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OFC. OF ENVIRONMENTAL
QUALITY CONTROL

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
OFFICE OF CONSERVATION AND COASTAL LANDS
P.O. Box 621
HONOLULU, HAWAII 96809

Ref.:PB:sl

File: KA-3142

SEP 19 2003

MEMORANDUM

TO: Genevieve Salmonson, Director
Office of Environmental Quality Control

FROM: Dierdre S. Mamiya, Acting Administrator
Office of Conservation and Coastal Lands, Department of Land and Natural Resources

SUBJECT: Final Environmental Assessment (FEA)/Finding of No Significant Impact (FONSI) for the Proposed Ben-dor Single Family Residence (SFR) in the Conservation District at TMK Parcel: (4) 5-9-05:20, located at Haena, Kauai

The Department of Land and Natural Resources has reviewed the Ben-dor Final Environmental Assessment (FEA) for the construction of a Single Family Residence. The Draft Environmental Assessment (DEA) for CDUA KA-3142 was published in the July 8, 2003 OEQC Environmental Notice for the subject project. The FEA is being submitted to OEQC. We have determined that this project will not have significant environmental effects, with the following qualifications:

Size of Dwelling

The subject property contains some obvious physical constraints, which limit its potential urban development. The proposed plans call for a residence of some 3,400 square feet. The size of the residence is excessive and should be redesigned and reduced. On August 8, 2003, the Department notified the applicant's representative of these concerns. Upon receipt of the Final EA, the size of the residence did not change. Failure on the part of the applicant, to address this issue, could result in a Board action

that requires a reduction in the size of the residence, or a denial recommendation by staff.

Shoreline Setback Calculation

The consultant for the applicant utilized an erosion rate formula (shoreline change analysis) for calculating an appropriate shoreline setback. This formula is the only rational way to provide an appropriate shoreline setback for coastal structures and is being proposed for use in the Hawaii Coastal Construction Guidebook, which is currently undergoing publication. We appreciate the employment of this formula by the consultants. Erosion Zone = Erosion Trend Risk +Storm Erosion Event (20 ft)+ Design Buffer (20 ft).

Use of the shoreline change analysis for this case is conceptually sufficient. However, the time range is somewhat short (27 years). It would be much better to include earlier photos if available. The use of only four (4) photographs induces much more uncertainty that with a larger data set, particularly of such a short duration. If the consultants used a longer photo series, the reference feature would likely indicate much higher erosion rates than indicated in this EA. While it is inappropriate to speculate what these rates might be it does reveal the importance of a larger data set than was used.

The use of the vegetation line induces another set of uncertainties. According to the EA the toe or step crest of the beach is unclear in many of the photographs so they use the vegetation line as the shoreline change reference feature. While there are no other features that are readily available other than the toe of the beach, the vegetation line can (and often is) altered through planting and watering. This induces an uncalculated uncertainty that could be significant if the vegetation line has been altered significantly. If this regard, the use of the beach width in addition to the position of the vegetation line would help determine the trend of the shoreline.

The EA states an annual average vegetation line change rate of -0.30 ft/year with a standard deviation of 0.43 ft/yr. Since the standard deviation is a gauge of the variability of the shoreline it would be prudent to add this uncertainty to the vegetation line change (-0.30ft/yr) to achieve a more robust erosion trend (-0.73 ft/yr). Applying this value for the erosion trend risk in the calculation for the erosion zone, we obtain -0.73ft/yr plus the 20% calculation (0.15 ft/yr) and 10% sea-level rise error (.07 ft/yr). Thus, we achieve an adjusted erosion rate of -0.95 ft/yr. Applied to a 70-year lifetime for the structure, we establish a 66.5 ft erosion trend risk. This value is combined with the 2 other terms of the equation as follows:

Erosion Zone = 66.5 ft +20 ft+20 ft
Erosion Zone = 106.5 ft

The environmental setting should give some warning for a development of such a scale. This area is not only in a flood zone, but is bordered by an unconfined stream and is

inundated with large north swells every year. The proximity to the Manoa stream and the active beach system can lead to rapid erosion compounded by high surf and or stream flooding. The EA alludes to potential "short-term" impacts to the beach from the breaching of Manoa Stream. Due to the nature of these dynamic processes erosion could rapidly become critical and threaten the proposed structures. The applicant should take this into account for the future preservation of proposed structures. The fact that many of the neighboring properties are encountering erosion problems and consistently face high surf inundation should give warning to such a large development so close to these dynamic areas.

Finally the shoreline certification map indicates an eroded area of 17,547 sq ft. It is unknown over what period of time this is calculated but represents a loss of roughly 36% of the original property. This implies a significant loss of property and should be addressed with an explanation or accommodated with appropriate setbacks that take this rate of erosion in account.

This being said, we are hereby issuing a **FONSI.** Please publish this notice in the September 8, 2003 OEQC Environmental Notice.

We have enclosed four copies of the FEA and CDUA KA-3142 for the project. The applicant will submit an electronic OEQC Bulletin Publication Form. Comments on the draft EA were sought from relevant agencies and the public, and were included in the FEA.

It should be noted that acceptance of the EA does not constitute a project approval by the Board of Land and Natural Resources (BLNR). The matter will be taken up by the BLNR at a regularly scheduled meeting to be announced at which time they have the discretion to approve, deny, or modify the project.

Please contact Sam Lemmo of our Office of Conservation and Coastal Lands (OCCL) at 587-0381, or Dolan Eversole of OCCL/UH Sea Grant, at 587-0439, if you have any questions on this matter.

Enclosures

cc: Edi Ben-dor

2003-08-08-KA-FEA-Ben Dor Single Family Residence

FINAL
ENVIRONMENTAL IMPACT ASSESSMENT

FOR

CONSTRUCTION OF RESIDENCE WITHIN THE STATE LAND USE CONSERVATION DISTRICT AND AFTER-THE-FACT APPROVAL OF WASTEWATER TREATMENT SYSTEM

AT

HAENA (HAENA HUI LANDS), HALELEA, KAUAI, HAWAII

TAX MAP KEY NO.: 5-9-005-020 (4)

September 10, 2003

The following constitutes the final environmental assessment for the proposed construction of a single family dwelling within the State Land Use Conservation District, including an unpaved driveway and for after-the-fact approval of an underground wastewater treatment system which was installed in the summer of 2001, on real property which is part of the Haena Hui Lands situated at Haena, Halelea, Island and County of Kauai, State of Hawaii, more particularly identified as Kauai Tax Map Key No.: 5-9-005-020, the total area of which is 47,782 square feet.

Any changes in the content of this final environmental assessment from the draft environmental assessment published July 8, 2003, are underlined.

(1) Identification of Applicant:

Ed E. Ben-Dor and Joan Beth Ben-Dor, husband and wife
c/o Walton D. Y. Hong
Lorna A. Nishimitsu
3135A Akahi Street
Lihue, Hawaii 96766
Telephone: 245-4757
Facsimile: 245-5175

(2) Identification of Approving Agency:

Board of Land and Natural Resources
State of Hawaii
P. O. Box 621
Honolulu, Hawaii 96808

(3) Identification of Agencies Consulted:

Planning Department
County of Kauai
4444 Rice Street, Suite 473
Lihue, Hawaii 96766

Department of Land and Natural Resources
State of Hawaii
P. O. Box 621
Honolulu, Hawaii 96808

(4) General Description of Action's Characteristics:

(a) Technical: The subject property, Kauai Tax Map Key No.: 5-9-005-020 consists of 47,782 square feet, more or less (hereinafter the "Property"). A map of the Island of Kauai, showing the approximate area of the affected Property on which the proposed use would occur, is attached hereto as Exhibit "A" and incorporated herewith. Also attached, as Exhibit "B," is a tax

map depicting the Property. At the time that the Applicants acquired the Property, in 1999, the square footage conveyed was described as 47,782 square feet, more or less. A substantial part of the Property, however, consists of what is described as "sandy beach." It is located immediately southwest of the Haena Beach Park, which is a County park. With the location of the certified shoreline (per survey done May 2002), it was noted that the actual area of the Property, after factoring in erosion, is 30,235 square feet.

The entire Property is classified by the State Land Use Commission as Conservation.

The Applicants propose to construct one single-family dwelling on the Property, consisting of approximately 3,380 square feet as shown on the plot plan of the Property, which is attached hereto as Exhibit "C". The dwelling would be accessed by an unimproved (grassed) driveway from the Kuhio Highway right-of-way. The dwelling will be served by an underground wastewater treatment system (an individual septic system, which was installed in 2001). The location of the existing wastewater treatment system is as depicted on Exhibit "C" attached hereto and made a part hereof.

The Property is also located within the Special Management Area as established by the County of Kauai, but is exempt from the Special Management Area permitting process because it is only one dwelling that is proposed. Attached as Exhibit "D" is a letter dated April 12, 2002 from the Planning Department of the County of Kauai, confirming such exemption.

The Applicants had previously secured the required permit from the Department of Health, State of Hawaii, for the installation of the wastewater treatment system. While the Applicants were aware that a Conservation District Use Permit was required before they would be able to construct their home, they were unaware that the installation of the wastewater treatment system required other than State Department of Health approval. The wastewater treatment system was sited, upon the recommendation of the engineering consultant, as far as reasonably practical from an intermittent stream (Manoa Stream) which runs between the Property and the Haena Beach Park, and away from the existing vegetation line which is sited between the makai boundary of the Property and the proposed location of the dwelling.

The reason the Applicants were not aware of the need to obtain the approval of the Board of Land and Natural Resources to proceed with the wastewater treatment system's installation was because of a misunderstanding about the nature of "development" which may or may not occur on lands within the Conservation District. While they were aware that a Conservation District Use Permit issued on April 22, 1988 (in File No.: KA-11/24/87-2098) to Robert Marvick (from whom the Applicants had purchased the Property), did not allow them to proceed with the construction of a dwelling unless they obtained a new Conservation District Use Permit, they were unaware that the wastewater treatment system should have been covered by a permit from the Board of Land and Natural Resources. They have since recognized that the stand-alone installation of the wastewater treatment system and the bamboo-enclosed water closet that was put on the Property required a separate application for a permit from the Board of Land and Natural Resources.

The early installation of the wastewater treatment system and water closet had been pursued by the Applicants (with their misconception about what does, and what does not require a Conservation District Use Permit) so as not to interrupt their efforts to establish a lawn and landscaping on the Property, which the Applicants and their family have used as their "park area" (instead of competing for use at the Haena Beach Park) during their Haena Beach outings.

The landscaping which has been implemented by the Applicants since acquiring the Property, and which complements some of the vegetation which were on site at the time the Applicants acquired the Property, consists of grassing, naupaka, bamboo and coconut palms. Before installing such plantings, the existing vegetation on the Property consisted of mostly weedy growth (*"Bidens pilsoa" and "Stachytarpheta urticaefolia"*). Trees included kamai, kukui, eucalyptus and ironwood, most of which have been retained for visual buffering.

To develop the proposed residence and wastewater treatment system, the Applicants have or must obtain:

1) a shoreline certification;

2) Department of Health approval of wastewater treatment system;

3) a conservation district use permit from Department of Land and Natural Resources with plan approval;

4) a special management area exemption or approval;

5) grading permit(s); and

6) a building permit from the County of Kauai.

(b) Economic impacts: The cost of the proposed action (constructing the dwelling and driveway and including the already-installed wastewater treatment system) is estimated at $400,000.00. This will, and has, provided some immediate economic benefits to the community in the sense that the architect who has prepared the building design, and the contractors, subcontractors and suppliers who will be or have been involved in supplying the labor, materials and supplies for the construction, are persons who are in business on the island.

At present, the Property's real property tax-assessed valuation is $650,000.00 (the Applicants acquired the Property for $425,000.00). The purchase price had increased the tax assessed value of the Property, and the improvement of the Property will further increase its valuation for real property tax purposes, which provides a benefit to the County of Kauai whose operations are dependent upon the valuation of properties on the island.

There is no negative economic impact that will result from allowing privately owned property to be developed for residential purposes.

(c) Social impacts: The proposed dwelling is intended for use by the Applicants and their three (3) minor children, who attend Kauai public schools. While it is possible that members of the general public might oppose the development of the Property, it has never been a part of the County park system, and any prior use of the Property by members of the general public would have been contrary to the rights of the owners of the Property.

(d) Environmental: The environmental characteristics of the proposed action are as follows:

(1) Flora. The Property does not contain, and at the time the Applicants acquired the Property did not contain, any threatened or endangered species of flora. Situated as it is near a highly-used County park and a popular beach right on Kuhio Highway, the Property has never been sufficiently secluded or protected to be able to provide a safe haven for threatened or endangered plants.

When the Applicants acquired the Property in 1999, the types of vegetation growing there consisted of *Bidens pilsoa* and *Stachytarpheta urticaefolia*, which are by and large considered noxious weeds or plants. Since that time, the Applicants have replaced the noxious growth with grassing (sea shore paspalum), some naupaka, coconut palm trees and bamboo, although they have retained and maintain much of the ironwood trees, kamani, and kukui trees which were on site when they purchased the Property.

With the exception of trees which need to be removed in order for the Applicants to situate their house at the recommended set-back distance from the shoreline, the Applicants do not propose to remove any existing trees, recognizing that by maintaining them, they provide a better means of protecting their Property from the destructive forces of storm-driven waves which tend to damage ocean-front properties throughout the State.

(2) Fauna. The Property does not contain, and at the time the Applicants acquired the Property did not contain, any threatened or endangered species of fauna or avifauna. Because it derives direct access from Kuhio Highway, and is surrounded by the County park, a popular beach, and other properties that have been developed for residential purposes, it has not proven to be a likely location at which threatened or endangered animals would be able to seek refuge.

Attached hereto and incorporated herewith as Exhibit "E" is a survey of wildlife performed by David Boynton on April 18, 2002 (5:30 p.m.-7:30 p.m.) and April 19, 2002 (7:15 a.m.-8:15 a.m.) of the subject Property and adjoining lands.

(3) Drainage. Run-off from Kuhio Highway, and lands mauka of Kuhio Highway, drain generally towards the ocean, some over the Property, and some through the Manoa Stream.

(4) Soils, Slope and Erosion. The soils in the area are described as "Kolokolo extremely stony clay loan (KUL)." See Archaeological Report described below, Exhibit "F," at

page 4). This series of soil is apparently "well-drained, consisting of a top layer of very dark grayish brown fine clay loam above dark brown loam. Permeability is described as being moderate, and can be subject to damaging overflow with annual rainfall ranging between 60-150 inches. There appears to be some minor erosion within the Manoa Stream boundaries (as earlier noted, the Manoa Stream is located immediately to the southwest of the Property, and is part of the Haena Beach Park parcel), probably occurring during period of heavy rainfall, when the stream bed must carry greater amounts of run-off than normal. The Applicants have planted young coconut palm trees and bamboo along the boundary between their Property and the Manoa Stream, to provide better soil stabilization.

In response to comments from the Department of Land and Natural Resources, Engineering Division, Applicants are aware that the project site is within Special Flood Hazard Areas designated as Zone VE with base flood elevations ranging between 34-36 feet MSL. Applicants will comply with the National Flood Insurance Program design requirements and other rules, regulations, and ordinances.

In response to comments from the County of Kauai, Department of Public Works, Applicants agree that building plans will be designed and stamped by a licensed structural engineer or architect who will complete a Coastal High Hazard Area Certification.

Applicants confirm that the bottom of the lowest horizontal framing member will be at or above 36 feet MSL and that an Elevation Certificate will be completed by a licensed surveyor or engineer and returned to the Department of Public Works. The water and sanitary sewage systems will be located to minimize infiltration of floodwater and onsite waste disposal shall be located to avoid impairment from floodwaters. No fills will occur within the flood zone and wasted excess excavated materials will be disposed of offsite. The area below the flood elevation will be used only for parking and not for storage of machinery or equipment. Applicants will implement Best Management Practices to prevent discharge of potential contaminants.

(5) Historical and archaeological. The Applicants commissioned Archaeological Consultants of the Pacific, Inc., to prepare An Archaeological Inventory Survey Report (hereinafter "Archaeological Report") in the spring of 2001. The Archaeological Report is attached hereto as Exhibit "F," and incorporated herewith. While no archaeological sites or burials were located on the Property, nor any cultural deposits located, the consultants have noted that it "remains possible that burials may be present on the subject property." In response to comments from Department of Land and Natural Resources, State Historic Preservation Division, Applicants agree that if any inadvertent discovery of burials or human remains occur during construction, Applicants will develop a burial treatment plan and submit a report on archaeological monitoring and burial documentation work to State Historic Preservation Division for review and approval.

The Applicants are aware that if they are issued the requested Conservation District Use Permit, that it has been recommended, by their consultant, that they have an archaeological monitor on-call during the construction phase.

In response to a comment from State Historic Preservation Division, Applicants have agreed to 1) submit a monitoring plan to State Historic Preservation Division for review and

approval before the start of monitoring work and 2) hire an archaeologist to conduct onsite monitoring during any ground disturbing work connected with construction of the residence.

(6) Visual. The proposed use will result in a visual impact simply because a vacant lot presents a different view and feel to an observer. However, there are other residences located to the northeast of the Property, and the view towards the Property, looking mauka, would be buffered by the presence of the existing trees which run roughly parallel to its makai boundary (although further inland).

The Kuhio Highway frontage of the Property (except for the area that has been kept open for access) is also vegetated with kukui trees, ti leaf plants, ginger plants and bougainvillea.

(7) Recreational. As earlier noted, the Property is immediately adjacent to a County beach park. The Property, however, has never been owned by any branch of government, and has not been designated for acquisition by the County of Kauai for park expansion.

(8) Scenic. To the extent that any lands near a sandy beach in Hawaii are located within a scenic area, the Property is undoubtedly located in an extremely beautiful area, with mountains looming immediately mauka and a beach immediately makai. The proposed residence, however, would not be the first residential improvement in the area and the maintenance of existing landscaping will ensure that the improvements that are intended to house a family will be sufficiently buffered from the public view.

(9) Cultural Impact Assessment. The Property is vacant land, and there is no historical record of buildings on it post-contact. Kamaaina in the area have recollections of the Property and the area being used as a "place for local residents to store their canoes". Although the Applicants sought information and input from families in the area, including a non-profit group named "Hui Maka'aianana o Makana", we have not found any indication that the Property served as the site for religious or cultural purposes. To the extent that families stored their canoes on this lot, however, it had served, in the past, as a part of the "subsistence" process.

A review of the Archaeological Report, attached hereto as Exhibit "F" indicates that there do not appear to be valued cultural or historical resources on the Property. The environmental resources of the Property are described in the Flora and Fauna Report, Exhibit "E" attached hereto, and Property description. There do not appear to be significant or unique environmental resources on the Property. The environmental resources are essentially the same as those found in the adjoining public park. Thus, the park provides public and cultural access to the beach, ocean, and stream environments.

Applicants' discussions with community members and groups, including Native Hawaiians and other long-term residents of the area, have not disclosed any cultural or religious practices specifically associated with this Property. Applicants and their consultants are not aware of any cultural practices of Native Hawaiians or other cultures on the Property. There do not appear to be any trails on the Property and people use the road or the beach to traverse the area.

The adjoining public park provides access to the ocean, beach and stream. There is no need for any public or cultural access to or across the subject Property. Any cultural practices associated with the ocean, beach or stream can be preserved and protected using public property and without using the subject Property.

Any cultural remains or features discovered during construction will be dealt with appropriately and in accordance with the law and permit conditions.

Applicants have consulted with nearby residents, ocean and beach users and cultural users of beach and ocean areas. These individuals have stated that the proposed use is consistent with uses of nearby properties and will not diminish cultural and recreational use of beach and ocean areas.

(10) Wastewater Treatment and Disposal. All wastewater generated by the proposed single family use will be handled through the septic system which was installed in the summer of 2001, and for which after-the-fact approval is sought herein. Attached hereto and incorporated herewith as Exhibit "G" is the Individual Wastewater System report prepared by Wagner Engineering Services, Inc.

(11) Construction. The construction of the proposed dwelling is expected to take twenty-four (24) months from the day the contractor first breaks ground, until the issuance of a certificate of occupancy by the Building Division, Department of Public Works, County of Kauai. All building materials, contractor and subcontractor vehicles and equipment, will be placed on site, and should not impede public travel on Kuhio Highway.

(12) Traffic impact. No substantial additional traffic impact post-construction is expected to occur once the Applicants and their children occupy the dwelling. The parents have one (1) car each, and during the summer months, the family relocates to New York. The children are too young at this time to drive.

(13) Water. The Property is entitled to one water meter for potable water purposes from the Department of Water, County of Kauai. A single water meter is in place and the Property has had potable water for the past two (2) years.

(14) Solid Waste. Residential solid waste is picked up by crews of the Department of Public Works, County of Kauai, once a week provided that the residence is located on an improved public road. It shall be the responsibility of the Applicants' contractor to properly dispose of solid waste generated during the construction phase.

(15) Utilities. The Property can be served by electrical and telephone utilities which are already in place in the immediate vicinity. The nature of these public utilities will not allow them to provide such utilities if the result would be a reduction in the quality or level of such service for the area.

(16) Rainfall. According to the Archaeological Report, which cites as its reference the 1972 *Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai and Lanai, State of Hawaii*, which was prepared for the U. S. Department of Agriculture, Soil Conservation Service by D. Foote, E. L. Hill, S. Nakamura and F. Stephens, the average annual rainfall in this area can range from 60" to 150".

(17) Streams. The Property adjoins a small, intermittent stream known as the Manoa Stream (along the southwestern boundary). No impact is expected to result from the proposed construction of the dwelling, the location of which is sited on Property as far from the stream as reasonably possible. Applicants have consulted with local residents familiar with the area and with Manoa Stream. These residents report that they have not seen Manoa Stream overflow its banks onto the area of the proposed residence. In addition, Applicants received written statements by email from Bruce Stine and Mark L. Soppeland of their observations of Manoa Stream (attached as Exhibit "L" hereto.

(e) Summary Description of the Affected Environment: The Applicants' proposal would allow them to reside on the Property. Along the makai side of Kuhio Highway, on the properties within the tax map plat in which this Property is located, there are existing dwellings (on TMK Nos.: 5-9-5-21, 5-9-5-23, 5-9-5-24 and 5-9-5-26). Across Kuhio Highway, before the Haena Beach park, there are a few houses within the tax map plat (on TMK Nos.: 5-9-5-7, 5-9-5-6 and 5-9-5-4).

The Property is within the Limited Subzone of the Conservation District, in which single family residences are permitted (so long as they conform with applicable County regulations adopted pursuant to the National Flood Insurance Program). In the County of Kauai, for properties which are within identified flood constraint areas, all construction is required to meet such standards as are intended to protect the Property on which construction is proposed and to limit the risk of damage to other properties. The design of the proposed residence meets the Single Family Residential Standards that were adopted by the Board of Land and Natural Resources pursuant to Chapter 13-5, Hawaii Administrative Rules entitled "Conservation District."

(f) Identification and Summary of Major Impacts and Alternatives Considered: The Department of Land and Natural Resources has previously identified beach loss and erosion rates as a matter of concern not only in Haena, but also within the State of Hawaii. Setback of the improvements, then, from the shoreline, has been deemed to be of great importance in protecting a dwelling from the effects of nature.

In the Applicants' case, approximately 40-45% of the Property is identified as "sandy beach," and the remainder is vegetated. The proposed dwelling will be set back from the shoreline an appropriate distance based on the assessment by Scott Sullivan of Sea Engineering Services, Inc. and proposed guidelines for shoreline construction. See Exhibit "K", attached hereto.

Requiring a greater setback could damage or interfere with the function of the existing wastewater treatment system which the Applicants had installed approximately one year ago (under a misconception that the same did not require the approval of the Board of Land and Natural

Resources). Alternatively, moving the proposed dwelling closer to the Haena Beach Park would place it in closer proximity to the Manoa Stream and to the public use area of the Park.

