information contained therein.

Sincerely,

  
Ben Welborn

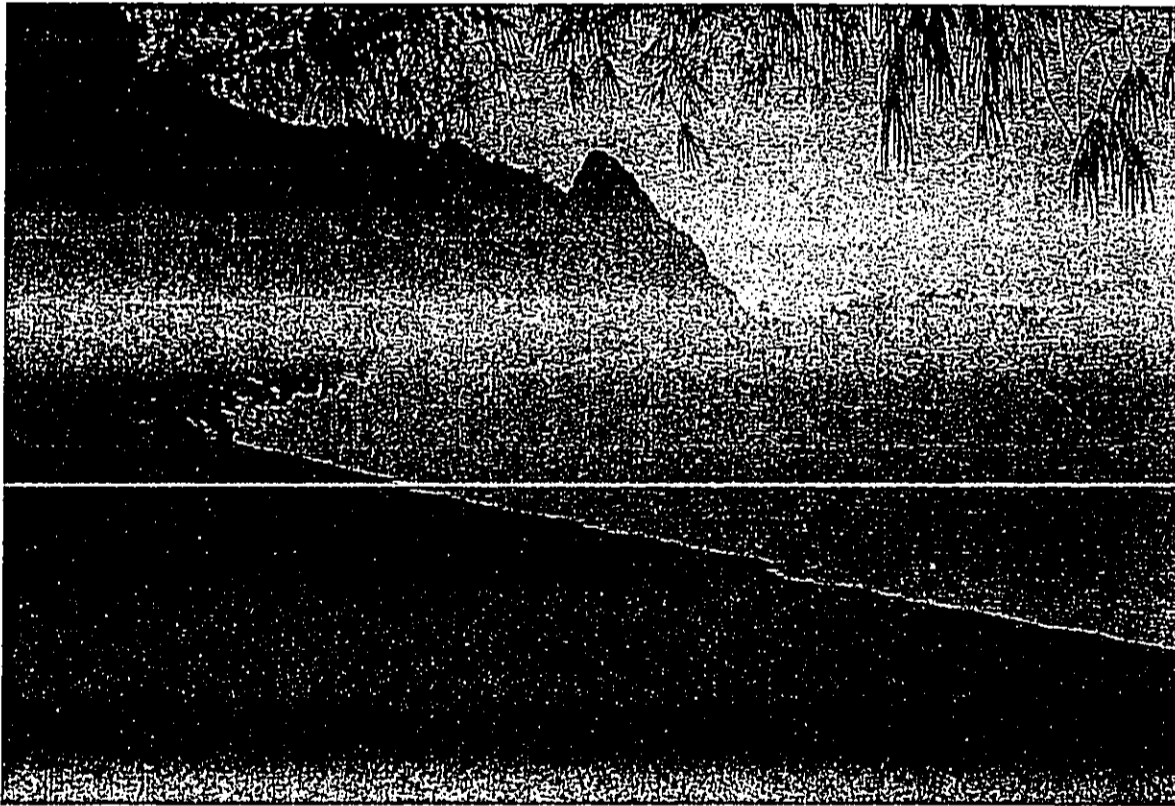
Kauai Group of the Hawaii Chapter  
The Sierra Club  
4430 Kauai Beach Drive  
Lihue, HI. 96766

Mr. Ben Welborn  
Landmark Consulting Services, PO Box #915, Hanalei, HI 96714

Re: TMK (4) 5-9-05:029, Haena, Kauai Hawaii  
Proposed Kent Browning Single Family Residence CDUA & Draft EA  
Pre- Assessment Consultation from Impacted Entities

Dear Mr. Welborn,

Thank you for the opportunity to comment on this proposed coastal project. The 1980 *North Shore Development Plan Update* specifies "maintenance of the natural beauty and ecological systems that characterize the North Shore must take priority over any new development." Beach preservation is a priority in Ha'ena, which has been identified as having a "high statewide significance."<sup>1</sup> Note this is the most heavily frequented area by beach-goers in Ha'ena-Wainiha.



<sup>1</sup> Statewide Recreation Resources Inventory Principal Swimming Areas, Clark & Souza, DLNR, Honolulu, 1987.

Littoral processes in Ha'ena are extremely complex. This shoreline is directly exposed to the dynamic winter North Pacific swell and regularly experiences huge waves, heavy surging and extensive wave run-up (photographs enclosed). The shoreline reach faces predominantly northwestward and is exposed to large forceful waves that cause heavy erosion to occur.



Seasonal high surf inundates *mauka* of the vegetation on this lot as well as surrounding north shore lots. Complex wave and currents along this shore cause tremendous sand movement and are in constant state of change. This valuable resource is subject to coastal hazards, and threatened by natural erosion processes.



No human attempts to protect coastal development by shoreline armoring should ever be allowed for the life of the house. Prohibitions on vegetative armoring by planting the shoreline or setback area should be included to minimize the adverse impacts of beach loss.

We echo the findings of the *Kauai Shoreline Erosion Management Study* prepared for Hawaii's Coastal Zone Management Program in September 1990. "Implicit in these recommendations is an acceptance of the standard that shoreline development should be located as far back from the shoreline as possible" and "pre-emptive solutions to erosion problems are more satisfying and effective than reaction solutions ....development that is compatible with the Island's scenic beauty and environment and to preclude inadequate, harmful or disruptive conditions that may prove detrimental to the social and economic well being of the residents of Kaua'i." <sup>2</sup>

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<sup>2</sup> Kaua'i County Comprehensive Zoning Ordinance, Chapter 8, Introduction, 1987.

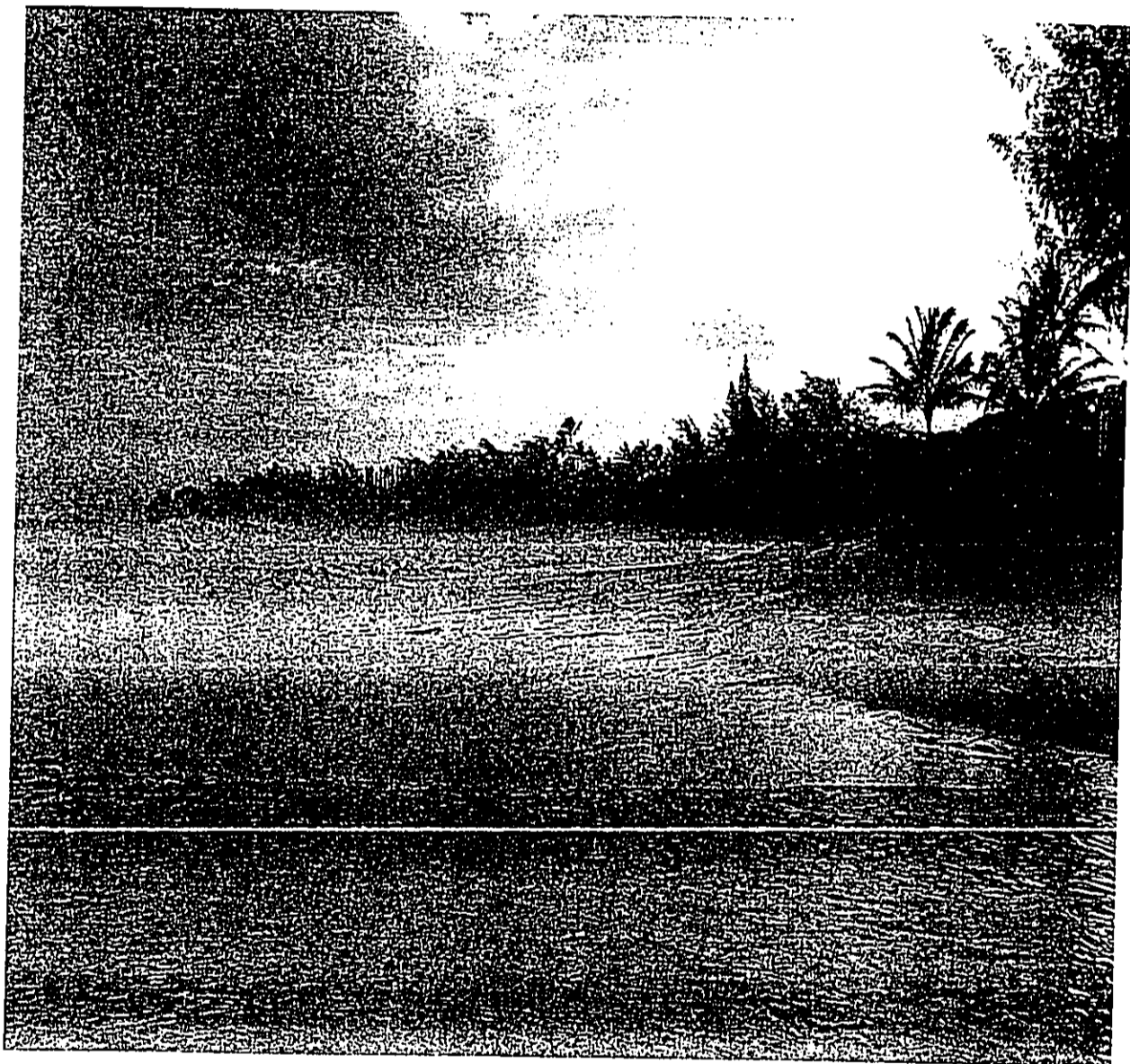




The need for preservation of Ha'ena's limited beach resources is essential. Any development must allow the natural littoral processes to proceed unimpeded and protect beach integrity in perpetuity.



Beach width changes documented in this study generally indicate a long-term trend towards narrowing of beach width. Section 4 of the *Study* encompassed this site, which suffered the greatest long term loss in beach width over the period of record, with maximum change of over 50 feet between 1975 and 1988. In 1990 *Study* states "The beach width at Ha'ena County Park, was 200 feet, and was significantly wider than anywhere else along this reach. In recent years severe diminishment of beach width at Ha'ena Beach Park has occurred.





The beach is currently really narrow, almost nonexistent, with a larger beach where the sand bag revetment is, to the east of the park. It seems the sandbags have altered the natural sand movement and possibly contributed to the diminishment of the public beach park. Extremely high wave energy and unstable conditions front this parcel. No sandbagging or other revetment should ever be implemented, and no artificially fixing of the shoreline.



The study summarized "visible evidence of massive undercutting at the vegetation line, long term recession of the waterline, narrowing of beach width especially in the last 15 years, and the recent construction of shore protection structure on this recreation oriented coastal reach, warrant extreme conservatism. The beach has continued to erode and is clearly unstable. "Coastal erosion can quickly change the size of lots. This fluctuation is in direct conflict with development, which assumes a degree of boundary stability that is not existent on sandy shorelines" according to Dennis Hwang in his *Coastal Hazard Mitigation Guidebook*.

Our recommendations include the following:

1. The shoreline must be determined at the upper reaches of the wash of the waves HRS, Section 205 A-1:  
"...the upper reaches of the wash of the waves, other than storm and seismic waves, at high tide during the season of the year in which the highest wash of the wave occurs,

usually evidenced by the edge of vegetation growth, or the upper limit of debris left by the wash of the waves."

- 2. Implement erosion based setback to reduce the risks from coastal hazards**  
Use the recommendations in Dennis Hwang's *Hawaii Coastal Hazard Mitigation Guidebook* that uses the following formula:

$$\text{erosion rate} \times 70 + 40 = \text{setback}$$

- 3. No shoreline hardening, sandbags or other structures to artificially fix the shoreline for the life of the property**  
Conditions to be incorporated into the deed:

- 4. Removal of the "private property" signs**  
This will allow people traversing the beach safe lateral access on the upper reach of the beach.

- 5. Immediate removal of the razor or barbed wire**  
This wire is sharp and dangerous, and separates the beach access from subject lot. The wire is located too far seaward. Is razor wire legal?

- 6. No vacation rental or commercial enterprise are allowed in Conservation**  
Require a condition that the subject parcel not be used as a vacation rental or commercial enterprise, and that this signed agreement be incorporated in the deed. Homeowner insures "Single family residence" means a building or structure used or designated and intended to be used as a home or dwelling place for a family.

- 7. Substantially reduce the size of the structure**  
A 3500 square foot house is not in keeping with the surrounding neighborhood, and is inconsistent and incompatible with the area and Conservation District. Reducing the size of the structure will mitigate tsunami hazard to the surrounding areas.

Dynamic beach systems are not only a basic aspect of the island's morphology, but also, an important, unique, and valuable resource which must be protected. The Sierra Club, Kauai Chapter strongly supports the following section from Chapter 205A, HRS:

Section 205A-2 Coastal zone management program:

*Objectives:* (9)(A) Beach protection; Protect beaches for public use and recreation.

*(C) Policies:* (9)(A) Beach protection; Locate new structures inland from the shoreline setback to conserve open space, minimize interference with natural shoreline processes, and minimize loss of improvements due to erosion; Ensure that new developments are compatible with their visual environment by designing and locating such developments to minimize the alteration of natural land forms and existing public views to and along the shoreline; Preserve, maintain, and, where desirable, improve and restore shoreline open space and scenic resources.

Caren Diamond  
Sierra Club



**LANDMARK**  
CONSULTING

January 30, 2006

Caren Diamond  
Kauai Group of the Hawaii Chapter  
The Sierra Club  
4430 Kauai Beach Drive  
Lihue, HI 96766

Re: **Proposed Browning Single Family Residence – CDUA**  
**TMK (4) 5-9-05: 029**  
**Haena, Kauai, Hawaii**

Dear Ms. Diamond,

Thank you for your comments in your letter regarding the proposed construction of the Browning Single Family Residence on the subject parcel within a portion of the Conservation District in Ha'ena, Kaua'i. Your comments together with this response shall be incorporated into the Draft Environmental Assessment, and shall become part of the public record.

I will address each of your recommendations in turn:

1. **Shoreline Determination** - - A shoreline certification survey has been submitted to the State Surveyor's office for review and approval. The proposed shoreline is located conservatively in accordance with HRS, Section 205 A-1.
2. **Erosion Based Shoreline Setback Determination** - - in order to accurately determine a reasonable shoreline setback distance for the proposed residence, the applicants contracted with EKNA Services, Inc., a Honolulu based firm with coastal engineering expertise. Elaine Tamaye, President of EKNA Services conducted a Historical Shoreline Erosion Study for the parcel and adjacent shoreline reaches which relied upon aerial photographic data dating back to 1950. Based upon this analysis, EKNA calculated an average annual erosion rate for the subject property of 0.22 feet/year. Following the recommendations of the State of Hawaii, Coast Hazard Mitigation Guidebook (*Guidebook*), EKNA further adjusted the average annual erosion rate to account for error (20%) and for accelerated sea level rise (10%). The resulting adjusted erosion rate for the parcel is 0.29 feet/year. The *Guidebook*

recommends a 70-year useful lifespan for new structures. Applying this 70-year lifespan to the adjusted annual erosion rate for the parcel, the erosion zone is determined to be 20.3 feet (70 X 0.29 ft/yr. = 20.3 feet). The *Guidebook* further recommends a storm event buffer of 20 ft., plus a safety/design buffer of 20 ft., resulting in a total recommended setback distance of 60.3 feet. Based upon these studies, the applicants are proposing to set their residence 61 feet back from the certified shoreline.

3. **Shoreline Alterations and Hardening** - - the proposed action does not call for any alterations to or hardening of the shoreline.
4. **Removal of Private Property Signs** - - this is a private property with inherent property rights, among which is the right to post signage restricting public access. Safe access to and from the beach/shoreline is provided directly adjacent to the subject property along the County Roadway "E".
5. **Immediate Removal of Barbed Wire Fence** - - this too is a private property issue.
6. **No Vacation Rental or Commercial Enterprises** - - this is a standard deed restriction which shall be incorporated into any Conservation District Use Permit issued for the construction of a residence on the subject property.
7. **Size of Structure** - - The current legislation governing allowable land use within the Conservation District allows for a residence of up to 3,500 sqft. on parcels of less than 1-acre in size. The applicants have complied with this legislation in designing their proposed residence. Please refer to HAR, Chapter 13-5, Exhibit 4 - Single Family Residential Standards.

In closing, thank you for your comments. I hope that you appreciate that we have acted proactively to mitigate your concerns. A copy of the Draft Environmental Assessment will be available at the Princeville Public Library for Review. We welcome your further input as merited by the information contained in therein.

Sincerely,



Ben Weiborn

# Appendix 2

Archaeological Assessment

Proposed Browning Residence  
TMK (4) 5-9-05: 029



LINDA LINGLE  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION  
KAKUHIHEWA BUILDING, ROOM 555  
KAOPOLEI, HAWAII 96707

PETER T. YOUNG  
CHAIRMAN  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT

ROBERT T. MASUDA  
DEPUTY DIRECTOR - LAND

DEAN MAKANO  
ACTING DEPUTY DIRECTOR - WATER

AGRICULTURE  
BOATING AND OCEAN RECREATION  
BUREAU OF CONSERVATION  
COMMISSION ON WATER RESOURCE MANAGEMENT  
CONSERVATION AND COASTAL LANDS  
CONSERVATION AND RESOURCES ENFORCEMENT  
HUNTING  
INDUSTRY AND WILDLIFE  
NATURAL PRESERVATION  
KAIHOLOLAU ISLAND RESERVATION COMMISSION  
LAND  
STATE PARKS

November 30, 2005

Tom Dye, Ph.D.  
T.S. Dye & Colleagues, Archaeologists  
735 Bishop Street, Suite 315  
Honolulu, Hawaii 96813

LOG NO: 2005.2593  
DOC NO: 0511NM51

Dear Dr. Dye:

**SUBJECT: Historic Preservation Review - Archaeological Assessment Report of a Coastal Lot TMK: 4-5-9-05: 29 at Haena, Halelea, Kauai (Dye, TSDYE, 2005) Haena, Hanalei Kauai TMK: 4-5-9-05: 29**

Thank you for submitting the above report, which we received on November 23, 2005 and find acceptable. One trench was dug in the project area and resulted in no findings of cultural deposits or burials. Nonetheless, we recommend that archaeological monitoring take place for all subsurface construction work since construction will occur in sandy soils (characterized in the Jaucus series), where there is a probability of unearthing human burial remains.

Please submit an archaeological monitoring plan to this office for review and approval.

In the event burials are discovered during the monitoring, burial treatment determinations must be handled by the State Historic Preservation Division with consultation of the Kauai/Niihau Island Burial Council. A burial treatment plan shall be prepared for burials, following the procedures outlined in Chapter 6E-43 and that section's accompanying rules.

If you have any questions, please call Nancy McMahon at 742-7033.

Sincerely,

MELANIE A. CHINEN, Administrator  
State Historic Preservation Division

NM:jen

c: LaFrance Kapaka-Arboleda, Chair, Kauai / Ni'ihau Islands Burial Council

DOCUMENT CAPTURED AS RECEIVED

*T. S. Dye & Colleagues, Archaeologists, Inc.*

735 Bishop St., Suite 315, Honolulu, Hawai'i 96813

An Archaeological Assessment of a Coastal Lot,  
TMK:(4)5-9-05:029, at Hā'ena, Halele'a, Kaua'i

Thomas S. Dye, Ph.D.

July 8, 2005

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### Abstract

Archaeological assessment of TMK:(4)5-9-05:029 consisted of a single backhoe trench that spanned the area of potential effect from its *makai* end to its *mauka* end, a length of 30 m. The trench exposed a natural stratigraphic profile with primary deposits of extinct *Carelia dolei isenbergi* landsnails near the surface, indicating a relatively stable land surface since at least the early traditional Hawaiian period. No evidence of traditional Hawaiian habitation, in the form of features, artifacts, or food remains, was found. In addition, no human remains were encountered. Construction of a single-family dwelling on the property will have "no effect" on historic sites because no historic sites are present.

## 1 Introduction

At the request of Ben Welborn of Landmark Consulting Services, *T. S. Dye & Colleagues, Archaeologists, Inc.* completed an archaeological assessment of a beach lot at Hā'ena, Kaua'i. The lot is covered with grass, which is mowed, with a stand of trees at the northeast end. No surface remains of historic sites are present and the fieldwork was designed to determine the presence or absence of potentially significant subsurface remains, in particular the remains of traditional Hawaiian habitation. The excavation for subsurface remains was confined to the area of potential effect, defined as that portion of the lot upon which construction of a single-family dwelling and its facilities is permitted.

### 1.1 Survey Area

The survey area is located between the beach and Kūhi'ō Highway, next to a beach right-of-way about 350 m east of Mānoa Stream. Immediately west is a 2.5 ac. residential lot. The survey area comprises a 29,746 ft.<sup>2</sup> residential lot in Hā'ena, Halele'a, Kaua'i described on tax maps as TMK:(4)5-9-05:029. The lot is owned by California residents, Kent and Kathryn Browning, who intend to develop a single-family residence there.

## 1.2 Environment

The real estate market in Hā'ena has been active over the last two decades and this once sparsely populated locale near the end of a winding road with single-lane bridges is now almost fully developed with single-family residences. The project parcel is a beach lot that was cleared of trees by Michael Olanolan about ten years ago and is now covered with grass that is maintained as a lawn. Shrubs and trees line all sides of the parcel and a cluster of trees grows in the southeast corner. The parcel is bound on two sides by roads: an unnamed road on the east is used as a beach access; Kūhi'ō Highway runs directly *mauka* of the parcel.

The *makai* end of the parcel is marked by a steep slope down to a wide sand beach. The parcel slopes down from its *makai* end, reaching the level of the highway about halfway along its length; the *mauka* half of the parcel is flat.

The soil is classified as Mokuleia fine sandy loam, which is found on the eastern and northern coastal plains of Kaua'i (Foote et al. 1972:95). Typically, soils of the Mokuleia series are formed in alluvium deposited over coral sand, but the soil on the project parcel, which is located at the *makai* fringe of the map unit, shows the influence of little, if any, alluvial deposition and is developed almost solely on beach sand. The nearest stream is Mānoa Stream, about 300 m west of the parcel.

The climate is sub-tropical with about 60–80 in. of rain annually (Giambelluca and Schroeder 1998).

## 1.3 Background Research

This section presents background information that can be used to predict the kinds and distributions of historic properties that might be present in the project area. The information also provides context for understanding and evaluating the significance of historic properties.

Documents and materials at the State Historic Preservation Division (SHPD) library and correspondence files, the SHPD geographic information system database, the Survey Office of the State of Hawai'i Department of Accounting and General Services, the Hawai'i State Library, the library of International Archaeological Research Institute, Inc. (IARI), and the library of T. S. Dye & Colleagues, *Archaeologists, Inc.* were consulted. All available archaeological project reports for Hā'ena *ahupua'a* were reviewed for this project. Most of these were found in the SHPD library, but one relatively recent report was consulted in the IARI library; a copy of this report was provided to SHPD for its library. Tax maps and information on the 1946 tsunami were found in the State Library. A nineteenth century map of Hā'ena was found in the Survey Office.

Materials in the State Archives were not reviewed because the pertinent nineteenth century land records for Hā'ena are presented by Hammatt et al. (1993).

Review of these materials indicates that the project area is on the margin of a large traditional Hawaiian settlement at Hā'ena Point. The general distribution of archaeological remains from this settlement is relatively well known, but the archaeological deposit itself hasn't been investigated in great depth, especially in the vicinity of the project areas.

*ahupua'a*

tsunami

The project area was also peripheral to the main mid-nineteenth century settlement in Hā'ena at Limahuli. The land commission awarded unirrigated agricultural lands to several claimants in the vicinity of the project area, and one of the many parcels awarded to the *konohiki* was nearby. Later in the nineteenth century a survey map shows the Hā'ena Point area was sparsely populated.

#### 1.4 Historic Land Use Patterns

This section presents information on historic land use patterns derived from available literature and records specific to Hā'ena *ahupua'a*, but also including more general references, as appropriate.

##### 1.4.1 Land Use Patterns prior to the *Māhele*

Information on land use patterns in Hā'ena prior to the *māhele* comes from archaeological investigations, which typically assign broad patterns of land use to periods established with dates on archaeological charcoal and/or volcanic glass. The periods thus defined for Hā'ena are useful interpretive devices, but their temporal limits should be understood as loose approximations because the dating procedures used in their construction are now known to be unreliable. Volcanic glass dating was discredited some time ago (Olson 1983) and none of the  $^{14}\text{C}$  dates on charcoal from Hā'ena have identified the type of wood used for dating. The use of unidentified wood charcoals introduces the possibility of in-built age and the potential for dates that are too old by several centuries (Dye 2000).

Yent (1980) presents a model of settlement pattern development at Hā'ena in a series of four cultural phases.

**Phase I** Transient settlement along the coastal terrace of Ke'e Beach with a marine-oriented economy. At present, the earliest date for this period at Haena is A.D. 989.

**Phase II** Semi-permanent settlements along the coastal terrace with some inland expansions. Expanded resource base which included both marine resource utilization and limited agricultural resources on the alluvial plain accompanied by population increases. Dates for these developments center around A.D. 1200.

**Phase III** Permanent settlements on both the coastal terrace and the alluvial plain. Development of an intensive irrigated agricultural complex on the alluvial plain around A.D. 1400. Subsistence economy now consists of marine resources, agricultural products, and domesticated mammals.

**Phase IV** Historic contact period with a decrease in population and reduced occupation of the Haena area around A.D. 1700-1800. Historically, the agricultural system in Haena continued into the 1950s with wet taro being grown in the terraced system on the alluvial plain irrigated by Limahuli Stream and sweet potatoes being grown on the coastal terrace (Handy and Handy 1972:419).

Another four phase model was developed by Griffin (1984), which emphasizes the archaeological record of the historic period. The sequence begins with a poorly known Early Occupation phase of transient beach use by a population using a generalized strand-looping adaptation. No evidence of agriculture is known for this phase. A Mid-millennium stability phase encompasses the eleventh through eighteenth centuries, virtually the entire traditional Hawaiian era. This phase saw an increased reliance on taro production, with diminished exploitation of the sea.

by the time of European arrival, most of the taro pondfields were completed, the *heiau* built, and the importance of Ha'ena as a social, political, and economic center established (Griffin 1984:14).