The alternative of not constructing a dwelling, on property which, along with others in the area, was intended to be used for residential purposes, would be extremely harsh and punitive. Reference is made to that letter dated June 24, 1999, from the Department of Land and Natural Resources to Michael R. Schmidt of Bali Hai Realty, a copy of which is attached hereto as Exhibit "H" and incorporated herewith, in which the Department recognizes that the policy of the Board of Land and Natural Resources, with respect to the Property, was that it had been placed in the category of "Good House Lot on Road."

(g) Proposed Mitigation Measures: Applicants have retained the perimeter trees which both buffer the Property from the surrounding lands, including the sandy beach, and protect the shoreward portion of the Property from the natural forces which affect shoreline areas, and have planted different types of plants (the coconut palms, naupaka and bamboo) which will further provide buffer and shoreline protection. The completed dwelling will meet the standards established in Exhibit "4" to Chapter 13-5, Hawaii Administrative Rules, "Conservation District", the intent of which standards is to ensure proper integration of dwellings within the environs. Applicants have also moved their residence further mauka than required by the 40' shoreline setback. Applicants have also agreed to implement the mitigation measures proposed by State Historic Preservation Division and the Kauai Department of Public Works as set out in Exhibit "M."

(h) Comments Received and Responses. The Applicants have received the attached comments from the following County or State agencies as to the proposed construction of one single-family dwelling: (i) from the Department of Land and Natural Resources, a letter dated April 2, 2002 in response to the Applicants' earlier efforts to obtain a Conservation District Use Permit on their own; and (ii) from the Planning Department, County of Kauai, which are attached hereto and incorporated herewith respectively as Exhibits "I" and "D." Applicants also received comments from State Historic Preservation Division, County of Kauai Public Works Department, and Office of Environmental Quality Control. See § (k), infra; see also Exhibit M.

(i) Determination: Based upon the foregoing, it is requested that a finding that the proposed action to construct a single-family dwelling and driveway, and the previous installation of the wastewater treatment system and bamboo-enclosed water closet (this water closet will be removed before the completion of the construction of the dwelling) shall not result in any significant adverse environmental or ecological impacts, be adopted, and that an environmental impact statement shall not be required of the Applicants for the proposed action.

(j) Findings and Reasons Supporting Determination: As the foregoing description and assessment indicates, the proposed use of the Property for single-family dwelling purposes amendment will not result in any significant adverse environmental or ecological impacts.

(1) Does not involve an irrevocable commitment to loss or destruction of any natural or cultural resources. The Archaeological Report confirms that, after subsurface testing and

an inventory, no cultural findings or human burials were discovered. To further protect the loss or destruction of possible historical or cultural resources, however, it has been recommended that archaeological experts be on-call during the period of construction.

In this case, as in the case of nearly all coastal properties in Hawaii, the natural resources of the Property are its beauty and proximity to the ocean. The proposed construction and use of the Property does not, per se, destroy its beauty, but it will allow the Applicants reasonable use of Property which they acquired, and in which the County has expressed no interest to acquire for park expansion purposes.

(2) Does not curtail the range of beneficial uses of the environment. The proposed use of the Property to support a single-family dwelling will not curtail or impinge upon the use of the environment or of public resources. The Haena Beach Park, immediately adjacent to the Property, has provided the public with access to the ocean, and the sandy beach fronting the Applicants' Property and others afford the people the experience of using the natural resources without impediment.

(3) Does not conflict with the State's long-term environmental policies or goals and guidelines as expressed in Chapter 344, Hawaii Revised Statutes, as amended from time to time, court decisions, or executive orders. One of the policies set forth in Chapter 344, Hawaii Revised Statutes, is conservation of natural resources by ensuring protection from pollution, preservation or augmentation of natural resources, safeguarding of the State's unique natural environmental characteristics to foster and promote the general welfare, creation and maintenance of conditions under which humanity and nature can exist in productive harmony, and the fulfillment of the social, economic and other requirements of the people of Hawaii.

One of the single most recognized rights in the United States is the right to the reasonable use of private property. Whether a person owns or rents a place, that place is "home," and people understandably crave and seek the shelter and comfort that their "homes" provide. The right to reasonable use of property, especially for human occupancy, is consistent with the State's policy of meeting the needs of humanity.

So long as the improvements meet the required setbacks from the shoreline and boundaries, can be sufficiently distanced from the public use of the Haena Beach Park, are properly landscaped to buffer public views in the area, and meet the standards for residences within the Limited Subzone of the Conservation District, the proposed use and construction will be consistent with existing uses in the area, will allow reasonable use of the Applicants' Property, and can reasonably support a finding that there are no significant impacts. The wastewater treatment system that will serve the dwelling will ensure that contaminants usually affiliated with human habitation will be kept from the soils and waters.

The balance between "using" a private piece of property, especially in a beautiful coastal area for the needs of the owners, and the public interest in preservation of the beautiful places, is to ensure that proper mitigation occurs. Most of the mitigation within the Limited Subzone is covered by the standards imposed by the Board of Land and Natural Resources for construction of

dwellings. Mitigation, to protect other properties and people, also is in place under the construction standards for properties that are identified on the National Flood Rate Insurance Maps.

(4) Does not substantially affect the economic or social welfare of the community or State. The use by the Applicants of their Property for their residence will not harm the economic or social welfare of the community or State. It does not remove a property previously designated for other purposes from the inventory, nor will the impact of people living in a house hurt, in any way, the economy or society.

(5) Does not substantially affect public health. Any waste generated by the proposed use of the Property will be disposed of through the individual wastewater treatment system, which keeps contaminants contained within the septic tank and leach fields. The use and occupancy of a single-family dwelling has not negative impact on the public's health.

(6) Does not involve substantial secondary impacts, such as population changes or effects on public facilities. The public facilities in the area include Kuhio Highway (a State roadway) and the Haena Beach Park (a County park), neither of which will suffer substantial effects because of the construction of a selling for the use of the Applicants and their children. Although there would technically be a population change in the area when the family moves from Hanalei to Haena, the change is nominal.

(7) Does not involve a substantial degradation of environmental quality. Because the siting of the proposed structure will meet shoreline setback requirements, and only involves construction of a family residence, no substantial degradation of the quality of the environment is reasonably anticipated. Landscaping will further protect views and provide some measure of protection from the forces of nature.

(8) While individually limited, will not cumulatively have considerable effect on the environment, nor involve a commitment for larger actions. The proposed use is not part of a larger development of the Property. The Applicants want to build one house, in which they and their children might live, and have no further plans for the Property. There will not be any cumulative impact on the environment resulting from what has been proposed.

(9) Does not substantially affect a rare, threatened or endangered species or its habitat. The Property and surrounding parcels are located immediately on Kuhio Highway. While the area is not characterized as a heavily populated area, it is sufficiently exposed to crowds of people who are drawn by the cave and beach attractions. With the heavy human presence, the Property does not host any rare, threatened or endangered plants or animals that would be affected by the construction of a house.

(10) Does not detrimentally affect air or water quality or ambient noise levels. Single family use does not ordinarily generate pollutants or impacts capable of changing air or water quality, or ambient noise levels. Because of its location on the ocean, near a public park, the ambient noise levels are already rather high. Noise levels during construction are regulated and controlled by the Department of Health of the State of Hawaii, which prohibits construction activity

before and after specified hours of the day. No air pollution will be generated from the proposed use, and water quality is maintained by the distancing of the house from the ocean and the Manoa Stream.

(11) Does not affect nor 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, freshwater or coastal water. The Property is located within a tsunami inundation zone. Mitigative measures intended to reduce damage from tsunamis are in place under the Flood Ordinance of the County of Kauai, which sets standards for construction of improvements. The Property is part of the Haena shoreline, which is a white, sandy beach. Public access is obtained immediately adjacent to the west, as the Property adjoins a County beach park.

The shoreline had been previously certified on December 30, 1987, and was then basically a straight line bisecting the Property. The May 9, 2002, shoreline, certified on July 26, 2002, is depicted as an irregularly jogged line, in approximately the same area as the 1987 shoreline. See Exhibit "J" attached hereto. In March of 2003, the Applicants commissioned Scott Sullivan of Sea Engineering, Inc. to conduct a study of the shoreline in the vicinity of the Property. The objective of the study was to evaluate the history of shoreline change in the area and determine the most optimal positioning of the dwelling on the Property. The results of the study are summarized in Shoreline Change Analysis, attached hereto as Exhibit "K." The report has since been supplemented by a memorandum from Scott Sullivan dated April 21, 2003 ("Supplemental Memorandum"), included herewith as Exhibit "K." The report states that the aerial photograph analysis indicated that the shoreline in the vicinity of the Property is relatively stable and has shown no dynamic changes in the vegetation line position since 1975. The vegetation line fronting the Property has had both accretion and erosion periods over the past 27 years, with the most recent (past 10 years) trend being a recession of the vegetation line. The average annual vegetation line change over the 27-year study period has been a recession of –0.30 feet per year. Assuming this rate of change continues, the vegetation line is predicted to recede an additional 9 feet over the next 30 years. Therefore, pursuant to this report, the shoreline in the Property's vicinity is relatively stable. Additionally, the Supplemental Memorandum recommends an appropriate shoreline setback distance of 60 and 68 feet for a structure life of 50 and 70 years, respectively. This recommendation is based on a quantitative analysis of the erosion zone, and follows the shoreline planning guidelines being developed for use by the DLNR, which recommends taking into account both a storm erosion event factor and a design safety buffer. Please refer to Exhibit "K" for further detail.

(12) Does not substantially affect scenic vistas and view planes identified in county or State plans or studies. The Kauai General Plan, adopted in April 2000, designates all of the lands adjacent to Kuhio Highway as part of the "Scenic Roadway Corridors." While the stated intent is to "conserve open space, scenic features, and views within and along Kauai's most heavily-traveled routes," the General Plan nevertheless recognizes that appropriate means of preserving views include screening development with trees and berms (rather than denying development). See Section 5.5. Maintenance of the existing landscaping along the Property's

boundary with Kuhio Highway is the means by which this section of the "Scenic Roadway Corridor" can be preserved.

(13) Does not require substantial energy consumption. The single-family use of the proposed dwelling will require energy usage comparable to, and no greater than, those of other island households.

(k) Agencies consulted: The Applicants have consulted with the Department of Land and Natural Resources and the Planning Department of the County of Kauai. Requirements for additional or further consultations as may be recommended by the Office of Environmental Quality Control shall be followed.

Because the proposed construction and use are consistent with the establishment of the Property and the policy of the Board of Land and Natural Resources, and are consistent with Chapter 13-5 of the Hawaii Administrative Rules, the Applicants are requesting a negative declaration.

During the comment period relative to the draft environmental assessment, Applicants received comments from:

1) Department of Land and Natural Resources, State Historic Preservation Division (letter dated June 25, 2003 from P. Holly McEldowney, Acting Administrator);

2) Department of Land and Natural Resources, Engineering Division (letter dated July 24, 2003 from Eric T. Hirano, Chief Engineer);

3) County of Hawaii, Department of Public Works (letter dated July 1, 2003 from Wynne M. Ushigome, Deputy County Engineer); and

4) State of Hawaii, Office of Environmental Quality Control (letter dated August 7, 2003, from Genevieve Salmonson, Director).

Copies of these letters, and the Applicants' responses are attached as Exhibit "M."

EXHIBIT A

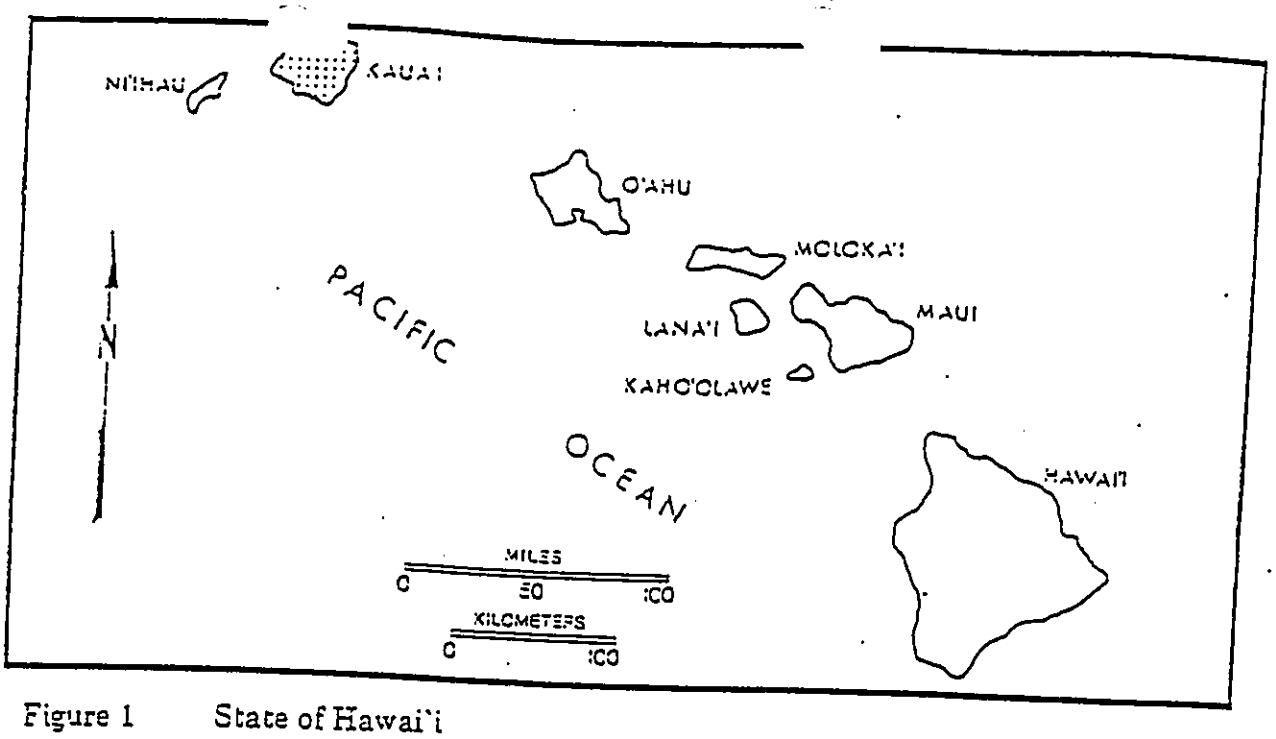


Figure 1 State of Hawai'i

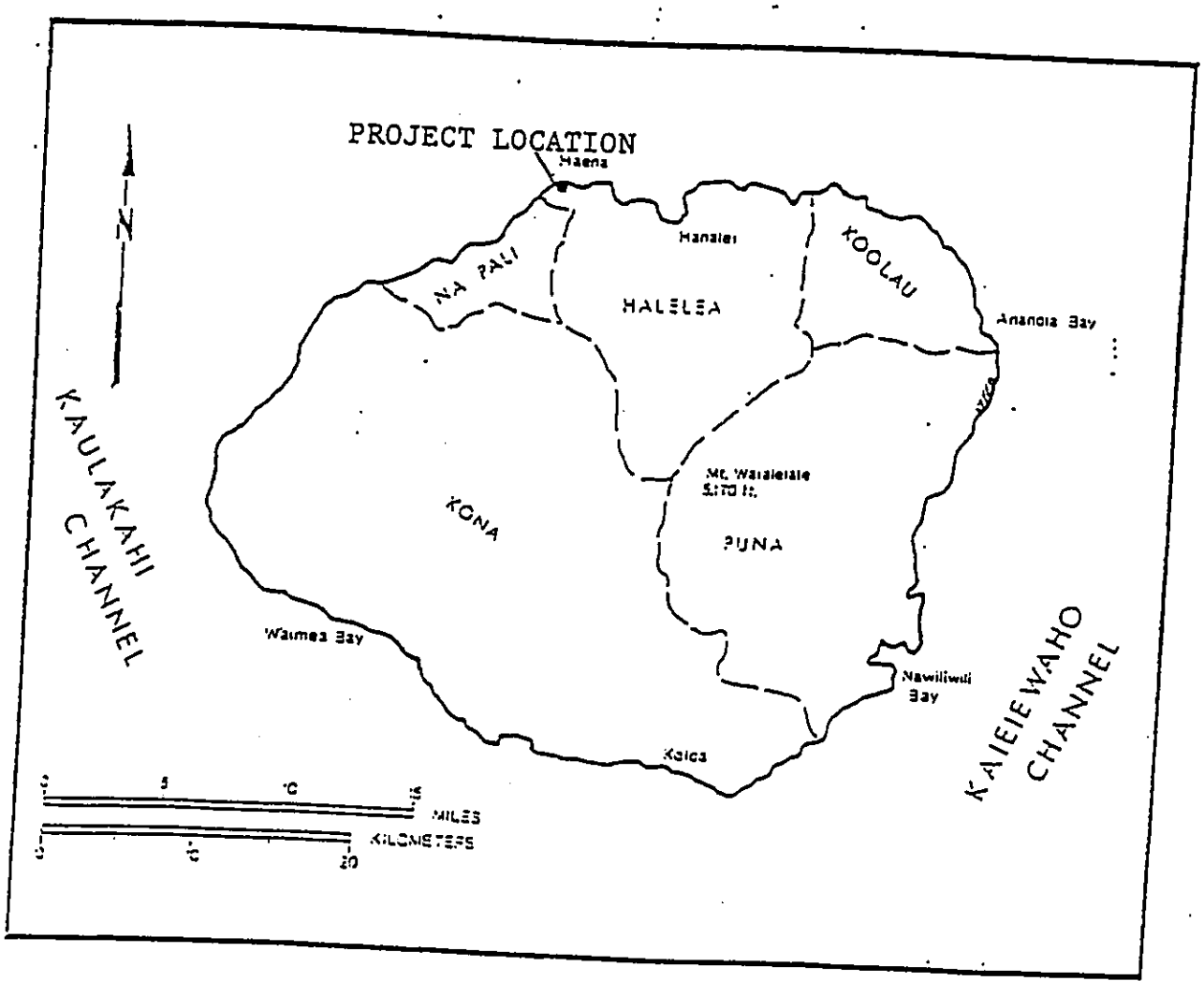


EXHIBIT B

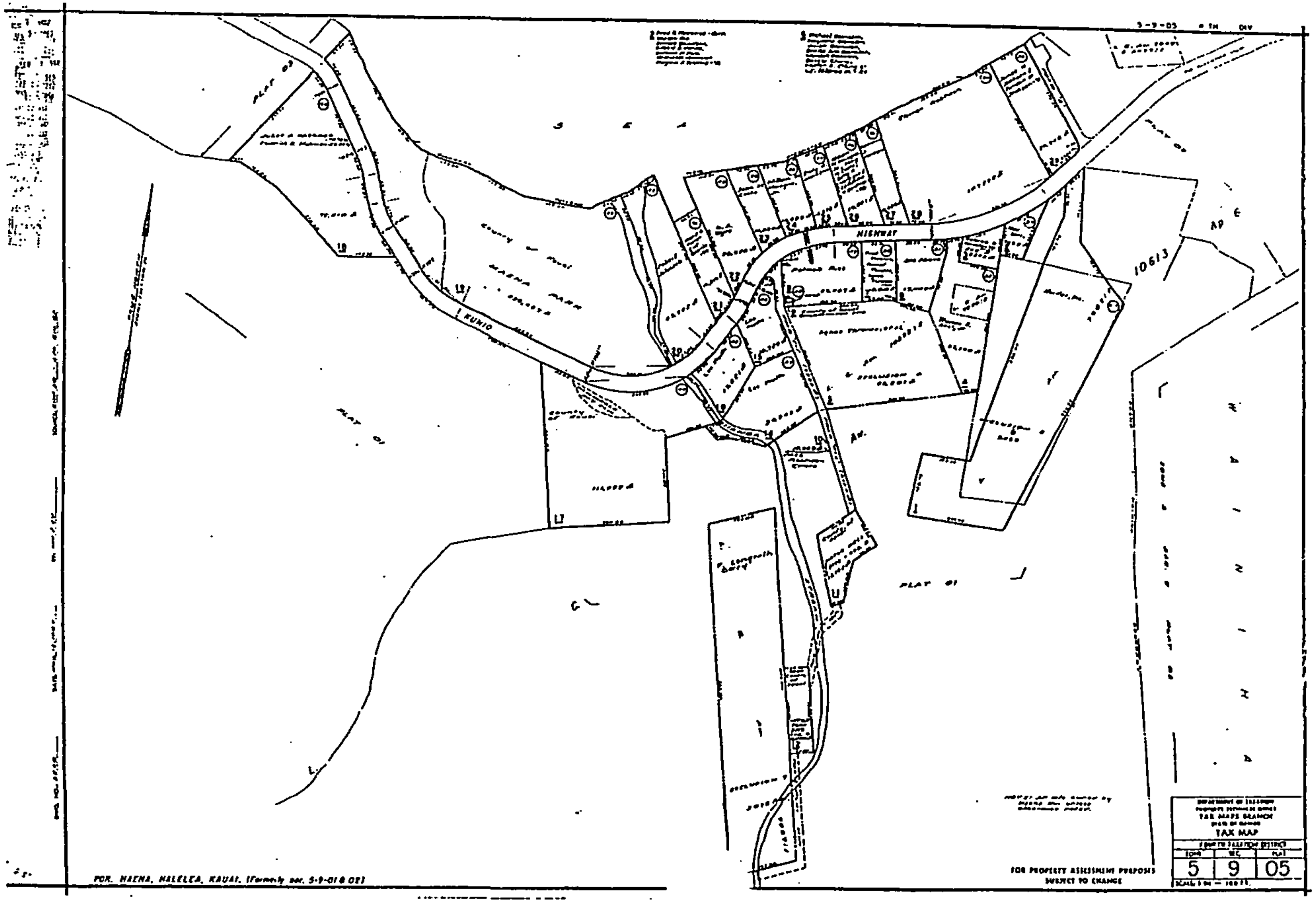
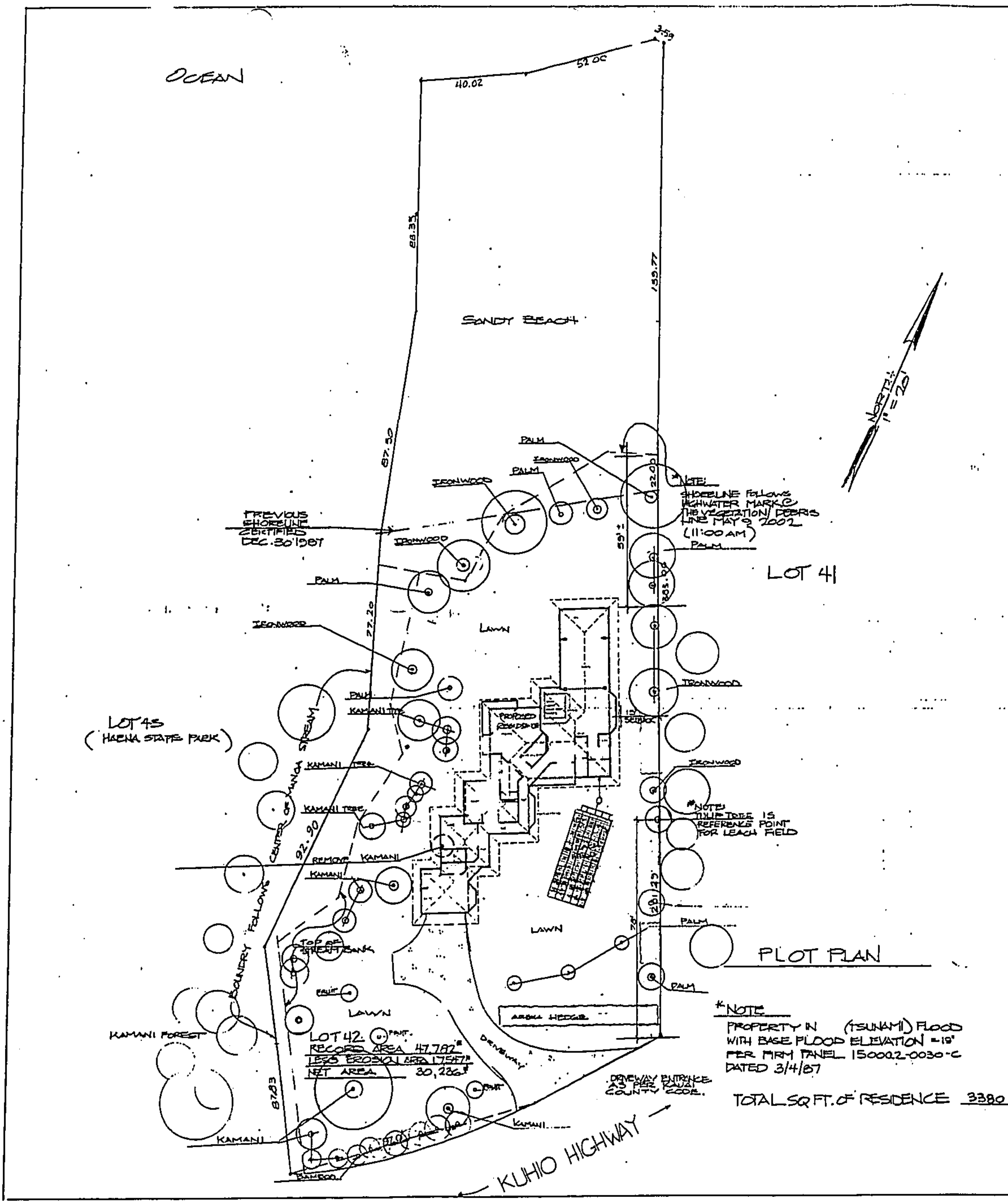
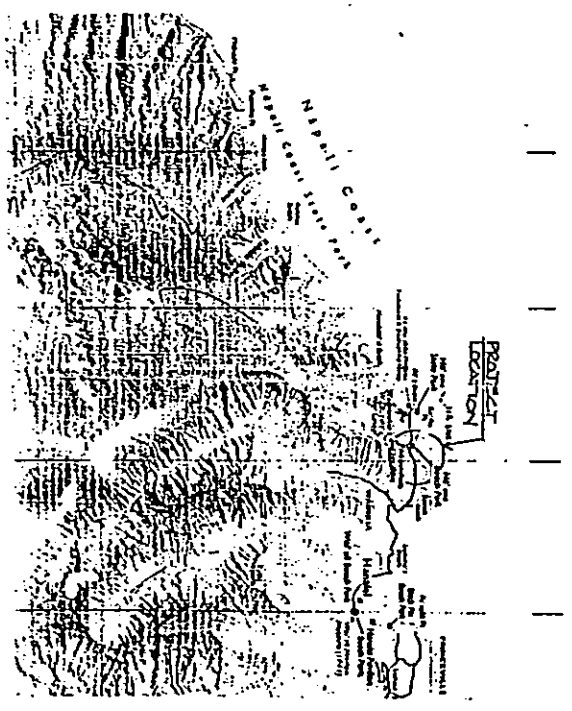