A nineteenth century Historic Transition Phase is posited on the basis of historical records, but the lack of excavated material from the houses and fields of individuals identified in the records is noted. The final Twentieth Century Adjustment phase is based primarily on excavations carried out by Riley and Ibsen-Riley (1979) in the abandoned hippy community at Taylor camp.

While these two models differ in many respects, they agree on an early period of coastal habitation followed by expansion of agricultural activities. Here it should be noted that the archaeological evidence for an early period of coastal habitation is highly susceptible to problems of in-built age in <sup>14</sup>C dates. The reason for this is the likelihood that early settlers in a region had access to large stores of driftwood (Strong and Skolmen 1963) for firewood; driftwood on Hawaiian beaches has been shown to be several hundred to a thousand years old (Emory and Sinoto 1969). Given this situation, reliable dates from early beach deposits can only be obtained on identified wood charcoals selected to minimize the possible effects of in-built age.

#### 1.4.2 Land Use at the Time of the *Māhele*

Silva (1995) researched land titles in Hā'ena, with emphasis on lands in the Hā'ena State Park. In the *māhele* of 1848, Hā'ena *ahupua'a* was reserved for Abenerā Pākī, husband of Kamehameha I's grand-daughter L. Konia and father of Bernice Pauahi Bishop, last heir in the Kamehameha line. Pākī was a *kaukauali'i* who received six *ahupua'a* in the *māhele* (Kame'eleihiwa 1992:268), of the nine, including Hā'ena, he had held previously. Pākī claimed twelve *kō'ele* within Hā'ena, named Pākī, Kahookumaka, Oahu, Kapalaa, Akole, Kaluahine, Kailiili, Peekauai, Kalaole, Koi, Kanaele, and Keokea, and placed a *kapu* on taking octopus in the shallow waters of the *ahupua'a*, reserving them for his own use and enjoyment.

About 1837, Pākī appointed a woman, E. Kekela, *konohiki* of Hā'ena. Although not a native of Kaua'i, Kekela lived for 14 years in Halele'a district, prior to being named *konohiki*. Kekela was a widow of Kamehameha I's half-brother Kalaimamahū in 1810 when she was given by Kamehameha to Kamaholelani, a nephew of the Kaua'i chief Kaumuali'i. She lived with Kamaholelani at Lumaha'i, near Hā'ena, from 1810 until Kamaholelani died in 1820. She left for O'ahu with the civil unrest on Kaua'i that followed Kaumuali'i's death in 1824. She returned to Kaua'i in 1837 to take up her *konohiki* duties.

*kaukauali'i*

*kō'ele*

*kapu*

The award to Pākī respected the claims of twenty-three native tenants in Hā'ena.<sup>1</sup> Fifteen of the claimants received their lands from Kaua'i chief Kaumuali'i prior to 1824. Seven claimants received their lands sometime after Kaumuali'i's death, when the chiefs of Kaua'i's traditional chiefly lines were dispossessed and, in the words of an O'ahu chronicler, "the loafers and hangers-on (*palaualelo*) of Oahu and Maui obtained the rich lands of Kauai" (Kamakau 1992:268–269). The rights of the *kama'āina* who held lands granted them by Kaumuali'i were well-respected at Hā'ena, a circumstance attributed to Kekela's long tenure in Halele'a, and her familiarity with the older residents of the land:

Haena was relatively fortunate in this regard; the corps of older tenants [sic] was respected and their holdings were honored and protected (Silva 1995:34).

The locations of land commission awards in Hā'ena *ahupua'a* recorded on the tax map for Zone 5, Section 9 are shown in figure 1. The map distinguishes the *konohiki* lands from those of the *maka'āinana*, and within the *maka'āinana* lands distinguishes four types of use. Houselots and *kula* are directly indicated in either the native register or foreign testimony for the parcel. The *lo'i* category includes parcels described as *lo'i kalo*, *mo'o kalo*, and *loko kalo*; it should be taken to indicate irrigated production of the staple taro. The mixed category includes parcels where the houselot and taro fields were contiguous, a settlement pattern that was common on the good taro lands in what is now Hā'ena State Park.

The land commission awarded five parcels in Hā'ena *ahupua'a* near Mānoa Stream and the project parcel (fig. 1). Descriptions of the parcels in the native register and foreign testimony records of the land commission are reproduced by Hammatt et al. (1993:appendix E). The award to the *konohiki* (LCA 7949:1) is described by Kamakama as a houselot in Waioli, which is most likely an error. More likely is Kamakama's description of 'āpana 2, as a houselot in Kalele-Haena. This type of inconsistency is relatively common in records of the land commission.<sup>2</sup> Large parcels of *kula* land were awarded to Keahiaka (LCA 7967:2) and to Opu (LCA 10562:2). Keahiaka was also awarded *lo'i kalo* along Mānoa Stream (LCA 7967:1). This was an 0.72 ha alluvial terrace irrigation system that took its water from a small independent stream with a 120 m 'auwai (Earle 1978:125, table 3). Foreign testimony makes it clear that the award to Kekala (LCA 7945:2) is the *kula* land described as 'āpana 1, bounded on one side by Keahiaka's *kula* and on the other by Opu's *kula*.

#### 1.4.3 Land Use Since the *Māhele*

A survey map shows land use in Hā'ena *ahupua'a* twenty years after the *māhele* (fig. 2). A grove of trees, possibly coconut palms, is shown at Hā'ena Point extending back from the strand about 100 m. Four houses are shown *mauka* of the roadway, the easternmost of which is labelled "Clark's house." The other three unlabeled houses are closer to

<sup>1</sup>The number of claims is given variously as 22 (Calis 2000:8), about 24 (Hammatt and Shideler 1998:9), and 32 (McGerty and Spear 1999:9).

<sup>2</sup>See, for example, Earle's comments on the limitations of land commission records (Earle 1978:122 fn. 3).

*kama'āina*

*maka'āinana*

*kula*

*lo'i*

'āpana

*mauka*

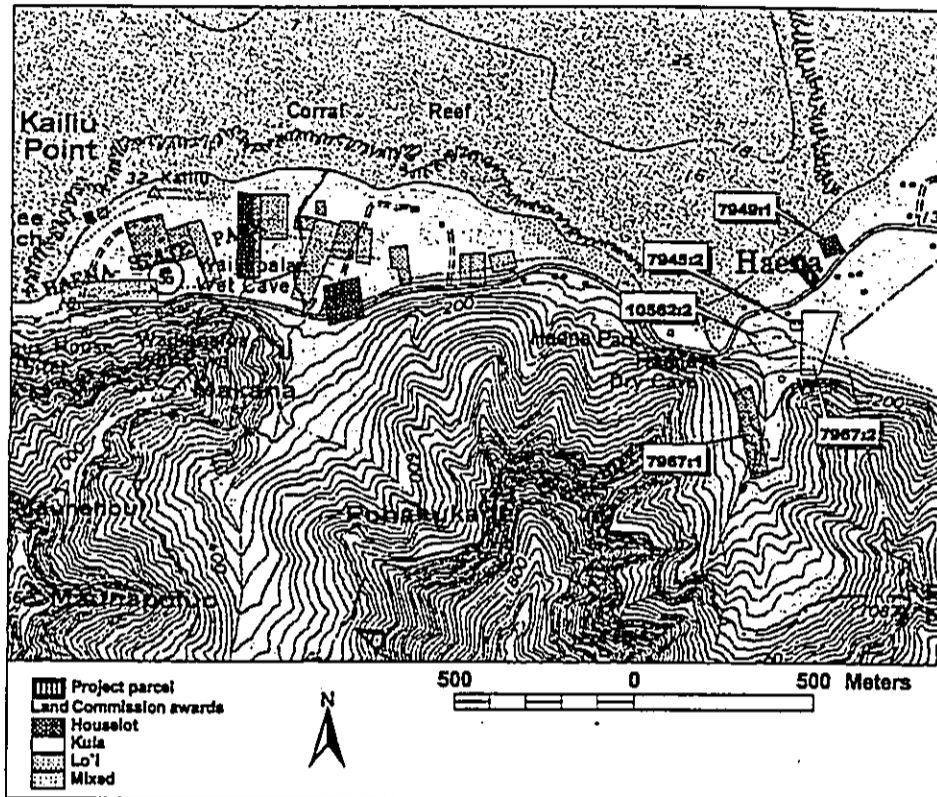


Figure 1. Land commission awards in Hā'ena ahupua'a in relation to the project parcel.

Mānoa Stream, in the vicinity of the *kula* lands awarded in the *māhele* (see fig. 1). The vicinity of the project area is blank on the map, indicating that this parcel was vacant at the time.

The twentieth century saw use of Hā'ena Point for habitation, with much of the area *mauka* of the highway used for pasture. Currently, the lands *makai* and *mauka* of the highway are being developed as single-family residences.

### 1.5 Archaeological Background Information

This section reviews archaeological studies carried out in Hā'ena ahupua'a, with an emphasis on the eastern portion of the ahupua'a from Mānoa Stream to Hā'ena Point, which has been surveyed intensively in the last twenty years. It summarizes the findings with a map of survey coverage in the vicinity of the project areas (fig. 3). The results of the archaeological studies are analyzed from the points of view of settlement pattern and chronology. The results of this analysis are compared to and contrasted with the



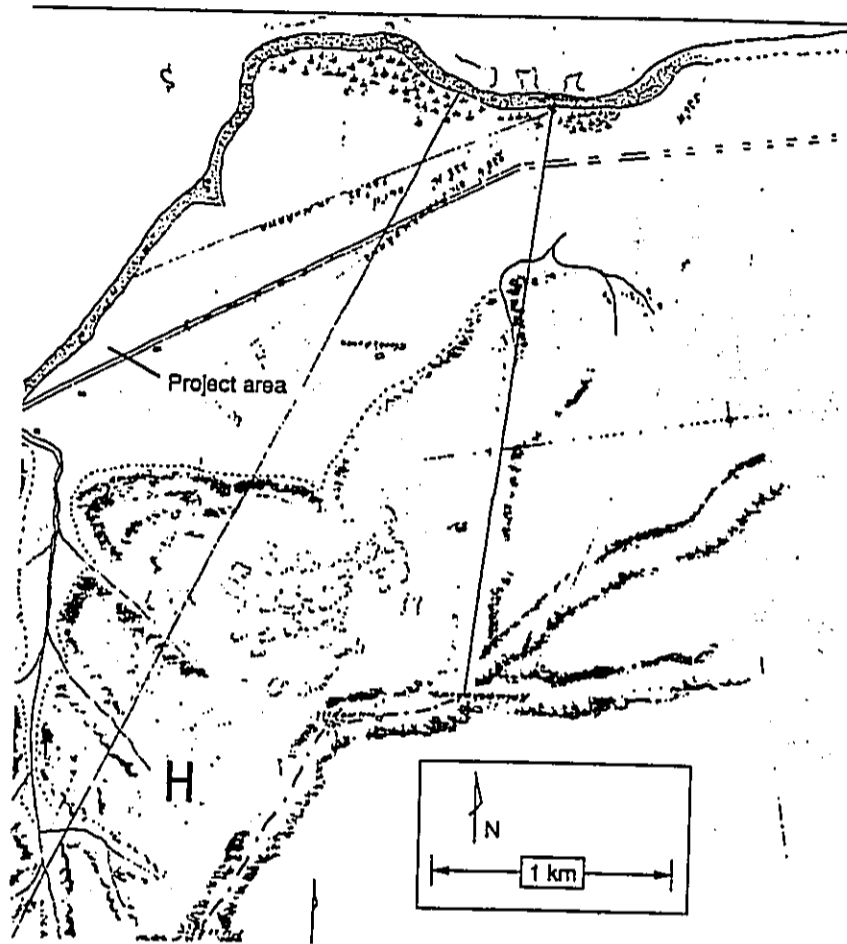


Figure 2. The Hā'ena Point portion of Gay (1871) showing the approximate location of the project area. Note that the map has been rotated so magnetic north is at the top of the figure. A scale and north arrow have been added to the annotated figure.

land use patterns derived from historical sources (pg. 4). In general, the archaeological studies indicate a more intensive use of Hā'ena Point than is indicated in the *māhele* records, although the levels of investigation and reporting are limited and place rather strong constraints on synthesis. The section ends with expectations about the types of sites that will be found during inventory survey of the project parcel.

#### 1.5.1 Archaeological Survey in Hā'ena Ahupua'a

There have been a great number of small archaeological surveys completed in Hā'ena ahupua'a near the project areas and to the east at Hā'ena Point. These are reviewed below to determine the site types likely to be found at the project parcel.

**Surveys Near the Project Area** Earle (1978) mapped the *lo'i* system on the west bank of Mānoa stream (fig. 3, 19). The *lo'i* are associated with dry terraces, mounds, and an enclosure on the talus slopes and with a *heiau* at the top of the system near the origin of the *'auwai* (Earle 1978:fig. 6.6). No excavations were undertaken.

Kennedy (1989a) excavated four backhoe trenches in a previously bulldozed lot *makai* of Kūhiō Highway (fig. 3, 12). A soil horizon was exposed at and near the surface, but no indication is given whether this soil layer represents a cultural deposit. Later, it was reported that "no significant cultural deposits were present" (Moore and Kennedy 1995:15, emphasis added) at the parcel. Moore and Kennedy (1995) report results from an additional four backhoe trenches immediately east (fig. 3, 11). Stratigraphic descriptions indicate that they found what appears to be a buried cultural layer in trench 4 and possibly trench 3, but failed to recognize it. Marine shells recovered from the trenches "could not be attributed to anthropomorphic [sic] activities" (Moore and Kennedy 1995:15). Incomplete remains of one individual, presumably Hawaiian, were discovered during house construction (McMahon 1996).

Shun (1994) excavated four long trenches across a property *mauka* of Kūhiō Highway (fig. 3, 14). No cultural materials were found in the surface alluvium or in the basal calcareous sand.

Kennedy (1989b) excavated four backhoe trenches immediately *mauka* of Kūhiō Highway (fig. 3, 13). The trenches exposed calcareous sand, which is not further described in the report. Presumably, the sand is light-colored because "no cultural material of any kind was present" (Kennedy 1989b:2), although the dog skeleton recovered from a depth of about 1 m presumably represents an intentional burial and not natural deposition.

Dye (1998) recorded three sites on a property *mauka* of Kūhiō Highway adjacent to the project area (fig. 3, 15). Two stone structures, sites 50-30-02-1994 and -1996, are located at the *mauka* end of the property at the base of the talus slope. Site 50-30-02-1994 is a *heiau*. Site 50-30-02-1995 is a remnant cultural deposit exposed at the *makai* east corner of the property, near Kūhiō Highway.

Hammatt et al. (1993) excavated 17 backhoe trenches, exposing a buried cultural layer at the *mauka* end of a property *makai* of Kūhiō Highway (fig. 3, 17). The cultural layer "probably occurs throughout the property, but is buried . . . by as much as 3 meters of dune and fill sand" (Hammatt et al. 1993:29). An *imu* cut from the cultural layer yielded a  $^{14}\text{C}$  date of  $80 \pm 60$  indicating either a late prehistoric or historic-era age for the deposit. Although the authors interpret the  $^{14}\text{C}$  date to indicate late prehistoric traditional Hawaiian use of the area (Hammatt et al. 1993:27), the possibility of in-built age for the unidentified wood charcoal makes this interpretation somewhat tenuous. The cultural layer yielded only three basalt flakes.

Wickler (1989) carried out an extensive program of auger and shovel testing west of the project parcel, immediately inland of Kūhiō Highway (fig. 3, 16). A basal deposit of calcareous sand was found near the surface near the highway and at increasing depths toward the *mauka* edge of the property. It was buried by alluvial sediments containing some charcoal and modern cultural material, such as glass and plastic. No traditional Hawaiian cultural deposit was found.

McGerty and Spear (1999) assign a deeply buried and stratigraphically variable layer of dark sand at Hā'ena Beach Park to State Site 50-30-02-788, west of the

*makai*

*imu*

project parcel (fig. 3, 18). They provide no evidence that the layer represents a cultural deposit; instead they assume that the layer "derived from past human activity in the area" (McGerty and Spear 1999:32). A sample of sediment from the supposed cultural layer yielded a  $^{14}\text{C}$  date of  $370 \pm 70$ , which falls within the traditional Hawaiian period. This result is not interpretable, however, because the sediment is not associated with an archaeological event and the source(s) of the dated carbon were not identified. Evidence for cultural activity associated with this buried layer should be obtained before it is considered a traditional Hawaiian site. The deposit could just as well represent a paleosol, whose presence is due to natural and not cultural processes.

paleosol

McMahon (1988) recorded the remains of possibly four individuals disturbed when a bulldozer removed ironwood trees from the crest of a "semi-U shape" sand dune on either side of Kūhiō Highway east of the project parcel (fig. 3, 8). A cultural layer was present, but was disturbed by the tree removal, and was not described in detail. It appears that the individuals were determined to be Hawaiian, although the basis for this determination is not specified, and were reinterred in place with the participation of the Office of Hawaiian Affairs.

Folk (1990) found a traditional Hawaiian cultural deposit whose *makai* edge is about 100 m from the beach and which runs to Road D-2 at the *mauka* end of a beach-front property (fig. 3, 9). It is found between 13 cm and 100 cm below surface and has a maximum thickness of at least 54 cm. Profiles of the cultural deposit (Folk 1990:figs. 6 and 7) indicate that it was located on the gently sloping *mauka* face of the Hā'ena dune, and that the eastern edge of the deposit was possibly truncated by an intermittent stream.

Hammatt and Shideler (1998) excavated trenches totalling 45.6 m on a parcel on the *makai* side of Kūhiō Highway (fig. 3, 10). No subsurface cultural remains were found, due possibly to the erosional effects of tidal waves (Hammatt and Shideler 1998:27-29). However, all of the trenches were excavated west of the expected location of the cultural deposit, based on the results reported by Folk (1990).

**Surveys at Hā'ena Point** Dixon et al. (1997) and Soldo and Dixon (1994) report a concentration of the extinct landsnail *Carelia dolei isenbergi* at site 50-30-10-1031, *makai* of Kūhiō Highway, east of the project parcel (fig. 3, 7). The *C. dolei* shells were in a sealed deposit with the Polynesian introduced landsnail *Lamellidea oblonga*, indicating that the *C. dolei* extinction event occurred after Polynesian colonization of the islands. A single  $^{14}\text{C}$  date of  $1390 \pm 60$  on *C. dolei* includes an unknown but potentially substantial in-built age, and the calibrated age of A.D. 252-549 provides a *terminus post quem* for extinction. Thus, *C. dolei* became extinct sometime within the last 1,750-1,450 years, well after their hypothesized Pleistocene demise (Cooke 1931).

They also report eleven archaeological features recorded in two stratigraphic layers in the upper 50 cm of unconsolidated calcareous sand. These include seven firepits, one *imu*, two landsnail deposits, and one modern trash pit.  $^{14}\text{C}$  dates on unidentified wood charcoal from one of the firepits and the *imu* returned conventional  $^{14}\text{C}$  ages of  $460 \pm 60$  and  $520 \pm 80$ , respectively. These dates have unknown but potential in-built age of up to about 200 years due to the possibility that the dated materials were long-lived species of relatively great age when they were burned. Interpreted conservatively, the  $^{14}\text{C}$  dates

indicate use of the coastal plain sometime in the fifteenth to early eighteenth centuries.

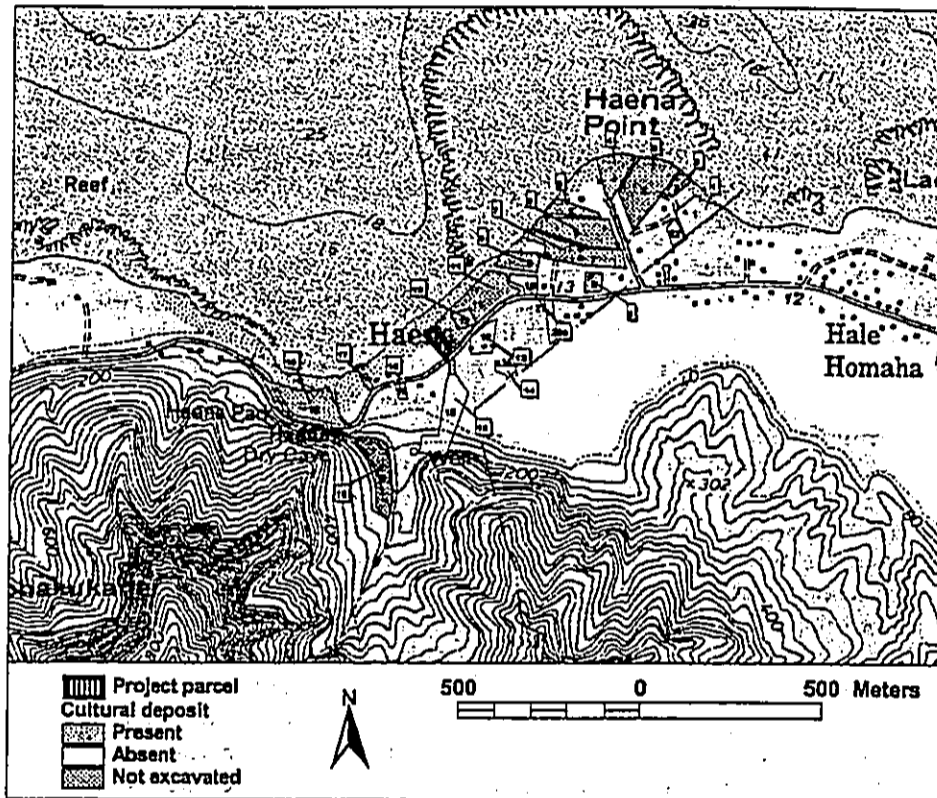


Figure 3. Archaeological survey coverage in the vicinity of the project area. See text for results of inventory surveys at numbered parcels.

Hammatt and Shideler (1989b) and Hammatt (1989) excavated 35 m<sup>2</sup>, revealing a discontinuous traditional Hawaiian cultural layer in the *makai* and *mauka* portions of the property (fig. 3, 5). The layer yielded an artifact assemblage dominated by basalt and volcanic glass flakes, but also including coral, sea urchin spine and basalt files, and a cowrie shell octopus lure. Faunal remains include a relatively large number of seabird and mammal bones, as well as *Neritina* sp. shells that indicate harvesting in Mānoa stream. <sup>14</sup>C dates on unidentified wood charcoal yielded calibrated ages ranging from the last half of the thirteenth to the seventeenth centuries. Given the possible influence of in-built age, a conservative interpretation of the <sup>14</sup>C evidence indicates traditional Hawaiian use of Hā'ena point by the fifteenth century. Denham and Kennedy (1993) describe the discovery of the partial remains of at least 18 individuals from disturbed deposits after construction of the Zimmerman house had begun. A large collection of traditional Hawaiian artifacts, also from disturbed contexts, was made. The artifacts include adzes, chisels, a mother-of-pearl pendant in the shape of a *nihopalaoa*, and a possible *kū'ula*.

Hammatt and Shideler (1989a) investigated remnants of a truncated traditional Hawaiian cultural layer at Hā'ena Point (fig. 3, 4), recovering a small collection of mostly marine shell midden, a single flake of volcanic glass, and the remains of two individuals, one disturbed by excavation and the other intact at a depth of 2 m below surface. Thirty-one sets of human remains were discovered during construction, along with a small collection of burial goods (including two *Pinctada* shell ornaments), and artifacts including hammerstones, adzes, basalt and volcanic glass flakes, a stone bowl or lamp, cowrie shell octopus lures, coral and sea urchin spine files, a bone ornament and a fishhook blank (Rechtman 1994).

Hammatt and Shideler (1989c) report results of 10.5 m<sup>2</sup> excavation at the Rasten property (fig. 3, 8). Excavations yielded 307 traditional Hawaiian artifacts, primarily basalt flakes, many with polish indicating they derived from a finished tool such as an adze, volcanic glass flakes, several adzes, a hammerstone, basalt, coral and sea urchin spine abraders of various forms, bone and shell fishhooks, and dog tooth and shell ornaments. Historic-era artifacts were absent. Vertebrate faunal remains include fish, birds, pig, dog, Polynesian rat, and turtle, and indicate consumption of relatively large numbers of pigs. Historically-introduced taxa were not recovered. Among the birds were bones of albatross and goose, neither of which were known to nest on Kaua'i during the historic period. Fish bone was composed primarily of inshore taxa, with a large number of shark or ray vertebrae. Marine invertebrate remains include primarily shells that could have been collected from the inshore waters adjacent to the property, but also *Neritina* sp., probably collected from Mānoa Stream, and 'ōpihi, which might have been collected along the Nā Pali coast. Two <sup>14</sup>C dates on unidentified charcoal yielded calibrated ages ranging from the fourteenth to fifteenth centuries. Given the possibility of in-built age, these dates can be conservatively interpreted to indicate traditional Hawaiian use of the area by the fifteenth century. A "basalt boulder feature" associated with abundant charcoal was uncovered at the base of the cultural layer (Hammatt and Shideler 1989c:fig. 9), but it is not interpreted.

'ōpihi

Kruse (1994) presents field notes from monitoring house construction at Hā'ena Point (fig. 3, 1). The notes record in minimal detail the discovery and reinterment of a single individual from burial site 50-30-02-870.

Rosendahl (1989) identified "a dark grey to black cultural deposit which evidenced aboriginal occupation and exploitation of the area" but failed to note the stratigraphic position of the deposit (fig. 3, 3).