KUHIO
HIGHWAY
10613
POR. HAENA, HALELEA, KAUAI. (Formerly sec. 5-9-01 & 02)
FOR PROPERTY ASSESSMENT PURPOSES
SUBJECT TO CHANGE
TAX MAPS BRANCH
TAX MAP
5
9
05

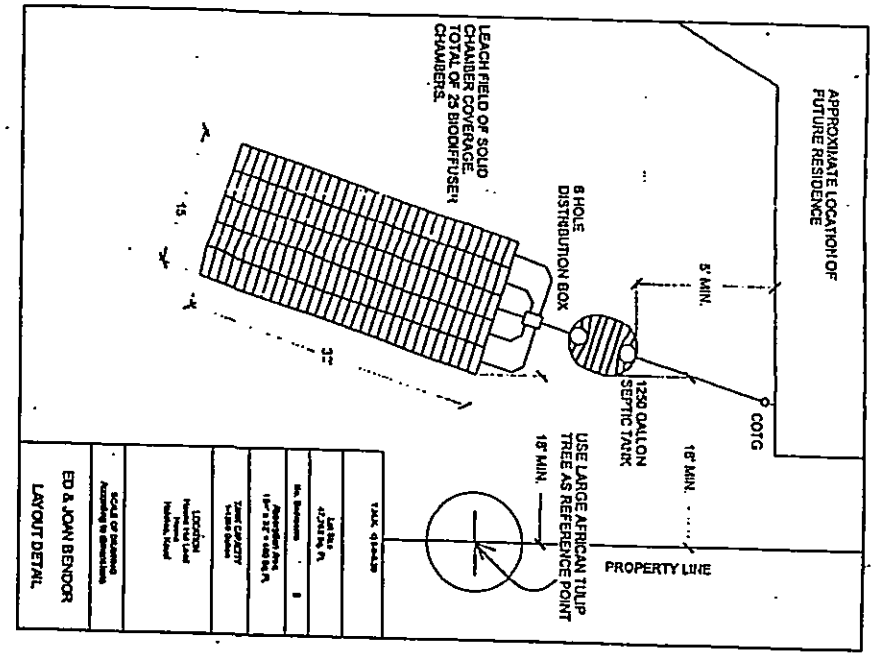
EXHIBIT C


OCEAN
SANDY BEACH
LOT 41
LOT 45 (HAENA STATE PARK)
LOT 42
RECORD AREA 47,782
LESS EROSION AREA 17,547
NET AREA 30,236
LAWN
PREVIOUS SHORELINE CERTIFIED DEC. 30 1987
NOTE: SHORELINE FOLLOWS HIGHWATER MARK @ THE VEGETATION/ DEBRIS LINE MAY 9 2002 (11:00 AM)
NOTE: TULIP TREE IS REFERENCE POINT FOR LEACH FIELD
PROPOSED RESIDENCE
BOUNDARY FOLLOWS CENTER OF MANOA STREAM
TOP OF STREAM BANK
KAMANI FOREST
KUHIO HIGHWAY
DRIVEWAY
DRIVEWAY ENTRANCE AS PER KAUAI COUNTY CODE
NORTH 1" = 20'
PLOT PLAN
*NOTE
PROPERTY IN (TSUNAMI) FLOOD WITH BASE FLOOD ELEVATION =19'
PER FIRM PANEL 150002-0030-C
DATED 3/4/87
TOTAL SQ FT. OF RESIDENCE 3380

FLOOD
ATION = "B"
12-0030-C

DENCE 3380





PROPOSED RESIDENCE FOR ED & JOAN BENDOR
T·M·K 5-9-5:20 LOT 42
HAENA HUI LAND HAENA HALELEA KAUAI

JAMES NEESS
LICENSED PROFESSIONAL ARCHITECT
HAWAII U.S.A.

MAUI ARCHITECTURAL GROUP, INC.

MAG

PLOT PLAN

D.S. E. LOPEZ
DATE
SHEET #

1

OF SHEETS

EXHIBIT D

MARYANNE W. KUSAKA
MAYOR

DEE M. CROWELL
PLANNING DIRECTOR

SHEILAH N. MIYAKE
DEPUTY PLANNING DIRECTOR

PLANNING DEPARTMENT

TELEPHONE (808) 241-6677
FAX (808) 241-6699

April 12, 2002

Lorna Nishimitsu
Law Offices of Walton D.Y. Hong
3135-A Akahi St.
Lihue, Kauai HI 96766

SUBJECT: Special Management Area (SMA) Determination for TMK: 5-9-05: 20 at Haena, Kauai

The subject property is within the County SMA and subject to the County's SMA Rules and Regulations. A single-family dwelling is however exempt from the SMA Rules and Regulations pursuant to its Section 1.4(H)(2)(a).

Please feel free to contact Keith Nitta of my staff at 241-6677 if you have any questions.

SHEILAH N. MIYAKE
Deputy Planning Director

EXHIBIT E

Wildlife Survey for Ha'ena property of Ed Bendor

by David Boynton

A survey of mammal and bird life was conducted on the shoreline property of Ed Bendor, adjacent to Haena County Beach Park, on April 18, 2002 from 5:30 p.m. till 7:30 p.m., and on April 19, 2002 from 7:15 a.m. till 8:15 a.m.

BIRDS

Ten common introduced bird species that typically inhabit Hawaii's rural coastlines were observed or heard on or adjacent to the property; no native bird species were seen on the property during the survey. At the ocean's edge, west of the county beach park, one wandering tattler ('ulili) - an indigenous, migratory species - was observed feeding along the intertidal zone.

The habitat consists mostly of open lawn grasses, surrounded on the edges by various trees such as ironwood, false kamani, octopus tree, be still tree, coconut, African tulip, and a large kukui. An understory hedge along the property boundary consists of native beach naupaka, and several introduced plants such as croton, ti, tahitian ti, spider lily, and bamboo.

In Manoa Stream, which runs along the western edge of the property, no waterbirds were seen. Black-crowned night heron (auku'u), an indigenous and non-endangerd native waterbird, might utilize such habitat although the high levels of human activity on the adjacent public park make this infrequent or unlikely. For the same reason, it is unlikely that any of Hawaii's four endangered waterbirds would utilize the Manoa Stream portion of the property, and none were observed during the survey.

Bird Species List (all are alien species)

an asterisk (*) denotes species actually seen on or over the property; other species were seen or heard in adjacent areas.

Scientific name	Common name
Copsychus malabaricus*	White-rumped shama
Cardinalis cardinalis	Northern cardinal
Paroaria coronata*	Red-crested cardinal
Streptopelia chinensis*	spotted dove
Geopelia striata	zebra dove
Acridotheres tristis*	common myna
Passer domesticus*	house sparrow

Bird species list, cont.

Scientific name	Common name
Carpodactus mexicanus	house finch
Zosterops japonicus*	Japanese white-eye
Gallus gallus	red junglefowl
Heteroscelus incanus	wandering tattler (*'ulili*)

MAMMALS

The only mammal observed during the survey was a stray dog that wandered onto the property.

None of the four rodent species (roof rat, Norway rat, Polynesian rat, house mouse) that typically inhabit such areas was observed, nor was there any evidence of their presence. However, it is likely that these four species inhabit the general area and might venture onto the property.

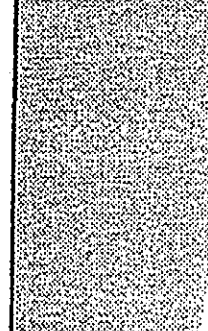
The only endangered mammal species that might come onto the property is the Hawaiian hoary bat. None were seen on or over the property during the survey which extended to dusk, the time during which bats are most likely to be seen. This endangered species is known to feed over nearshore waters around Kaua'i and several of the other main Hawaiian Islands. Hawaiian bats have been observed in previous years over the nearshore waters of Hanalei Bay, Lumaha'i, and Ha'ena.

Due to the high level of human activity in the adjacent Ha'ena County Beach Park and the small size of the Bendor property, it is extremely unlikely that the Hawaiian bat would ever roost in trees on the property.

EXHIBIT F

AN ARCHAEOLOGICAL INVENTORY SURVEY REPORT FOR A PROPERTY LOCATED AT TMK: 5-9-05:20 IN HA'ENA AHUPUA'A, HANALEI DISTRICT ISLAND OF KAUA'I

MAY 2001



Prepared for: Mr. Edi Bendor
P.O. Box 526
Hanalei, Hawaii 96714

Prepared by: Archaeological Consultants of the Pacific, Inc.
Brad Ostroff, B.A.
Joseph Kennedy, M.A.
59-624 Pupukea Road
Haleiwa, Hawaii 96712

Abstract

An Archaeological Inventory Survey with subsurface testing has been conducted on property located in Ha'ena on the Island of Kaua'i. The purpose of the investigations was to determine if significant historic properties exist within the project limits and, if present, properly document and evaluate those sites.

Investigations took the form of a surface survey as well as 4 trenches excavated by a 24 inch clawed backhoe. The trenches were spaced across the property in order to cover the area in a systematic way and to test the differing topographic areas on the property (i.e. moderately sloping and adjacent low-lying areas). No surface remains, cultural deposits or burials were located on the subject property.

Based upon the results of the current investigations, Archaeological Consultants of the Pacific, Inc. recommends that a determination of "no historic properties" be made. No further archaeological investigations are necessary on the subject property. However, because burials are known to exist on other parcels nearby, it is recommended that an archaeological monitor be on call during construction in the event that human remains are encountered.

Table of Contents

List of Illustrations

An Archaeological Inventory Survey Report for a Property Located at TMK: 5-9-05: 20 in Ha'ena, Ha'ena Ahupua'a, Hanalei District, Island of Kaua'i

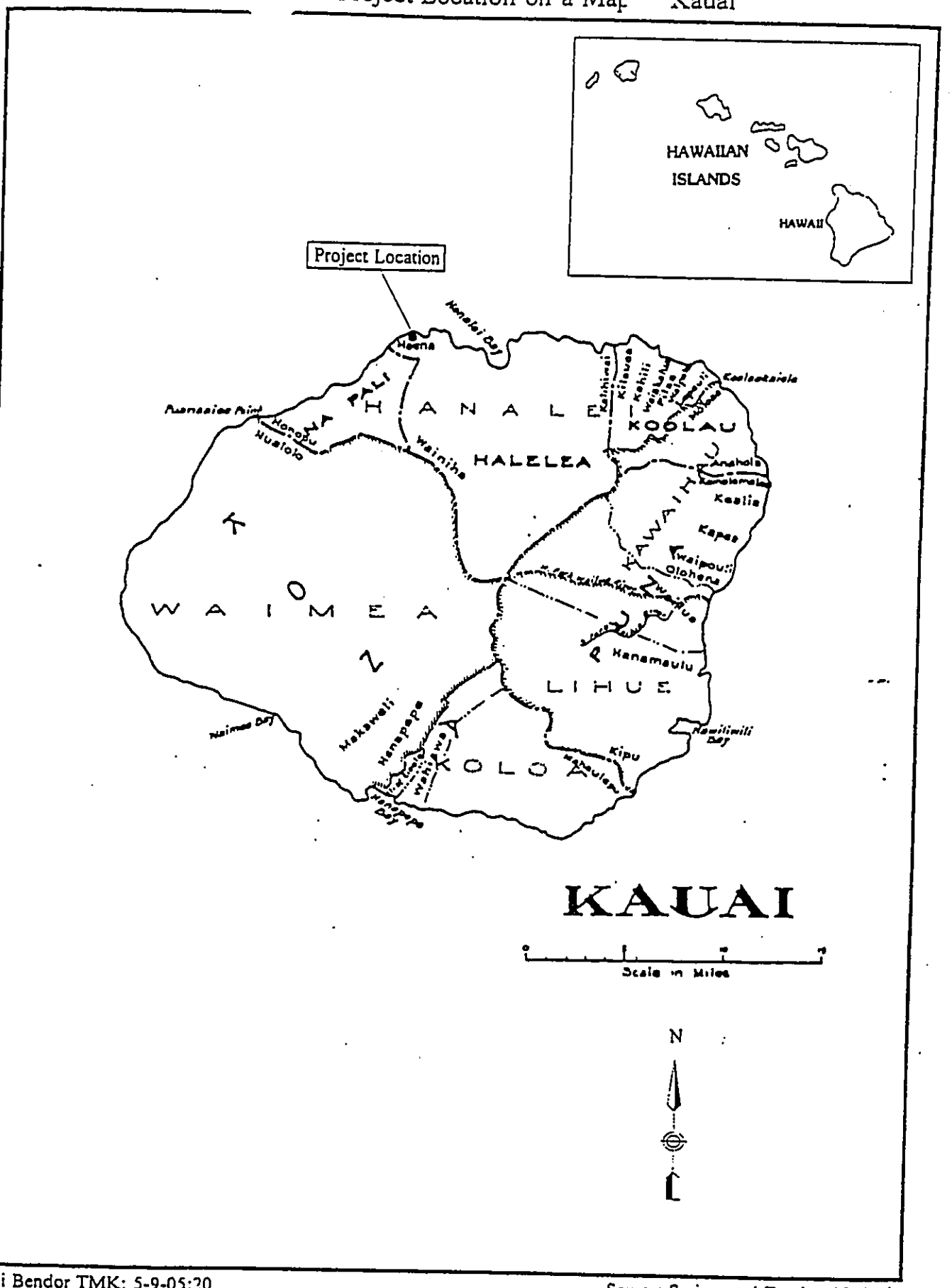
Section 1: Introduction

At the request of Mr. Edi Bendor, Archaeological Consultants of the Pacific, Inc. (ACP) has conducted an Inventory Survey with subsurface testing for property at which a private residence has been proposed to be constructed. The subject property (TMK: 5-9-05: 20) is located in Ha'ena, in the *ahupua'a* of Ha'ena, current district of Hanalei, Island of Kaua'i (see Figures 1 & 2).

The purpose of these archaeological investigations was to perform the tasks and meet the requirements specified by the National Historic Preservation Act (NHPA) and the Department of Land and Natural Resources, State Historic Preservation Division (DLNR-SHPD). These investigations would allow for the evaluation of the significance of potential historic resources located on the property including their eligibility for inclusion in the National Register of Historic Places. These investigations also allow for the making of recommendations concerning the mitigation of the impact of future construction activities upon potentially significant historic resources.

Inventory Survey investigations have determined that no sites of historic significance are located on the subject property. Recommendations are being made for on call monitoring during construction in the event that human remains are encountered.

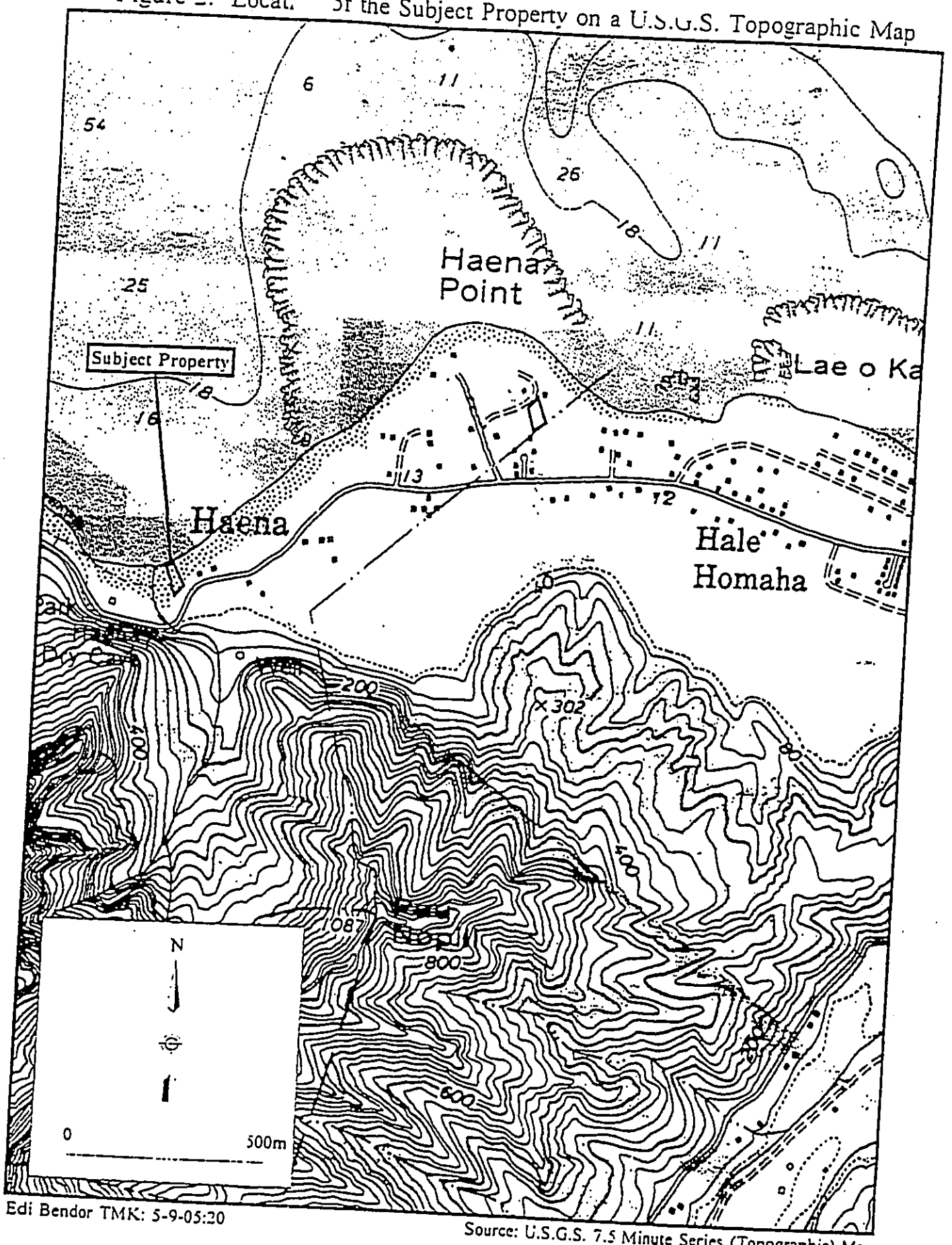
Fi 1: Project Location on a Map Kauai



Edi Bendor TMK: 5-9-05:20

Source: Spriggs and Tanaka 1988:xiv

Figure 2: Locat. of the Subject Property on a U.S.G.S. Topographic Map



Edi Bendor TMK: 5-9-05:20

Source: U.S.G.S. 7.5 Minute Series (Topographic) Map
Haena Quadrangle 1983

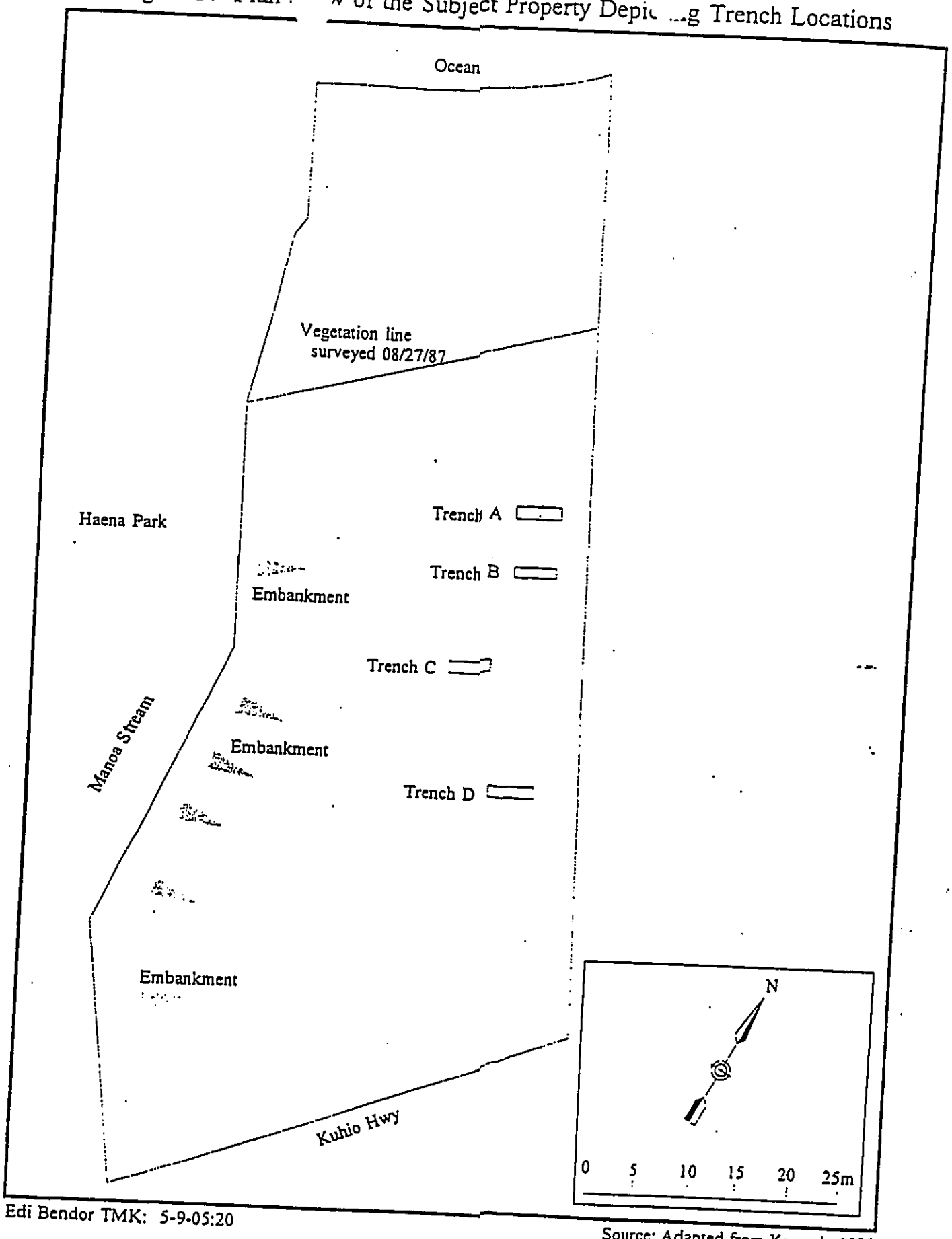
Section 2: Physical Setting

The subject property (TMK: 5-9-05: 20) is located in Ha'ena, *ahupua'a* of Ha'ena, current district of Hanalei, Island of Kaua'i. The project area is located at geographic grid coordinates 159° 33' 50"W by 22° 13' 30"N and UTM (Universal Transverse Mercator) coordinates 2458020mN by 442100mE. The property is bordered by the ocean along its *makai* or northern border, the Ha'ena County Park and Manoa Stream on its western border and by Kuhio Highway on the southern border (see Figure 3).