Hammatt (1980) discovered a cultural layer in a wave-cut bank within 30 cm of the present land surface at Hā'ena Point (fig. 3, 2). It contained artifacts, marine shell midden, and charcoal. Four years later, Hammatt (1984b) returned to the parcel, excavated three test pits along the wave-cut bank and reported no indication of buried cultural deposits. As a result of these investigations, Hammatt concluded that there are "no archaeological remains in the dune deposits" and recommended no further archaeological investigations. Subsequently, Hammatt (1984a) returned to the parcel, excavated six test pits, and rediscovered the cultural deposit which is described as having "fairly heavy midden content" and which yielded an 'ulu maika and basalt and volcanic glass cores and flakes.

'ulu maika

## 1.6 Synthesis of Archaeological Information

Archaeological investigations in Hā'ena *ahupua'a* near Mānoa Stream have revealed the presence of a widespread buried traditional Hawaiian cultural layer in the sandy soils near the shore, stone structures including a *heiau* at the base of talus slopes near the mountains, and agricultural fields, *heiau*, shelters and enclosures in the Mānoa Stream valley. No traditional Hawaiian sites have been found on the former pasture lands between the base of talus slopes and the sandy soils mostly *makai* of the highway.

The discontinuous traditional Hawaiian cultural layer at Hā'ena Point is listed as site 50-30-02-1809 (State Historic Preservation Division 2001) in the SHPD geographic information system database. This site was probably established by the fifteenth century A.D.; claims for an earlier settlement do not take into account the likely effects of in-built age on unidentified wood charcoal used in <sup>14</sup>C dating. The wide range of traditional Hawaiian artifacts recovered from the site indicate use for habitation and burial. Subsurface archaeological features associated with habitation are present and include *imu* and stone structures. These have received relatively little attention, despite their importance in reconstructing traditional Hawaiian settlement at Hā'ena Point. The site has yielded a wide range of faunal material indicating animal husbandry of pig, dog, and chicken and fishing in the shallow and deep water offshore. It has been suggested that *'ōpihi* were brought to the site from the Nā Pali coast and that inhabitants of the settlement at Hā'ena Point regularly harvested snails from Mānoa Stream. Recovery of bones from a seabird and a goose not known to nest on Kaua'i during the historic period indicate either different environmental conditions in the past, or possible inter-island transport of birds. Dates for the presence of these birds at Hā'ena can be established by dating the bones directly, using sample preparation techniques described by Stafford et al. (1991).

The discontinuous nature of Site 1809 is explained as a result of twentieth century land modifications and erosion due to tsunamis. Coastal sand deposits generally develop as a series of ridges and swales that parallel the coast; land modifications typically flatten this undulating topography by pushing the crests of ridges into the swales. In places, this creates a discontinuous cultural deposit buried in former swales and absent on former ridges. The situation at Hā'ena Point might be more complex than this, however, and awaits a more detailed analysis. The effects of tsunami are believed to have been greatest at the western edge of the site (Hammatt and Shideler 1998). Records of the 1946 tsunami indicate wave heights up to 14 m behind the channel in the coral reef at Mānoa Stream (fig. 4). The wave had devastating effects on the land. Cultural deposits are found in the sandy soils here, but they haven't been explored in depth so it is not possible to specify what effects, if any, tsunamis have had on them.

Human burial remains are numerous in the sandy coastal soils of Hā'ena Point. In general, archaeological inventory survey techniques employed to date have been unsuccessful in locating or predicting the locations of burial sites at Hā'ena Point. These techniques, which include augering, excavation of small test pits, and backhoe trenching, are all designed to yield stratigraphic information and concentrate on the vertical dimension, rather than the horizontal. An alternative technique that has been used successfully to identify burial sites elsewhere in the islands maximizes horizontal exposure by scraping the surface. The goal of this technique is to expose the tops of

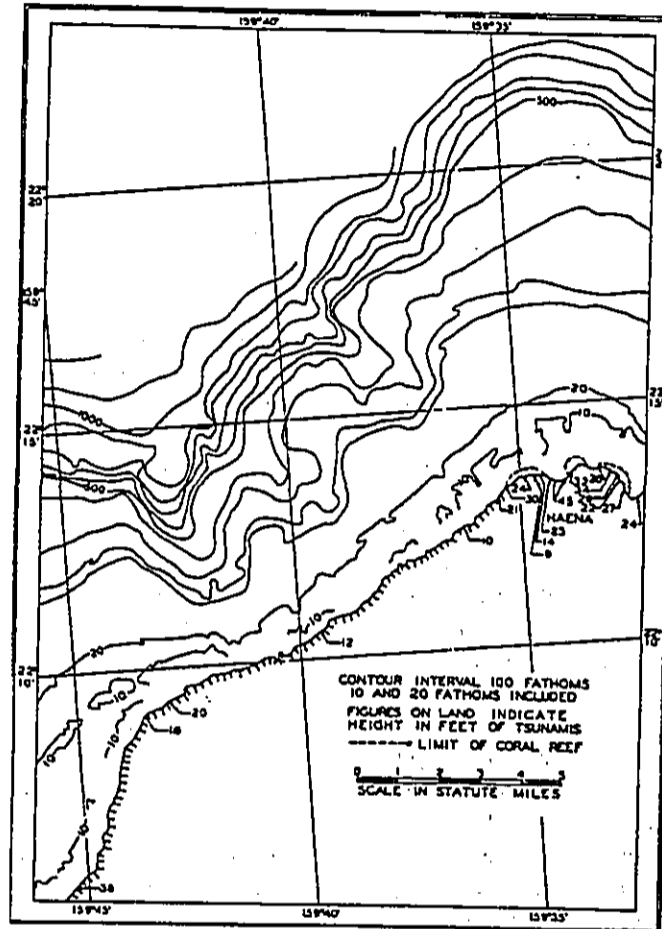


Figure 4. Wave heights in Ha'ena during the 1946 tsunami. Source: Shepard et al. (1950).

possible grave shafts, which can be identified by the mixed sediment used to fill them, without exposing human remains.

#### 1.6.1 Expected Inventory Survey Results

The project parcel is located at the coast in an area that, according to published maps, receives the full force of tsunami. It is expected that discontinuous deposits of site 50-30-02-1809 are present at the parcel, although their probable distribution across the parcel can't be predicted with confidence based on previous archaeological work in the vicinity. The archaeological remains might be primary deposits significant for the information on Hawaiian history and prehistory that they are likely to yield, or they might be secondary deposits of tsunami events. Secondary deposits yield little

information on Hawaiian history and prehistory and, if present, would not be evaluated as significant. Human burial remains might also be present at this parcel. The locations of burial remains are very difficult to predict and have traditionally been discovered at Hā'ena Point during construction activities and not during archaeological inventory survey.

## 2 Methods

The archaeological fieldwork was conducted by Thomas S. Dye, a qualified archaeologist, on Wednesday, June 8, 2005. A single trench was positioned to span the area of potential effect, running *mauka* to *makai* at an azimuth of 310°, which served as grid north for the project. The trench was oriented in this way for two reasons: to expose evidence for the natural processes that deposited *marine sands* across the parcel; and to intersect traditional Hawaiian habitation sites that might be present and which are typically oriented parallel to the shoreline. The trench was excavated to a depth of approximately 4 ft. with a backhoe operated by Mark Soppeland (fig. 5). A portion of the trench was excavated to approximately 6 ft., but the trench walls of unconsolidated sand proved unstable at this depth and no attempt was made to excavate deeper.



Figure 5. Backhoe trench, looking *makai*. Note the collapsed sections along the right-hand face of the trench. The property boundaries are marked by the lines of vegetation on the right and left hand sides of the photograph.

The stratigraphic section exposed in the trench was recorded using standard terminology and three profiles of the west face were drawn to illustrate the range of stratigraphic variation along its length. Samples of sediment and extinct landsnail shells



were collected for description in the laboratory. A photograph was taken to show the position of the trench on the property.

### 3 Field Survey Results

The stratigraphic profile exposed by the trench is predominantly natural. At the *mauka* end of the parcel, as illustrated by the profiles 2.4 m and 10 m from the *mauka* end of the trench, the profile consists of two layers (fig. 6), with an A-horizon directly overlaying a C-horizon. The upper layer, mapped as contexts 1 and 8 (tables 1 and 2), is sand that has been darkened by organic matter. Typically, the sand is darkest and finest at the surface and becomes lighter and coarser with depth. Sediment near the surface of the profile 2.4 m from the *mauka* end of the trench is very dark gray, while at a depth of about 20 cm below surface it is grayish brown. The basal sand at depth of excavation along the entire trench is a pale brown to brown coarse sand.

Table 1. Sediment descriptions for profile at 2.4 m

Context	Depth*	Color	Description	Interpretation
1	0-30	10YR 3/1	Very dark gray marine sandy loam; non-sticky, non-plastic; gradual, wavy lower boundary.	Natural layer.
1	0-30	10YR 5/2	Grayish brown marine sand; non-sticky, non-plastic; gradual, wavy lower boundary.	Natural layer.
2	18-100+	10YR 6/3	Pale brown marine sand; non-sticky, non-plastic; base of excavation.	Natural layer.

\* Depth in cm below surface.

Table 2. Sediment descriptions for profile at 10 m

Context	Depth*	Color	Description	Interpretation
8	0-28	10YR 3/2	Very dark grayish brown marine sandy loam; non-sticky, non-plastic; abrupt, smooth lower boundary.	Natural layer.
9	28-80+	10YR 6/3	Pale brown marine sand; non-sticky, non-plastic; base of excavation.	Natural layer.

\* Depth in cm below surface.

The boundary between the A-horizon and C-horizon was typically smooth, but in some sections of the trench the boundary was wavy, as shown in the profile drawn 2.4 m from the *mauka* end of the trench (fig. 6). This variation in the boundary appears to be due to the effect of vegetation, rather than some cultural process. The dip in the

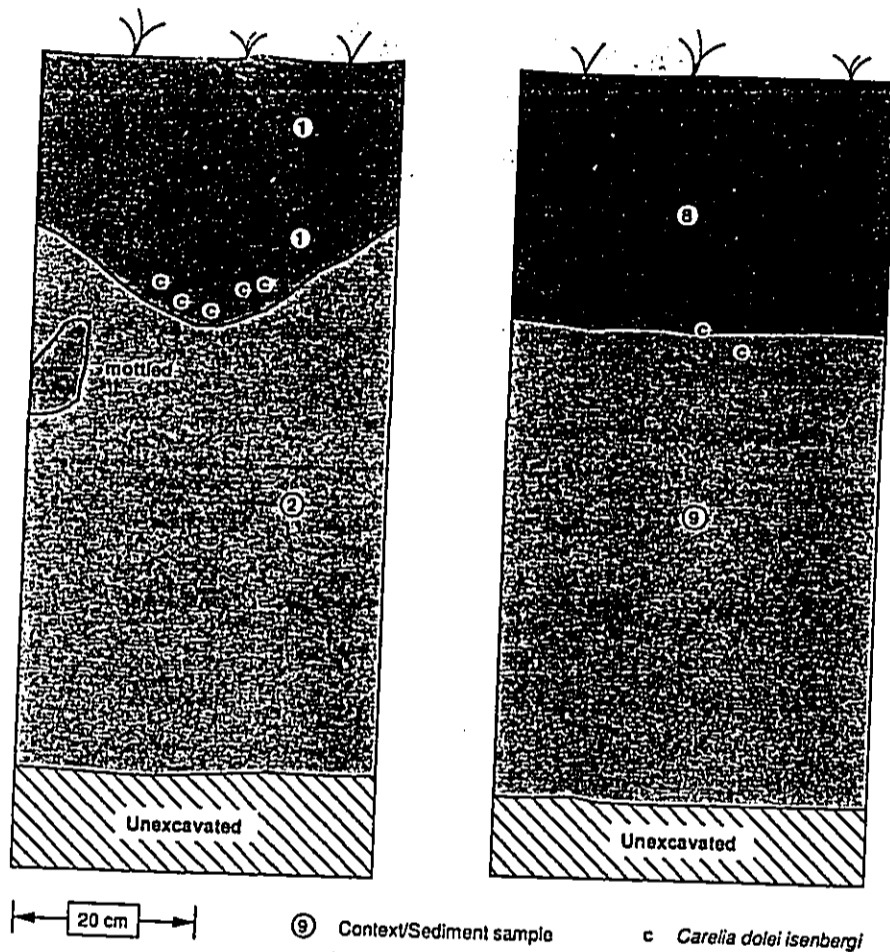


Figure 6. Stratigraphic profiles of the west face at 2.4 m, left, and 10 m, right from the mauka end of the trench.

boundary shown in figure 6 was not associated with any cultural material and below it was a mottled stain in the sand typical of a root cast.

Shells of the extinct landsnail, *Carelia dolei isenbergi* (fig. 7), were found in relatively great numbers. They were distributed primarily at the interface of the A-horizon and C-horizon, where they often appeared as pockets of several shells, but were also found in lesser numbers within the bottom half of the A-horizon.

The stratigraphic profile at the makai end of the trench is somewhat more complex (fig. 8). Here recent deposits of sand overlay the two-layer stratigraphy found in the mauka end of the trench (table 3). The A-horizon in the mauka end of the trench corresponds to context 6, a very dark gray sandy loam with a relatively level upper surface at about 37 cm below surface. Context 6 is buried by three sand layers, each of which has a surface that slopes up toward the makai end of the parcel. The middle of

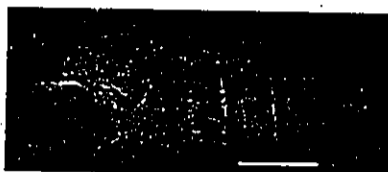


Figure 7. *Carelia dolei isenbergi* shell. The scale bar is 1 cm.

these three layers is somewhat darker than the other two, suggesting that it was a stable surface for a longer time.

Table 3. Sediment descriptions for profile at 28 m

Context	Depth*	Color	Description	Interpretation
3	0-19	10YR 6/3	Pale brown marine sand; non-sticky, non-plastic; smooth lower boundary.	Natural layer.
4	19-32	10YR 4/2	Dark grayish brown marine sand; non-sticky, non-plastic; smooth lower boundary.	Natural layer.
5	32-37	10YR 6/3	Pale brown marine sand; non-sticky, non-plastic; smooth lower boundary.	Natural layer.
6	37-62	10YR 3/1	Very dark gray marine sandy loam; non-sticky, non-plastic; gradual, smooth lower boundary.	Natural layer.
7	62-100+	10YR 5/3	Brown marine sand; non-sticky, non-plastic; base of excavation.	Natural layer.

\* Depth in cm below surface.

Scattered throughout the trench in small numbers were waterworn cobbles and pebbles of basalt. Marine shells were also present, including *Turbo* sp., *Trochus* sp., cowry (*Cypraea* spp.), *pipipi* (*Nerita picea*), 'ōpihi (*Cellana* sp.), and *Strombus* sp. Many of the shells were waterworn and none of them appear to be constituents of a traditional Hawaiian midden. Instead, they appear to be natural components of the sand here.

Modern artifacts of glass and plastic were encountered in the surface layer, primarily in the *makai* third of the trench. No traditional Hawaiian artifacts or features were observed during excavation of the trench or in its walls.

West of the *makai* end of the trench, 4.6 m from the western property boundary, five waterworn basalt cobbles were exposed at the surface. These were investigated by digging a trench approximately 50 cm deep immediately *makai* of them. The trench exposed several waterworn basalt cobbles and boulders at and immediately beneath the surface. This concentration of basalt was not associated with any traditional Hawaiian cultural material. Michael Olanolan noted that when he was a child a road ran through the lot at about this location, and it is likely that the stones are associated with the road.

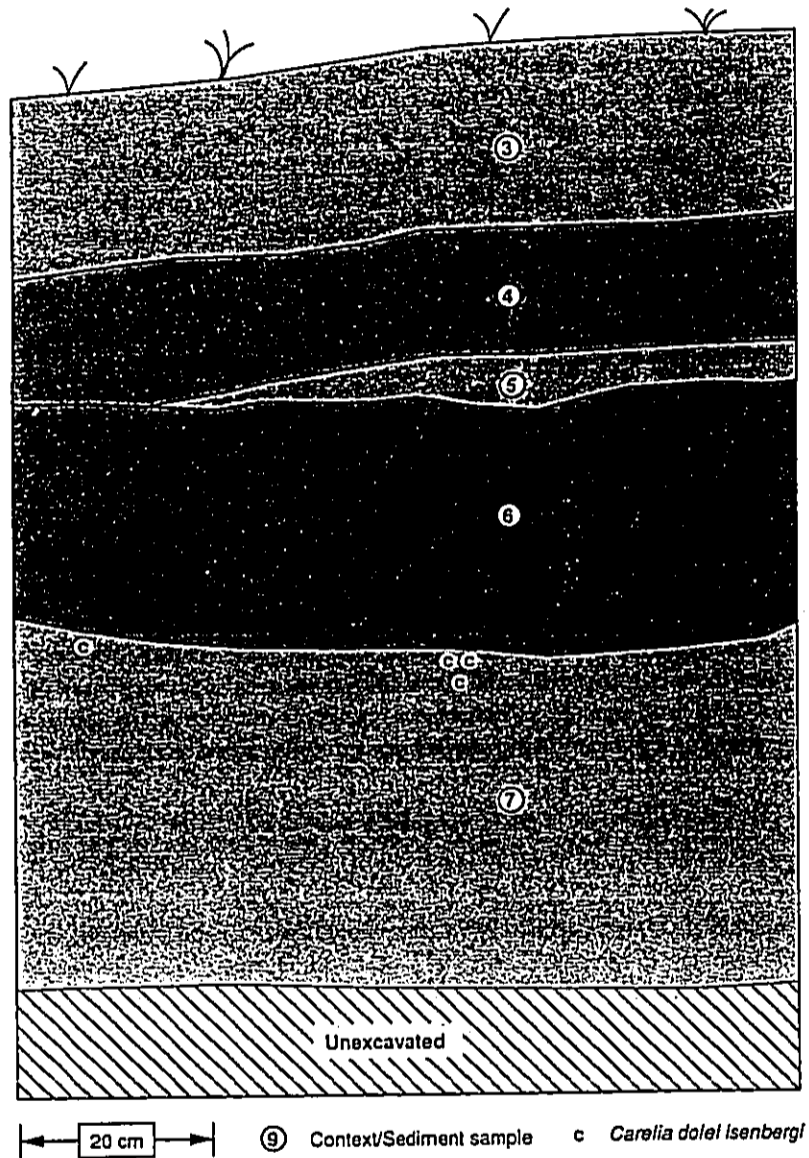


Figure 8. Stratigraphic profile of the west face at 28 m from the *mauka* end of the trench.

#### 4 Discussion and Conclusions

Excavation of a single backhoe trench through the area of potential effect for construction of a single-family dwelling on parcel TMK:(4)5-9-05:029 revealed a natural stratigraphy with no evidence for traditional Hawaiian use. Primary deposits of shells from the landsnail, *Carelia dolei isenbergi*, within and immediately beneath the A-

horizon indicate that this horizon, mapped as contexts 1, 6, and 8, was a stable surface of relatively great antiquity. Recent archaeological work indicates that this landsnail was extant during the time of initial Polynesian colonization, but that it was extinct by the time of Captain Cook's visit to Kaua'i in A.D. 1778 (Dixon et al. 1997). The stability of the land surface here is somewhat surprising, given recorded tsunami heights in excess of 20–30 ft. in the vicinity. Michael Olanolan, who witnessed a tsunami here in the mid-1950's, noted that the effects varied considerably from one area to another. Property damage east and west of the project parcel was particularly severe, but the area of the project parcel escaped relatively unscathed. The presence of this old, stable surface indicates that it is unlikely that a deeply buried traditional Hawaiian cultural deposit, below the base of the backhoe trench, is present at the parcel.

Evidence for recent sediment deposition, sometime after the extinction of *Carelia dolei isenbergi* and extending into the historic period, is found at the *makai* end of the parcel where the ground rises. Waterworn stones in the uppermost of these recent deposits are associated with modern artifacts and are likely associated with construction and use of a road, now abandoned, that ran along the *makai* end of the parcel.

Based on the negative results of the archaeological assessment, construction of a single-family dwelling on the project parcel will have "no effect" on historic sites because none are present. It is possible that isolated human burials are located on the parcel. Should human remains be discovered during construction, all work in the vicinity of the remains must stop and the island archaeologist for the State Historic Preservation Division contacted. Construction work in the vicinity of the find spot can resume when the human remains have been properly treated and SHPD gives its approval.

## Glossary

Entries for Hawaiian words are excerpted or paraphrased, where possible, from the *Hawaiian Dictionary* (Pukui and Elbert 1971), or from Lucas (1995). Geological and geographical terms are from American Geological Institute (1976) and Clark (1998). Archaeological terms are from Bray and Trump (1982) and Mignon (1993).

*'āpana* Piece, slice, portion, fragment, section, land division, lot, district, sector.

*'ōpihi* A limpet, *Cellana* sp.

*'ulu maika* Stone used in *maika* game.

*ahupua'a* Traditional Hawaiian land division usually extending from the uplands to the sea.

*imu* Underground oven.

*kama'āina* Native-born, one born in a place, host.

*kapu* Taboo, prohibition; special privilege or exemption from ordinary taboo; sacredness; prohibited, forbidden; sacred, holy, consecrated; no trespassing, keep out.

- kaukauali'i* Class of chiefs of lesser rank than the high chief.
- kō'ele* Small land unit farmed by a tenant for the chief.
- konohiki* Head man of an *ahupua'a* land division under the chief; land or fishing rights under control of the *konohiki*; such rights are sometimes called *konohiki* rights. See also *ahupua'a*.
- kū'ula* Any stone god used to attract fish, whether tiny or enormous, carved or natural, named for the god of fishermen.
- kula* Plain, field, open country, pasture. Land with no water rights.
- lo'i* A single irrigated taro patch. Irrigated terrace, especially for taro.
- māhele* Land division of 1848.
- maka'āinana* Commoner, populace, people in general.
- makai* Seaward.
- mauka* Inland, upland, toward the mountain.
- niho palaoa* Whale tooth, whale-tooth pendant, a symbol of royalty.
- paleosol* A soil of the past, often buried.
- tsunami* Tidal wave.

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# Appendix 3

Cultural Impact Assessment

Proposed Browning Residence  
TMK (4) 5-9-05: 029

*T. S. Dye & Colleagues, Archaeologists, Inc.*

735 Bishop St., Suite 315, Honolulu, Hawai'i 96813

Cultural Impacts Assessment of a Coastal Lot,  
TMK:(4)5-9-05:029, at Hā'ena, Halele'a, Kaua'i\*

Thomas S. Dye, Ph.D.

July 8, 2005

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\*Prepared for Landmark Consulting Services Inc., P.O. Box 915, Hanalei, HI 96714.

### Abstract

This document provides a cultural impact assessment for a proposed single-family residence at a beach lot in Hā'ena in Halele'a District, Kaua'i Island. The assessment is based on a review of written material—archaeological reports, government and other historical records—supplemented by interviews with two long-term residents of Hā'ena. No valued cultural, historical, or natural resources were identified at the beach lot. No traditional and customary native Hawaiian rights associated with the beach lot were identified. Proposed development of a single-family residence will have no cultural impacts.

## 1 Introduction

At the request of Landmark Consulting Services Inc., *T. S. Dye & Colleagues, Archaeologists, Inc.* has completed a cultural impact assessment for a proposed single-family residence at a coastal lot in Hā'ena, Kaua'i described by tax map key (4)5-9-05:029. The cultural impact assessment has three goals:

1. Determine the identity and scope of valued cultural, historical, or natural resources on the parcel, including the extent to which traditional and customary native Hawaiian rights are exercised there,
2. Determine the extent to which those resources—including traditional and customary native Hawaiian rights—will be affected or impaired by the proposed construction of a single-family dwelling; and
3. Propose a feasible action, if any, to be taken to reasonably protect native Hawaiian rights if they are found to exist.

## 2 Cultural Resources Identification

Kent and Kathryn Browning, current owners of the project area, have pursued an ongoing process of identification of cultural resources and evaluation of potential effects that development might have on these resources. This process has included the following:

**Archaeology** Archaeological work to identify historic sites was accomplished recently. An archaeological assessment was prepared by *T. S. Dye & Colleagues, Archaeologists, Inc.* (Dye 2005). This work is pending review by the State Historic Preservation Division.

**Literature Search** Documents and materials at the State Historic Preservation Division (SHPD) library and correspondence files, the SHPD geographic information system database, the Survey Office of the State of Hawai'i Department of Accounting and General Services, the Hawai'i State Library, the library of International Archaeological Research Institute, Inc. (IARI), and the library of *T. S. Dye & Colleagues, Archaeologists, Inc.* were consulted. Tax maps and information on the 1946 tsunami were found in the State Library. A nineteenth century

map of Hā'ena was found in the Survey Office. Materials in the State Archives were not reviewed because the pertinent nineteenth century land records for Hā'ena are presented by Hammatt et al. (1993).

**Interviews** Project-specific interviews with two long-time residents of Hā'ena, Michael Olanolan and Violet Hashimoto, were conducted by the author in June 2005.

## 2.1 Archaeological Information

This section reviews archaeological studies carried out in Hā'ena *ahupua'a*, with an emphasis on the eastern portion of the *ahupua'a* from Mānoa Stream to Hā'ena Point, which has been surveyed intensively in the last twenty years. It summarizes the findings with a map of survey coverage in the vicinity of the project areas (fig. 1). The results of the archaeological studies are analyzed from the points of view of settlement pattern and chronology. The results of this analysis are compared to and contrasted with the land use patterns derived from historical sources. In general, the archaeological studies indicate a more intensive use of Hā'ena Point than is indicated in the *māhele* records, although the levels of investigation and reporting are limited and place rather strong constraints on synthesis.