The property is comprised of one parcel located on a coastal plain. The subject property encompasses an area of approximately, 0.68 acres. The property is sloping on the *mauka* (southern) end of the subject parcel and has a low sand berm at the *makai* (northern) end. The ground cover at the *mauka* end of the parcel, which was previously cleared, is currently dominated by various weeds including, *Bidens pilsoa* and *Stachytarpheta urticaefolia*. The standing trees left on the property are located along the Manoa Stream and along the vegetation line at the top of the beach. They include *kamani (Calophlyllum inophylum), kukui (Aleurites moluccana)*, eucalyptus (*eucalyptus sp.*) and Ironwood *(Casuarina equisetifolia)*.

Foote *et al.* (1972) describes the soils in the area as Kolokolo extremely stony clay loam (KUL). This series consists of well-drained soils on bottom-lands of Kaua'i. Kolokolo soils are geographically associated with Hanalei soils. These soils consist of a top layer of very dark grayish brown fine clay loam above dark brown loam. Foote *et al.* describes the area: Permeability is moderate, soils subject to damaging overflow and annual rainfall of 60-150 inches with a slope as much as 12 percent (1972:75). The mean annual soil temperature is 73° F. The current investigations by ACP found that the soil on the property consists of soils similar to those described by Foote *et al.*. Refer to Section 5.1 for a more detailed description of the soils.

Figure 3: Plan ... w of the Subject Property Depi... g Trench Locations



Edi Bendor TMK: 5-9-05:20

Source: Adapted from Kennedy 1990

Section 3: Historic Background

Approximately half of Ha`ena is located on a narrow, low coastal terrace extending from the Na Pali Cliffs at Ke`e Beach to Wainiha Stream. The coastal plain is bounded by the ridges of the Na Pali formation of the Waimea Canyon volcanic series. Ha'ena is well drained by Limahuli Stream to the east and by Manoa Stream to the west. Rainfall from the coast to the mountains averages about 75 inches annually. Prehistorically, the stream valleys were locations for agriculture and habitation, and they were also sources for lithic raw material. The beachfront and adjacent coastal plain areas were likely the locations for habitation structures, marine based activities, and various gardening activities.

Compared to some other locations in Hawai'i the Ha'ena area has not received a considerable amount of attention for historical and archeological projects. There has, however, been adequate research that allows us to sketch general trends and significant changes in the past. This research coupled with surviving historic documentation also enables useful reconstructions that are important for current archaeological investigations.

Griffin (1984) describes beach profiles for the Ha'ena area (see also Hammatt *et al.* 1978). These deposits contain intermittent stratigraphic layers containing cultural deposits truncated by various types of beach deposits (e.g., storm surge deposits). 'Stratum VIII' appears to be indicative of the earliest temporary occupation of the beach according to Tomonari-Tuggle (Hammatt *et al.* 1978:51-60). 'Stratum VI' represents a long term, permanent occupation with a decline in surge zone fauna. 'Stratum IV' represents the most recent and most complex cultural deposit. This deposit gives evidence of a subsistence economy shift from a dependence on marine based resources to that of agriculturally produced land based resources (Griffin 1984:11).

Cultural layers similar to Griffin's (1984) descriptions have been noted elsewhere along the beachfront and dune areas in Ha'ena (Hammatt & Shideler 1989; Kennedy 1990). However, the extent and continuity of these deposits remains obscure due to limited testing and difficulties with determining the temporal relationship of various site classes.

The Pre-Contact population is estimated to have been within the range of 220+/-100 people (Hammatt & Shideler 1989). Hammatt and Shideler (1989:8) further suggest:

> The land ownership record for Ha'ena is somewhat complicated by the fact that after the Kaua'i insurrection of 1824 lands were divided among the chiefs of the Kamehameha monarchy who were largely from Hawai'i Island. In the Great Mahele of the 1840s the *ahupua`a* of Ha'ena was awarded to Abner Paki (father of Bernice Pauahi). About 24 land court awards were filed by natives.

Additionally, from Earle (1978:147-150, 163-164) we know that: 1) approximately 96% of the land awards in 1850 included taro lands; 2) although taro production was a significant factor in the subsistence economy, agricultural resources were not extensively utilized (it should be noted that, although 96% of the awards were granted for taro lands, this may inadequately represent total subsistence contribution of taro *vis-à-vis* other resources); 3) marine oriented economic resources were of greater importance to this community compared to elsewhere on the island; 4) 85% of the settlement lots were located near the shore with little clustering of house lots; and 5) warfare between local communities was not present.

As the Ha'ena area moved from the post-contact period, through the historic period, and into the current century, there has been a marked shift in native Hawaiian demographics as Hawaiian populations decreased for numerous reasons. There has been a lessening dependence on local traditional marine based subsistence economies. Although agriculturally based subsistence resources had been increasingly developed during the proto-historic and early historic periods, today there is only limited traditional farming practiced. The Ha'ena area has recently experienced "a new form of permanent residence... in the guise of expensive beach homes of our culture's socio-economic elite... at the same time continued transient occupation by both mobile (vacationing) elite and "squatting" lower class members of society" (Griffin 1984:15). The Ha'ena area still remains somewhat under-researched archaeologically concerning the 'Historic Transition Phase', although numerous interesting questions can be posed (see Griffin 1984:14-15).

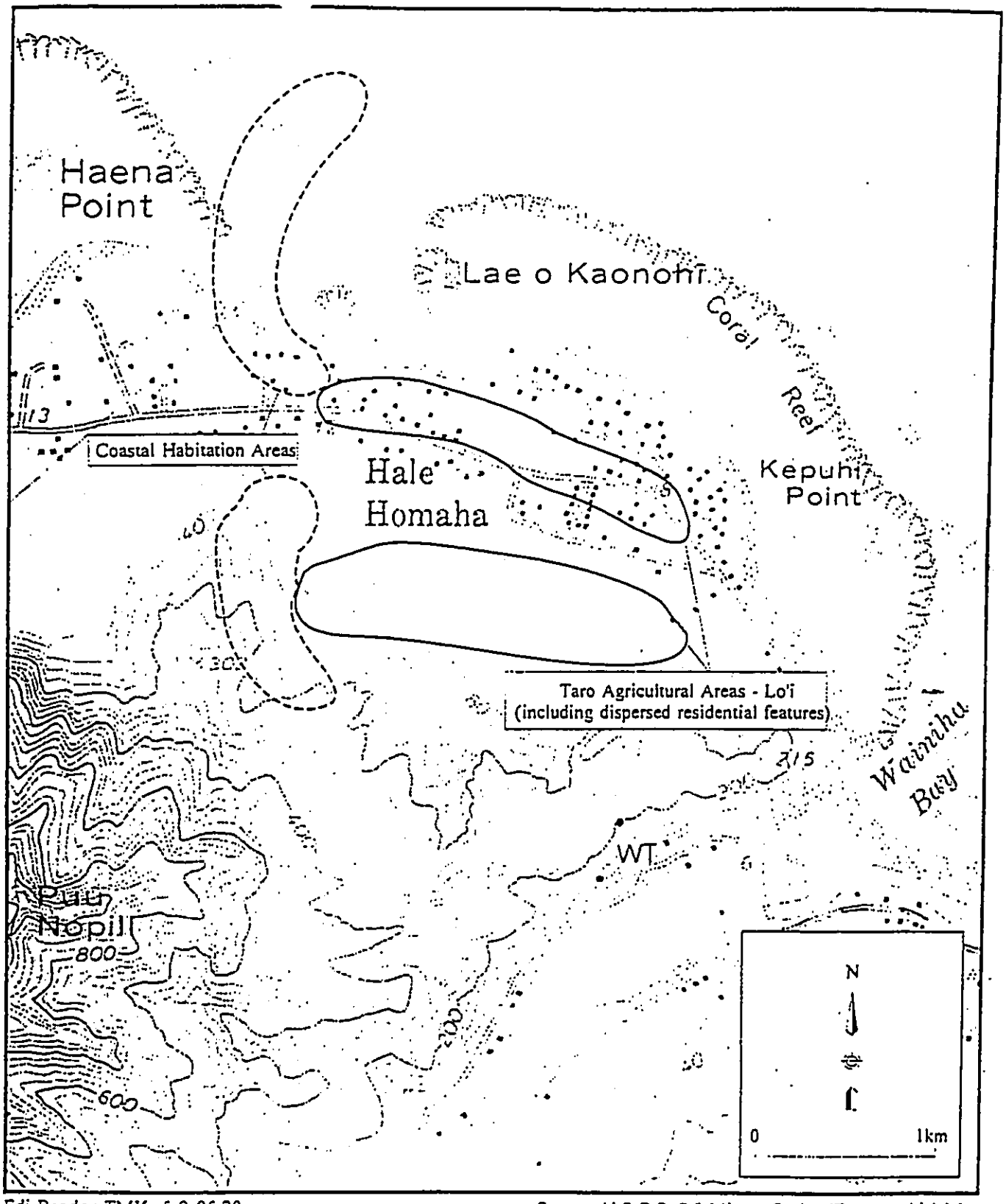
Section 3.1: Previous Archaeology in the Vicinity of the Subject Property

In their bibliography, Spriggs and Tanaka (1988:300) list 18 archaeological studies conducted in Ha'ena. Many of the early accounts concerning prehistory centered on various caves and ruins at Ke'e.

Emory (1929) visited the area and reported on ruins at Ke'e. Bennett (1931) followed with a systematic survey of the island. Bennett discussed Lohi'au's 'Hula Platform' and Ka Ulu a Paoa Heiau. These *heiau* are located in the *ahupua`a* of Ha`ena, district of Hanalei (see Figure 4). Emerson (1925) discusses the related Hi'iaka myth. Bennett also mentioned that the Ha'ena dune was considered one of the largest burial sites on the island. Human osteological remains have appeared in the seaward faces of these dunes from time to time following winter storms.

Timothy Earle (1978) detailed irrigation systems, pond fields and the *lo'i* terraces located near Limahuli and Manoa Streams in Ha'ena (see Figure 5), though coastal areas were not specifically addressed in his research. Following Earle's research, archaeological investigations intensified in the Ha`ena area during the late 1970's and early 1980's. Several investigations were conducted for the Ha'ena State Park and other nearby areas, including a joint field school held by the University of Hawai'i and the University of Illinois in 1978 (Griffin 1984; Griffin *et al.* 1977; Hammatt 1977: Hammatt

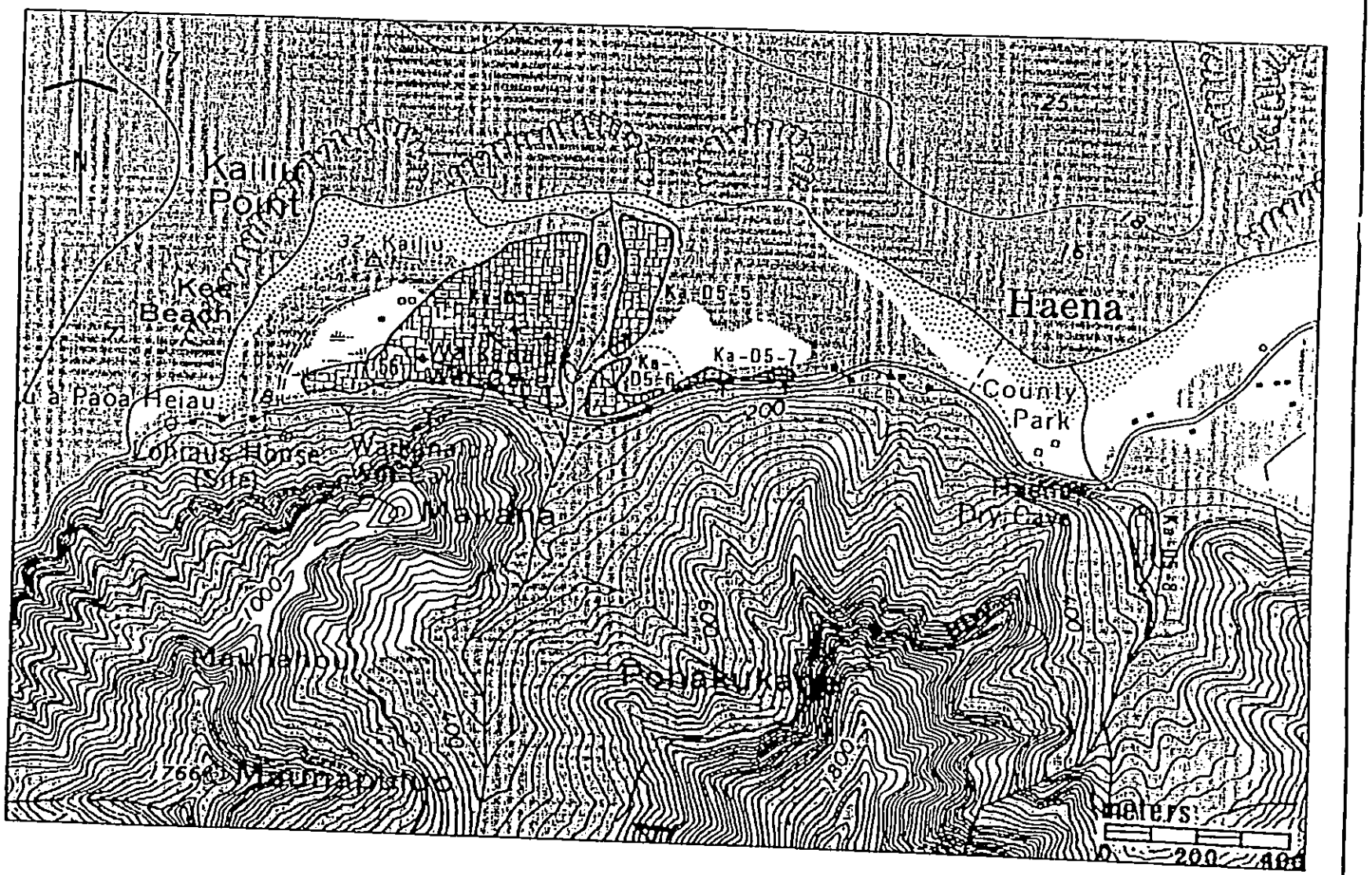
Fig 4: Ha'ena Prehistoric Land Use Patterns



Edi Bendor TMK: 5-9-05:20

Source: U.S.G.S. 7.5 Minute Series (Topographic) Map
Ha'ena Quadrangle 1983

Figure 5: Location of Lo'i Systems Investigated by Earle at Limahuli



Edi Bendor TMK: 5-9-05:20

Source: Earle 1978

et al. 1978; Hammatt & Meeker 1979; Riley & Clark 1979; Yent 1980). Conclusions and interpretations from some of these projects are provided below.

Prehistoric and historic cultural layers consisting of dark deposits containing significant amounts of organic material were identified in the beach and dune deposits extending from Ke'e Beach to Wainiha Bay. Hammatt and Shideler (1989; see also Hammatt *et al.* 1978) using volcanic glass hydration rind dating, dated this dark marine resource oriented occupation layer located at Ke'e Beach to between AD 900 and 1000, one of the oldest Hawaiian occupation dates on Kauai. However, hydration rind dating is no longer considered reliable. More recent radiocarbon dating by Moore *et al.* (1997) corroborate Griffin's model of population expansion in the Ha'ena area with initial occupation occurring between AD 900-1000. Intensive irrigated agricultural developments later occurred after AD 1200 (Hammatt & Shideler 1989; Hammatt *et al.* 1978).

Griffin (1984) suggests that during the initial occupation of the area, a sporadic marine resource oriented residence pattern characterized the area. Temporary and specialized residence may have been characteristic of this early period. The population density was likely relatively low. Permanent residence was likely small and sparse (Griffin 1984:6).

Beginning approximately around AD 1200, "beach occupation intensified, with evidence of temporally and spatially continuous habitation" (Griffin 1984:6). By AD 1400, the subsistence economy shifted to a greater dependence on land based resources such that agricultural intensification resulted in a significant taro production system (Hammatt *et al.* 1978:55; Griffin 1984:8). Extending inland from the beach dune area and continuing towards the base of the cliffs, all of Ha'ena appears to have been developed into taro growing systems with occasional residences (Griffin 1984:13). Associated *'auwai* (irrigation ditches) have been identified in the area. These ditches had been engineered to divert water from the nearby streams to irrigate the taro-growing systems (see Figure 4).

Yent's 1980 study suggests a late prehistoric occupation of residential houses near *mauka* (inland) taro pondfields near Limahuli Stream. Population density during prehistory remained low but continuous. An 1847 government census gives a figure of 162 persons for Ha'ena (n.d. State of Hawaii Archives). By the time of Western contact, the taro pondfields were likely completed and significantly intensified, *heiau* had been built, and Ha'ena had been established as a relatively important social, political, and economic center (Griffin 1984:14).

Archaeological investigations by ACH (Archaeological Consultants of Hawai'i) at Limahuli determined that buried *lo'i* were present (Kennedy 1987 noted in Moore & Kennedy 1995). ACH also conducted investigations on a nearby parcel (TMK 5-9-02: 51) but found no evidence of archaeological remains (Kennedy 1989).

Several archaeological investigations have occurred at the nearby Zimmerman property (TMK: 5-9-02: 34, Site 50-30-02-1809, also 50-30-02-KaR3)(Hammatt 1989; Hammatt & Shideler 1989; Denham & Kennedy 1993). Although the site's full extent was never determined, investigations identified over 20 human burials, large quantities of floral and faunal remains, and over 1000 artifacts (Denham & Kennedy 1993). Many of the artifacts were lithic tools and debitage characterizing the variability and range of technology inherent in the traditional Hawaiian lithic industry and subsequent lithic tool kits. Coral abraders, coral files, echinoderm spine files, and a variety of other artifacts were identified as well.

Also on the Zimmerman property, Hammatt and Shideler (1989) identified a cultural layer of brown (10YR 5/3 Munsell) fine to medium sand (stratum IIA at 30-40cmbs) continuing to a very dark brown (10YR 2/2) fine to medium sand (stratum IIC) thought to be comparable in structure and age with cultural layers from Ke'e Beach dated to between AD 900 and 1000. However, their radiocarbon dates suggest occupation at Ha'ena Point may range from 200 to 400 years more recent (AD 1200 to 1400) than at Ke'e Beach. Hammatt and Shideler suggest that the research potential concerning temporal variation may be fruitful in the Ha'ena area:

> Radiocarbon ages show Ha'ena Point occupation to range 200-400 years younger than Ke'e Beach. However, significant and widespread cultural deposits showing prehistoric beach occupation do occur all along the Ha'ena coastline. The Ha'ena Point locality with additional information from adjacent localities could eventually prove to have the full time range of the prehistory of Kauai and can show significant shifts in resource utilization and economy (Hammatt & Shideler 1989:51).

However, thus far, interpretations are not detailed concerning temporal variation in the area. The nature of previously disturbed deposits and the lack of significant amounts of evidence from various locations in the area prevent worthwhile interpretations of temporal variation.

Recent investigations in Ha'ena, located near the subject property, include inventory survey and subsurface testing conducted by ACH at TMK: 5-9-02: 52 (Moore & Kennedy 1995) and at TMK: 5-9-02: 44 by ACP (Elmore & Kennedy 1999). No cultural remains were encountered on either property. However, these report do contain stratigraphic and soil information which will be relevant to future comparative interpretations.

Another nearby property in Ha'ena (TMK: 5-8-09: 25) was the location for a compliance-bound Inventory Survey (Kennedy 1990) and Data Recovery (Moore, Latinis, Carson & Kennedy 1997). Stratigraphic deposits were determined to be composed of soils similar in depth and structure to the cultural layers noted from archaeological research conducted throughout Ke'e Beach and Ha'ena. Two radiocarbon samples recovered during the 1990 inventory survey (Kennedy 1990) obtained results

indicating utilization occurring at 1360+/-70 BP (Beta-39270-shell) and 140+/-50 BP (Beta-39271-charcoal). Following the inventory survey a single human burial (50-30-02-1875) was identified during the early stages of construction for the home located on Lot 7B. This site was documented by ACH in an addendum to the inventory survey report (Kennedy 1990). It was determined to be lacking any associated features or structures.

Data Recovery investigations were conducted by ACP on the above mentioned property (TMK: 5-9-09: 52, Site 50-30-02-1837) in June and July of 1996 (Moore, Latinis, Carson & Kennedy 1997). These investigations further supported the evidence from the Inventory Survey that the site was temporarily occupied on a recurrent basis for the purpose of utilizing littoral resources and engaging in various other related processing activities from the thirteenth century AD continuing into the post-Contact period. Twenty-five pit features were identified in an area of sixteen square meters. Radiocarbon dating yielded dates corresponding with those from the Inventory Survey. Two distinct episodes of use were identified with dates of between AD 1795 to 1952 and AD 1277 to 1638.

Archaeological investigations were conducted by Scientific Consultant Services, Inc., on two lots located near the subject property. Inventory Survey and Data Recovery was conducted at TMK: 5-8-09: 43 and identified one site, *Site 50-30-02-1878* (Spear 1993). The site consisted mainly of one cultural layer with radiocarbon dates of AD 1437 to 1954 and AD 1440 to 1654 with noncontiguous deposits from an earlier period. Twenty-three subsurface features were identified. The site was interpreted as an area of repeated temporary habitation over a long period of time with a variety of land utilization.

The above site was found to continue onto a neighboring parcel, TMK: 5-8-09: 44, during additional Inventory Survey and Data Recovery. As of this writing, the Data Recovery report is not available for discussion. The Inventory Survey identified varying stratigraphy (Mc Gerty & Spear 1998). Between one and three cultural layers were identified in seven trenches and one test unit. Nine subsurface features were identified. One radiocarbon date was obtained from a feature which dated to AD 1510-1955. Artifacts and midden material recovered from the site suggested a variety of land utilization over an extended period of time. McGerty and Spear suggests in their report that the site may have been of "a permanent and/or long term habitation site."

In 1998, ACP conducted an Inventory Survey with subsurface testing adjacent to the above mentioned properties at TMK: 5-8-09: 41, 42, 45, 46, 47, 48, 49, 50, 51, 53, 54 and 55 in Ha'ena (Elmore, Moore & Kennedy 1999). This projected documented a continuation of the above site (Site 50-30-02-1878), wherein one cultural layer and one burial were identified. The reader may refer to Elmore *et al.* 1999 for complete details.