### 2.1.1 Archaeological Survey in Hā'ena *Ahupua'a*

There have been a great number of small archaeological surveys completed in Hā'ena *ahupua'a* near the project areas and to the east at Hā'ena Point. These are reviewed below to determine the site types likely to be found at the project parcel.

**Surveys Near the Project Area** Earle (1978) mapped the *lo'i* system on the west bank of Mānoa stream (fig. 1, 19). The *lo'i* are associated with dry terraces, mounds, and an enclosure on the talus slopes and with a *heiau* at the top of the system near the origin of the *'auwai* (Earle 1978:fig. 6.6). No excavations were undertaken.

Kennedy (1989a) excavated four backhoe trenches in a previously bulldozed lot *makai* of Kūhiō Highway (fig. 1, 12). A soil horizon was exposed at and near the surface, but no indication is given whether this soil layer represents a cultural deposit. Later, it was reported that "no significant cultural deposits were present" (Moore and Kennedy 1995:15, emphasis added) at the parcel. Moore and Kennedy (1995) report results from an additional four backhoe trenches immediately east (fig. 1, 11). Stratigraphic descriptions indicate that they found what appears to be a buried cultural layer in trench 4 and possibly trench 3, but failed to recognize it. Marine shells recovered from the trenches "could not be attributed to anthropomorphic [sic] activities" (Moore and Kennedy 1995:15). Incomplete remains of one individual, presumably Hawaiian, were discovered during house construction (McMahon 1996).

Shun (1994) excavated four long trenches across a property *mauka* of Kūhiō Highway (fig. 1, 14). No cultural materials were found in the surface alluvium or in the basal calcareous sand.

Kennedy (1989b) excavated four backhoe trenches immediately *mauka* of Kūhiō Highway (fig. 1, 13). The trenches exposed calcareous sand, which is not further de-

*makai*

scribed in the report. Presumably, the sand is light-colored because "no cultural material of any kind was present" (Kennedy 1989b:2), although the dog skeleton recovered from a depth of about 1 m presumably represents an intentional burial and not natural deposition.

Dye (1998) recorded three sites on a property *mauka* of Kūhiō Highway adjacent to the project area (fig. 1, 15). Two stone structures, sites 50-30-02-1994 and -1996, are located at the *mauka* end of the property at the base of the talus slope. Site 50-30-02-1994 is a *heiau*. Site 50-30-02-1995 is a remnant cultural deposit exposed at the *makai* east corner of the property, near Kūhiō Highway.

Hammatt et al. (1993) excavated 17 backhoe trenches, exposing a buried cultural layer at the *mauka* end of a property *makai* of Kūhiō Highway (fig. 1, 17). The cultural layer "probably occurs throughout the property, but is buried . . . by as much as 3 meters of dune and fill sand" (Hammatt et al. 1993:29). An *imu* cut from the cultural layer yielded a  $^{14}\text{C}$  date of  $80 \pm 60$  indicating either a late prehistoric or historic-era age for the deposit. Although the authors interpret the  $^{14}\text{C}$  date to indicate late prehistoric traditional Hawaiian use of the area (Hammatt et al. 1993:27), the possibility of in-built age for the unidentified wood charcoal makes this interpretation somewhat tenuous. The cultural layer yielded only three basalt flakes.

Wickler (1989) carried out an extensive program of auger and shovel testing west of the project parcel, immediately inland of Kūhiō Highway (fig. 1, 16). A basal deposit of calcareous sand was found near the surface near the highway and at increasing depths toward the *mauka* edge of the property. It was buried by alluvial sediments containing some charcoal and modern cultural material, such as glass and plastic. No traditional Hawaiian cultural deposit was found.

McGerty and Spear (1999) assign a deeply buried and stratigraphically variable layer of dark sand at Hā'ena Beach Park to State Site 50-30-02-788, west of the project parcel (fig. 1, 18). They provide no evidence that the layer represents a cultural deposit; instead they assume that the layer "derived from past human activity in the area" (McGerty and Spear 1999:32). A sample of sediment from the supposed cultural layer yielded a  $^{14}\text{C}$  date of  $370 \pm 70$ , which falls within the traditional Hawaiian period. This result is not interpretable, however, because the sediment is not associated with an archaeological event and the source(s) of the dated carbon were not identified. Evidence for cultural activity associated with this buried layer should be obtained before it is considered a traditional Hawaiian site. The deposit could just as well represent a paleosol, whose presence is due to natural and not cultural processes.

McMahon (1988) recorded the remains of possibly four individuals disturbed when a bulldozer removed ironwood trees from the crest of a "semi-U shape" sand dune on either side of Kūhiō Highway east of the project parcel (fig. 1, 8). A cultural layer was present, but was disturbed by the tree removal, and was not described in detail. It appears that the individuals were determined to be Hawaiian, although the basis for this determination is not specified, and were reinterred in place with the participation of the Office of Hawaiian Affairs.

Folk (1990) found a traditional Hawaiian cultural deposit whose *makai* edge is about 100 m from the beach and which runs to Road D-2 at the *mauka* end of a beach-front property (fig. 1, 9). It is found between 13 cm and 100 cm below surface and has a maximum thickness of at least 54 cm. Profiles of the cultural deposit (Folk 1990:figs.

*imu*

paleosol

6 and 7) indicate that it was located on the gently sloping *mauka* face of the Hā'ena dune, and that the eastern edge of the deposit was possibly truncated by an intermittent stream.

Hammatt and Shideler (1998) excavated trenches totalling 45.6 m on a parcel on the *makai* side of Kūhiō Highway (fig. 1, 10). No subsurface cultural remains were found, due possibly to the erosional effects of tidal waves (Hammatt and Shideler 1998:27-29). However, all of the trenches were excavated west of the expected location of the cultural deposit, based on the results reported by Folk (1990).

**Surveys at Hā'ena Point** Dixon et al. (1997) and Soldo and Dixon (1994) report a concentration of the extinct landsnail *Carelia dolei isenbergi* at site 50-30-10-1031, *makai* of Kūhiō Highway, east of the project parcel (fig. 1, 7). The *C. dolei* shells were in a sealed deposit with the Polynesian introduced landsnail *Lamellidea oblonga*, indicating that the *C. dolei* extinction event occurred after Polynesian colonization of the islands. A single  $^{14}\text{C}$  date of  $1390 \pm 60$  on *C. dolei* includes an unknown but potentially substantial in-built age, and the calibrated age of A.D. 252-549 provides a *terminus post quem* for extinction. Thus, *C. dolei* became extinct sometime within the last 1,750-1,450 years, well after their hypothesized Pleistocene demise (Cooke 1931).

They also report eleven archaeological features recorded in two stratigraphic layers in the upper 50 cm of unconsolidated calcareous sand. These include seven firepits; one *imu*, two landsnail deposits, and one modern trash pit.  $^{14}\text{C}$  dates on unidentified wood charcoal from one of the firepits and the *imu* returned conventional  $^{14}\text{C}$  ages of  $460 \pm 60$  and  $520 \pm 80$ , respectively. These dates have unknown but potential in-built age of up to about 200 years due to the possibility that the dated materials were long-lived species of relatively great age when they were burned. Interpreted conservatively, the  $^{14}\text{C}$  dates indicate use of the coastal plain sometime in the fifteenth to early eighteenth centuries.

Hammatt and Shideler (1989b) and Hammatt (1989) excavated  $35 \text{ m}^2$ , revealing a discontinuous traditional Hawaiian cultural layer in the *makai* and *mauka* portions of the property (fig. 1, 5). The layer yielded an artifact assemblage dominated by basalt and volcanic glass flakes, but also including coral, sea urchin spine and basalt files, and a cowrie shell octopus lure. Faunal remains include a relatively large number of seabird and mammal bones, as well as *Neritina* sp. shells that indicate harvesting in Mānoa stream.  $^{14}\text{C}$  dates on unidentified wood charcoal yielded calibrated ages ranging from the last half of the thirteenth to the seventeenth centuries. Given the possible influence of in-built age, a conservative interpretation of the  $^{14}\text{C}$  evidence indicates traditional Hawaiian use of Hā'ena point by the fifteenth century. Denham and Kennedy (1993) describe the discovery of the partial remains of at least 18 individuals from disturbed deposits after construction of the Zimmerman house had begun. A large collection of traditional Hawaiian artifacts, also from disturbed contexts, was made. The artifacts include adzes, chisels, a mother-of-pearl pendant in the shape of a *nihopalaoa*, and a possible *kū'ula*.

Hammatt and Shideler (1989a) investigated remnants of a truncated traditional Hawaiian cultural layer at Hā'ena Point (fig. 1, 4), recovering a small collection of mostly marine shell midden, a single flake of volcanic glass, and the remains of two individuals, one disturbed by excavation and the other intact at a depth of 2 m below

*nihopalaoa*  
*kū'ula*



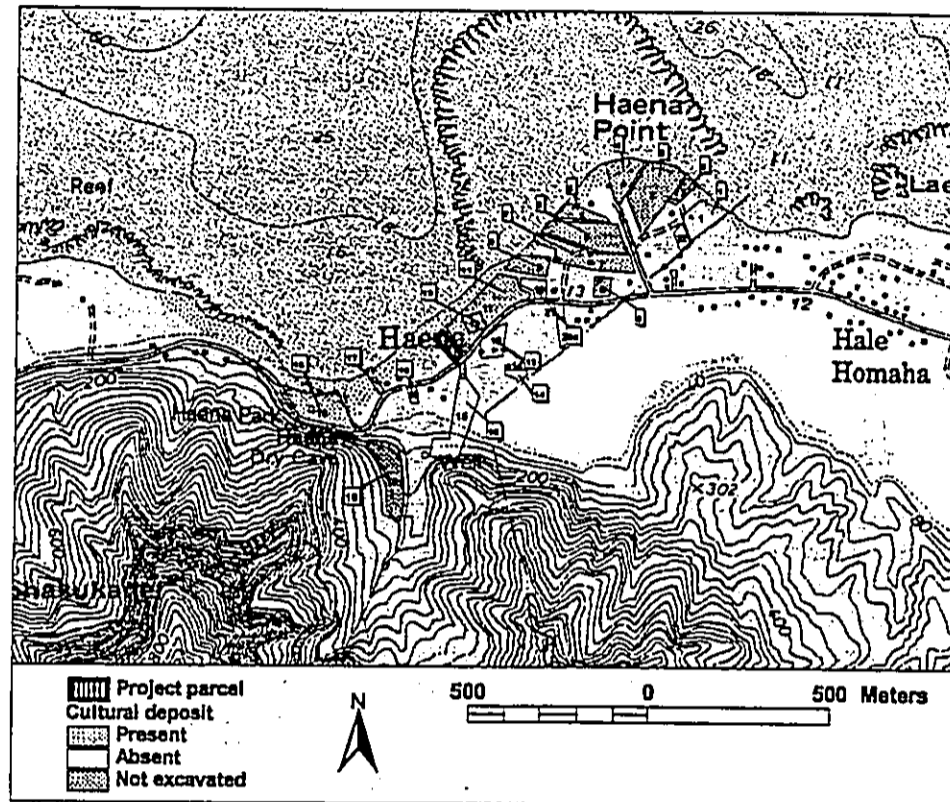


Figure 1. Archaeological survey coverage in the vicinity of the project area. See text for results of inventory surveys at numbered parcels.

surface. Thirty-one sets of human remains were discovered during construction, along with a small collection of burial goods (including two *Pinctada* shell ornaments), and artifacts including hammerstones, adzes, basalt and volcanic glass flakes, a stone bowl or lamp, cowrie shell octopus lures, coral and sea urchin spine files, a bone ornament and a fishhook blank (Rechtman 1994).

Hammatt and Shideler (1989c) report results of 10.5 m<sup>2</sup> excavation at the Rasten property (fig. 1, 8). Excavations yielded 307 traditional Hawaiian artifacts, primarily basalt flakes, many with polish indicating they derived from a finished tool such as an adze, volcanic glass flakes, several adzes, a hammerstone, basalt, coral and sea urchin spine abraders of various forms, bone and shell fishhooks, and dog tooth and shell ornaments. Historic-era artifacts were absent. Vertebrate faunal remains include fish, birds, pig, dog, Polynesian rat, and turtle, and indicate consumption of relatively large numbers of pigs. Historically-introduced taxa were not recovered. Among the birds were bones of albatross and goose, neither of which were known to nest on Kaua'i during the historic period. Fish bone was composed primarily of inshore taxa, with a large num-

ber of shark or ray vertebrae. Marine invertebrate remains include primarily shells that could have been collected from the inshore waters adjacent to the property, but also *Neritina* sp., probably collected from Mānoa Stream, and 'ōpihi, which might have been collected along the Nā Pali coast. Two <sup>14</sup>C dates on unidentified charcoal yielded calibrated ages ranging from the fourteenth to fifteenth centuries. Given the possibility of in-built age, these dates can be conservatively interpreted to indicate traditional Hawaiian use of the area by the fifteenth century. A "basalt boulder feature" associated with abundant charcoal was uncovered at the base of the cultural layer (Hammatt and Shideler 1989c:fig. 9), but it is not interpreted.

'ōpihi

Kruse (1994) presents field notes from monitoring house construction at Hā'ena Point (fig. 1, 1). The notes record in minimal detail the discovery and reinterment of a single individual from burial site 50-30-02-870.

Rosendahl (1989) identified "a dark grey to black cultural deposit which evidenced aboriginal occupation and exploitation of the area" but failed to note the stratigraphic position of the deposit (fig. 1, 3).

Hammatt (1980) discovered a cultural layer in a wave-cut bank within 30 cm of the present land surface at Hā'ena Point (fig. 1, 2). It contained artifacts, marine shell midden, and charcoal. Four years later, Hammatt (1984b) returned to the parcel, excavated three test pits along the wave-cut bank and reported no indication of buried cultural deposits. As a result of these investigations, Hammatt concluded that there are "no archaeological remains in the dune deposits" and recommended no further archaeological investigations. Subsequently, Hammatt (1984a) returned to the parcel, excavated six test pits, and rediscovered the cultural deposit which is described as having "fairly heavy midden content" and which yielded an 'ulu maika and basalt and volcanic glass cores and flakes.

'ulu maika

### 2.1.2 Synthesis of Archaeological Information

Archaeological investigations in Hā'ena ahupua'a near Mānoa Stream have revealed the presence of a widespread buried traditional Hawaiian cultural layer in the sandy soils near the shore, stone structures including a heiau at the base of talus slopes near the mountains, and agricultural fields, heiau, shelters and enclosures in the Mānoa Stream valley. No traditional Hawaiian sites have been found on the former pasture lands between the base of talus slopes and the sandy soils mostly makai of the highway.

The discontinuous traditional Hawaiian cultural layer at Hā'ena Point is listed as site 50-30-02-1809 (State Historic Preservation Division 2001) in the SHPD geographic information system database. This site was probably established by the fifteenth century A.D.; claims for an earlier settlement do not take into account the likely effects of in-built age on unidentified wood charcoal used in <sup>14</sup>C dating. The wide range of traditional Hawaiian artifacts recovered from the site indicate use for habitation and burial. Subsurface archaeological features associated with habitation are present and include imu and stone structures. These have received relatively little attention, despite their importance in reconstructing traditional Hawaiian settlement at Hā'ena Point. The site has yielded a wide range of faunal material indicating animal husbandry of pig, dog, and chicken and fishing in the shallow and deep water offshore. It has been suggested that 'ōpihi were brought to the site from the Nā Pali coast

and that inhabitants of the settlement at Hā'ena Point regularly harvested snails from Mānoa Stream. Recovery of bones from a seabird and a goose not known to nest on Kaua'i during the historic period indicate either different environmental conditions in the past, or possible inter-island transport of birds. Dates for the presence of these birds at Hā'ena can be established by dating the bones directly, using sample preparation techniques described by Stafford et al. (1991).

The discontinuous nature of Site 1809 is explained as a result of twentieth century land modifications and erosion due to tsunami. Coastal sand deposits generally develop as a series of ridges and swales that parallel the coast; land modifications typically flatten this undulating topography by pushing the crests of ridges into the swales. In places, this creates a discontinuous cultural deposit buried in former swales and absent on former ridges. The situation at Hā'ena Point might be more complex than this, however, and awaits a more detailed analysis. The effects of tsunami are believed to have been greatest at the western edge of the site (Hammatt and Shideler 1998). Records of the 1946 tsunami indicate wave heights up to 14 m behind the channel in the coral reef at Mānoa Stream (fig. 2). The wave had devastating effects on the land. Cultural deposits are found in the sandy soils here, but they haven't been explored in depth so it is not possible to specify what effects, if any, tsunami have had on them.

Human burial remains are numerous in the sandy coastal soils of Hā'ena Point. In general, archaeological inventory survey techniques employed to date have been unsuccessful in locating or predicting the locations of burial sites at Hā'ena Point. These techniques, which include augering, excavation of small test pits, and backhoe trenching, are all designed to yield stratigraphic information and concentrate on the vertical dimension, rather than the horizontal. An alternative technique that has been used successfully to identify burial sites elsewhere in the islands maximizes horizontal exposure by scraping the surface. The goal of this technique is to expose the tops of possible grave shafts, which can be identified by the mixed sediment used to fill them, without exposing human remains.

Archaeological assessment of the project parcel consisted of a single backhoe trench that spanned the area of potential effect from its *makai* end to its *mauka* end, a length of 30 m (Dye 2005). The trench exposed a natural stratigraphic profile with primary deposits of extinct *Carelia dolei isenbergi* landsnails near the surface, indicating a relatively stable land surface since at least the early traditional Hawaiian period. No evidence of traditional Hawaiian habitation, in the form of features, artifacts, or food remains, was found. In addition, no human remains were encountered. The assessment concluded that construction of a single-family dwelling on the property will have "no effect" on historic sites because no historic sites are present.

## 2.2 Historical Review

This section presents information on historic land use patterns derived from available literature and records specific to Hā'ena *ahupua'a*, but also including more general references, as appropriate.

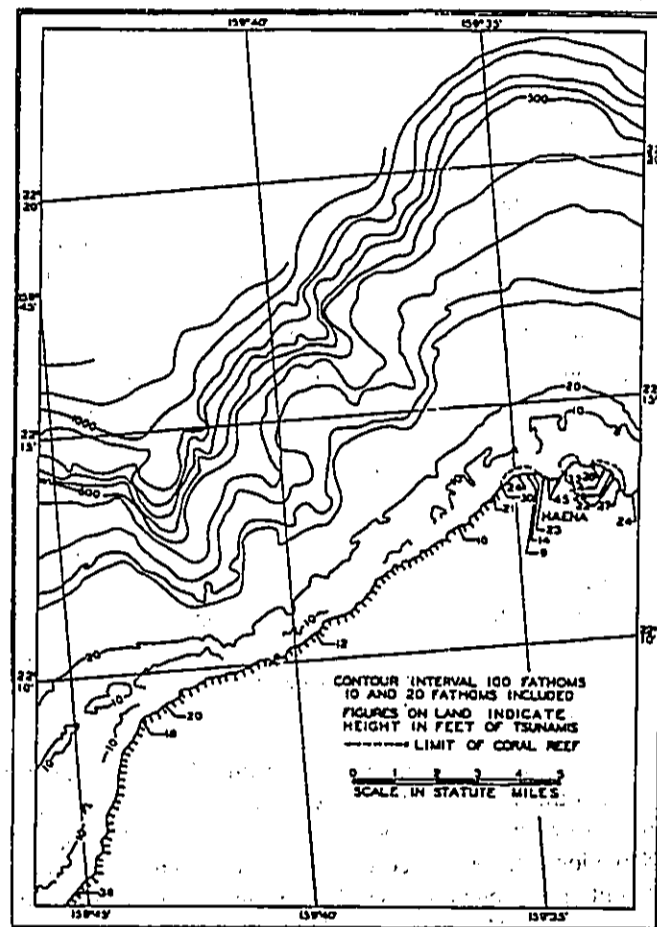


Figure 2. Wave heights in Hā'ena during the 1946 tsunami. Source: Shepard et al. (1950).

### 2.2.1 Land Use Patterns Prior to the *Māhele*

Information on land use patterns in Hā'ena prior to the *māhele* comes from archaeological investigations, which typically assign broad patterns of land use to periods established with dates on archaeological charcoal and/or volcanic glass. The periods thus defined for Hā'ena are useful interpretive devices, but their temporal limits should be understood as loose approximations because the dating procedures used in their construction are now known to be unreliable. Volcanic glass dating was discredited some time ago (Olson 1983) and none of the  $^{14}\text{C}$  dates on charcoal from Hā'ena have identified the type of wood used for dating. The use of unidentified wood charcoals introduces the possibility of in-built age and the potential for dates that are too old by several centuries (Dye 2000).

*māhele*

Yent (1980) presents a model of settlement pattern development at Hā'ena in a series of four cultural phases.

**Phase I** Transient settlement along the coastal terrace of Ke'e Beach with a marine-oriented economy. At present, the earliest date for this period at Haena is A.D. 989.

**Phase II** Semi-permanent settlements along the coastal terrace with some inland expansions. Expanded resource base which included both marine resource utilization and limited agricultural resources on the alluvial plain accompanied by population increases. Dates for these developments center around A.D. 1200.

**Phase III** Permanent settlements on both the coastal terrace and the alluvial plain. Development of an intensive irrigated agricultural complex on the alluvial plain around A.D. 1400. Subsistence economy now consists of marine resources, agricultural products, and domesticated mammals.

**Phase IV** Historic contact period with a decrease in population and reduced occupation of the Haena area around A.D. 1700-1800. Historically, the agricultural system in Haena continued into the 1950s with wet taro being grown in the terraced system on the alluvial plain irrigated by Limahuli Stream and sweet potatoes being grown on the coastal terrace (Handy and Handy 1972:419).

Another four phase model was developed by Griffin (1984), which emphasizes the archaeological record of the historic period. The sequence begins with a poorly known Early Occupation phase of transient beach use by a population using a generalized strand-looping adaptation. No evidence of agriculture is known for this phase. A Mid-millennium stability phase encompasses the eleventh through eighteenth centuries, virtually the entire traditional Hawaiian era. This phase saw an increased reliance on taro production, with diminished exploitation of the sea.

by the time of European arrival, most of the taro pondfields were completed, the *heiau* built, and the importance of Ha'ena as a social, political, and economic center established (Griffin 1984:14).

A nineteenth century Historic Transition Phase is posited on the basis of historical records, but the lack of excavated material from the houses and fields of individuals identified in the records is noted. The final Twentieth Century Adjustment phase is based primarily on excavations carried out by Riley and Ibsen-Riley (1979) in the abandoned hippy community at Taylor camp.

While these two models differ in many respects, they agree on an early period of coastal habitation followed by expansion of agricultural activities. Here it should be noted that the archaeological evidence for an early period of coastal habitation is highly susceptible to problems of in-built age in <sup>14</sup>C dates. The reason for this is the likelihood that early settlers in a region had access to large stores of driftwood (Strong and Skolmen 1963) for firewood; driftwood on Hawaiian beaches has been shown to be

several hundred to a thousand years old (Emory and Sinoto 1969). Given this situation, reliable dates from early beach deposits can only be obtained on identified wood charcoals selected to minimize the possible effects of in-built age.

### 2.2.2 Land Use at the Time of the *Māhele*

Silva (1995) researched land titles in Hā'ena, with emphasis on lands in the Hā'ena State Park. In the *māhele* of 1848, Hā'ena *ahupua'a* was reserved for Abenera Pākī, husband of Kamehameha I's grand-daughter L. Konia and father of Bernice Pauahi Bishop, last heir in the Kamehameha line. Pākī was a *kaukauali'i* who received six *ahupua'a* in the *māhele* (Kame'eiehiwa 1992:268), of the nine, including Hā'ena, he had held previously. Pākī claimed twelve *kō'ele* within Hā'ena, named Pākī, Kahookumaka, Oahu, Kapalaa, Akole, Kaluahine, Kailiili, Peekauai, Kalaole, Koi, Kanaele, and Keokea, and placed a *kapu* on taking octopus in the shallow waters of the *ahupua'a*, reserving them for his own use and enjoyment.

*kaukauali'i*

*kō'ele*

*kapu*

About 1837, Pākī appointed a woman, E. Kekela, *konohiki* of Hā'ena. Although not a native of Kaua'i, Kekela lived for 14 years in Halele'a district, prior to being named *konohiki*. Kekela was a widow of Kamehameha I's half-brother Kalaimamahū in 1810 when she was given by Kamehameha to Kamaholelani, a nephew of the Kaua'i chief Kaumuali'i. She lived with Kamaholelani at Lumaha'i, near Hā'ena, from 1810 until Kamaholelani died in 1820. She left for O'ahu with the civil unrest on Kaua'i that followed Kaumuali'i's death in 1824. She returned to Kaua'i in 1837 to take up her *konohiki* duties.

The award to Pākī respected the claims of twenty-three native tenants in Hā'ena.<sup>1</sup> Fifteen of the claimants received their lands from Kaua'i chief Kaumuali'i prior to 1824. Seven claimants received their lands sometime after Kaumuali'i's death, when the chiefs of Kaua'i's traditional chiefly lines were dispossessed and, in the words of an O'ahu chronicler, "the loafers and hangers-on (*palaualelo*) of Oahu and Maui obtained the rich lands of Kauai" (Kamakau 1992:268–269). The rights of the *kama'āina* who held lands granted them by Kaumuali'i were well-respected at Hā'ena, a circumstance attributed to Kekela's long tenure in Halele'a, and her familiarity with the older residents of the land:

*kama'āina*

Haena was relatively fortunate in this regard; the corps of older tenants [sic] was respected and their holdings were honored and protected (Silva 1995:34).

The locations of land commission awards in Hā'ena *ahupua'a* recorded on the tax map for Zone 5, Section 9 are shown in figure 3. The map distinguishes the *konohiki* lands from those of the *maka'āinana*, and within the *maka'āinana* lands distinguishes four types of use. Houselots and *kula* are directly indicated in either the native register or foreign testimony for the parcel. The *lo'i* category includes parcels described as *lo'i kalo*, *mo'o kalo*, and *loko kalo*; it should be taken to indicate irrigated production of the staple taro. The mixed category includes parcels where the houselot and taro fields

*maka'āinana*

*kula*

*lo'i*

<sup>1</sup>The number of claims is given variously as 22 (Calis 2000:8), about 24 (Hammatt and Shideler 1998:9), and 32 (McGerty and Spear 1999:9).

were contiguous, a settlement pattern that was common on the good taro lands in what is now Hā'ena State Park.

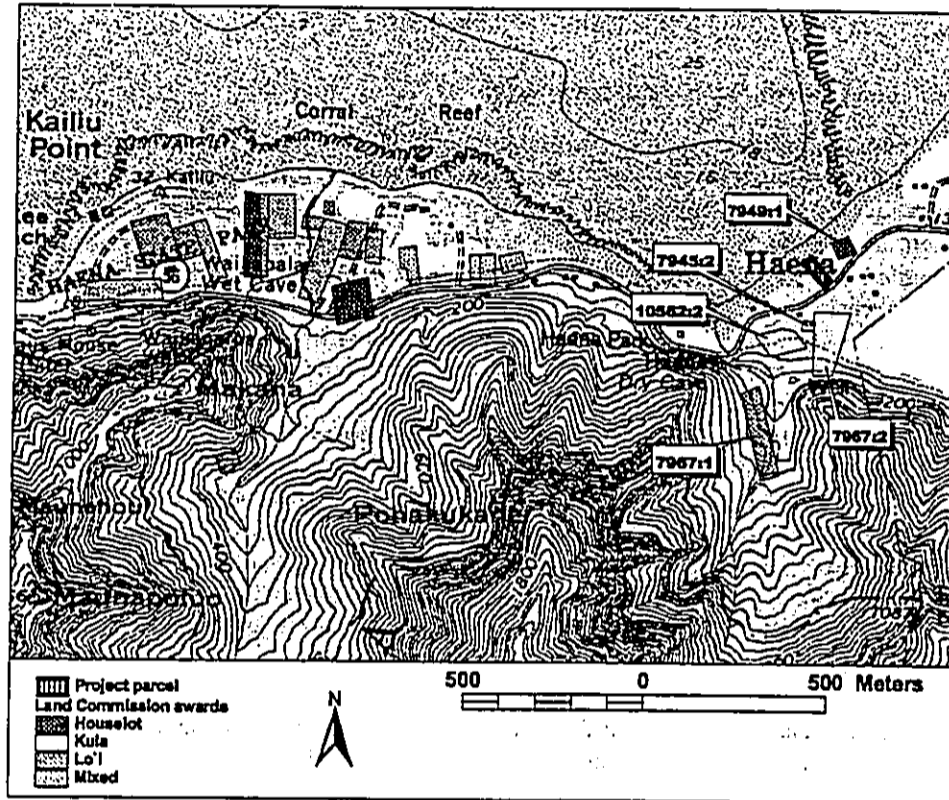


Figure 3. Land commission awards in Hā'ena *ahupua'a* in relation to the project parcel.

The land commission awarded five parcels in Hā'ena *ahupua'a* near Mānoa Stream and the project parcel (fig. 3). Descriptions of the parcels in the native register and foreign testimony records of the land commission are reproduced by Hammatt et al. (1993:appendix E). The award to the *konoiki* (LCA 7949:1) is described by Kamakama as a houselot in Waioli, which is most likely an error. More likely is Kamakama's description of 'āpana 2, as a houselot in Kalele-Haena. This type of inconsistency is relatively common in records of the land commission.<sup>2</sup> Large parcels of *kula* land were awarded to Keahiaka (LCA 7967:2) and to Opu (LCA 10562:2). Keahiaka was also awarded *lo'i kalo* along Mānoa Stream (LCA 7967:1). This was an 0.72 ha alluvial terrace irrigation system that took its water from a small independent stream with a 120 m 'auwai (Earle 1978:125, table 3). Foreign testimony makes it clear that

<sup>2</sup>See, for example, Earle's comments on the limitations of land commission records (Earle 1978:122 fn. 3).

## 2.2 Historical Review

13

the award to Kekala (LCA 7945:2) is the *kula* land described as 'āpana 1, bounded on one side by Keahiaka's *kula* and on the other by Opu's *kula*.

## 2.2.3 Land Use Since the Māhele

A survey map shows land use in Hā'ena *ahupua'a* twenty years after the *māhele* (fig. 4). A grove of trees, possibly coconut palms, is shown at Hā'ena Point extending back from the strand about 100 m. Four houses are shown *mauka* of the roadway, the easternmost of which is labelled "Clark's house." The other three unlabeled houses are closer to Mānoa Stream, in the vicinity of the *kula* lands awarded in the *māhele* (see fig. 3). The vicinity of the project area is blank on the map, indicating that this parcel was vacant at the time.

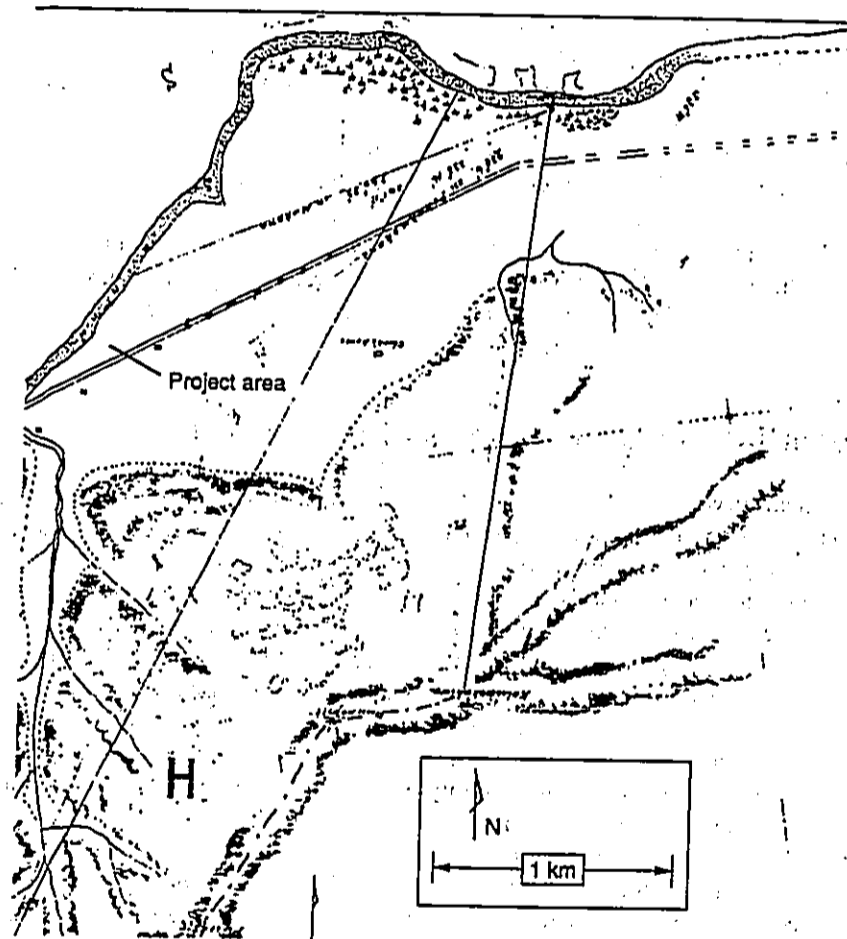
*mauka*

Figure 4. The Hā'ena Point portion of Gay (1871) showing the approximate location of the project area. Note that the map has been rotated so magnetic north is at the top of the figure. A scale and north arrow have been added to the annotated figure.



The twentieth century saw use of Hā'ena Point for habitation, with much of the area *mauka* of the highway used for pasture. Currently, the lands *makai* and *mauka* of the highway are being developed as single-family residences.

### 2.3 Interviews

Interviews were conducted with two long-time Hā'ena residents, Michael Olanolan and Violet Hashimoto, both of whom are familiar with the project parcel. The interview with Olanolan took place on Wednesday, June 8, 2005 at the project parcel. The interview with Hashimoto took place on Thursday, June 9, 2005 at Waipā after a morning making poi there. The interviews were not tape recorded.

Olanolan grew up in a house on the *mauka* side of Kūhi'o Highway immediately west of the project parcel. He played on the parcel as a child in the 1950's and recalls trying to set fire to large trees at the *makai* end of the parcel, an activity his father actively discouraged. About a decade ago, he cleared the parcel of trees, cutting them down with a chain saw and removing stumps with a backhoe. Since that time he has maintained the grass lawn at the parcel.

Violet Hashimoto has less direct familiarity with the project parcel than Olanolan. Her house is also on the *mauka* side of Kūhi'o Highway, but is some distance east of the parcel, near the boundary with Wainiha *ahupua'a*. She doesn't access the parcel directly. Her primary activity near the project parcel is fishing along the reef offshore.

Neither Olanolan nor Hashimoto were aware of any valued cultural resources at the property. To their knowledge, there are no traditional and customary native Hawaiian rights that are exercised at the parcel.

## 3 Potential Cultural Impacts of the Project

Archaeological survey and a review of historical documents both failed to yield information on traditional uses of the project parcel. Review of these materials indicates that the project parcel is on the margin of a large traditional Hawaiian settlement at Hā'ena Point. The general distribution of archaeological remains from this settlement is relatively well known, but the archaeological deposit itself hasn't been investigated in great depth, especially in the vicinity of the project areas. The excavations that have been completed indicate that this area, away from the point, was used primarily for human burials. The project area was also peripheral to the main mid-nineteenth century settlement in Hā'ena at Limahuli. The land commission awarded unirrigated agricultural lands to several claimants in the vicinity of the project area, and one of the many parcels awarded to the *konohiki* was nearby. Later in the nineteenth century a survey map shows the Hā'ena Point area was sparsely populated.

Interviews with long-time residents failed to identify any traditional Hawaiian cultural resources at the parcel. There are no traditional and customary native Hawaiian rights that are exercised at the parcel.

The Browning's proposal to construct a single-family dwelling at the project parcel poses no potential cultural impacts. Very many lots in the vicinity have been similarly developed in the recent past, so the proposed house does not represent a new use of this

portion of the coast. No native Hawaiian rights are associated with the parcel, so no actions need to be taken to protect them.

## Glossary

Entries for Hawaiian words are excerpted or paraphrased, where possible, from the *Hawaiian Dictionary* (Pukui and Elbert 1971), or from Lucas (1995). Geological and geographical terms are from American Geological Institute (1976) and Clark (1998). Archaeological terms are from Bray and Trump (1982) and Mignon (1993).

*'āpana* Piece, slice, portion, fragment, section, land division, lot, district, sector.

*'ōpihi* A limpet, *Cellana* sp.

*'ulu maika* Stone used in *maika* game.

*imu* Underground oven.

*kama'āina* Native-born, one born in a place, host.

*kapu* Taboo, prohibition; special privilege or exemption from ordinary taboo; sacredness; prohibited, forbidden; sacred, holy, consecrated; no trespassing, keep out.

*kaukauali'i* Class of chiefs of lesser rank than the high chief.

*kō'ele* Small land unit farmed by a tenant for the chief.

*kū'ula* Any stone god used to attract fish, whether tiny or enormous, carved or natural, named for the god of fishermen.

*kula* Plain, field, open country, pasture. Land with no water rights.

*lo'i* A single irrigated taro patch. Irrigated terrace, especially for taro.

*māhele* Land division of 1848.

*maka'āinana* Commoner, populace, people in general.

*makai* Seaward.

*mauka* Inland, upland, toward the mountain.

*niho palaoa* Whale tooth, whale-tooth pendant, a symbol of royalty.

*paleosol* A soil of the past, often buried.

*tsunami* Tidal wave.

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# Appendix 4

Floral & Faunal Survey

Proposed Browning Residence  
TMK (4) 5-9-05: 029



**Floral and Faunal Survey**  
of  
**TMK (4) 5-9-05: 029**  
**Ha'ena, Kaua'i, Hawai'i**

Prepared by David W. Bender, Ecologist

Introduction

The following Floral and Faunal Survey was conducted in order to fulfill the Conservation District Use Permit requirements for TMK 4-5-9-005: 029. The property comprises approximately .43 acres, adjacent to the Kuhio Highway, in Ha'ena, Kauai.

Survey Methods

The information provided in this report was obtained by walking through the survey area on foot. All plant and animal species observed were identified and noted. The .43 acres were thoroughly covered during a 1-hour period on December 19, 2005.

Vegetation

The survey area could be described as a well-maintained empty lot planted with Hibiscus varieties and numerous other non-native ornamental species. The coastal vegetation fronting this property consists of coconut palms (*Cocos nucifera*), ironwood trees (*Casuarina equisetifolia*), and Indian almond trees (*Terminalia catappa*). A complete list of plant species observed on the site can be found in Appendix 1. There is no trace of a native coastal plant community along the beachfront here. Along the margins of the lawn area, the most frequently encountered tree species are Indian almond and Java plum (*Syzigium cumini*), two very common non-native trees in this area. Plant species encountered on the ground are entirely of introduced origin. These consist of a large number of common weedy species. The most frequently encountered are wedelia (*Wedelia trilobata*), indigo (*Indigoifera suffruticosa*), Spanish clover (*Desmodium incanum*), candle bush (*Senna alata*), buttonweed (*Spermacoce assurgens*), and several species of introduced grasses.

This vegetation type is quite extensive on the North shore of Kauai, and this reduction does not represent a significant loss of this habitat for any sensitive plant or animal species. Planting of coastal native plants such as naupaka (*Scaevola sericea*) and pohuehue (*Ipomoea pes-caprae*) would reduce erosion of this property by storm waves.

### Animal Species Observed

This parcel is habitat for a number of non-native bird species such as Japanese white-eye (*Zosterops japonicus*), red-crested cardinal (*Paroaria coronata*), and wild jungle fowl (*Gallus gallus*). A complete list of animal species observed on the site can be found in Appendix 2. These species will likely move to adjacent habitat during construction, but will return to the area once the activity has ceased.

### Threatened and Endangered Species

The survey did not locate any plant or animal species that are Federally Listed as Threatened or Endangered Species, or any species that are candidates for Federal Listing. None of the species on the site could even be described as rare.

**Appendix 1. Plant species observed at TMK (4) 5-9-005:029.**

<b>Botanical Name</b>	<b>Common Name</b>	<b>Status</b>	<b>Form</b>
<b>Monocotyledons</b>			
<b>Arecaceae</b>			
<i>Cocos nucifera</i>	niu	Hawaiian intro.	tree
<b>Araceae</b>			
<i>Epipremnum pinnatum</i>	golden pothos	modern intro.	vine
<b>Poaceae</b>			
<i>Cynodon dactylon</i>	Bermuda grass	modern intro.	herb
<i>Digitaria setigera</i>	itchy crab grass	modern intro.	herb
<i>Paspalum conjugatum</i>	Hilo grass	modern intro.	herb
<b>Dicotyledons</b>			
<b>Asteraceae</b>			
<i>Crassocephalum crepidioides</i> (Benth.)	none	modern intro.	herb
<i>Elaphantopus mollis</i> Kunth.	elephants foot	modern intro.	herb
<i>Pluchea carolinensis</i>	sourbush	modern intro.	shrub
<i>Wedelia trilobata</i>	wedelia	modern intro.	herb
<b>Boraginaceae</b>			
<i>Tournefortia argentea</i> L. fil.	Tree heliotrope	modern intro.	tree
<b>Caricaceae</b>			
<i>Carica papaya</i> L.	papaya	modern intro.	tree
<b>Casuarinaceae</b>			
<i>Casuarina equisetifolia</i>	ironwood	modern intro.	tree
<b>Clusiaceae</b>			
<i>Calophyllum inophyllum</i> L.	Alexandrian laurel	Hawaiian intro.	tree
<b>Combretaceae</b>			
<i>Terminalia catappa</i>	Indian almond	modern intro.	tree
<b>Fabaceae</b>			
<i>Senna alata</i> (L.) Roxb.	candle bush	modern intro.	shrub
<i>Desmodium incanum</i> DC.	spanish clover	modern intro.	herb
<b>Myrtaceae</b>			
<i>Syzigium cumini</i>	Java plum	modern intro.	tree
<b>Rubiaceae</b>			
<i>Spermacoce assurgens</i>	buttonweed	modern intro.	herb
<b>Verbenaceae</b>			
<i>Stachytarpheta jamaicensis</i>	Jamaican vervain	modern intro.	shrub

**Appendix 2. Animal species observed at TMK (4) 5-9-005:029.**

<b>Scientific Name</b>	<b>Common Name</b>	<b>Status</b>
<b>Birds</b>		
<i>Acridotheres tristis</i>	common myna	modern intro.
<i>Gallus gallus</i>	wild jungle fowl	Hawaiian intro.
<i>Paroaria coronata</i>	red-crested cardinal	modern intro.
<i>Zosterops japonicus</i>	Japanese white-eye	modern intro.

# Appendix 5

Historical Shoreline Erosion Study

Prepared by

EKNA Services, Inc.

Engineers and Environmental Consultants

Proposed Browning Residence

TMK (4) 5-9-05: 029



EKNA Services, Inc.

CN 2480

January 17, 2005

Landmark Consulting Services, Inc.  
P.O. Box 915  
Hanalei, Hawaii 96714

Attn: Mr. Ben Welborn

Subject: Historical Shoreline Erosion Study  
Browning Property TMK:(4)5-9-05:029  
Haena, Kauai

Gentlemen:

EKNA Services, Inc. has completed the historical shoreline erosion study for the above subject parcel in Haena, Kauai. The scope involved digitizing relevant information from three (3) aerial photographs obtained from the archives of R.M. Towill Corporation, and including it in the data base from a prior study performed for the Hawaii Coastal Zone Management Program, Office of State Planning, titled "Kauai Shoreline Erosion Management Study," dated September 1990. The 1990 study utilized historical aerial photographs spanning the period 1950-1988. The additional aerial photographs extended the time period to February 2002.

The method that we used involves digitizing the continuous shorelines (both the vegetation line and the beach toe line or waterline), rather than just using discrete transects. We have found that there is significant alongshore variability such that tracking the movement at discrete locations along a shoreline reach (say at 200-300 foot intervals) does not necessarily provide a complete picture of how the continuous shoreline is behaving. For this evaluation, aerial photo coverage was obtained for the approximately 2,500 feet of shoreline from Manoa Stream to the unnamed stream that discharges about 800 feet north of your client's property, because the shoreline is affected by the discharges from these two streams within the littoral cell.

The attached figure shows the shoreline data plotted for the study reach. The TMK map was scanned and put in the background to provide a reference for the digitized information. Graphs are provided that depict the shoreline changes for the vegetation line and beach toe line (or waterline) for the 2,500 feet of shoreline, as well as the approximate 200 feet of shoreline in the immediate vicinity of the subject property. The data that are graphed are the average change in shoreline position between successive aerial photo dates, i.e. the total area between the two shorelines (square feet) divided by the total length of shoreline (feet). This results in an estimate of the average erosional loss (-) or accretionary gain (+) per unit length of shoreline over the specified shoreline reach. The data are graphed to show the cumulative changes, starting with

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Environmental  
Consultants

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Computer  
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96814-3139

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(808) 591-8553  
Facsimile:  
(808) 593-8551

the earliest photo. Least squares fit of the data points yields a line where the slope is the average rate of shoreline change (i.e. feet/year).

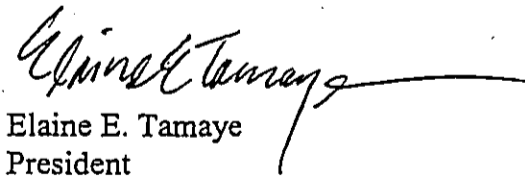
In this analysis, two representative shorelines were defined: the vegetation line and the beach toe line (or waterline). The vegetation line is an indicator of the seaward limit of fastlands (i.e. landward limit of the active beach zone). The beach toe line (or waterline) is an indicator of the seaward limit of the beach zone. The beach toe line is the point at which the beach slope intersects the shallow reef flat. Where there is not a shallow reef flat, then the waterline is selected, which is the point at which the water surface intersects the beach slope, and can vary depending on the tidal stage and wave activity. The following summarizes the results of the analysis.

	2500 feet shoreline reach	200 feet shoreline reach
Vegetation line avg annual	+0.39 feet/year	-0.22 feet/year
Trend-derived 30-year change	+12 feet	-7 feet
Vegetation line max cycle	-1.9 to +21.9 = 23.8 feet	+12 to -13.7 = 25.7 feet
Beach Toe line avg annual	-0.98 feet/year	-1.02 feet/year
Trend-derived 30-year change	-29 feet	-31 feet
Beach Toe line max cycle	-5.9 to -60.2 = 54.3 feet	0 to -31.3 = 31.3 feet

The results indicate that the beach has receded (eroded) at an average rate of about 1 foot per year in the vicinity of the property and along this entire shoreline reach. There have been large cycles of erosion and accretion, but the general trend has been that of beach loss. The vegetation line, on the other hand, has been relatively stable in the vicinity of the property (average rate of erosion of 0.2 feet per year), although there have been cycles of accretion and erosion on the order of 20 feet or more. For the entire 2,500 feet reach, the vegetation line has moved seaward an average of about 0.4 feet per year. With the beach toe line moving landward and the vegetation line stable or moving slightly seaward, the beach width will continue to narrow along this shoreline reach.

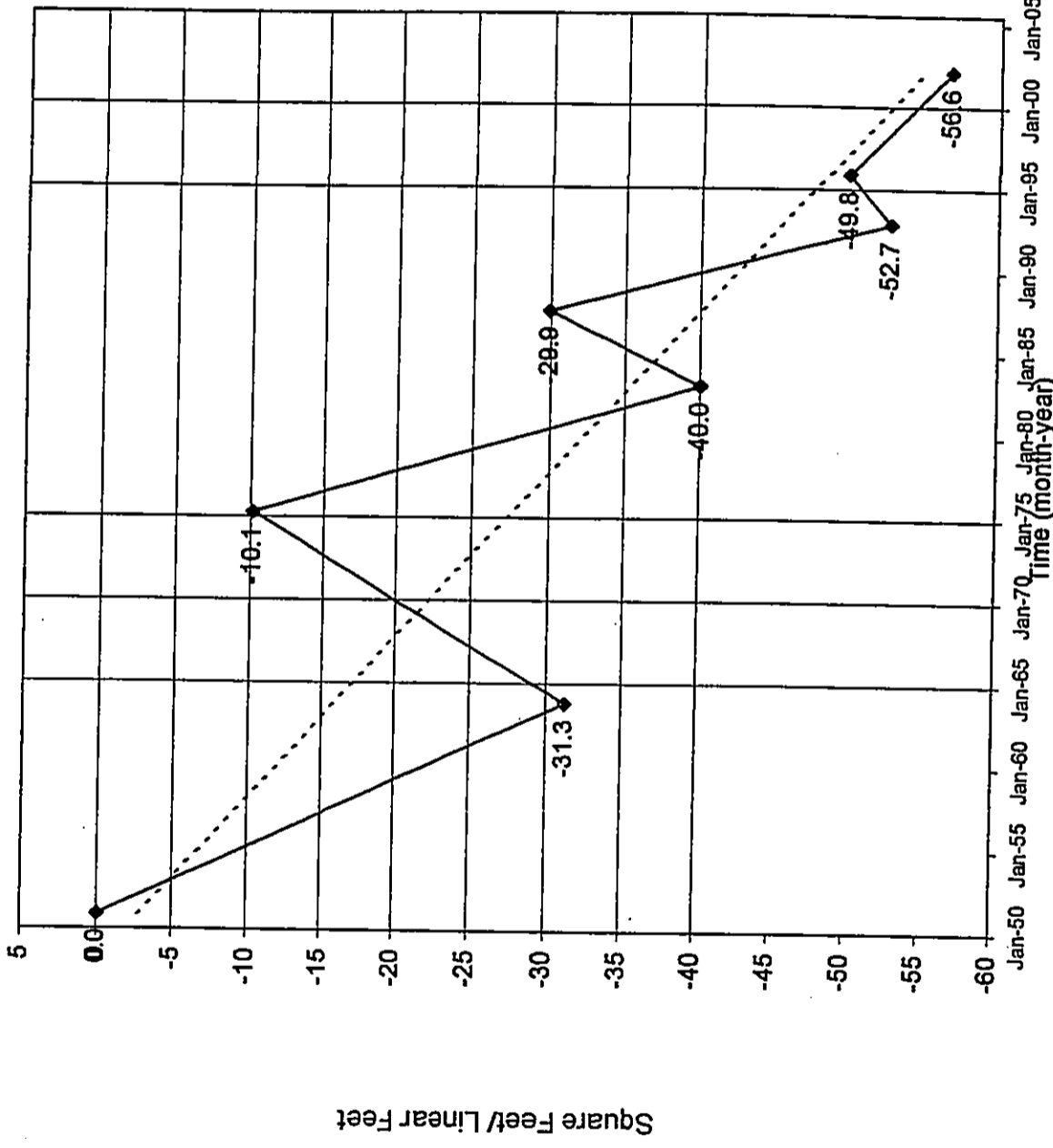
Please do not hesitate to contact me if you have any questions concerning the above.