In 1999, ACP conducted a Data Recovery Survey on the above mentioned property. A significant amount of cultural remains were recovered during these investigations but no specific research questions were addressed. Soil specialists, David Welch, Ph.D. and Charles Fletcher, Ph.D. concurred with the hypothesis theorized by

ACP that a single event storm surge lens was present, consisting of culturally sterile beach sand which bisected the cultural layer (Site 1878). This lens was likely deposited during the tsunami of 1946 or some other recent tsunami.

In 2000, ACP conducted an Inventory Survey with subsurface testing for a parcel located at TMK: 5-9-02: 19 and found no cultural remains (Ostroff, Moore & Kennedy 2001). However the single event storm surge lens was present.

Section 3.2: Summary of Probable Settlement Patterns and Expected Finds

Based upon the historic reviews of the region by Earle, Griffin and others, Hammatt & Shideler suggest a settlement pattern for the area in which there are scattered house sites along the coast with intensive utilization of the valley floors along Manoa and Limahuli Streams for the cultivation of wet taro (Hammatt & Shideler 1989:9). The current subject property is located in an area used for scattered habitations and coastal marine utilization. This is consistent with general claimed land uses for the area at the time of the Mahele. It is also known that the coastal areas were used for the interment of the deceased.

Therefore, the expected finds for the subject property could be surface remnants of habitation sites or structural remains typical of coastal marine settlement. In addition, subsurface finds could include cultural layers including midden deposits, fire pits, etc.. There would also be the possibility of encountering the remains of the deceased.

Section 4: Methodology

The subject property was systematically investigated by conducting a 100% surface survey of the parcel. The field crew swept the property using transects spaced approximately 5 meters (m) apart. Transects ran roughly north to south. Visibility was good to excellent. No archaeological sites were located during the surface survey.

Subsurface investigations took the form of 4 trenches excavated by a 24 inch clawed backhoe. The trenches were placed strategically across the subject property in order to test the area in a systematic way. All trenches were excavated to the sterile basal layer.

All trench locations were shot using a measuring tape and compass from known corner points depicted on the TMK map and were subsequently plotted on a plan map of the subject property. All soils removed from the trenches were raked and visually examined in order to identify cultural materials or deposits. In addition, samples from one out of every forth backhoe scoops were sifted through 1/4 inch mesh screen in order to better determine the presence of cultural materials. All potentially significant cultural

materials recovered from these procedures were collected. Soil samples were collected from each stratigraphic layer identified in each trench and profiles drawn of representative sections of two trenches.

All sampling was conducted using standard archaeological methods including the screening of soils using 1/4 inch mesh in order to retrieve significant cultural deposits. Soil samples were collected and placed in airtight zip-lock bags and labeled for use in laboratory analyses. No samples suitable for radiocarbon dating were obtained.

Small amounts of invertebrate faunal remains, including gastropods, bivalves, coral, echinoderm and crustaceans were observed during trench excavations, but these remains were not collected due to the proximity of the subject property to the coast. It is assumed that these were naturally deposited.

This report provides complete descriptions of the excavations undertaken including written accounts, placement of the trenches on plans drawn to scale, and profiles depicting stratigraphic deposits. Also included are soil descriptions according to USDA standards.

All fieldwork was conducted under the direction of the principal investigator, Joseph Kennedy, M.A.. All materials collected during test excavations will be bagged and labeled appropriately, placed in labeled and inventoried boxes, and curated at the ACP offices located at 59-624 Pupukea Road, Haleiwa, Hawaii.

Section 5: Findings

Section 5.1: Stratigraphy Encountered

Soils encountered during the current investigations generally conformed with the stratigraphy predicted by Foote *et al.*. Excavations across the property did reveal that the stratigraphy varied somewhat across the property. This variance is likely due to the deposition of a layer of soil (Layer I) atop the naturally formed strata during the tsunami of 1946. Only the low-lying areas of the current subject property seemed to have been affected by this event.

The following description is a general model for the subject property. Layer I soil consisted of between 4 to 20cm of very dark brown (10YR 2/3) detritus. Layer II consisted of between 5 to 20 cm of very pale brown (10YR 8/4) coarse sand. Layer III soil consisted of white (10YR 8/2) sand. Layer IV consisted of dark grayish brown (10YR 4/2) silty clay loam. Layer V consisted of Layer V consisted of very pale brown (10YR 8/3) sand. Layer VI consisted of 4cm of dark reddish brown (5YR 3/4) silty clay loam. Layers VII through XI are jumbled layers, which have repeated soils from the

layers above. For specific soil descriptions of each trench, refer to trench descriptions below.

Section 5.2: Trench Descriptions

Four trenches were excavated on the subject property. No invertebrate marine materials were collected. Likewise, modern debris was not collected. All trench locations may be found on Figure 3.

Trench A

Trench A was placed towards the north-eastern most portion of the subject parcel (see Figure 3). The trench extended for a total length of 4m and reached a maximum depth of 140cmbs. Three layers were encountered (see Figure 6). Layer I consisted of approximately 9cm of very dark brown (10YR 2/3) detritus. Layer II consisted of approximately 23cm of very pale brown (10YR 8/4) coarse sand which reached a depth of 32cmbs. Layer III consisted of 110cm of white (10YR 8/2) sand which was excavated to a maximum depth of 140cmbs. No cultural layers or features were present. No cultural materials were recovered. A small amount of marine materials were present which are assumed to be naturally deposited given the close proximity to the ocean. *Kukui* nut was also present and was assumed to be naturally deposited.

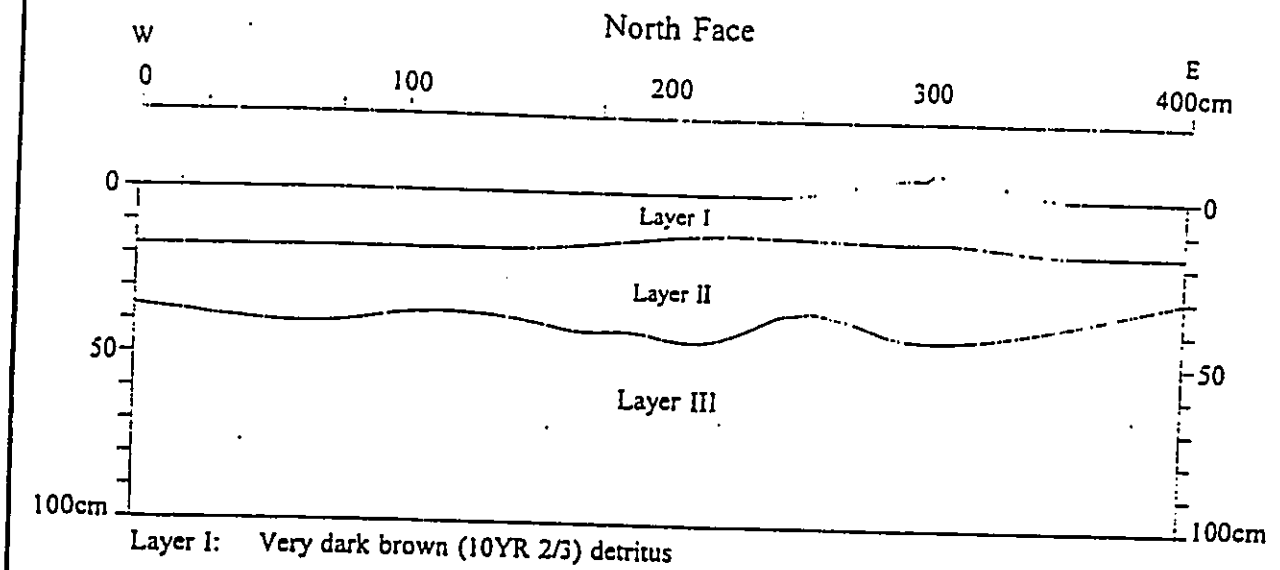
Trench B

Trench B was strategically placed extending across the north-eastern portion of the subject parcel (see Figure 3). The trench extended for a total length of 4m and reached a maximum depth of 140cmbs. Three layers of soil were present in the trench (see Figure 7). Layer I consisted of 10cm of very dark brown (10YR 2/3) detritus. Layer II consisted of 20cm of very pale brown (10YR 8/4) coarse sand which reached a depth of 30cmbs. Layer III consisted of 110cm of white (10YR 8/2) sand was excavated to a maximum depth 140cmbs. Cultural materials were present in the form of a lens of 5-10cm of charcoal at a depth of 20cmbs. Not enough material was present to send out to radiocarbon date. A small amount of marine materials were present which are assumed to be naturally deposited given the close proximity to the ocean. A small amount of *kukui* nut was recovered, and this was also, thought to be naturally deposited.

Trench C

Trench C was placed extending across the central portion of the subject parcel (see Figure 3). The trench extended for a total length of 4m and had a maximum depth of 160cmbs. Five layers of soil were present (see Figure 8). Layer I consisted of 10cm of very dark brown (10YR 2/3) detritus. Layer II consisted of 20cm of very pale brown (10YR 8/4) coarse sand which reached a depth of 30cmbs. Layer III consisted of 3cm of

Figure 6: Profile of Trench A

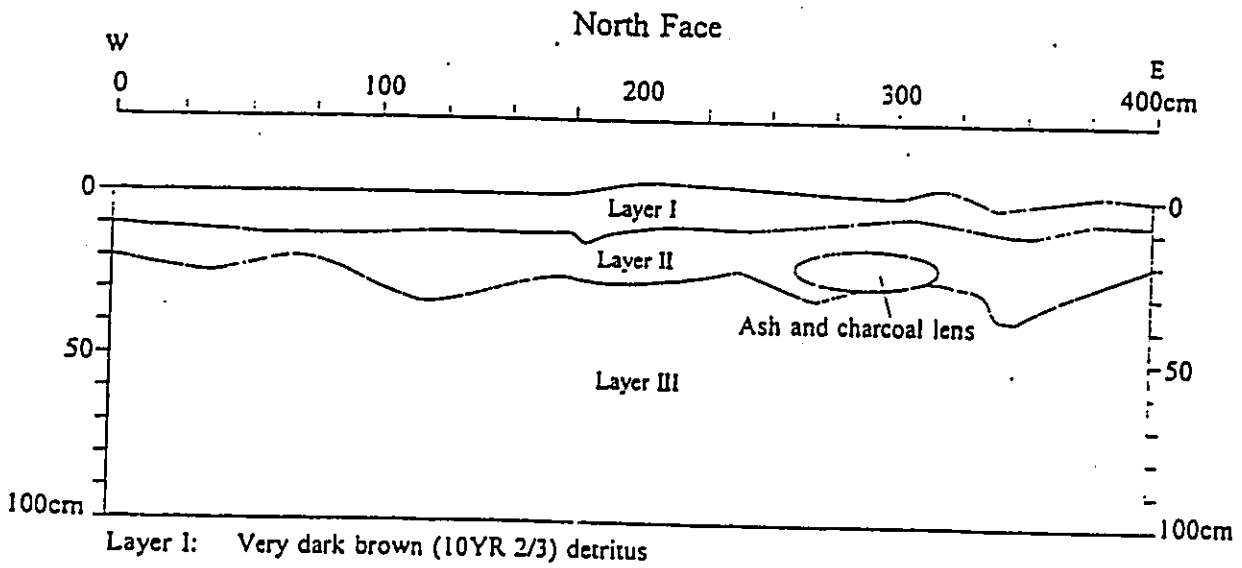


Layer I: Very dark brown (10YR 2/3) detritus

Layer II: Very pale brown (10YR 8/4) sand

Layer III: White (10YR 8/2) sand

Figure 7: Profile of Trench B

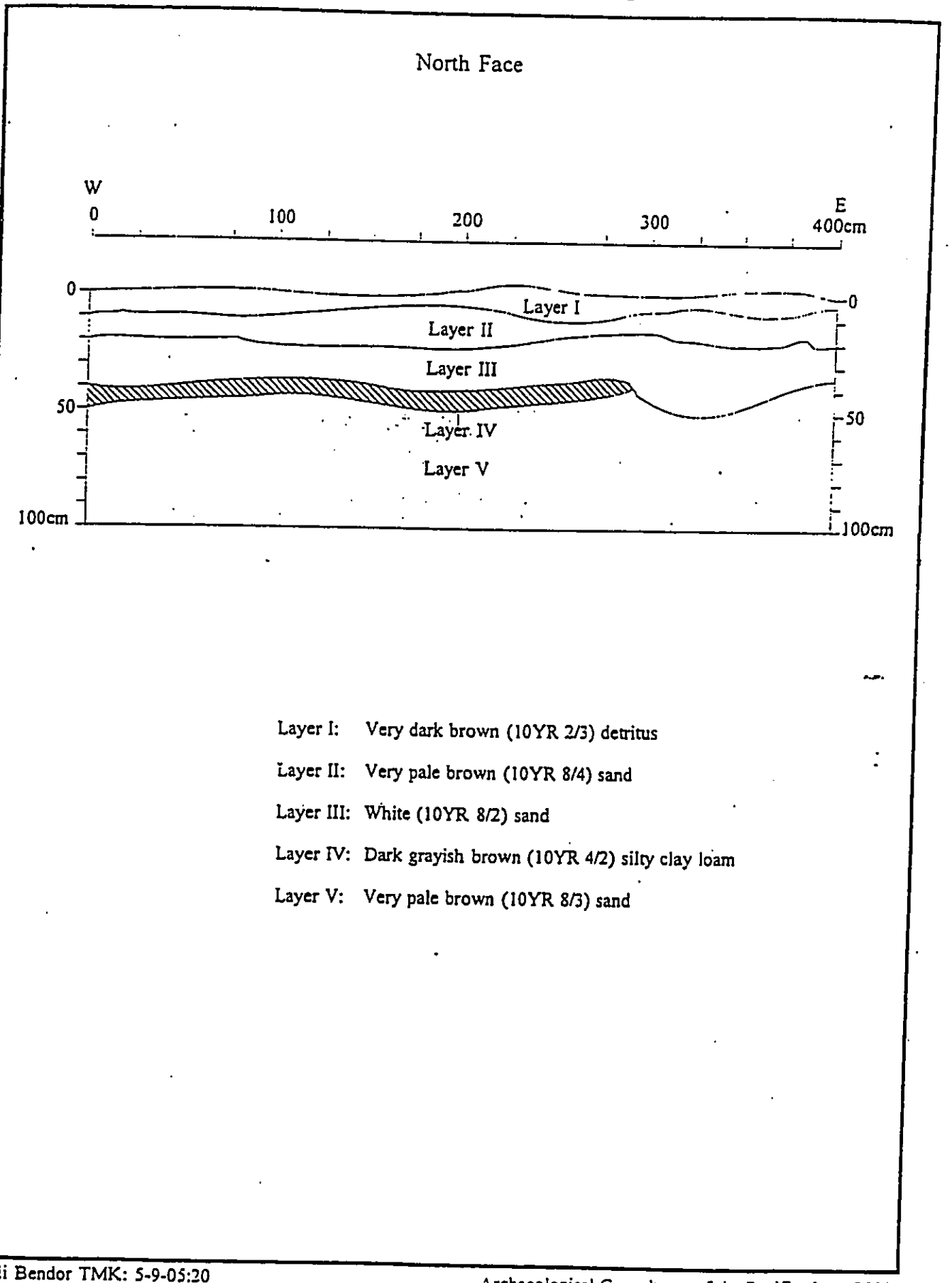


Layer I: Very dark brown (10YR 2/3) detritus

Layer II: Very pale brown (10YR 8/4) sand

Layer III: White (10YR 8/2) sand

Figure 8: Profile of Trench C



Layer I: Very dark brown (10YR 2/3) detritus

Layer II: Very pale brown (10YR 8/4) sand

Layer III: White (10YR 8/2) sand

Layer IV: Dark grayish brown (10YR 4/2) silty clay loam

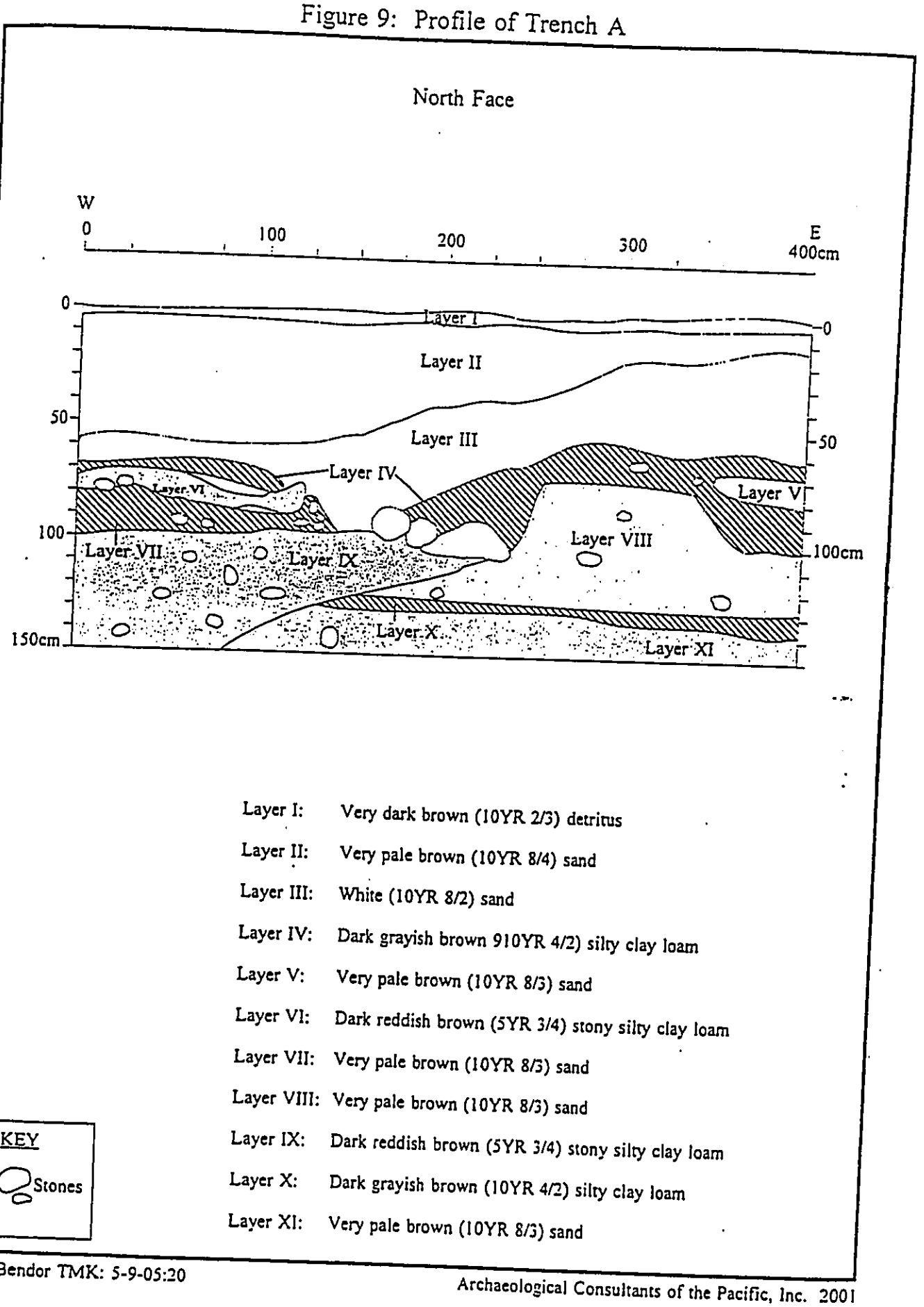
Layer V: Very pale brown (10YR 8/3) sand

white (10YR 8/2) sand was excavated to a maximum depth of 42cmbs. Layer IV consisted of 3cm of dark grayish brown (10YR 4/2) silty clay loam. This layer. is thought to have been deposited during flooding of the Manoa Stream. Layer V consisted of very pale brown (10YR 8/3) sand. No cultural layers or features were present. No cultural materials were found.

Trench D

Trench D was placed extending across the south-eastern portion of the subject parcel (see Figure 3). The trench had a total length of 4m and had a maximum depth of 160cmbs. Eleven layers of soil were present (see Figure 9). Layer I consisted of 5-10cm of very dark brown (10YR 2/3) detritus. Layer II consisted of 20-50cm of very pale brown (10YR 8/4) coarse sand which reached a depth of 55cmbs. Layer III consisted of 3cm of white (10YR 8/2) sand was excavated to a maximum depth 75cmbs. This layer appears to have been deposited during the Tsunami of 1946 or other high water events. Layer IV consisted of 5-15cm of dark grayish brown (10YR 4/2) silty clay loam. In this layer water-worn stones begin were recorded. Layer V consisted of 10-20cm of very pale brown (10YR 8/3) sand which reached a depth of 75cmbs. Layer VI consisted of 4cm of dark reddish brown (5YR 3/4) silty clay loam. Layer VII consisted of 20cm of similar soils as Layer V but has an abrupt but irregular boundary, which reached a depth of 96cmbs. Layer VIII consisted of 30-60cm of similar soils as Layer V but also has an abrupt boundary. Layer IX consisted of 20-60cm of soils similar to Layer VI. Layer X consists of 10cm of soil similar to Layer IV. Layer XI consisted of 40cm of soil similar to Layers V and VIII. In this layer several pockets of *kukui* nuts were found. None of the nuts showed any signs of use. No cultural layers or features were present. No cultural materials were found. This trench was located furthest from the ocean and closest to the Manoa Stream. Flooding from the stream is thought to have caused the jumble of layers encountered in Trench D.

Figure 9: Profile of Trench A



Section 6: Discussion

No sites or burials were located on the subject property. Marine materials were present and are assumed to have been naturally deposited due to the close proximity to the ocean. No cultural materials were present in any of the excavated areas aside from a small amount of modern debris and some *kukui* nut, which is also assumed to be naturally deposited. Evidence of the impact of the tsunami of 1946 on the subject property is present in the form of the sand of Layer II in Trenches A through D. The layers of silty clay loam and the large rocks found in Trenches C and D would have been deposited during periods when Manoa Stream flooded this area. Thus, the subject property is a boundary zone between the beach sand and the Kolokolo extremely stony clay loam (KUL) as described by Foote *et al.* (1975).

These findings are consistent with those on three nearby properties, TMK: 5-9-02: 51 and 52 (Kennedy 1989 and Moore & Kennedy 1995) and also at TMK: 5-9-02:19 (Ostroff, Moore & Kennedy 2001). No cultural deposits or burials were located on these lots, and an inconsistent top layer of soil was noted (Moore & Kennedy 1995). However, another property nearby contained a large number of burials and cultural materials (TMK: 5-9-02: 34, Site 50-30-02-1809, also 50-30-02-KaR3)(Hammatt 1989; Hammatt & Shideler 1989; Denham & Kennedy 1993). Although the site's full extent was never determined, investigations identified over 20 human burials, large quantities of floral and faunal remains, and over 1000 artifacts (Denham & Kennedy 1993).

Given the presence of so many burials only a short distance away, it remains possible that burials may be present on the subject property. For this reason, it is recommended that on call monitoring be conducted during construction activities at the subject property.

Conclusion

An Inventory Survey with subsurface testing has been completed on TMK: 5-9-05: 20. No surface remains, cultural deposits or burials were identified on the subject property.

Based upon the results of the current investigations, Archaeological Consultants of the Pacific, Inc. recommends that a determination of "no historic properties" be made. No further archaeological investigations are necessary on the subject property.

However, because burials are known to exist on parcels nearby, it is recommended that an archaeological monitor be on-call during construction in the event that human remains are encountered.

References Cited

Bennett, W.C.

1931 *The Archaeology of Kaua'i.* Bishop Museum Bulletin 80. Honolulu.