Very truly yours,

  
Elaine E. Tamaye  
President

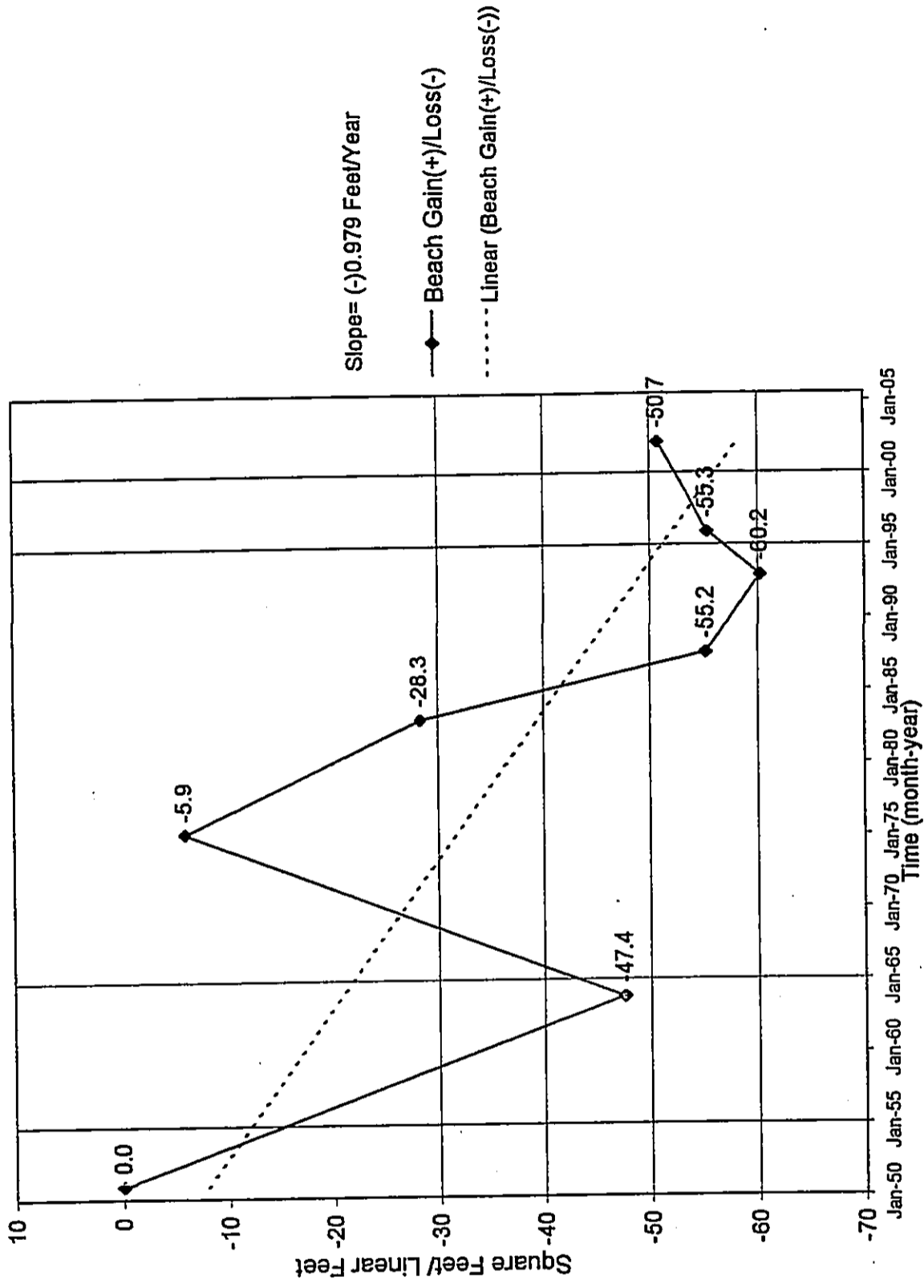
encl: aerial photos (1992, 1995, 2002)  
Figure showing digitized information from photos  
Graphs of Vegetation Line (2500' reach and 200' reach)  
Graphs of Beach Line (2500' reach and 200' reach)

# Haena SM Beach Line



Time (month-year)	Beach Gain(+)/Loss(-)	Beach Length (Feet)
11/1/50	0.0	204
10/1/63	-31.3	204
4/1/75	-10.1	204
1/5/83	-40.0	204
7/1/87	-29.9	204
11/4/92	-52.7	204
11/12/95	-49.8	204
2/3/02	-56.6	204

# HAENA Beach Line



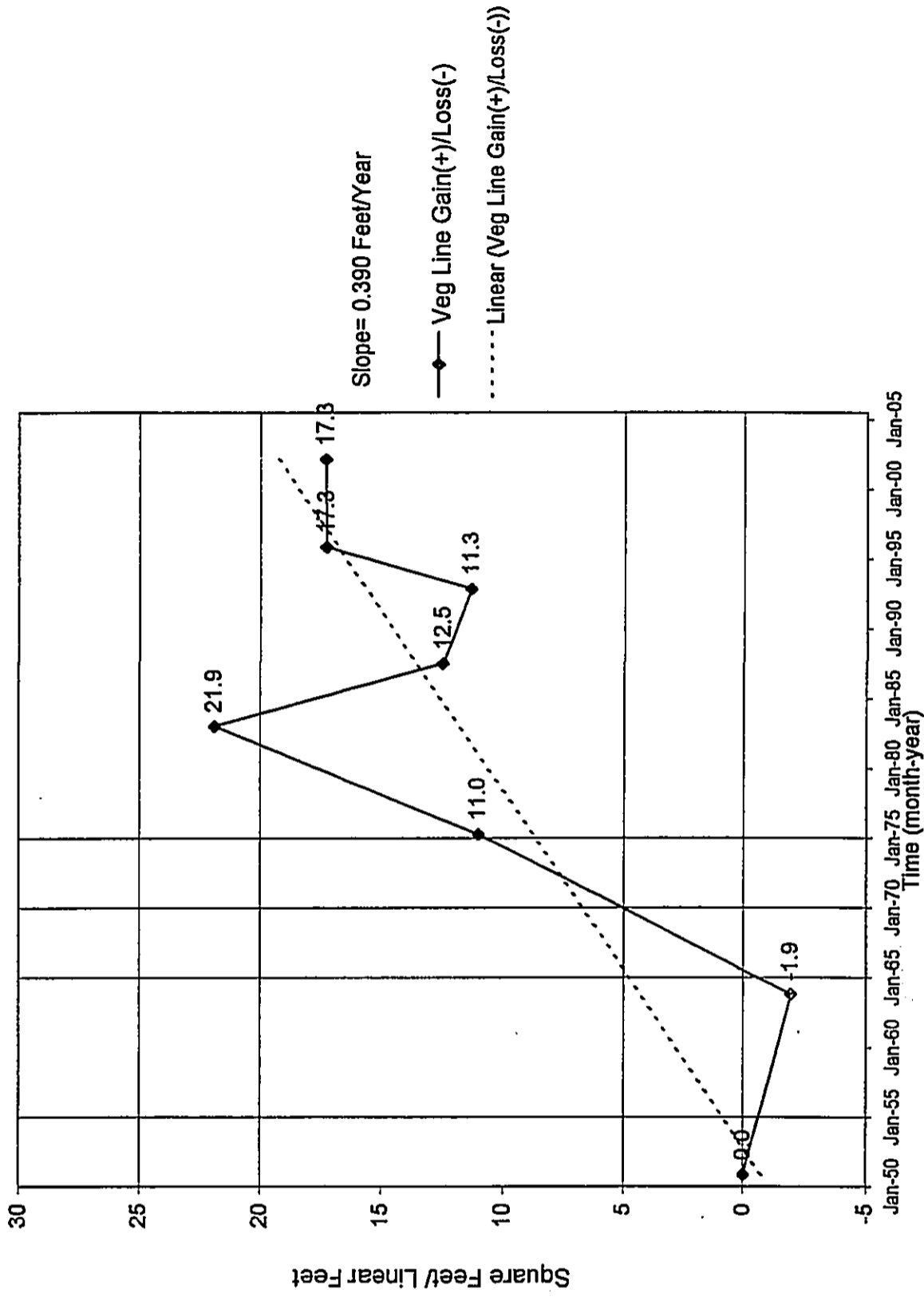
Time (month-year)	Beach Gain(+)/Loss(-)	Beach Length (Feet)
11/1/50	0.0	2542
10/1/63	-47.4	2542
4/1/75	-5.9	2542
1/5/83	-28.3	2542
7/1/87	-55.2	2542
11/4/92	-60.2	2542
11/12/95	-55.3	2542
2/3/02	-50.7	2542

HAENA BEACH LINE





# HAENA Vegetation Line



Time (month-year)	Veg Line Gain(+)/Loss(-)	Shoreline Length (Feet)
11/1/50	0.0	3175
10/1/63	-1.9	3175
4/1/75	11.0	3175
1/5/83	21.9	3175
7/1/87	12.5	3175
11/4/92	11.3	3175
11/12/95	17.3	3175
2/3/02	17.3	3175

# Appendix 6

Professional Opinion of Shoreline Setback Distance

Prepared by

EKNA Services, Inc.

Engineers and Environmental Consultants

Proposed Browning Residence

TMK (4) 5-9-05: 029



EKNA Services, Inc.

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Consultants

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CN 2480-01F#

January 7, 2006

Landmark Consulting Services, Inc.  
P.O. Box 915  
Hanalei, Hawaii 96714

Attn: Mr. Ben Welborn

Subject: Shoreline Setback Determination  
Browning Property TMK:(4)5-9-05:029  
Haena, Kauai

Dear Mr. Welborn:

In response to your request, this letter provides a professional opinion regarding an appropriate shoreline setback distance for the subject parcel. The opinion is based on the analysis of historical shoreline changes that EKNA Services, Inc. recently performed for the shoreline area in the vicinity of the subject property, the guidelines contained in "Hawaii's Coastal Hazard Mitigation Guidebook"<sup>1</sup> (*Guidebook*), and our coastal engineering expertise.

1. The vegetation line as certified by the Board of Land and Natural Resources should be used to establish the setback, rather than the beach toe line as suggested by the DLNR. For this coastal reach, the shoreline escarpment or vegetation line is an unambiguous indicator of long-term shoreline change, whereas the beach toe line is highly variable. Based on our analysis of historical shoreline change, the average annual erosion rate for the location of the subject property is 0.22 feet/year. Using the recommended adjustment for error (20%) and accelerated sea level rise (10%) from the *Guidebook*, the adjusted erosion rate is 0.29 feet/year.
2. For a 70-year life, the erosion zone is  $(70 \times 0.29) = 20.3$  feet. For a 50-year life, the erosion zone is  $(50 \times 0.29) = 14.5$  feet. The *Guidebook* recommends using a 70-year life plus a storm event buffer of 20 feet, plus a safety/design buffer of 20 feet, resulting in a total setback of 60.3 feet. Using a 70-year life plus a 40-foot buffer (which is equivalent to adding an estimated 70 years of lifespan to the prevailing 40-foot standard setback) is conservative, especially if the dwelling is designed and constructed to be relocatable, and

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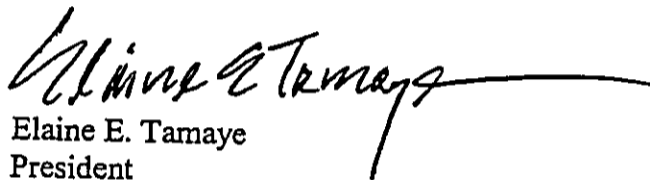
<sup>1</sup>Hawaii Coastal Hazard Mitigation Guidebook, prepared for the Office of Conservation & Coastal Lands, Department of Land and Natural Resources, Coastal Zone Management Program, Office of Planning, State of Hawaii, University of Hawaii Sea Grant College Program and the Pacific Services Center - NOAA, prepared by Dennis J. Hwang, January 2005.

provided that there is sufficient space on the property to relocate the dwelling. The subject property satisfies both criteria.

3. For shorelines where the historical changes have not been uniformly erosional or accretional, it is recommended that the minimum setback should not be less than the erosion zone for a 50-year life plus the maximum cycle of shoreline movement from the aerial photo analysis. The maximum cycle accounts for relatively short-term fluctuations in the movement of the shoreline, which is "averaged out" when calculating the long-term annual rate. For the subject property, the maximum cycle of shoreline movement has been about 26 feet, resulting in a minimum recommended setback of (14.5 feet + 26 feet) = 40 feet. Because this setback is smaller than the 60 feet based on the *Guidebook*, it is recommended that the more conservative setback of 60 feet be considered for this property.

Based on the above, it is my opinion that a reasonably protective shoreline setback for the subject property is 60 feet. Please do not hesitate to contact me if you have any questions concerning the above.

Very truly yours,

  
Elaine E. Tamaye  
President

cc: Randy Vitousek  
Cades Schutte LLC  
75-170 Hualalai Road, Suite #303B  
Kailua Kona, HI 96740

# Appendix 7

Proposed Shoreline Certification Survey  
& Accompanying Documentation

Prepared by

Wagner Engineering Services, Inc.

Proposed Browning Residence

TMK (4) 5-9-05: 029

STATE OF HAWAII  
DEPARTMENT OF LAND & NATURAL RESOURCES

SHORELINE CERTIFICATION  
APPLICATION FORM

For DLNR use only:

Case file no.: \_\_\_\_\_  
Date application recvd: \_\_\_\_\_  
Date applic. complete: \_\_\_\_\_  
Completion date (+90): \_\_\_\_\_  
1st OEQC notice: \_\_\_\_\_  
2nd OEQC notice: \_\_\_\_\_  
Date appeals due (+20): \_\_\_\_\_  
Date briefs due: \_\_\_\_\_  
Date of decision (+60): \_\_\_\_\_

**COPY**  
cc: Kent Browning  
Ben Welborn  
Randy Vtousek

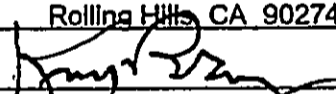
I. APPLICANT/AGENT

Applicant means the person submitting an application for shoreline certification.

Applicant name: Ronald J. Wagner  
Applicant address: Wagner Engineering Services, Inc.  
P.O. Box 851, Hanalei, Kauai, HI. 96714  
Phone numbers: (808) 826-7256 ext. 111 (808) 826-7745 ron@wagnereng.com  
Phone Fax E-mail

II. PROPERTY OWNER

Property owner means the equitable or legal holder of interest in, or the lessee holding under a recorded lease for the property for which a shoreline certification is requested, or the authorized agent.

Owner name: Kent Browning  
Owner address: 64 Saddleback Road  
Rolling Hills, CA 90274  
Signature:  Date: 12/19/05

III. LOCATION AND ADDRESS

Island:  Oahu  Kauai  Molokai  
 Hawaii  Maui  Lanai  
Town, District: Haena, Hanalei Tax Map Key: (4) 5-9-05:29  
Address: 5-7772 Kuhio Highway  
Haena, Hanalei, Kauai, HI. 96714

IV. PURPOSE

State the purpose for which the certification is being applied:  
My client is requesting a shoreline certification for the purpose of  
residential building permits.

V. CHECKLIST OF ENCLOSURES

(X) At least three (3) sets of color photographs of the shoreline, in accordance with §13-222-8, HAR:

- (X) Shoreline, as delineated on the map, is indicated on each photograph.
- (X) Permanent markings on the ground or flaggings are indicated on the photographs.
- (X) Each photograph is labeled by number or alphabet to coincide with the map showing the direction the photograph was taken.
- (X) Photographs provide accurate perspectives of the shoreline in relation to permanent markings or other land features.
- (X) Each photograph is marked with the date and time taken.

(X) At least twelve (12) maps of the shoreline, in accordance with §13-222-9, HAR:

- (X) Maps are on whiteprints and are one of the following sizes (in inches): 8.5 x 13, 10 x 15, 13 x 23, 15 x 21, 21 x 32, 22 x 36, 24 x 36, 30 x 36, 36 x 42, 42 x 42-72.
- (X) Maps are drawn using an engineer or architect scale, in units of feet. Scale is clearly noted on the map. No reduced or enlarged maps allowed.
- (X) Maps are based on an actual field survey conducted within the prior 90 days.
- (X) Maps have the licensed surveyor's seal and testament indicating the work was done by the surveyor or under the surveyor's supervision.
- (X) Maps indicate true north pointing towards the top.
- ( ) Map title and reference to location include the original source of title and name of awardee, patentee, or grantee and the ili, ahupuaa, and the TMK and the property owner's name and address.
- (X) Maps show all permanent identification marks established on the ground and all pertinent azimuths and distances.
- (X) Maps indicate the type of shoreline being determined (i.e., vegetation line, debris line, upper reaches of the wash of waves, face of artificial structure, or combination).
- (X) At least two (2) of the maps show the direction the photographs were taken and the point or shoreline depicted in the photographs.

(X) Field survey was conducted on 11/30/05 by Erik Pasco  
(date of field survey) (name of person who conducted field survey)

(X) The licensed land surveyor who made or supervised the field survey was:

Name Ronald J. Wagner, L.S.  
Address P.O. Box 851, Hanalei, Kauai, HI. 96714  
Phone no. (808) 826-7256

(X) Application fee of \$75 is enclosed.

(X) Statement signed by property owner granting the State of Hawaii the right to enter the property.

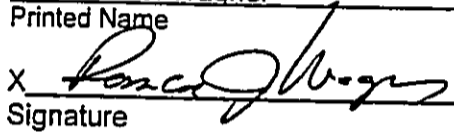
( ) Statement(s) signed by applicable owners granting the State of Hawaii the right to enter land not owned by the property owner necessary for access.



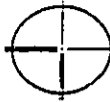
- ( ) Copy of any federal, State or county enforcement or other legal action involving the subject shoreline.
- ( ) If shoreline is being located at the base of a manmade structure, copy of all documents supporting that the structure has been approved by the appropriate government agencies or is exempt from such approval.

VI. CERTIFICATION

I hereby certify that the statements and information contained in this application, including all attachments, are true and accurate to the best of my knowledge and understand that if any statements are shown to be false or misrepresented, this application may be rejected. Further, I understand that the Department may review any shoreline certification during its 12-month validity period and may rescind the certification where there is substantial misrepresentation or material fact in the application, whether intentional or unintentional, as determined by the State Land Surveyor or the Department.

Ronald J. Wagner  
Printed Name  
X   
Signature

January 6, 2006  
Date



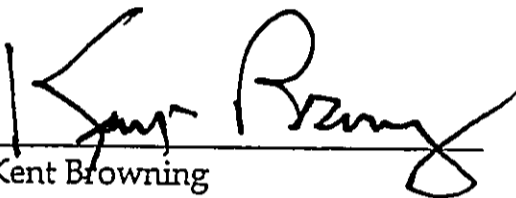
Wagner Engineering Services, Inc.

Box 851 Hanalei, HI 96714 808-826-7256 FAX: 808-826-7745

Letter of Authorization  
by  
Property Owner

I (We) the undersigned do hereby authorize representatives of the State of Hawaii, including the State Surveyor, the right to enter the property at Haena, Halelea, Kauai, Hawaii, being Tax Map Key (4) 5-9-05:29 of the shoreline under review for certification.

Signature of property owner(s):

  
Kent Browning

Address of property owner(s):

64 Saddleback Road

Rolling Hills, CA 90274

Project No: 3939-1

DOCUMENT CAPTURED AS RECEIVED



3 Denotes number of pictures taken

Location of stake

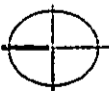
NOVEMBER 29, 2005  
TIME: 2:30 P.M.

SHORELINE CERTIFICATION  
PHOTOGRAPHS

LOT 33

HAENA HUI LANDS

AT HAENA, HALELEA, KAUAI, HAWAII



Wagner Engineering Services, Inc.

P.O. Box 851 Hanalei, HI 96714 (808) 826-7256

TMK (4) 5-4-05:29

PROJECT NO. 3934-I

3



4



5



3 Denotes number of pictures taken

Location of stake

NOVEMBER 29, 2005  
TIME: 2:30 P.M.

SHORELINE CERTIFICATION

PHOTOGRAPHS

LOT 33

HAENA HUI LANDS

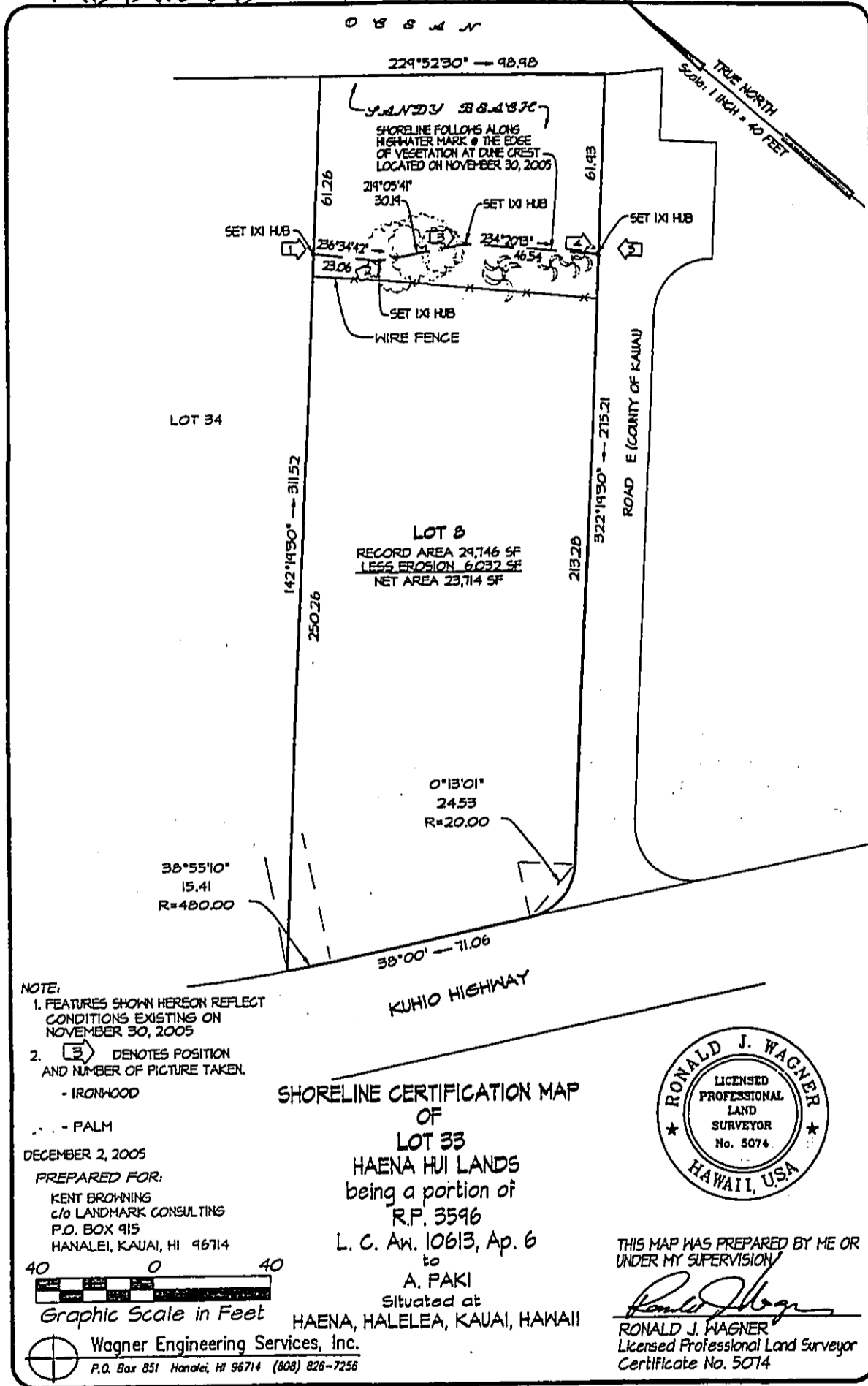
AT HAENA, HALELEA, KAUAI, HAWAII



Wagner Engineering Services, Inc.

P.O. Box 851 Hanalei, HI 96714 (808) 826-7256

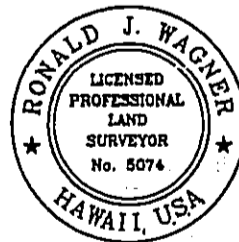
REDUCED - NOT TO SCALE



- NOTE:
1. FEATURES SHOWN HEREON REFLECT CONDITIONS EXISTING ON NOVEMBER 30, 2005
  2. [3] DENOTES POSITION AND NUMBER OF PICTURE TAKEN

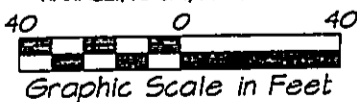
- IRONWOOD  
 - PALM  
 DECEMBER 2, 2005  
 PREPARED FOR:  
 KENT BROWNING  
 c/o LANDMARK CONSULTING  
 P.O. BOX 915  
 HANAIEI, KAUAI, HI 96714

SHORELINE CERTIFICATION MAP  
 OF  
 LOT 33  
 HAENA HUI LANDS  
 being a portion of  
 R.P. 3596  
 L. C. Aw. 10613, Ap. 6  
 to  
 A. PAKI  
 Situated at  
 HAENA, HALELEA, KAUAI, HAWAII



THIS MAP WAS PREPARED BY ME OR UNDER MY SUPERVISION

*Ronald J. Wagner*  
 RONALD J. WAGNER  
 Licensed Professional Land Surveyor  
 Certificate No. 5074



Wagner Engineering Services, Inc.  
 P.O. Box 851 Hanalei, HI 96714 (808) 826-7256

3939.1

LINDA LINGLE  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
LAND DIVISION

POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

PETER T. YOUNG  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT  
ROBERT K. MASUDA  
DEPUTY DIRECTOR  
DEAN NAKANO  
ACTING 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 PALMS

March 15, 2006

KA-195WAGNERSL-P  
LD-NAV

Wagner Engineering Services, Inc.  
Ronald Wagner  
BOX 851  
Hanalei, Hawaii 96714

Dear Mr. Wagner:

Subject: ACCEPTANCE OF PROPOSED SHORELINE CERTIFICATION  
Applicant: Wagner Engineering Services, Inc./Kent Browning  
Island: Kauai - District: Haena, Hanalei  
TMK: (4) 5-9-005: 029

The State Land Surveyor has recommended certification of the subject shoreline certification application. We have submitted this proposed shoreline certification for publication in the March 23, 2006 OEQC Environmental Notice to allow for appeals. Any person wishing to file an appeal shall have twenty (20) days from the publication. If no appeals are received, the Chairperson will certify the shoreline and we will send you the signed shoreline map(s).

If you have any questions, please feel free to contact me at (808) 587-0384. Thank you.

Sincerely,

NICHOLAS A. VACCARO  
Land Agent

c: District Branch  
Central File

✓ 3/19/06 faxed to  
Ben Welborn  
for Kent Browning

# Appendix 8

## Documentation of CDUA Related Correspondence with OCCL

- OCCL letter dated February 10<sup>th</sup>, 2005 - - regarding recommended 130 ft. shoreline setback.
- OCCL letter dated February 16<sup>th</sup>, 2006 - - rejecting CDUA KA-3294 on the grounds that the application was incomplete.
- Cades Schutte (Applicant's legal counsel) letter dated, March 7<sup>th</sup>, 2006 - - challenging the OCCL's authority to reject CDUA KA-3294 upon the grounds cited.
- OCCL letter dated March 29<sup>th</sup>, 2006 - - responding to Cades Schutte letter dated March 7<sup>th</sup>, 2006 and agreeing to officially accept the CDUA.

LINDA LINGLE  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES

Office of Conservation and Coastal Lands  
POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

PETER T. YOUNG  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT

YVONNE Y. IZU  
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

OCCL:DE

Correspondence File No.: KA-05-168

February 10, 2005

Mr. Ben Welborn  
Landmark Consulting Services  
P.O. Box 915  
Hanalei, HI 96714

SUBJECT: Browning Shoreline Setback, Haena, Kauai (TMK: (4) 5-9-05:029)

Pertaining to the construction of a single family residence at Haena, Kauai. The shoreline area here is known to be subject to seasonal erosion, tsunami inundation, flooding and high surf and dwellings should be sited conservatively with respect to the shoreline setback. In order to determine an appropriate setback from the shoreline, the Department required an historical shoreline analysis be carried out for the property. We are in receipt of the January 17, 2005 report from Edward K. Noda and Associates (EKNA) regarding the subject historical shoreline analysis.

EKNA prepared a historical shoreline analysis utilizing 8 aerial photographs dated from 1950 to 2002 for a time series of 52 years. A recent guidebook<sup>1</sup> on coastal development offers guidelines on determining the historical erosion rate. The historical shoreline change analysis prepared by EKNA meets these guidelines as well as our requirements for establishing the historical shoreline behavior for the subject property.

EKNA supplied data on the historical erosion rate at the property based on analysis of the position of the vegetation line and the beach line (toe or step crest) in aerial photographs. EKNA calculated the erosion trend for two reaches for this property; the immediate 200 linear feet fronting the property as well as a 2500 foot reach extending from Manoa Stream to the unnamed stream 800 feet to the north. The dual reaches provide an opportunity to quantify the along shore variability of the shoreline and

<sup>1</sup> Hawaii's Coastal Hazard Mitigation Guidebook. In Press. Dennis Hwang for the State of Hawaii, Department of Land and Natural Resources, The Coastal Zone Management Program, University of Hawaii Sea Grant Program, and the Pacific Services Center- NOAA.



reduces the error associated with tracking discrete transects at set intervals. Both reaches are consistent and suggest an overall erosion trend for the area.

In addition to tracking the shoreline movement, EKNA tracked the movement of the vegetation line for both reaches. Quantifying the trend of the vegetation line is useful in understanding the long-term changes of the overall beach width changes as a function of both shoreline erosion landward and migration of the vegetation. EKNA has determined that the trend of the vegetation line for the immediate property (200 linear feet) is erosional (landward at -0.22 ft/yr) while the 2500 foot reach for the area reveals the vegetation line is accretionary (seaward at +0.39 ft/yr). The discrepancy between the two vegetation line trends may be a function of widespread landscaping in the area or localized coastal processes that prevent the landward migration of vegetation at the subject site.

For the purpose of establishing setback the use of the toe or waterline is utilized since it is thought to be a better indicator of long-term shoreline change that cannot be manipulated as the vegetation can be. Using the toe or beach line as the Shore Reference Feature (SRF), and based on the information provided **we have calculated the shoreline set back at ~130 feet.** The setback was calculated as follows:

**Table 1. DLNR Shoreline Setback Calculations:**

Annual Erosion Rate (ft/yr) Rounded off to -1.0	-1.0	Ave Rate of beach Line
Error Adjustment (20%)	0.20	+ error
Sea level adjustment (10%)	0.12	+ SL adjustment
Final Adjusted erosion rate (ft /yr)	1.32	= adjusted rate
Adjusted rate X lifespan (70 years) (ft)	92.4 ft	Initial setback
Storm Event Buffer (20 feet)	20	+ storm
Design/Safety Buffer (20 feet)	20	+ safety
<b>Erosion Zone setback (Feet)</b>	<b>132.4</b>	<b>= setback</b>

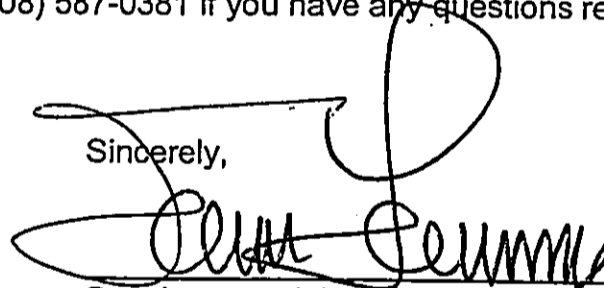
**Table 2 – Example Table of Erosion Rates Based on Structure Life Expectancy**

Erosion Rate ft./yr.	Adjusted Rate for Errors (20%)	Adjusted Rate for Errors and Accel. Sea Level Rise (20%) X (10%)	Storm Event	Safety/Design Buffer	Erosion Zone 70-year Life of Structure	Erosion Zone 100-year Life of Structure
0	0.12*	0.13*	20	20	49*	53*
1	0.12	0.13	20	20	49	53
2	0.24	0.26	20	20	58	66
3	0.36	0.39	20	20	67	79
4	0.48	0.52	20	20	76	92
5	0.60	0.66	20	20	86	106
1.0	1.20	1.32	20	20	132	172
1.5	1.80	1.98	20	20	179	238
2.0	2.40	2.64	20	20	225	304

Table 2 describes the approach the Guidebook<sup>1</sup> utilizes to achieve a shoreline setback for a given erosion rate. This method accounts for calculation error, sea level rise, storm buffer and a design buffer and would provide a safe setback for an estimate 70 year lifespan for the structure. Similar formulas have been used at the Maui County Planning Department<sup>2</sup> as well as being widely used in several mainland states.

The recommended shoreline setback is thought to be a conservative and proactive planning measure to protect the applicant from developing within a known coastal hazard zone. Please call me at (808) 587-0381 if you have any questions regarding the shoreline setback for this parcel.

Sincerely,



Sam Lemmo, Administrator  
Office of Conservation and Coastal Lands

Cc: Chairperson's Office  
Kauai Board Member  
Kauai Land Agent  
Kauai County Planning Department

<sup>2</sup> Maui County Shoreline setbacks are based on a 50 year structural lifespan plus 20 foot storm buffer. See <http://www.co.maui.hi.us/departments/Planning/pdf/mpcshoreline.pdf>

LINDA LINGLE  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
OFFICE OF CONSERVATION AND COASTAL LANDS  
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ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAIKOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

REF: OCCL:CC

CDUA: KA-3294

Ben Welborn  
Landmark Consulting Services  
PO Box 915  
Hanalei, HI 96714

FEB 16 2006

Dear Mr. Welborn,

SUBJECT: Conservation District Use Application (CDUA) KA-3294 for construction of a Single-Family Residence (SFR), Haena, Island of Kauai, Subject Parcel TMK: (4) 5-9-005:029

The Department of Land and Natural Resources (the Department) is in receipt of CDUA KA-3294, filed February 6, 2006, for the owners to construct a SFR in the Conservation District in Haena on Kauai, Subject Parcel TMK: (4) 5-9-005:029.

Departmental records indicate that the subject parcel is located in the State Land Use (SLU) Conservation District, Limited Subzone. The Office of Conservation and Coastal Lands (OCCL) is writing to inform you the Department is bound by statute to accept or reject each application within 30 days of receipt. The OCCL has reviewed your CDUA and considers it incomplete.

The OCCL has notified you by letter, Correspondence File No. KA-05-168, of the correct erosion rate, as derived in the EKNA study, to use when calculating the shoreline setback area. The OCCL also included a worksheet showing all calculations, based on your study, for producing the correct shoreline setback area. Following is a section from the letter.

In addition to tracking the shoreline movement, EKNA tracked the movement of the vegetation line for both reaches. Quantifying the trend of the vegetation line is useful in understanding the long-term changes of the overall beach width changes as a function of both shoreline erosion landward and migration of the vegetation. EKNA has determined that the trend of the vegetation line for the immediate property (200 linear feet) is erosional (landward at -0.22 ft/yr) while the 2500 foot reach for the area reveals the vegetation line is accretionary (seaward at +0.39 ft/yr). The discrepancy between the two vegetation line trends may be a function of widespread landscaping in the area or localized coastal processes that prevent the landward migration of vegetation at the subject site.

For the purpose of establishing setback the use of the toe or waterline is utilized since it is thought to be a better indicator of long-term shoreline change that cannot be manipulated as the vegetation can be. Using the toe or beach line as the Shore Reference Feature (SRF), and based on the information provided we have calculated the shoreline set back at ~130 feet. The setback was calculated as follows:

**Table 1. DLNR Shoreline Setback Calculations:**

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Storm Event Buffer (20 feet)	20	+ storm
Design/Safety Buffer (20 feet)	20	+ safety
<b>Erosion Zone setback (Feet)</b>	<b>132.4</b>	<b>= setback</b>

Using the beach toe as a shoreline proxy for calculating erosion rates is the industry standard in Hawaii, as defined by the Coastal Geology Group at the University of Hawaii. It was used to calculate the erosion rates for the island of Maui, and is currently being used to calculate the erosion rates for the islands of Oahu and Kauai. The Coastal Geology Group at the University of Hawaii has established the beach toe as the best shoreline change reference feature, and has published a number of peer-reviewed scientific papers documenting shoreline erosion in the Hawaiian Islands, as well as describing modern techniques for measuring erosion rates using historical and modern aerial photographs. They have also noted the inherent problems with using vegetation line for calculating erosion rates in Hawaii, and choose to use vegetation line only as a reference for beach width.

For example, in Coyne *et al.* (1999)<sup>1</sup> state:

The usefulness of this feature (vegetation line) as a monitor of shoreline change is heavily compromised by human influence, such as shoreline armoring and anthropogenic cultivation of coastal vegetation, which effectively fixes the aerial extent of developable land.

The questionable significance of the vegetation line as a geologic marker outweighs the benefit of clear identification on aerial photographs.

...in a natural system, the beach toe, the high water line (HWL), and the vegetation line migrate nearly in concert from a cross-shore perspective within an envelope of seasonal profile fluctuations. A landward movement of the beach toe indicates an increased erosion hazard to coastal lands.

The OCCL is committed to protection and preservation of coastal resources. As such, the applicant may wish to revise their CDUA to better conform to the State statutes, rules, and policies governing

<sup>1</sup> Coyne, MA, Fletcher, CH, and Richmond, BM, 1999. Mapping Coastal Erosion Hazard Areas in Hawaii: Observations and Errors. *Journal of Coastal Research*, Special Issue 28, pp 171-184.

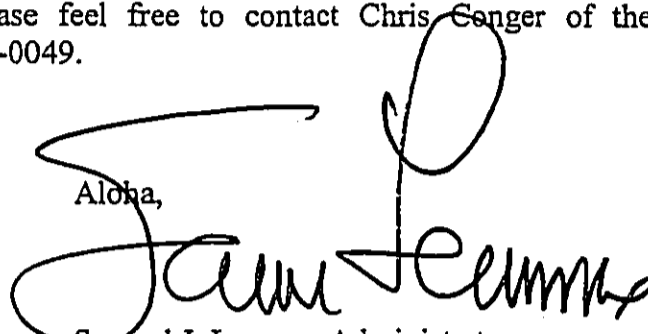
the protection and preservation of coastal lands. The OCCL will be happy to work with you so that you may design an environmentally compatible project.

The Department is returning the CDUA and DEA to you with your fee of \$100.00. The OCCL notes the filing fee is \$100.00, pursuant to HAR, Section 13-5-32, BOARD PERMITS, (a), (1).

The OCCL looks forward to your resubmitted application.

Should you have any questions please feel free to contact Chris Conger of the Office of Conservation and Coastal Lands at 587-0049.

Aloha,

A handwritten signature in black ink, appearing to read "Samuel J. Lemmo". The signature is stylized with a large initial "S" and "L".

Samuel J. Lemmo, Administrator  
Office of Conservation and Coastal Lands

March 7, 2006

Roy A. Vitousek III  
Direct Line: (808) 329-5811  
Direct Fax: (808) 326-1175  
E-mail: rvitousek@cades.com

Sam Lemmo  
Office of Conservation and Coastal Lands  
Department of Land and Natural Resources  
P. O. Box 621  
Honolulu, Hawaii 96809

Re: CDUA KA-3294; TMK: (4) 5-9-005:029; Kent C. and Kathryn M. Browning

Dear Mr. Lemmo:

This office has been retained by Kent and Kathryn Browning, Trustees, to assist them and their consultant, Landmark Consulting Services (Ben Welborn) with respect to their Application for a Conservation District Use Permit (CDUP) to build a single-family home in Haena, Kauai. We understand that the Application was delivered to your Department on February 6, 2006, but was purportedly rejected by letter dated February 16, 2006, as being incomplete.

The February 16, 2006, letter does not state how the Application is incomplete under HAR 13-5-51(a). My review of the application discloses that it contained or was accompanied by all necessary and appropriate information, documents, and fees as set out in HAR 13-5-31 (a) (1)-(7).

In reading your letter, it appears that you rejected the Application because it did not adopt your interpretation of the appropriate building setbacks which you suggested in your letter of February 10, 2005 (Correspondence File No. KA-05-168). Applicants considered your assessment, retained an engineering firm to review the same issues and concerns, and filed their Application based on the recommendations of the professional engineer, which recommendations were attached as Exhibit 6 to the Application.

I have not been able to find any statute, rule, or policy of the State of Hawaii which:

- 1) establishes a particular methodology for determining building setbacks in the Conservation District;
- 2) confers authority on the DLNR or OCCL to require use of a particular methodology;
- 3) allows the OCCL administration to reject an otherwise complete application because the proposed setback is based on an engineering assessment different from what you prefer; or

C S

Cades Schutte Building  
1000 Bishop Street, Suite 1200  
Honolulu, Hawaii 96813  
Tel: 808.521-9200  
Fax: 808.521-9210  
www.cades.com

Kona Office  
75-170 Hualalai Road, Suite 303  
Kailua Kona, Hawaii 96740  
Tel: 808.329-5811  
Fax: 808.326-1175

Sam Lemmo  
March 7, 2006  
Page 2

- 4) authorizes OCCL to exercise Board authority with respect to a Board permit.

If you could direct me to specific legal authority for your action and identify which "State statutes, rules and polices governing the protection and preservation of coastal lands" you believe the Application did not conform to, this would help Applicants and us assess the validity of the rejection of the Application and what we need to do to have their Application presented to the Board for action. If there is no rule requiring use of a particular methodology which has gone through the HRS chapter 91 rule-making process then it becomes a matter for the Board's consideration based on all the information presented. It would appear to be inappropriate to reject an application and keep it from Board consideration based on a purported "policy" that has not been legally enacted and published.

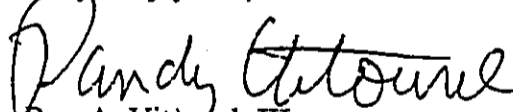
It seems that the nearly automatic rejection of applications is becoming a policy of your office. Applicants are concerned that this might be an effort to avoid the 180-day decision period prescribed by HRS 183C and HAR 13-5-31(c) and (d). We note that a completed Application was delivered to your Department on February 6, 2006.

The Brownings' Application is for a single-family home in an established residential neighborhood. It is part of the Haena Hui lands and appears to abut the Urban District. The Application proposes a setback from the shoreline which is significantly greater than most homes at Haena and is consistent with recent Board decisions.

Applicant appreciates OCCL's commitment to protection of natural resources but suggests that the scope of a government agency's authority over private persons and private property is limited by specific legal authority, however you do not cite your authority in your letter. Please consider this letter a request that you specifically state the legal authority for your action or reconsider your action.

Please call me if you have questions or require additional information. I hope to hear from you soon.

Very truly yours,



Roy A. Vitousek III

for

CADES SCHUTTE

A Limited Liability Law Partnership

RAV:bah

cc: Ben Welborn, Landmark Consulting Services

lmanageDB:638163.1

LINDA LINGLE  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES

Office of Conservation and Coastal Lands  
POST OFFICE BOX 621  
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ROBERT K. MASUDA  
DEPUTY DIRECTOR

DEAN NAKANO  
ACTING 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

MAR 29 2006

Roy A Vitousek III  
Cades Schutte  
75-170 Hualalai Road, Suite 303  
Kailua-Kona, Hawaii 96740

Dear Mr. Vitousek:

Subject: CDUA KA-3294, Kent and Kathryn Browning, Haena, Kauai (TMK: 5-9-5:29)

Thank you for your March 7, 2006 letter on behalf of the Brownings. You raise a number of legal questions that may require input from the Department of the Attorney General. Thus, I am not prepared to answer them in a short period of time.

We are willing to accept and process the application and present the matter before the Board of Land and Natural Resources, despite our stated concerns as to how the setback was calculated. Prior to the submission of the application, the OCCL provided specific instructions (in writing) on the proper way to calculate the building setback. The applicant chose to use a different method for calculating the setback (vegetation). We do note that the OCCL's preferred use of the beach toe as a shoreline proxy for calculating erosion rates is the industry standard in Hawaii. Despite these misgivings, your clients' application will be submitted to the Board and notice will be provided to you in advance of this proceeding.

In addition, we have several comments on your client's application that we would like to have clarified.

*Maximum Developable Area*

The OCCL notes the Maximum Developable Area (MDA) "means the total floor area in square feet allowed under the approved land use. The floor area computation shall include: all enclosed (on three sides minimum, with floor or roof structure above) living areas; above-grade decks in excess of four feet in width; garage; carport; swimming pools, saunas or other developable water features (excluding naturally existing ponds, tidepools, etc.); play courts; or any other standing structures, which are accessory to the approved land use." For lots less than one acre the maximum MDA is 3,500 square feet.

The OCCL notes, according to your information, you are applying for CDUA approval for the structure, which will be approximately 3,482 square feet in size. However, the OCCL notes square footage measurements (length, width) are missing for the following: 1) great room; 2) lanai off of



the great room; 3) deck off the master bedroom; 4) extra decking off of bedroom 1 and bedroom 2; and) the deck leading to bedroom 3.

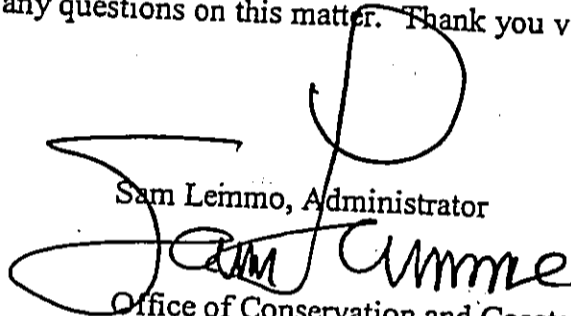
Based on our approximate computations, the total proposed project appears to be approximately 3,539 square feet. The OCCL notes with these proposed design elements with the provided square footage you have exceeded the maximum MDA by 39 square feet. If the square foot numbers are in error please revise the DEA and CDUA. Please make sure the diagrams; Site Plans and CDUA and DEA information is uniform. Please show all site plans to scale. Please explain in the CDUA and DEA the number of rooms (bedrooms, bathrooms, garage, kitchen, decks, living room, dining room, garage, storage, etc.).

Exhibit 8 indicates the front of the subject parcel is "12.4" MSL. This seems like a low figure. Please check and see if this figure is a typo.

Please revise the information accordingly in the CDUA and DEA. Lastly, the OCCL notes there appears to be a proposed rock wall, and the area is to be landscaped with native flora. These two issues are not discussed in the CDUA and/or DEA; please include this information.

The Department will officially accept the application upon receipt of the CDUAs that were returned to Mr. Wellborn.

Please contact me at 587-0381 if you have any questions on this matter. Thank you very much, and we look forward to hearing from you.

  
Sam Leimmo, Administrator  
Office of Conservation and Coastal Lands

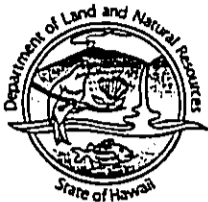
C: Chairperson  
Ben Wellborn

# Appendix 9

Documentation of Draft EA  
Agency Comments

Proposed Browning Residence  
TMK (4) 5-9-05: 029

LINDA LINGLE  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
OFFICE OF CONSERVATION AND COASTAL LANDS  
POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

PETER T. YOUNG  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT

ROBERT K. MASUDA  
DEPUTY DIRECTOR - LAND

DEAN NAKANO  
ACTING 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  
KAIKOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

REF:OCCL:DH

FILE NO: CDUA KA-3309

JUL 12 2006

Acceptance Date: May 15, 2006  
180-Day Exp. Date: November 11, 2006

Ben Welborn  
Landmark Consulting Services, Inc.  
P.O. Box 915  
Hanalei, Hawaii 96714

Dear Mr. Welborn:

**SUBJECT:** Conservation District Use Application (CDUA) KA-3309 for the Browning Single Family Residence (SFR), Haena District, Island of Kauai, TMK: (4) 5-9-005:029

This letter is regarding the processing of CDUA KA-3309. The public and agency comment period on your client's application has closed. Attached to this letter are copies of the comments received by the Office of Conservation and Coastal Lands (OCCL) regarding your CDUA. The final copy of your CDUA needs to include the responses to the queries raised in these letters. These responses can be attached to the end of the final CDUA document. Please send 6 (six) copies of the final EA to the OCCL by August 9, 2006, so it can be published the OEQC's August 23, 2006 Environmental Notice.

The OCCL reiterates our concern over the shoreline setback. As noted, the OCCL is committed to protection and preservation of coastal resources. Your CDUA page # 5 notes that the applicant is proposing to set the residence 61 feet back from the pending certified shoreline. However, based on our analysis of the EKNA study, this setback is not sufficient to protect the homeowner from future erosion hazards. A larger buffer is also required between any structures and the shoreline to protect the public beach from future damages.

Lastly, the OCCL that the Department or BLNR did not approve a fence on the property. Your email noted that the "seaward section of the fence running parallel to Roadway "E" which extended beyond the shoreline has been removed. However, the OCCL notes there is still a fence on the subject parcel. Therefore, we intend to process the matter through our Hawaii Officer Administrative Penalty System (HOAPS), which will involve an administrative fine of \$500.00.

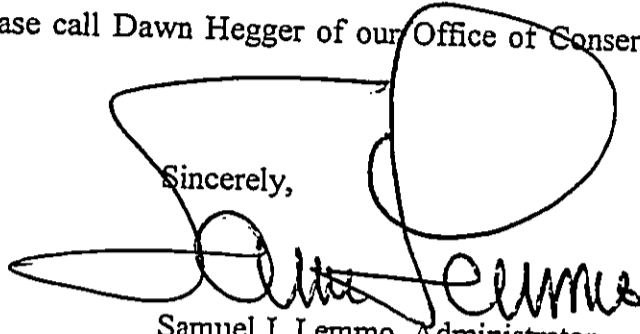
REF:OCC:DH

CDUA: KA-3309

The OCCL notes to please provide a list and Site Plan of the area to be landscaped with native flora. After the OCCL receives the final version of your CDUA and Environmental Assessment with all the necessary amendments, staff will submit your CDUA to the Board of Land and Natural Resources for their consideration. Early submittal of your documents will expedite the review process.

Should you have questions, please call Dawn Hegger of our Office of Conservation and Coastal Lands staff at 587-0380.

Sincerely,

A handwritten signature in black ink, appearing to read 'Samuel J. Lemmo', is written over a large, irregular scribble or stamp.

Samuel J. Lemmo, Administrator  
Office of Conservation and Coastal Lands

c: KDLO  
County of Kauai Planning Department



**LANDMARK**  
CONSULTING

August 1, 2006

Samuel J. Lemmo, Administrator  
DLNR, Office of Conservation and Coastal Lands  
P.O. Box 621  
Honolulu, HI 96809

**Re: Conservation District Use Application (CDUA) KA-3309  
Proposed Browning Single Family Residence (SFR)  
TMK (4) 5-9-005: 029, Haena, Kauai**

Dear Mr. Lemmo,

We are in receipt of the public and agency comment letters forwarded by the OCCL pertaining to the proposed construction of the Browning SFR. Comments were provided by your office and by the following agencies:

- DLNR, State Historic Preservation Division
- DLNR, Division of Aquatic Resources
- County of Kauai, Planning Department

We have responded to each of the agencies, copies of which are provided herewith for your review and files.

**Shoreline Setback Distance**

The Applicants, their legal counsel and their shoreline consultant (EKNA) all feel that this proposed shoreline setback distance of 61 feet is both conservative and entirely consistent with the findings of the Historical Shoreline Erosion Study. In calculating the shoreline setback distance, EKNA followed the written guidelines contained in the *Hawaii Coastal Hazard Mitigation Guidebook*.