Denham, T. and J. Kennedy

1993 "Remedial Archaeological Investigations and Monitoring Report Following the Inadvertent Discovery of Human Remains on the Zimmerman Property, at TMK: 5-9-02: 34 Ha'ena Ahupua'a, Hanalei District, Kauai Island." Prepared by ACH, Haleiwa. Report on file at DNLR-SHPD.

Earle, T.

1978 *Economic and Social Organization of a Complex Chiefdom: The Halele'a District, Kaua'i.* Anthropology Papers No. 63. Museum of Anthropology, University of Michigan. Ann Arbor.

Elmore, M., J.R. Moore and J. Kennedy

1999 "An Inventory Survey with Subsurface Testing Report for Properties Located at TMK: 5-8-09: 41, 42, 45, 46, 47, 48, 49, 50, 51, 53, 54 and 55 in Ha'ena, Wainiha Ahupua'a, Hanalei District, Island of Kaua'i." Prepared by ACP, Haleiwa. Report on file at DNLR-SHPD.

Elmore, M., and J. Kennedy

1999 "An Inventory Survey with Subsurface Testing Report for a Property Located at TMK: 5-9-02: 44 in Ha'ena, Ha'ena Ahupua'a, Hanalei District Island of Kauai". Prepared by ACP, Haleiwa. Report on file at DNLR-SHPD.

Emerson, N.B.

1925 *Pele and Hi'iaka.* Honolulu.

Emory, K.P.

1929 Ruins at Ke'e, Ha'ena, Kaua'i: Famous Court of Lohi'au. *Thrum's Hawaiian Annual.* pg. 88-94. Honolulu.

Foote, D., E.L. Hill, S. Nakamura, and F. Stephens.

1972 *Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai and Lanai, State of Hawaii.* U.S. Department of Agriculture, Soil Conservation Service, Washington D.C..

Griffin, P.B.

1984 Where Lohi'au Ruled: Excavations at Ha'ena. *Hawaiian Archaeology* Vol 1. Honolulu.

Griffin, P.B., R. Bordner, H. Hammatt, and H. Morganstein

1977 "Preliminary Archaeological Investigations at Ha'ena, Halele'a." Prepared by Archaeological Research Center Hawaii. Report on file at DNLR-SHPD>

Hammatt, H.H.

1977 "Archaeological Reconnaissance of a Residential Property, Ha'ena, Halele'a, Kauai." Prepared by Cultural Surveys Hawaii, Kailua. Report on file at DNLR-SHPD.

1989 "Archaeological Reconnaissance of a Residential Property, Haena, Halele'a, Kauai." Prepared by Cultural Surveys Hawaii, Kailua. Report on file at DNLR-SHPD.

Hammatt, H.H. and V. Meeker

1979 "Archaeological and Ethnohistorical Investigations at Ha'ena, Halele'a, Kaua'i." Prepared by Archaeological Research Center Hawaii. Report on file at DNLR-SHPD

Hammatt, H.H. and D.W. Shideler

1989 "Excavations at Site 50-30-02-1809 at a Residential Property (TMK 5-9-02: 34), Ha'ena, Halele'a, Kaua'i" (Zimmerman Property). Prepared by Archaeological Research Center Hawaii. Report on file at DNLR-SHPD.

Hammatt, H.H., Tomonari-Tuggle, M.J. and C.F. Streck

1978 "Archaeological Investigation of Ha'ena State Park, Halelea, Kauai. Phase II: Excavations of Beach Localities and Visitors' Facilities Area." Prepared by Archaeological Research Center Hawaii. Report on file at DNLR-SHPD.

Kennedy, J.

1989 "Letter Report Concerning Preliminary Archaeological Survey of a Property Located at TMK:5-9-02:51." Prepared by ACH, Haleiwa. Report on file at DNLR-SHPD.

1990 "Archaeological Inventory Survey For TMK:5-8-09: 25, Located at Wainiha, Island of Kauai." Prepared by ACH, Haleiwa. Report on file at DNLR-SHPD.

McGerty, Leann and R.L. Spear

1998 "An Archaeological Inventory Survey at a Residential Property, Lot 44, Wainiha, Halele'a, Kaua'i, Hawaii [TMK 5-8-09: 44]." Prepared by Scientific Consultant Services Inc., Honolulu. Report on file at DNLR-SHPD

Moore, J.R. and J. Kennedy

1995 "An Archaeological Inventory Survey with Subsurface Testing Report for a Property Located at TMK:5-9-02:52 in Ha'ena Ahupua'a, Hanalei District, Island of Kauai." Prepared by ACH, Haleiwa. Report on file at DNLR-SHPD.

Moore, J.R., Latinis, D.K., Carson, M.T. and J. Kennedy

1997 "An Archaeological Data Recovery Report for a Property Located at TMK:5-8-09: 25 in Ha'ena, Wainiha Ahupua'a, Hanalei District, Island of Kauai." Prepared by ACP, Hale'iwa. Report on file at DNLR-SHPD.

Ostroff, B., Moore, J.R. and J. Kennedy

2000 "An Archaeological Inventory Survey Report for a Property Located at TMK: 5-9-02: 19 in Ha'ena Ahupua'a, Hanalei District, Island of Kaua'i". Prepared by ACP, Hale'iwa. Report on file at DNLR-SHPD.

Riley, T.J. and J. Clark

1979 "Archaeological Testing and Excavation at Ha'ena, Kaua'i." Prepared for DLNR by University of Illinois and University of Hawaii.

Spear, R.

1993 "Archaeological Data Recovery Excavations at Site 50-30-02-1878 (The Goodman Property) Wainiha, Island of Kaua'i (TMK: 5-8-09: 43)." Prepared by Scientific Consultant Services Inc., Honolulu. Report on file at DNLR-SHPD.

Spriggs, M.J. and P.L. Tanaka

1988 *Na Mea 'Ima i Ka a Kahiko: An Annotated Bibliography of Hawaiian Archaeology*. Asian and Pacific Archaeology Series, 11. Social Science Research Institute, University of Hawaii. Honolulu.

Yent, M.

1980 "Preliminary Archaeological Testing of House 4, Ha'ena State Park, Halele'a, Kaua'i". Prepared for DLNR, Division of State Parks.

EXHIBIT G

August 16, 2001

Mr. Ronald J. Wagner
Wagner Engineering Services, Inc.
P.O. Box 851
Hanalei, Hawaii 96714

Dear Mr. Wagner:

Subject: Individual Wastewater System (IWS) Plans for
Ed & Joan Bendor
Project Site: Kuhio Highway, Hanua, Kauai
TMK: (4) 5-9-5: 20
File No.: 3862

We have received your Certification of Construction and As Built Plans for the above IWS. Information submitted to us indicates that the installed IWS meets applicable provisions of Hawaii Administrative Rules, Title 11, Chapter 62, entitled "Wastewater Systems."

As the professional engineer responsible for the Certification of Construction, please inform your client that the above IWS is approved for use. We strongly recommend that you discuss the necessary operation and maintenance of the individual wastewater system with your client. Emphasis should be placed on periodic inspections for scum and sludge accumulation as well as informing them not to dispose of materials that could affect the operation of the wastewater system.

Should you have any questions, please feel free to contact Joe Tateyama at 241-3323.

Sincerely,

Original Signed On

DENNIS TULANG, P.E.
Chief, Wastewater Branch

JT:lmh

LETTER OF TRANSMITTAL

SEPTIC Technology
OAHU

Attention: Joseph Tateyama

Date: ~~May 11, 2001~~

9' x 5'6" x 5'6"

37 - 7070
miles

14

To: State of Hawaii
Department of Health
Wastewater Branch
3040 Umi Street
Lihue, Kauai, Hawaii 96766

Subject: Wastewater System for – Ed & Joan Bendor
TMK: (4) 5-9-5:20

We are transmitting herewith:

- **Engineering data & design for an**

INDIVIDUAL WASTEWATER SYSTEM

emarks:

This property is a sandy soil beach lot adjacent to Haena Beach County Park and this wastewater system is designed to serve up to a 5-bedroom residence.

The house plans are still in conceptual phase. Therefore we have taken preliminary specifications from the homeowner as to the maximum size and location of the residence and applied this information to the calculations and the layout of the wastewater system.

The homeowners have chosen to install their system well in advance of the residence since they want to have the landscaping well established prior to construction of the residence. The installation of the wastewater system would be destructive to any well-established landscaping if installed after or just before residence construction.

You can contact us at 635-6462 if you require further information.

Thank you,

Ronald J. Wagner P.E.
Wagner Engineering Services, Inc.

Prepared by: Jim Psaila

INDIVIDUAL WASTEWATER SYSTEM
FOR

ED & JOAN BENDOR

TMK: (4) 5-9-5:20

TABLE OF CONTENTS

THIS WORK HAS BEEN PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY SUPERVISION

ENGINEER'S SIGNATURE/STAMP

INDIVIDUAL WASTEWATER SYSTEM
APPLICATION INFORMATION SHEET

Please Print or Type, Incomplete forms will result in delayed reviews

Engineer: RonWagner of Wagner Engineering

Owner: Ed & Joan Bendor

Owner's Mailing Address (Required): PO Box 526, Hanalei, HI 96714

Contact Person (If different from owner) address, and phone number:

826-1488

Project Location (street address, subdivision name and general area):

Haena Hui Land, Haena, Halelea, Kauai

Project TMK: (4) 5-9-5:20

Lot Size: 47,782 sq. ft.

Zoning: Residential

Projected Flow or Number of Bedrooms: up to 5

Proposed Treatment Unit (Manufacturer, Model, Capacity of Septic Tank, Aerobic Unit, etc.):

1250 Gallon Capacity by Boyd Tank Co. or equivalent

Proposed Disposal System: Absorption Bed

Percolation Rate: <1 Min/in

Existing IWS on the lot: No Type:

FOR DEPARTMENT USE ONLY

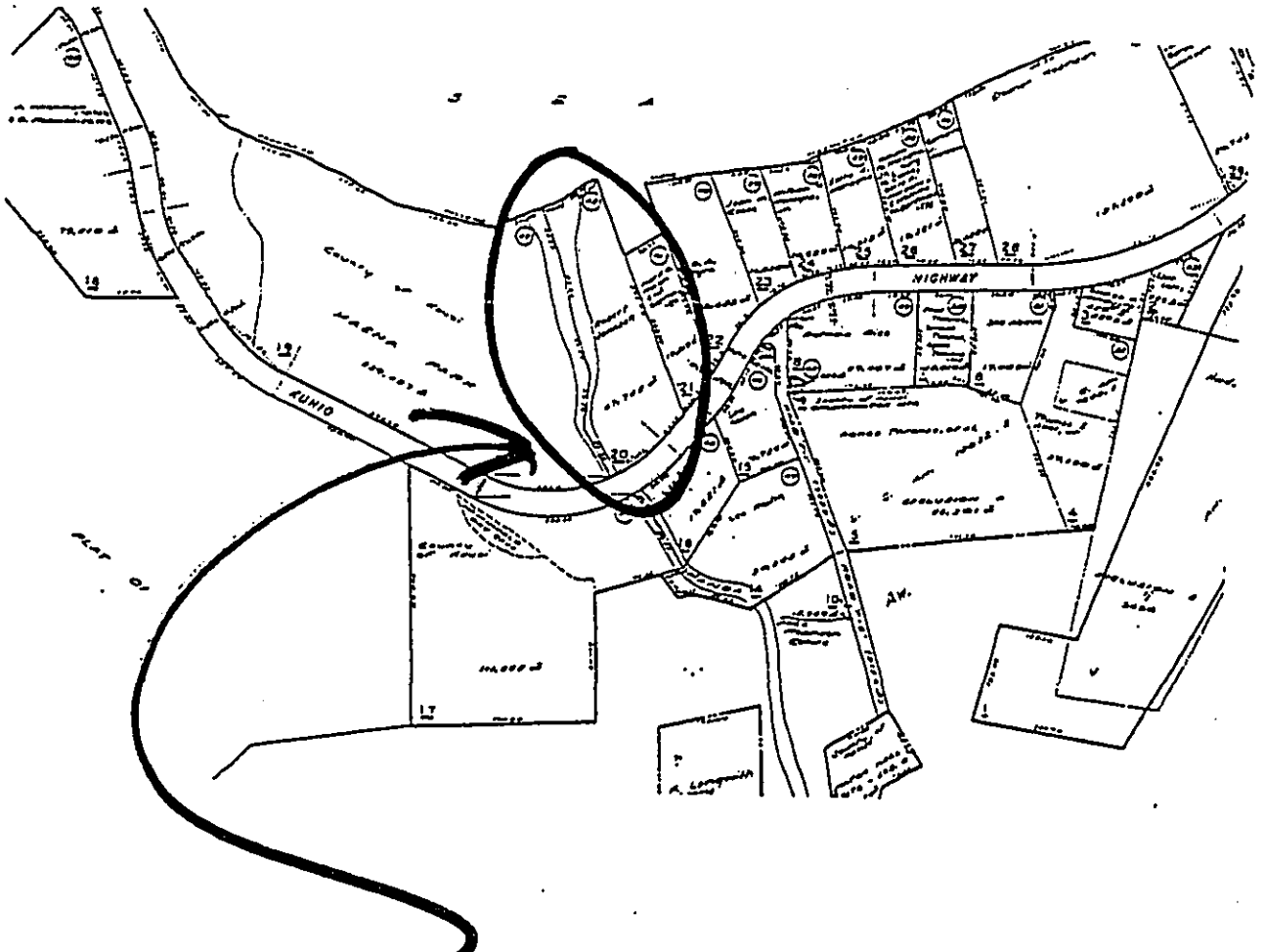
Date Received:

Project Engineer:

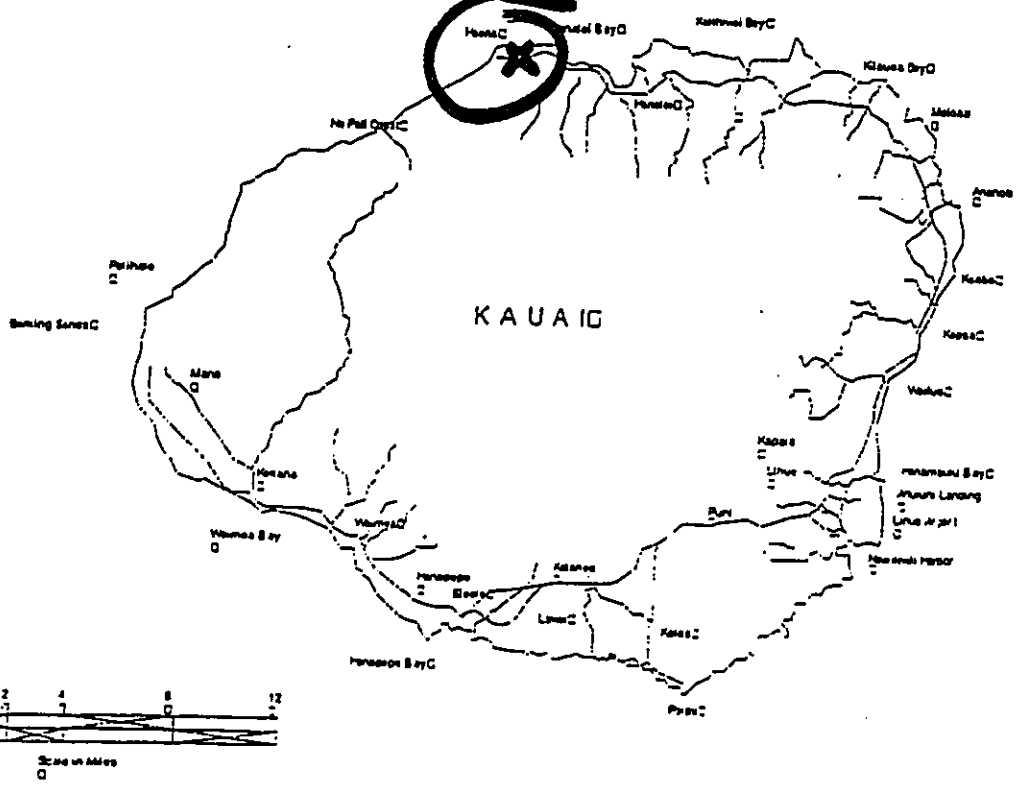
File No.:

Notes:

Application Form, revised 1/94



PROJECT SITE



TE EVALUATION/PERCOLATION TEST

Date/Time: 4/27/01 9 AM

Test performed by: Jim C. Psaila

Name of Owner: Ed & Joan Bendor

Tax Map Key: (4) 5-9-5:20

Elevation: 16 ft. (approximate)

Depth to Groundwater Table: 16 ft. below grade

Depth to Bedrock: ø ft. below grade

Diameter of Holes: 6 inches

Depth to Bottom of Holes: 3-6 ft. below grade

Depth, inches below grade	Soil Profile (color, texture, other)
0-6"	Dark Brown Soil/Sand, single grain, loose
6"-48"	Light yellowish-brown sand, single grain, loose

PERCOLATION READINGS

Time 12 in of water to seep away: ≤1 min.

Time 12 in of water to seep away: ≤1 min.

Check one:

X Percolation tests in sandy soils, recorded time intervals and water drops at least every 10 minutes for at least 1 hour.

_____ Percolation test in non-sandy soils, presoaked the test hole for at least 4 hours. Recorded time intervals and water drops at least every 10 minutes for 1 hour or if the time for first 6 inches to seep away in greater than 30 minutes record time intervals and water drops at least every 30 minutes for 4 hours or until 2 successive drops do not vary by more than 1/16 inch.

Time interval	Drop in inches	Time interval	Drop in inches
10	>10		
10	>10		
10	>10		

Percolation Rate (time/final water level drop): <1 min./in

As the engineer responsible for gathering and providing site information and percolation test results, I attest to the fact that above site information is accurate and that the site evaluation was conducted in accordance with the provisions of Chapter 11-62, "Wastewater Systems" and the results were acceptable. I also attest that three feet of suitable soil exist between the bottom of the soil absorption system and the groundwater table or any other limiting layer.

ENGINEER'S SIGNATURE/STAMP

DESIGN CALCULATIONS

Owners name: Ed & Joan Bendor
TMK: 4) 5-9-5:20

Slowest Percolation Rate:	1	Minutes Per Inch
Minimum Absorption Area	70.00	Sq. Ft. Per Bedroom
No. of Bedroom	5	
MINIMUM ABSORPTION AREA REQUIRED	350	SQUARE FEET

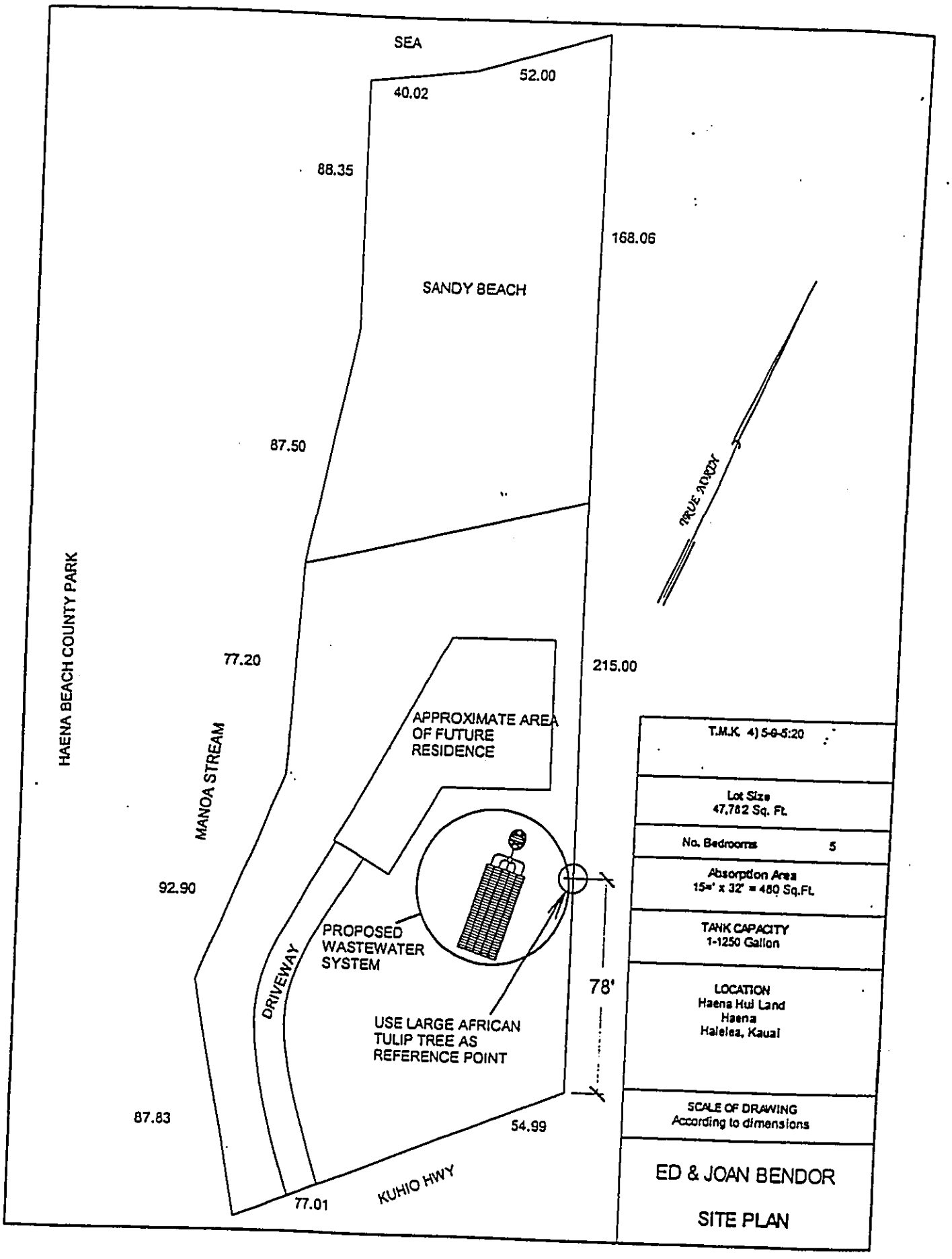
*(Determined from the "Manual of Septic Tank Practice" #526, Section One, Table One, Page Eight.)