**Shoreline Certification Process**

Since the shoreline certification appeal was filed, the Applicant's legal counsel has twice written to the DLNR with requests to expedite the briefing schedule. However, to the best of my knowledge no response has yet been given and no schedule has been set. Since the comments on the DEA and CDUA are in and time is running out toward the November 11<sup>th</sup>, 180-day Expiration Date we ask that the DLNR move on the appeal process as soon as possible.

**Fencing & Boundary Rock Wall**

Regarding fencing, you are correct in that there is still an unpermitted pre-existing fence on the subject property. By its appearance, one can surmise that this fence was constructed long ago by a previous property owner. As per the OCCL's request, the seaward section of fencing which ran parallel to Roadway E and which extended beyond the proposed shoreline was removed. However, sections of the same chain link fence which run parallel to Roadway E and then along Kuhio Highway were retained to keep beachgoers from trespassing onto the property. Due to the fact that the subject parcel is

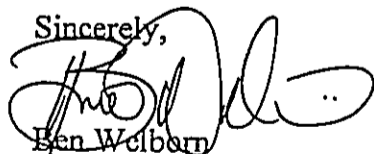
situated adjacent to a busy vehicular and pedestrian public right-of-way to the shoreline (Roadway E), the Applicants are requesting that the BLNR allow for the construction of the proposed dry-stack lava rock wall which would terminate at the certified shoreline limit. This rock wall would replace the existing fence line. The boundary wall would be heavily landscaped on the interior/backside to soften its visual impact and to provide a buffer between the Browning residence and the public right-of-way (a benefit to both the homeowners and the general public). Aesthetically this will be far superior to the "barracks" appearance of a wire fence. A primary concern in this boundary matter is the lack of public restroom facilities in the immediate vicinity of the beach access and the common practice of people "using the bushes" to relieve themselves. This poses a significant health concern. Other concerns include the heightened shoreline erosion which is caused by the heavy foot traffic of beachgoers along the shoreline reach of the right-of-way. A rock wall would prevent the trespass of beachgoers onto the Browning parcel and the associated acceleration of erosion along the seaward edge of their property. Liability and security risks associated with the public right-of-way further justify this boundary wall. If the proposed rock wall is approved by the BLNR, then a County shoreline setback variance will be subsequently applied for. The Applicants hope to resolve the issue of the existing unpermitted fence as a component of the CDUA process. The \$500.00 administrative fine which is being processed by HOAPS will be paid promptly upon receipt.

#### Landscape Plan

Exhibit 17 - Landscape Plan has been added to the CDUA (a copy of which is attached hereto for your review). As depicted on the plan, there are some areas of the parcel, particularly parallel to the boundary edge with Roadway E and along the frontage adjacent to Kuhio Highway where there are numerous introduced invasive species of plants and trees. Most prevalent of these are the Java Plum (*Syzigium cumini*) and the Indian Almond (*Terminalia catappa*). It is the Applicants' intention to completely remove some of these trees and to prune others to make way for the planting of more desirable native and introduced landscape varieties which are common to the area. Over time, the invasive species will be completely phased out once the replacement landscaping is well established. This phasing approach should maintain the desired screening of the parcel from public roadways and the beach. No large trees will be removed from the shoreline area. A representative sampling of landscape varieties and native plants is included on the Landscape Plan. Other compatible species may be used in addition to those shown on the plan.

In closing, thank you for your comments. We appreciate your time in processing this CDUA.

Sincerely,



Ben Welborn  
Project Consultant

c: Randy Vitousek, Cades Shutte (via email)

LINDA LINGLE  
GOVERNOR OF HAWAII



RECEIVED  
OFFICE OF CONSERVATION  
AND COASTAL LANDS

STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES 03

STATE HISTORIC PRESERVATION DIVISION  
601 KAMOKILA BOULEVARD, ROOM 565  
KAPOLEI, HAWAII 96705  
LAND & NATURAL RESOURCES  
STATE OF HAWAII

PETER T. YOUNG  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT

ROBERT K. MASUDA  
DEPUTY DIRECTOR - LAND

DEAN NAKANO  
ACTING DEPUTY DIRECTOR - WATER

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

May 25, 2006

Mr. Sam Lemmo, Administrator  
Department of Land and Natural Resources  
Office of Conservation and Coastal Lands  
P.O. Box 621  
Honolulu, Hawaii'i 96809

LOG NO: 2006.1783  
DOC NO: 0605NM27  
Archaeology

Dear Mr. Lemmo:

**SUBJECT: Chapter 6E-8 Historic Preservation Review [State/Private] –  
Conservation District Use Application (CDUA KA-3309) for a  
Single Family Residence, Ben Wellborn for the Browning Residence  
Haena Ahupua'a, Hanalei District, Island of Kaua'i  
TMK: (4) 5-9-005:029**

The archaeological assessment report submitted in Appendix 2 of this permit application (T.S. Dye, Dye 2005) was accepted (LOG NO: 2005.2593, DOC NO: 0511NM51).

We recommend that archaeological monitoring take place for all subsurface construction work, because construction will occur in sandy soils (*Jaucus* series). There is a high probability of unearthing human burial remains in these soils on the north shore of Kaua'i. We understand the applicant is submitting an archaeological monitoring plan to address our concerns.

Therefore, we recommend the following conditions be attached to the subject permit, should it be approved.

- 1) A qualified archaeological monitor shall be present during all ground-altering activities conducted in the project area in order to document any historic properties which may be encountered during the proposed undertaking and to provide mitigation measures as necessary. An acceptable archaeological monitoring plan will need to be submitted to the State Historic Preservation Division for review, prior to the commencement of any ground-altering activities. An archaeological monitoring plan must contain the following nine specifications: (1) The kinds of remains that are anticipated and where in the construction area the remains are likely to be found; (2) How the remains and deposits will be documented; (3) How the expected types of remains will be treated; (4) The archaeologist conducting the monitoring has the authority to halt the construction in the immediate area of the find in order to carry out the plan; (5) A coordination meeting between the archaeologist and construction crew is scheduled, so that the construction team is aware of the plan; (6) What laboratory work will be done on remains that are collected; (7) A schedule of report preparation; (8) Details concerning the archiving of any collections that are made; and (9) An acceptable report documenting the findings of the monitoring activities shall be submitted to the State Historic Preservation Division for review following the completion of the proposed undertaking.

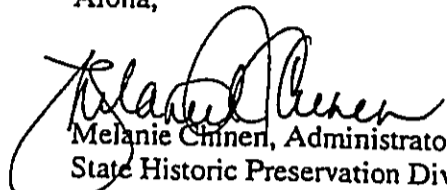
Mr. Sam Lemmo  
Page 2

- 2) The State Historic Preservation Division (O'ahu Office) shall be notified via facsimile (808-692-8020) upon the on-set and completion of the proposed undertaking.

A burial treatment plan (BTP) shall be prepared and submitted to SHPD for review and approval for burial discoveries encountered during the project. The BTP shall be prepared following consultation with native Hawaiians and the Office of Hawaiian Affairs and shall adhere to the procedures outlined in Chapter 6E-43, HAR.

If you have any questions please call Nancy McMahon our Kauai archaeologist at (808) 742-7033

Aloha,

  
Melanie Chinen, Administrator  
State Historic Preservation Division

NM:dlb





**LANDMARK**  
CONSULTING

July 31, 2006

Melanie Chinen, Administrator  
DLNR, State Historic Preservation Division  
601 Kamokila Boulevard  
Kakuhihewa Building, Room 555  
Kapolei, HI 96707

**RE: Chapter 6E-8 Historic Preservation Review (State/Private)  
Conservation District Use Application (CDUA) KA-3309  
Proposed Browning Single Family Residence (SFR0  
TMK (4) 5-9-05: 029, Ha'ena, Kaua'i, Hawai'i**

Dear Ms. Chinen,

Thank you for your comments on the above referred CDUA for the proposed Browning Residence in Ha'ena, Kaua'i.

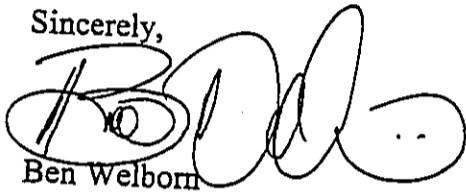
As per your recommendation, the following conditions will be included in the Final Environmental Assessment for the proposed project and shall be attached to the subject Conservation District Use Permit (CDUP), should it be approved by the BLNR:

1. A qualified archaeological monitor shall be present during all ground-altering activities which are conducted in the project area in order to document any historic properties which may be encountered and to provide mitigation measures as necessary.
2. An archaeological monitoring plan will be prepared and submitted to the SHPD for review and approval prior to the commencement of any ground-altering activities. The archaeological monitoring plan will contain the following nine specifications:
  - A) The kinds of remains that are anticipated and where in the construction area the remains are likely to be found.
  - B) The manner in which the remains and deposits will be documented.
  - C) The manner in which the expected types of remains will be treated.
  - D) Provide that the archaeologist conducting the monitoring will have the authority to halt construction in the immediate area of the find(s) in order to carry out the plan requirements.
  - E) Provide that a coordination meeting between the archaeologist and the construction crew take place prior to ground-altering activities so that the construction team is aware of the monitoring plan and its requirements.
  - F) Specify what laboratory work will be done on the remains which are collected.
  - G) Provide a schedule of report preparation.
  - H) Provide details concerning the archiving of any collections that are made.

- D) Submit an acceptable report documenting the findings of the monitoring activities to the State Historic Preservation Division for review following the completion of the proposed undertaking.
3. The State Historic Preservation Division (O'ahu Office) shall be notified via facsimile at 808-692-8020 upon the on-set and completion of the proposed project.
4. If burials are discovered during construction activities, then a burial treatment plan (BTP) shall be prepared and submitted to the SHPD for review and approval. The BTP shall be prepared following consultation with native Hawaiians, the Kauai/Niihau Islands Burial Council, and the Office of Hawaiian Affairs. The BTP shall adhere to the procedures outlined in Chapter 6E-43, HAR.

We thank you for your input on these matters.

Sincerely,



Ben Welborn  
Project Consultant

c: Samuel Lemmo, OCCL  
Randy Vitousek, Cades Schutte (via email)

SUSPENSE DATE: June 5, 2006

STATE OF HAWAII  
Department of Land and Natural Resources  
Division of Aquatic Resources

MEMORANDUM

To: Dan Polhemus, Administrator <sup>DP</sup>  
From: Richard Sixberry, Aquatic Biologist <sup>RS</sup>  
Subject: Comments on Conservation District Use Application KA-3309

Comments Requested By: Samuel Lemmo, Administrator  
Office of Conservation and Coastal Lands

Date of Request: 5/12/06

Date Received: 5/16/06

Summary of Project

Title: Single Family Residence & Associated Improvements  
Proj. By: Kent Browning  
Location: Haena, Halelea, Kauai

Brief Description:

The applicant proposes to construct a single family dwelling with improvements on a shoreline parcel in the Conservation District at Haena, Kauai.

Comments:

The proposal as described should not significantly impact aquatic resource values provided construction activities are restricted to periods of minimal rainfall and low runoff, and the areas denuded of vegetation or susceptible to erosion are appropriately stabilized. Also, precautions shall be taken to prevent debris, landscaping chemicals, eroded soil, petroleum products and other potential contaminants from flowing blowing or leaching into coastal waters.

Any additional or undescribed construction or landscape modifications within the Conservation District should be submitted to the Department for review.

Richard Sixberry  
Aquatic Biologist

LINDA LINGLE  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
OFFICE OF CONSERVATION AND COASTAL LANDS  
POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

AQUATIC RESOURCES: *24-266*

DIRECTOR	
COMM. FISH	
AO RES/ENV	
AO REC	
PLANNER	
STAFF SVCS	
PCUH-UH	
STATISTICS	
AFRC/FED AID	
EDUCATION	
SECRETARY	
OFFICE SVCS	
TECH ASST	
Return to:	FILE NO: CDUA KA-3309
No. Copies	
Copies to:	
Due Date:	Acceptance Date: May-15, 2006

PETER T. YOUNG  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT  
  
ROBERT K. MASUDA  
DEPUTY DIRECTOR - LAND  
  
DEAN NAKANO  
ACTING DEPUTY DIRECTOR - WATER  
  
AQUATIC RESOURCES  
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FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
MOLOKAI ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

REF:OCCL:DH

180-Day Exp. Date: November 11, 2006  
SUSPENSE DATE: 21 Days from  
stamped date MAY 12 2006

**MEMORANDUM:**

TO: Division of Forestry and Wildlife, Historic Preservation Division, Engineering Division, Kauai District Land Office, Commission on Water Resource Management, Division of Aquatic Resources, Division of Conservation and Resources Enforcement

FROM: Samuel J. Lemmo, Administrator  
Office of Conservation and Coastal Lands

SUBJECT: Conservation District Use Application (CDUA) KA-3309 proposed Single Family Residence (SFR) *the Brown*

APPLICANT: Ben Welborn, Landmark Consulting Services, Inc., P.O. Box 915, Hanalei Hawaii, 96714

TMK: (4) 5-9-005:029

LOCATION: Haena District, Island of Kauai,

PUBLIC HEARING: YES NO X

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OFFICE OF CONSERVATION AND COASTAL LANDS  
JUN - 6 P M '06

RECEIVED  
MAY 12 2006  
AQUATIC RESOURCES

Please contact Dawn Hegger at 587-0380, should you have any questions on this matter. If no response is received by the suspense date, we will assume there are no comments. The suspense date starts from the date stamp.

Comments Attached

No Comments

*[Signature]*  
Signature

Date *6/2/06*

Attachment(s)



**LANDMARK**  
CONSULTING

July 31, 2006

Dan Polhemus, Administrator  
DLNR, Division of Aquatic Resources  
1151 Punchbowl Street, Room 330  
Honolulu, HI 96813

**Re: Conservation District Use Application (CDUA) KA-3309  
Proposed Browning Single Family Residence (SFR)  
TMK (4) 5-9-005: 029, Haena, Kauai**

Dear Mr. Polhemus,

As per the comments contained in Richard Sixberry's memorandum regarding the proposal to construct the Browning Single Family Residence (SFR) upon a shoreline parcel within the Conservation District in Ha'ena, Kauai, the following conditions will be included in the Final Environmental Assessment (FEA) and will become part of the public record should the requested Conservation District Use Permit (CDUP) be approved:

- 1) Construction activities (particularly ground-altering activities) will be restricted to periods of minimal rainfall and/or low runoff.
- 2) The areas denuded of vegetation or susceptible to erosion shall be re-stabilized through the planting of new vegetation, the use of silt retention measures (if necessary) and generally through the implementation of Best Management Practices (BMP).
- 3) Precautions shall be take to prevent debris, landscaping chemicals, eroded soil, petroleum products and other potential contaminants from flowing, blowing or leaching into the coastal waters.

Thank you for your feedback on this matter.

Sincerely,

Ben Welborn  
Project Consultant

c: Samuel Lemmo, OCCL  
Randy Vitousek, Cades Schutte (via email)

BRYAN J. BAPTISTE  
MAYOR

GARY K. HEU  
ADMINISTRATIVE ASSISTANT



IAN K. COSTA  
DIRECTOR OF PLANNING

MYLES S. HIRONAKA  
DEPUTY DIRECTOR OF PLANNING


COUNTY OF KAUA'I  
PLANNING DEPARTMENT  
4444 RICE STREET  
KAPULE BUILDING, SUITE A473  
LIHU'E, KAUA'I, HAWAII 96766-1326  
TEL (808) 241-6677 FAX (808) 241-6699

May 31, 2006

RECEIVED  
OFFICE OF CONSERVATION  
AND COASTAL LANDS  
2006 JUN 13 A 11:34  
DEPT. OF LAND &  
NATURAL RESOURCES  
STATE OF HAWAII

MEMORANDUM

To: Samuel J. Lemmo, Administrator  
Office of Conservation and Coastal Lands

From: Ian K. Costa,  
Director of Planning 

Subject: Request for Comments, Conservation District Use Application CDUA KA-3309 for the Browning proposed Single Family Residence, TMI 5-9-5: 29, Haena, Kauai

We concur with the comments reflected by OCCL. Additionally, the following comments are provided:

1. Similar to the County's Open District standards, lot coverage of impervious surface should not exceed 10%.
2. Portions of the proposed lava rock wall lie within the 40 ft. shoreline setback. Unless a shoreline setback variance is authorized by the County, the extent of this improvement should be revised.
3. Roadway E is for public access and parking purposes. No access to this property shall be permitted from this roadway.
4. Bedroom 3 requires an interior connection.
5. Exterior colors and finishes of all structures, including building roof colors, shall be limited to medium or dark earth tones such as brown, green, or grey, or other color compatible with the area's natural surroundings. Use of reflective materials or colors shall be prohibited. The proposed color scheme shall be submitted to the Planning Department for review and approval prior to building permit application.
6. A landscape plan composed of native species, or species common to the area, to help screen the proposed structures, and integrate the site with its surroundings, should be developed for review and approval by OCCL.
7. In order to minimize adverse impacts on the Federally Listed Threatened Species, Newell's Shearwater and other seabirds, all external lighting shall be only of the following types: shielded lights, cut-off luminaries, or indirect lighting. Spotlights aimed upward or spotlighting of structures or physical features should be prohibited.

AN EQUAL OPPORTUNITY EMPLOYER

8. An understanding should be established as to the extent of "maintenance" to be permitted by OCCL of the mature landscaping existing on the property, and whether or not it will include complete removal of healthy trees.

Should there be any questions regarding the above, please contact planner Michael Laureta at 241-6699.



**LANDMARK**  
CONSULTING

July 31, 2006

Ian K. Costa, Director of Planning  
County of Kauai Planning Department  
4444 Rice Street, Suite A473  
Lihue, HI 96766-1326

**Re: Conservation District Use Application (CDUA) KA-3309  
Proposed Browning Single Family Residence (SFR)  
TMK (4) 5-9-005: 029, Haena, Kauai**

This letter addresses the comments provided in your memorandum to the OCCL dated May 31<sup>st</sup>, 2006 relating to the proposed construction of the Browning Single Family Residence (SFR) within the Conservation District in Ha'ena. As per your suggestion, I spoke with Michael Laureta of your staff on Friday, July 28<sup>th</sup> to go over some of the points in your letter. I will address each of your comments in order:

1. *Planning Department (PD): "Similar to the County's Open District standards, lot coverage of impervious surface(s) should not exceed 10%."*

It is our understanding and interpretation of Chapter 13-5 Hawaii Administrative Rules that the County of Kauai defers to the State when determining the zoning and land use requirements for proposed actions within the Conservation District. The Single Family Residential Standards of Chapter 13-5 HAR do not require a lot coverage limitation of 10%, but rather set forth a "Maximum Developable Area" of 3,500 sqft for lots which are up to one acre in size. The proposed Browning SFR is in compliance with the State's guidelines in this respect with a Maximum Developable Area of 3,480 sqft. Michael Laureta concurred with this interpretation.

2. *PD: "Portions of the proposed lava rock wall lie within the 40ft. shoreline setback. Unless a shoreline setback variance is authorized by the County, the extent of this improvement should be revised."*

Due to the fact that the subject parcel is situated adjacent to a busy vehicular and pedestrian public right-of-way to the shoreline (Roadway E), the applicant is requesting that the BLNR allow for the construction of the proposed dry-stack lava rock wall with its termination at the certified shoreline limit. The boundary wall would be heavily landscaped on the interior/backside to soften its visual impact and to provide a buffer between the Browning residence and the public right-of-way (a benefit to both the homeowners and the general public). Aesthetically this will be far superior to the harsh appearance of a wire fence. A primary concern in this matter is the lack of public restroom facilities in the immediate vicinity of the beach access and the common practice of people "using the bushes" to relieve themselves. This poses a significant health concern. Other concerns include the heightened shoreline erosion which is caused by the heavy foot traffic of beachgoers along the shoreline reach of



the right-of-way. A rock wall will prevent the trespass of beachgoers onto the Browning parcel and the associated acceleration of erosion along the seaward edge of their property. Liability and security risks associated with the public right-of-way further justify this boundary delineation. If the proposed rock wall is approved by the BLNR, then a County shoreline setback variance will be subsequently applied for.

3. ***PD: "Roadway E is for public access and parking purposes. No access to (the subject property) shall be permitted from this roadway."***

The applicants have no intention of accessing their parcel from Roadway E. Consistent with the CDUA and Draft EA, access to the subject parcel will be provided directly from Kuhio Highway at the mauka boundary of the property.

4. ***PD: "Bedroom 3 requires an interior connection."***

This is another matter which I discussed at length with Michael Laureta. Furthermore, prior to designing the home, the project architect, Tony DeJesus reviewed the State Chapter 13-5 HAR Residential Standards and the County CZO to interpret the architectural design requirements. Nowhere in either of these rule documents is a detached bedroom specifically disallowed. The Applicants understand the concerns of both State and County that a detached bedroom might be converted into a separate dwelling or may be used as a transient accommodation. However, in this case, access to bedroom #3 can only be gained by passing through an interior connection via the main entrance to the home, then through the main living area or "great room" before proceeding to the breezeway which leads to bedroom #3. There is no separate staircase or independent way to access to this bedroom and none is intended. Michael Laureta suggested that a deed restriction might be added as a condition of the permit approval which would allow for the 3<sup>rd</sup> bedroom as depicted while preventing the Applicants and/or future owners from constructing a separate stairwell to access said bedroom. We intend to petition the BLNR to adopt this suggestion.

5. ***PD: "Exterior colors and finishes of all structures, including building roof colors, shall be limited to medium to dark earth tones such as brown, green, or grey, or other colors compatible with the area's natural surroundings. Use of reflective materials or colors shall be prohibited. The proposed color scheme shall be submitted to the Planning Department for review and approval prior to building permit application."***

The applicants will comply with this condition and similar color conditions as outlined in the Residential Standards of Chapter 13-5 HAR.

6. ***PD: "A landscape plan composed of native species, or species common to the area, to help screen the proposed structures, and integrate the site with its surroundings, should be developed for review and approval by the OCCL."***

The OCCL has put forth a similar landscape plan requirement. Included herewith is a copy of the proposed plan that will be submitted with the Final Environmental Assessment for the project. The landscape plan will be reviewed by the OCCL and considered by the BLNR for their collective approval.

7. **PD:** *"In order to minimize adverse impacts on the Federally Listed Threatened Species, Newell's Shearwater and other seabirds, all external lighting shall be only of the following types: shielded lights, cut-off luminaries, or indirect lighting. Spotlights aimed upward or spotlighting of structures or physical features should be prohibited."*

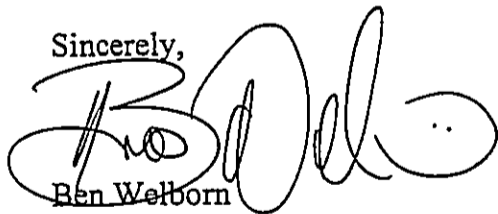
The Applicants will comply with these lighting conditions.

8. **PD:** *"An understanding should be established as to the extent of 'maintenance' to be permitted by the OCCL of the mature landscaping existing on the property, and whether or not it will include the complete removal of healthy trees."*

As depicted in Exhibit 17 – Landscape Plan (a copy of which is attached hereto for your review), there are some areas of the parcel, particularly parallel to the boundary edge with Roadway E and along the frontage adjacent to Kuhio Highway where there are numerous introduced invasive species of plants and trees. Most prevalent of these are the Java Plum (*Syzigium cumini*) and the Indian Almond (*Terminalia cattapa*). It is the Applicants' intention to completely remove some of these trees and to prune others to make way for the planting of more desirable native and introduced landscape varieties which are common to the area. Over time, the invasive species will be completely phased out once the replacement landscaping is well established. This phasing approach should maintain the desired screening of the parcel from public roadways and the beach. No large trees will be removed from the shoreline area. A representative sampling of landscape varieties and native plants is included on the Landscape Plan. Other compatible species may be used in addition to those shown on the plan.

The Planning Department's comments and this response will be included in the Final Environmental Assessment for the proposed actions and shall become a part of the public record for the CDUA. Thank you for your time in reviewing and commenting on this matter.

Sincerely,



Ben Welborn  
Project Consultant

c: Sam Lemmo, OCCL  
Randy Vitousek, Cades Shutte (via email)

LINDA LINGLE  
GOVERNOR OF HAWAII



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OFFICE OF CONSERVATION  
AND COASTAL LANDS

2006 JUN -6 P 12:57

STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
OFFICE OF CONSERVATION AND COASTAL LANDS  
POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

PETER T. YOUNG  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT

ROBERT K. MASUDA  
DEPUTY DIRECTOR - LAND

DEAN NAKANO  
ACTING DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES  
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KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

REF:OCCL:DH

FILE NO: CDUA KA-3309

Acceptance Date: May 15, 2006  
180-Day Exp. Date: November 11, 2006  
SUSPENSE DATE: 21 Days from  
stamped date MAY 12 2006

**MEMORANDUM:**

TO: Division of Forestry and Wildlife, Historic Preservation Division, Engineering  
Division, ~~Kauai District Land Office~~ Commission on Water Resource  
Management, Division of Aquatic Resources, Division of Conservation and  
Resources Enforcement

FROM: Samuel J. Lemmo, Administrator  
Office of Conservation and Coastal Lands

SUBJECT: Conservation District Use Application (CDUA) KA-3309 for the Browning  
proposed Single Family Residence (SFR)

APPLICANT: Ben Welborn, Landmark Consulting Services, Inc., P.O. Box 915, Hanalei,  
Hawaii, 96714

TMK: (4) 5-9-005:029

LOCATION: Haena District, Island of Kauai,

PUBLIC HEARING: YES NO

Please contact Dawn Hegger at 587-0380, should you have any questions on this matter. If no  
response is received by the suspense date, we will assume there are no comments. The suspense  
date starts from the date stamp.

( ) Comments Attached

No Comments

Attachment(s)

Signature

Date

PH1:20:46

MAY 15 '06

DLNR KDLO RCVD