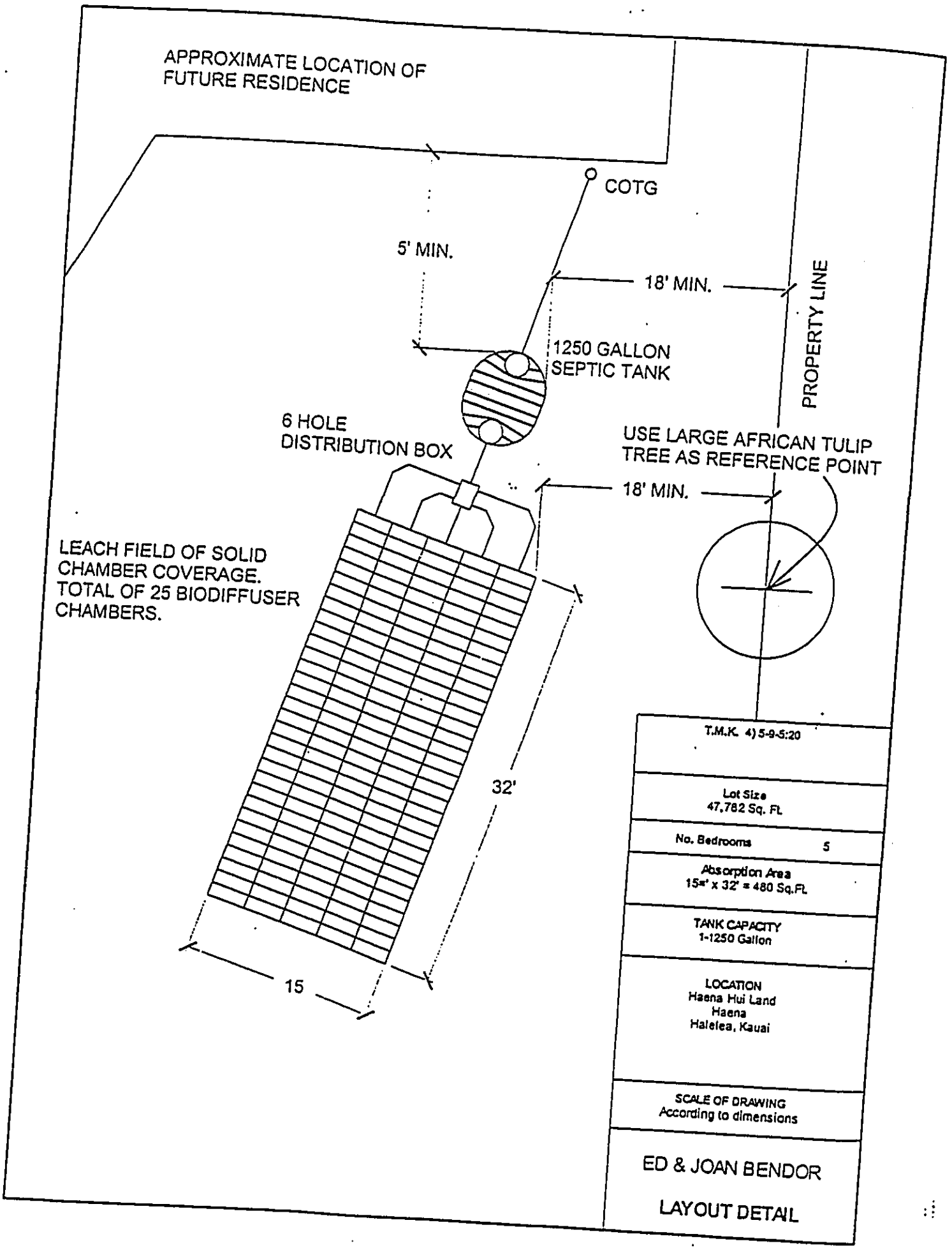
LEACH FIELD DESIGN SPECIFICATIONS:

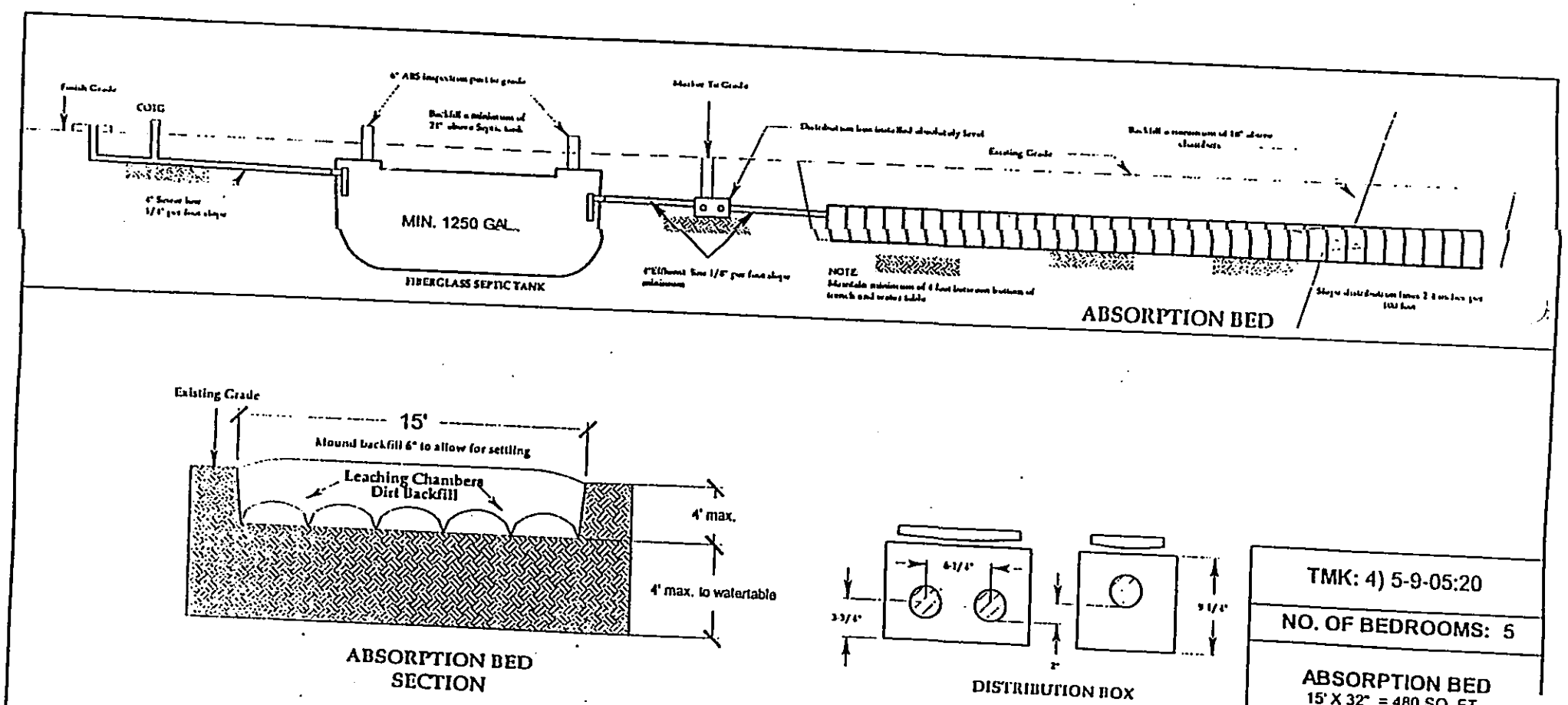
Use 1 absorption bed	15' x 32' = 480 Sq. Ft.
Use 4 rows of leaching chambers	

SUMMARY OF DESIGN COMPLIANCE WITH REQUIRMENTS:

Total absorption area required	350 Sq. Ft.
Total area provided by design	480 Sq. Ft.


SEA
52.00
40.02
88.35
168.06
SANDY BEACH
87.50
TRUE NORTH
HAENA BEACH COUNTY PARK
77.20
215.00
APPROXIMATE AREA OF FUTURE RESIDENCE
MANOA STREAM
92.90
PROPOSED WASTEWATER SYSTEM
DRIVEWAY
78'
USE LARGE AFRICAN TULIP TREE AS REFERENCE POINT
87.83
54.99
77.01
KUHIO HWY
T.M.K. 4) 5-6-5:20
Lot Size
47,762 Sq. Ft.
No. Bedrooms 5
Absorption Area
15=' x 32' = 480 Sq.Ft.
TANK CAPACITY
1-1250 Gallon
LOCATION
Haena Hui Land
Haena
Halelea, Kauai
SCALE OF DRAWING
According to dimensions
ED & JOAN BENDOR
SITE PLAN


APPROXIMATE LOCATION OF FUTURE RESIDENCE
COTG
5' MIN.
18' MIN.
PROPERTY LINE
1250 GALLON SEPTIC TANK
6 HOLE DISTRIBUTION BOX
USE LARGE AFRICAN TULIP TREE AS REFERENCE POINT
18' MIN.
LEACH FIELD OF SOLID CHAMBER COVERAGE. TOTAL OF 25 BIODIFFUSER CHAMBERS.
32'
15
T.M.K. 4) 5-9-5:20
Lot Size
47,782 Sq. Ft.
No. Bedrooms 5
Absorption Area
15=' x 32' = 480 Sq.Ft.
TANK CAPACITY
1-1250 Gallon
LOCATION
Haena Hui Land
Haena
Halelea, Kauai
SCALE OF DRAWING
According to dimensions
ED & JOAN BENDOR
LAYOUT DETAIL



ABSORPTION BED
SECTION

DISTRIBUTION BOX

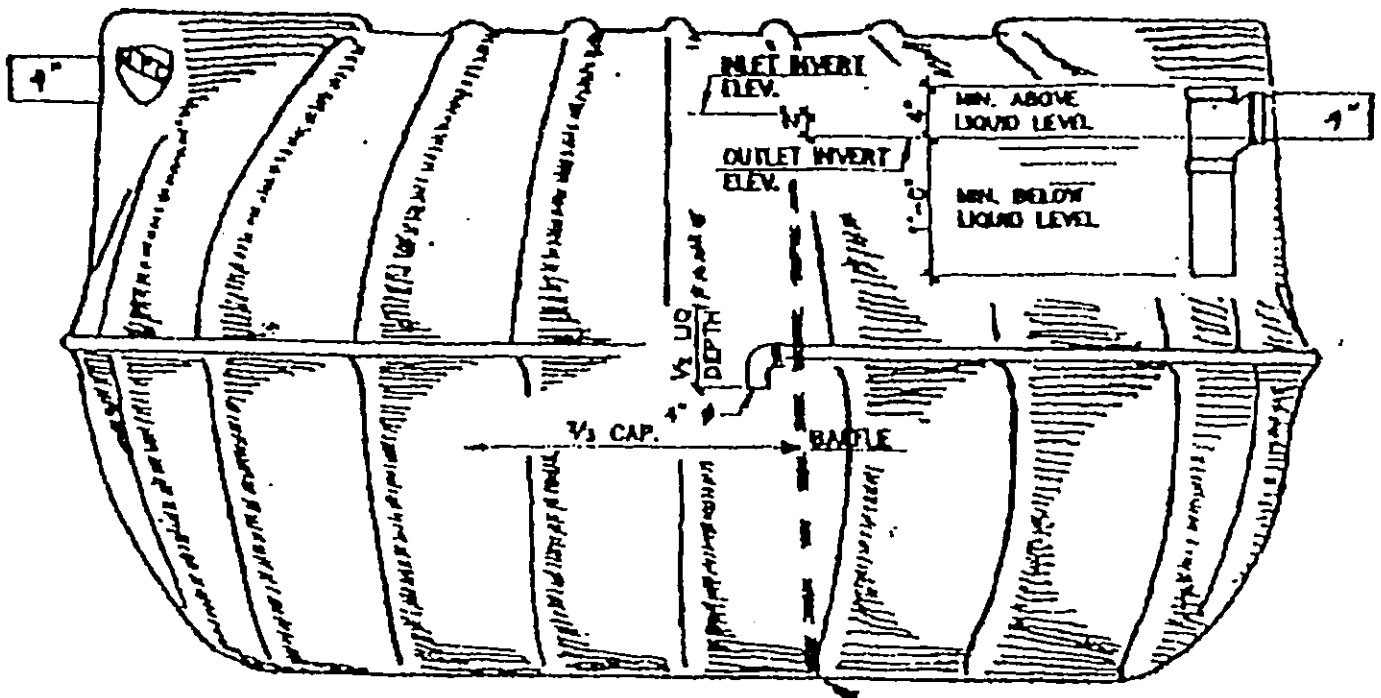
TMK: 4) 5-9-05:20
NO. OF BEDROOMS: 5
ABSORPTION BED 15' X 32' = 480 SQ. FT.
TANK CAPACITY 1250 GALLON
LOCATION Haena Hui Land, Haena, Halelea,Kauai
SCALE OF DRAWINGS ACCORDING TO DIMENSIONS
ED & JOAN BENDOR
PROFILE SECTIONS

750 GALLON	
6' WIDE	
5'4" HIGH	
7'10" LONG	
INLET 4'9" OFF BOTTOM	

BOYD TANKS CO.
PERRIS, CA. 92570
(714) 657-6966

6' WIDE	
5'4" HIGH	
9'8" LONG	
INLET 4'9" OFF BOTTOM	

909 657 6966



BAFFLE MAY NOT BE REQUIRED IN SOME AREAS

1250 GALLON	1500 GALLON	2000 GALLON
6' WIDE	6' WIDE	6' WIDE
5'4" HIGH	5'4" HIGH	5'4" HIGH
11'7" LONG	13'4" LONG	17'1" LONG
INLET 4'9" OFF BOTTOM	INLET 4'9" OFF BOTTOM	INLET 4'9" OFF B

PTIC TANK CONSTRUCTION NO...

SEPTIC TANK: UPC approved, 1250 Gallon Capacity by Boyd Tanks Co. or equivalent

INSTALLATION INSTRUCTIONS FOR COMPLETE BURIAL TANKS

1. Inspect tank for damage

2. Site Requirements
   - Position tank where it will not be driven over.

3. Excavation Requirements
   - Top of tank to be 12"-24" below ground level,
   - Dig hole from side to side to prevent bridging, and make wide and long enough to allow manual compaction of backfill.
   - Hole to be level, firm, uniform and free of rocks, roots or hard objects. If rock or other undesirable protruding obstructions are encountered, the bottom of the hole shall be excavated an additional six inches and backfilled with sand, or gravel to the proper grade.
   - Remove any water from hole and backfill with sand or 1/2" diameter or smaller gravel if too hole is to deep.

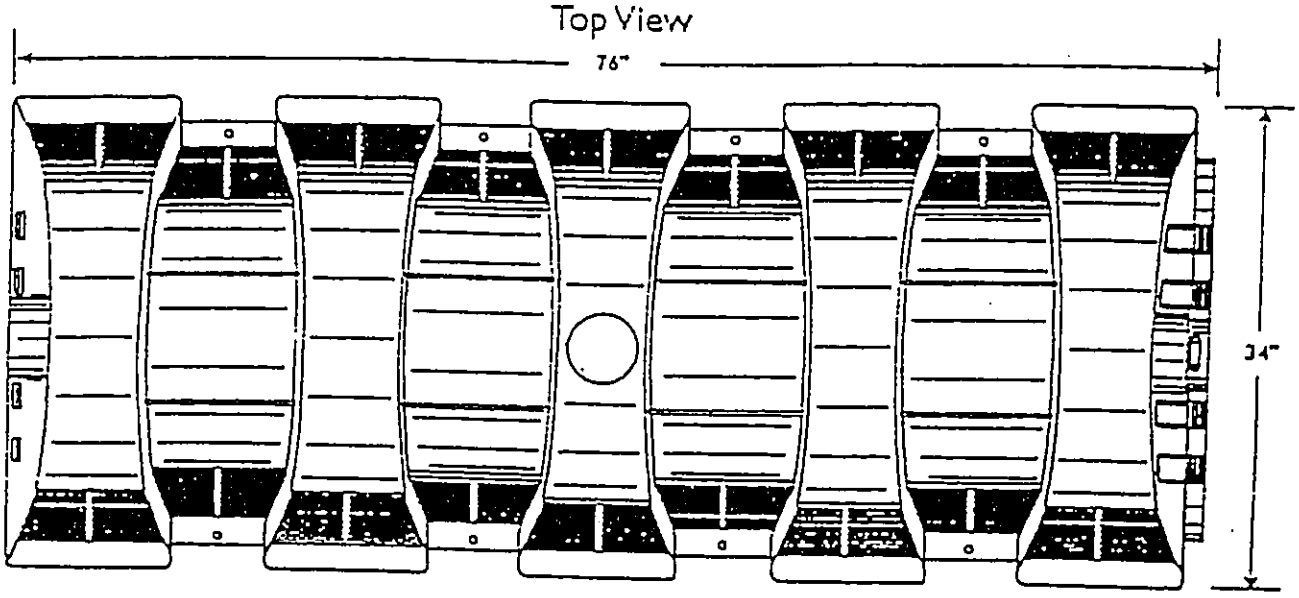
4. Tank Placement
   - Straps to be attached to mid-line handholds, or around outside of the tank. Do not lift through outlet or inlet. Level tank.

5. Backfill Requirements
   - Backfill must be free of large or sharp rocks, sticks, large clods or other damaging objects.
   - With tank in place backfill 1 foot.
   - Important: Compact by hand or foot under the tank haunches.
   - Washing in fill should not be used unless accompanied by hand or foot compaction.
   - As backfill progresses, fill tank with water no more than 12" higher than level of backfill. Heavy clay to be avoided. Granular material to be no larger than 1 1/4" rock or 3/4" gravel.
   - Install manhole risers or inspection ports before backfill reaches top of tank.
   - Dirt layers placed with a backhoe or similar equipment should be 12" max. Hand compact around inlet and outlet.
   - Use of cinder or course granular material is not recommended as a cover material over septic tanks due to possible odor problems.

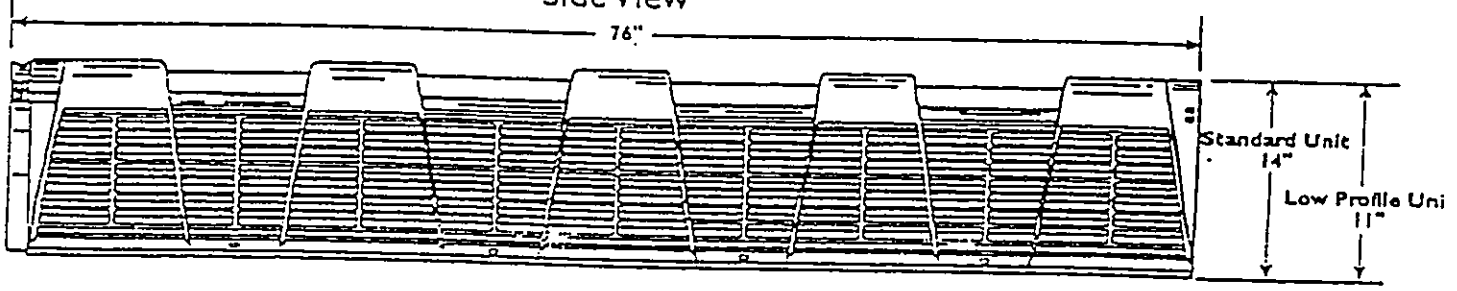
6. Final Requirements
   - If manhole covers are to be at finished grade they are to be locked to prevent unwanted entry.
   - Septic tanks shall have 6 inch inspection ports brought to grade for the purpose of inspecting septic tank contents.

Bio Diffuser™ Specification Sheet

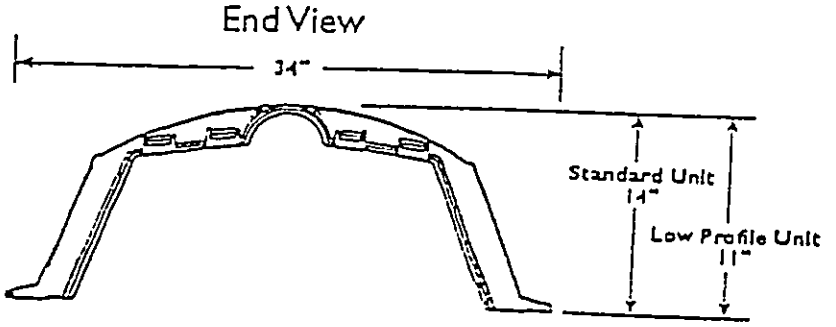
Top View

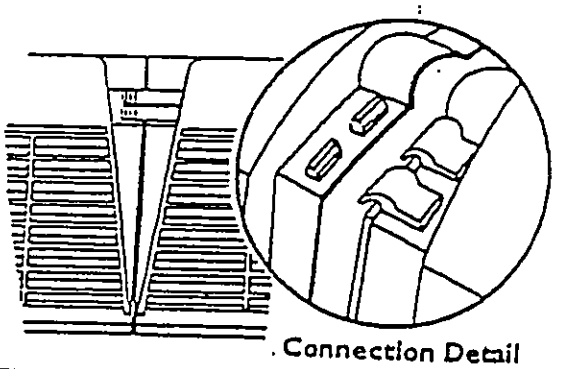


Side View



End View





Connection Detail

Specifications

Original Standard Unit		Low Profile Unit	
Length	76"	Length	76"
Width	34"	Width	34"
Height	14"	Height	11"
Invert	9"	Invert	6.5"

BioDiffusers™ of either size when installed with properly graded and compacted soils, to depths of cover of 12" or 17", withstand H-10 or H-20 load factors respectively. End caps are Universal. Knockouts allow for pipe entry as required.

PSA, Inc.
P.O. Box 307, Topsham, ME 04086
Ph: (207) 729-1628 Fax: (207) 729-8710

ABSORPT. BED DISTRIBUTION BOX CONSTRUCTION NOTES

#1 Absorption Bed distribution lines shall slope at the rate of 2-4 inches per 100 feet.

#2 Bottom of Absorption Bed shall be a minimum of 4' above the Seasonal High Ground Water Level.

#3 The depth of the Absorption Bed shall not exceed 4' unless a deeper depth is first approved by the engineer.

#4 Ends of distribution chambers shall be capped or plugged.

#5 All excavation and backfilling must be done without having the machinery enter into the bed bottom.

#6 Avoid any unnecessary walking on the bottom of the bed and be sure to rake out all footprints before covering.

#7 Filter cloth or equivalent should be used on top of absorption chambers to prevent silt intrusion.

#8 Backfill over the distribution lines shall be compacted and mounded to a minimum of 6 inches.

#9 Absorption field to be placed a minimum distance of 1000 feet away from any potable water source.

DISTRIBUTION BOX CONSTRUCTION NOTES

!!(Very Important) Distribution box shall be absolutely leveled and tested with water to insure equal distribution of effluent!!

Backfill around Distribution boxes should be hand compacted.

Distribution boxes shall have inspection ports or markers brought to grade.

GENERAL CONSTRUCTION NO.

#1 Locate and backfill existing cesspool/s.

#2 All bends in the waste line 90° or greater (before septic tank) shall be provided with proper cleanout to grade (COTG).

#3 Horizontal drainage pipe to the treatment tank shall be sloped one-fourth (1/4) inch per foot and maximum of 40 feet in length unless approved by engineer.

#4 Final elevation of the septic tank, distribution box and absorption field will be determined by the contractor based on the elevation of the drain line from the building and the minimum drain line slopes shown on these drawings.

#5 All the work covered under this plan shall conform to the local plumbing codes, Uniform Plumbing Codes, and Department of Health regulations, State of Hawaii.

#6 Installation of this IWS must be accomplished by a licensed contractor who is experienced in the field and thoroughly familiar with the construction requirements.

#7 All work must be inspected by the design engineer or his authorized representative prior to backfilling. Re-exposure of the wastewater system will be required if no final inspection is made by the engineer prior to backfilling.

#8 The contractor and/or homeowner must notify the IWS engineer of any changes made to the approved plan and shall obtain his or her approval before proceeding with the changes..

#9 The contractor shall provide effective measures for the control of fugitive dust emissions from the project and surrounding areas caused by his operations. The contractor shall conduct all operations so that excavation, embankment, and imported material shall be dampened during the grading operation to prevent dust problems. These measures shall meet the requirements of State Administrative Rules, Department of Health, Air Pollution Control (11-60 & 11-58).

#10 DOH regulations require all new plumbing fixtures used for this project to be water saver type, not exceeding the following water usage criteria. All existing plumbing fixtures shall be retrofitted to meet the water flow criteria.

Kitchen faucet----------2.5 Gal/min.
Lavatory faucet----------1.5 Gal/min.
Showerhead----------2.5 Gal/min.
Water Closet----------1.6 Gal/min.

#11 The following information is provided for the convenience of the contractor: Design Engineer Phone: 828-2000 Department of Health, Environmental Health Branch, Phone: (808)-586-4294

#12 Approved backfill material includes Sandy Loam, Sand, Pea Gravel or Crusher Screenings S4C. Material used for backfill shall contain no stone, rock, concrete or other material larger than 3 inches. No vegetable matter or "Adobe" clay shall be permitted.

#13 Backfill material around the septic tank and other structures shall be compacted in 12 inch (maximum) lifts to 90% compaction., water jetting will be permitted only in sandy soils with approval of the engineer.

#14 The minimum cover over the septic tank and distribution box shall be 8 inches. Minimum cover over the absorption field shall be 12 inches. Cover material shall be a suitable material such as a Sandy Clay Loam or similar soil. Course material such a Cinder or gravel is not recommended due to possible odor problems.

#15 The contractor shall verify the locations and invert of all existing underground facilities before commencing the work. Any discrepancies discovered between the field conditions and the drawings shall be immediately brought to the attention of the design engineer. All existing utilities, whether or not shown on the plans, shall be protected and any damage to them shall be repaired and paid for by the contractor. Personal injury resulting from contact with the existing utilities shall be payable by the contractor.

#16 The contractor shall provide, install and maintain all barricades and safety devices and take all necessary precautions for the protection of the work and the convenience and safety of the public.

OPERATION & MAINTENANCE MANUAL

GENERAL

Avoid flushing objects that will not biodegrade or that will cause a blockage in the system.

MONITORING

A routine check shall be performed once per year on each septic tank and system. Septic tank gases are both NOXIOUS AND POTENTIALLY EXPLOSIVE! Due to the presence of possibly lethal gases in a septic tank, all monitoring should be done from the ground surface and ONLY after the tank has been opened and allowed to vent. ENTERING A SEPTIC TANK OR ANY SEWER MANHOLE CAN CAUSE IMMEDIATE DEATH!

REMOVE MANHOLE COVER

Without damaging the tank, locate the manhole cover. Next, a narrow trench should be dug around the edge of the manhole rim at least 2-3 inches deep to prevent dirt and debris from falling into the tank.

INSPECT CONNECTIONS

Inspect all connections to make sure they are secure and have not changed from the original specifications.

INSPECT LIQUID LEVELS

Measure from the manhole rim to make sure the liquid level is being maintained at the specified level.

MEASURE SCUM DEPTH

The Manual of Septic Tank Practice recommends measuring the scum material by using a stick with a device on the end of it that will catch on the underside of the material.

MEASURE SLUDGE DEPTH

A long stick wrapped with a rough white towel or a tube type sampler can be used to determine the sludge depth. Either unit can be pushed down the inspection hole until it rests on the bottom of the tank. It will probably be impossible to determine the sludge level by feel. However, by leaving the unit in place for several minutes and pulling it out very slowly, it should be possible to determine the sludge accumulation depth.

PUMPING SEPTIC TANK

After a certain period of time, it will be necessary to removed the sludge and scum from the septic tank. The septic tank must be pumped when the sludge layer is no more than 12"-16" thick, or the scum layer is no more than 4"-6" thick.

Septage pumping should never be scheduled during any excessively wet period of time and should always be avoided, if possible, when the water table is within 3' from the ground surface. DO NOT pump the tank to a level lower than the adjacent ground water. Pumping the tank when the water table is high puts additional stress on the tank, which should be avoided.

The tank must be pumped out through the manholes. A small amount of sludge should be left in the tank for seeding purposed. Once the tank is pumped, the interior connections should be inspected as well as the general integrity of the tank. DO NOT ENTER THE TANK FOR ANY REASON! The tank should always be filled with water up to its normal liquid level immediately after each pump-out.

Family size, diet, garbage disposal use, washing machine use, and various other factors all have an effect on sludge and scum accumulation. Due to the vast differences in accumulation rates, no set pumping schedule can be recommended. Yearly monitoring, accurate record keeping, and pumping as required are the best way to keep a septic system operating at its optimum.

DISPOSAL OF PUMPED SLUDGE

The pumped sludge shall be disposed of by an authorized service company possessing proper County and State licenses, permits and authorizations.

REPLACE MANHOLE COVER

After refilling the tank with water to the normal liquid level, replace the manhole cover securely over the top of the tank. Place and gently tamp the soil around the edge of the manhole rim. Then cover the manhole cover with sand fill up to the ground level.

Owner: [signature] Date: 7-26-01

Owner: ED BENDOR Date: _____

Location of System: TMK: 4)5-9-05:20
HANA HWY LAND, HANA, KAUAI

Date System Was Installed: _____

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

Subject: Individual Wastewater System for ED BENDOR

TMK: _____

Mailing Address: PO 526

HANALEI, HI 96714

I, ED BENDOR, hereby certify that I am the owner(s) of the subject property and that I have read the following and shall comply with all provisions. Failure to comply with any or all of the provisions can lead to imposition of the penalties and remedies as provided for in Administrative Rule, Title 11, Chapter 62, Section 11-62-42, Penalties and [illegible]

1. I certify that as the owner of the Individual Wastewater System (IWS) serving the subject property, the IWS will be inspected, operated and maintained in accordance with the operation and maintenance manual developed by my IWS design engineer (§ 11-62-31.1(e)(2).

   Furthermore, if an aerobic unit is utilized for wastewater treatment, an active service contract for the proper operation and maintenance shall be maintained at all times (§ 11-62-33.1(b)(3).

2. I understand and shall comply with the provision of § 11-62-08(g) which requires that the IWS be constructed by a licensed contractor.

   Furthermore, the licensed contractor information form shall be completed and submitted to the Department prior to final inspection.

3. I understand and shall comply with the provisions of § 11-62-31.1(f) which states that the IWS must be inspected and approved of by the Department prior to use.

[illegible] Revised 1/94

Furthermore, I shall instruct and require my contractor to leave uncovered for inspection, various parts of the IWS system. These parts include manholes/access openings, distribution boxes, ends of trenches to visually see gravel, pipe and geotextile fabrics used and/or seepage pit openings. I understand that I will be required to re-expose these areas if at the time of inspection they are not visible.

4. I understand and shall comply with the provisions of § 11-62-31.1(e)(2) which requires me to certify upon sale or transfer of the subject property, that the appropriate transfer or sales documents and provisions shall bind the new owners to the operation and maintenance provisions referenced in item 1 above.

5. I understand and shall submit any and all changes made to my IWS plans to the Department (§ 11-62-08(o) for review and approval. Changes to the approved IWS plans that need to be submitted to the Department include but are not limited to the following - changes in location of any component of the wastewater system, changes in the type of products used, changes in the disposal system methods, changes in the dwellings/buildings location or size and changes in the design engineer for the IWS.

Dated: 5-9-01

Certification Form revised 1/94

Page 2 of 2

EXHIBIT H

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION
P.O. BOX 621
HONOLULU, HAWAII 96809

AQUACULTURE DEVELOPMENT PROGRAM
AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
CONSERVATION AND RESOURCES ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
LAND DIVISION
STATE PARKS
WATER RESOURCE MANAGEMENT

Ref.:PB:THE

JUN 24 1999

File: Cor99.196
CDUA KA-2098

Mr. Michael R. Schmidt
Bali Hai Realty
P.O. Box 930
Hanalei, Kauai 96714

Dear Mr. Schmidt,

SUBJECT: Inquiry regarding TMK Parcel (4)5-9-5:20, Haena Hui, Kauai

We received your correspondence regarding the desire of the property owner to sell the subject parcel. We understand he is requesting clarification of the ability of prospective buyers to construct a single family residence on the vacant lot, and we have the following comments.

In 1988, the Board of Land and Natural Resources (BLNR) approved Conservation District Use Permit (CDUP) No. KA-2098 for single family residential use of the parcel. However, since no residence was constructed within the time frame stipulated in the CDUP, that approval is now considered null and void. A new application would have to be submitted and approved prior to any single family residential use of the parcel.

The previous permit application was filed, analyzed, and approved under the provisions of a BLNR policy regarding the conditional single family residential use of court-divided and/or approved house lots within the Limited subzone of the Conservation District. The subject Lot No. 42 was categorized as a "Good House Lot on Road" in accordance with Exhibit "C" of Civil No. 30 approved by the Fifth Circuit Court on October 20, 1967.

While the rules that govern the Conservation District have been amended since 1988, the referenced BLNR policy has not, and thus may provide some guidance on the BLNR's consideration of a new application for single family residential use of the parcel. The current rules (Chapter 13-5, Hawaii Administrative Rules), enacted in 1994, contain Single Family Residential Standards that would apply to the proposed use of the parcel. Please examine

Exhibit 4 of the enclosed copy of the rules to ascertain the setback, height, maximum developable area, and other limitations that would be applicable to any proposed residential use of the parcel.

Information related the previous application, such as archaeological reports, might be relevant to future applications, depending on how relevant the old information is to the proposed land use. Our files, however, do not include any copies of the referenced 1990 archaeological survey.

Please contact Tom Eisen of our Planning Branch at (808) 587-0439 should you have any questions regarding this matter.

Sincerely,

DEAN Y. UCHIDA, Administrator
Land Division

Enclosures

cc: Kauai Board member
KDLO

EXHIBIT I

STATE OF HAWAI'I
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION
P.O. BOX 621
HONOLULU, HAWAII 96809

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
CONSERVATION AND
RESOURCES ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
LAND DIVISION
STATE PARKS
WATER RESOURCE MANAGEMENT

REF:PB:SL

FILE NO.: CDUA KA-3084B

APR 2 2002

Mr. Edi Bendor
P.O. Box 526
Hanalei, Hawaii 96714

Dear Mr. Bendor

Subject: Conservation District Use Application (CDUA) KA-3084B, for the Bendor Single Family Residence at Haena, Kauai (5-9-5:20)

This is to notify you that the Department is unable to accept your application for processing. Upon review, we find that that application is incomplete.

Conservation District Use Application (CDUA) form

Please submit documentation that you are the owner of the subject property. Please address items III through XVI in the CDUA form (attached).

Environmental Assessment

The environmental assessment EA included in your application is inadequate. We have enclosed copy of a draft environmental assessment from a previous case to provide you with guidance in the preparation of EAs.

Shoreline Conditions

Studies show that nearly 25 percent of sandy beaches (17 miles) on the island of Oahu have been severely narrowed or lost over the past 70 years due to shoreline armoring. On the island of Maui, nearly 30 percent (9 miles) of the shoreline has experienced beach loss or significant narrowing. The Island of Kauai has not been extensively studied for beach loss or erosion rates. However, some areas in Haena are experiencing significant erosion problems. Several of the properties to the

immediate west have experienced severe erosion problems. The owners have been forced to take emergency measures (temporary sea bags) to prevent the loss of their residences. Thus, it is our belief that this area of the shoreline is highly unstable.

Since it would be imprudent to construct a single-family residence within an area that could be subject to significant erosion hazards, we suggest that you site any future residence on the property as far back from the shoreline as feasible. We do not recommend the placement of a permanent structure on the primary sand dune, as this dune is a potential source of sand for the public beach. During high wave events, the sea may borrow sand from the dune. Structures on the dune will interfere with natural beach processes, which could result in beach narrowing. In addition, any structures on the dune could be destroyed during high wave events. When living in areas subject to erosion hazards, one needs to plan and accommodate erosion hazards to avoid future problems.

Alternatively, you may wish to determine an appropriate setback scientifically. A commonly adopted formula for calculating shoreline setbacks is to calculate the projected erosion rate, multiplied by the life of the residence (60-70 years), with a buffer of perhaps 20-40 feet. A FEMA contracted report by the Heinz Center, entitled Evaluation of Coastal Hazards Study (2000) which studies residential construction in coastal areas uses the figure of 70 years as the life of a building. According to a Federal Insurance Administration funded report for the National Association of Homebuilders (1978), the average life of a shoreline structure varies depending on weather conditions, between 50 and 70 years.

In addition, please include the following information in your revised application:

1. You must seek out and forward copies of your application and draft environmental assessment to interested community groups, including practitioners of traditional and customary practices in the area. In the project's final draft EA, document all consultation with the community regarding the proposed project;

2. The identity and scope of "valued cultural, historical and natural resources" in the area, including the extent to which traditional and customary native Hawaiian rights are exercised in the area;

3. The extent to which those resources, including traditional and customary native Hawaiian rights, will be affected or impaired by the proposed action;

4. The feasible action, if any, to be taken by the Board of Land and Natural Resources in regards to your application to reasonably protect native Hawaiian rights if they exist;

The Land Division is dedicated to protecting Hawaii's natural shoreline and its beaches. 25 percent of Oahu's beaches have been either lost or severely narrowed due to shoreline armoring (Fletcher, C.H., Mullane, R.A. Beach loss along armored shorelines of Hawaii, 1997). Much of this armoring would not have been necessary if structures were placed farther back from the shoreline.

We encourage you to consider these matters and to make any necessary adjustments to your house plans to avoid long-term erosion hazards. This information should all be incorporated into the draft EA.

If there are any questions regarding this matter, please contact Sam Lemmo of our Land Division Planning Branch at 587-0381. We are also returning your application materials and fee.

Attachments

Sincerely,

Dierdre S. Mamiya, Administrator
Land Division

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

EXHIBIT J

2996

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
CONSERVATION AND
RESOURCES ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
LAND DIVISION
STATE PARKS
WATER RESOURCE MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION
P.O. BOX 621
HONOLULU, HAWAII 96809

August 2, 2002

File: KA-162WAGNERRSSMAP
L-657

LD-NAV

Wagner Engineering Services, Inc.
Ronald J. Wagner, LPLS
Box 851
Hanalei, Hawaii 96714

Dear: Mr. Wagner:

Subject: Shoreline Certification - Release of Shoreline Survey Map(s)

Applicant:	Wagner Engineering Services, Inc..
Owner:	Ed and Joan Ben-Dor
Address:	Kuhio Highway
Location:	Island: Kauai - District: Haena, Halelea - TMK: 4th/ 5-9-5:20
Shoreline:	May 9, 2002
Map:	Dated May 13, 2002

This letter informs you that the above shoreline survey maps have been certified. Please be aware that in the past these maps were withheld until the end of the 20-day appeal period. The Department of the Attorney General recently advised us that, while perhaps well intentioned, withholding the maps had the effect of imposing an automatic stay on the release of the maps and was not consistent with the intent of the public records law or with the shoreline certification rules.

Enclosed for your records are seven (7) certified shoreline survey maps covering the subject property. However, please be advised that pursuant to Section 13-222-26, Hawaii Administrative Rules, this certification is **subject to appeal** which may possibly include a contested case hearing. Public notice of this shoreline certification is scheduled for publication in the **August 8, 2002** Environmental Notice.

You will be notified whether an appeal or request for a contested case hearing to the shoreline certification has been filed during the appeal period, which ends on **August 28, 2002**. If no appeal has been filed during the 20-day period, then the certification is final. If, however, an appeal is filed, then the certification would be subject to the resolution of the contested case hearing.

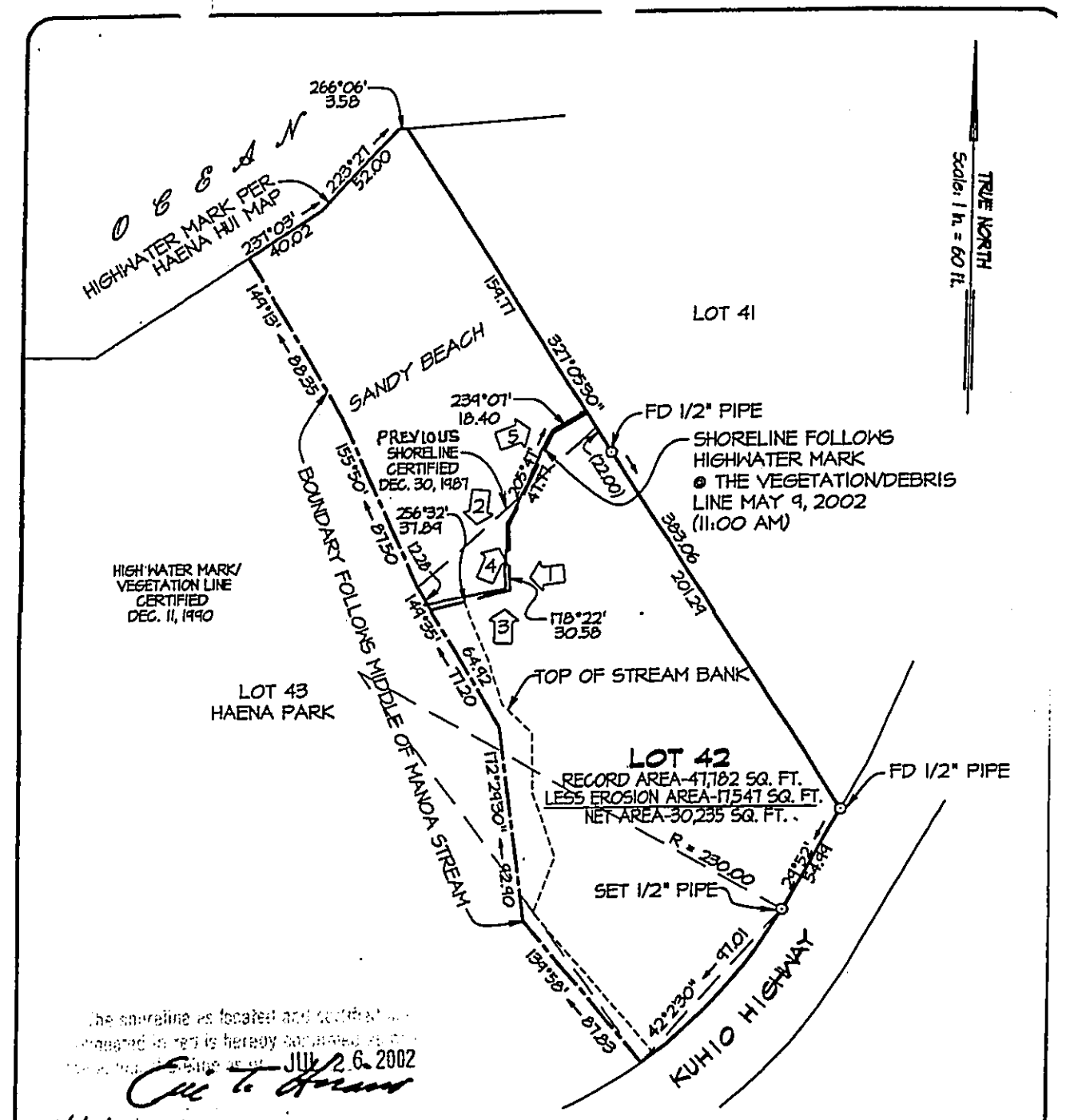
Should you have any questions on this matter, please feel free to contact Nicholas A. Vaccaro of the Land Division Support Services Branch at (808) 587-0384.

Very truly yours,

Madeline E. Unoki

for DIERDRE S. MAMIYA
Administrator

C: District Land Branch (w/attach)
Survey Division (w/attach)



The shoreline as located and depicted hereon is hereby accepted as true.

JUL 26 2002

for

PREPARED FOR:
ED & JOAN BEN-DOR
C/O LORNA NISHIMITZU etal.
WALTON HONG, ATTORNEY
3135 AKAHI STREET
LIHUE, KAUAI, HI 96766

MAY 13, 2002

NOTE:
1. FEATURES SHOWN HEREON REPRESENT CONDITIONS EXISTING ON MAY 9, 2002
2. [3] DENOTES POSITION AND NUMBER OF PHOTO TAKEN

SHORELINE CERTIFICATION MAP OF LOT 42

HAENA HUI LANDS
R.P. 3596, L.C. Aw. 10613, AP 6
to A. PAKI
AT HAENA, HALELEA, KAUAI, HAWAII

60 0 60
Graphic Scale in Feet

RONALD J. WAGNER
LICENSED PROFESSIONAL LAND SURVEYOR
No. 5074
HAWAII, USA

THIS MAP WAS PREPARED BY ME OR UNDER MY SUPERVISION

RONALD J. WAGNER
Licensed Professional Land Surveyor
Certificate No. 5074

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

Tax Map Key: (4) 5-9-05:20

Project No. 2996

EXHIBIT K

SHORELINE CHANGE ANALYSIS
VICINITY OF LOT 42, HAENA HUI LANDS
HAENA, HALELEA, KAUAI, HAWAII

Sea Engineering, Inc.
March 19, 2003

Introduction

The objective of this study is to evaluate the history of shoreline change in the vicinity of Lot 42 at Haena Hui Lands, located in Haena on the north coast of the island of Kauai. The shoreline changes have been assessed by comparing historical aerial photographs. A further objective is to estimate the 30-year future shoreline position based on the historical data. The shoreline is defined as the vegetation line in this study. The vegetation line was used to reference the shoreline position because it is easily recognizable on aerial photographs, and it best represents long term change, rather than short term or seasonal fluctuations. It is also a commonly used reference position for current shoreline setback determinations. Four vertical aerial photographs were used in the analysis, spanning a 27-year period from 1975 to 2002 at approximately 10-year intervals. An earlier 1963 photograph was also evaluated for use, however the quality and clarity of the photo were not adequate for the analysis. Glare and reflection from the water and beach rendered accurate identification of shoreline features and the vegetation line impossible.

Methodology

The vertical aerial photos were analyzed to determine changes in the location of the vegetation line. Changes in the beach toe line were not determined, due to poor beach toe resolution on the aerial photos as a result of nearshore wave action or light reflection on the water surface along the beach. The photographs were enlarged to an approximate scale of 1 inch = 200 feet, and then the vegetation line and common shoreline features were digitized for input to a computer model. The photo information was then corrected for distortion and scale irregularities, and put into a common coordinate system, using a computer program previously developed for the study *Aerial Photograph Analysis of Coastal Erosion on the Islands of Kauai, Molokai, Lanai, Maui and Hawaii* (Makai Ocean Engineering, Inc. and Sea Engineering, Inc., 1991) prepared for the State of Hawaii, Office of State Planning, Coastal Zone Management Program.

Each photograph has several reference points in common that were used to overlay the data from each onto a base map in a common coordinate system (Hawaiian Plane coordinate system, Zone 4). The base map reference points were based on two existing photogrammetric maps (1 inch=200 feet) - U. S. Army Corps of Engineers, Flood Insurance Studies, Island of Kauai, Haena, drawing number 15-05-01 (1977); and Aerial Photogrammetric Mapping of Haena, Island of Kauai, State of Hawaii (1995).

The average annual rate of shoreline change from 1975 to 2002 was calculated at five shoreline transects spaced approximately 200 feet to 300 feet apart along the study area shoreline. The average shoreline-change rate was then used to estimate the shoreline position in the year 2032 (30-years from the date of the last photo used). The standard deviation associated with this estimate was calculated using a probabilistic Markov model. The standard deviation is a representation of how dynamic the shoreline is. A large standard deviation relative to the predicted shoreline change indicates that the beach is dynamic with large fluctuations in shoreline position being possible.

Results

The vegetation line positions derived from the four representative aerial photos are plotted on Figure 1 to show the general plan-view trends in movement of the vegetation line since 1975. The 1975 vegetation line is the reference datum, or zero position, and changes (erosion or accretion) for each photograph year are measured from this point. The position of the vegetation line from each photo, relative to the position in 1975, is calculated along five transect lines positioned along the shore. Figure 1 and Table 1 summarize shoreline changes at the transects, a positive value indicates accretion and a negative value indicates erosion relative to the reference 1975 shoreline.

The shoreline changes at Transects 1 to 5 are also presented on Figure 2. Two severe storms, Hurricanes Iwa (November, 1982) and Iniki (September, 1992), have struck the island of Kauai during the study period, but the historical photographs indicate little impact of the two hurricanes on the study area shoreline. The shoreline positions noted on a 1987 certified shoreline survey and a 2002 lot survey shoreline at Transect 3, which is located within Lot 42, are also shown on Figure 2 to compare this information with the shoreline positions determined from the photo analysis. The surveyed shoreline positions and the aerial photograph analysis are reasonably consistent. It should be noted that the 1987 certified shoreline was represented by a single straight line, which presumably represented an average vegetation position. Thus, some deviation between the actual vegetation line derived from the aerial photos and the "average" vegetation line represented by the survey can be expected at any specific point along the line. The 1992 surveyed vegetation line on the other hand is irregular, and presumably follows more closely along the actual vegetation.

The data shows that between 1975 and 2002, the vegetation line moved landward (eroded) 26 feet at Transect 1, moved seaward (accreted) 24 feet at Transect 2, eroded 9 feet at Transect 3 (Lot 42), accreted 24 feet at Transect 4, and accreted 34 feet at Transect 5. This translates to average annual accretion (+) or erosion (-) rates of -0.97, +0.90, -0.30, +0.90 and +1.27 feet/year at Transects 1, 2, 3, 4 and 5, respectively. The data also indicates that the shoreline has been changed gradually, without periods of severe erosion associated with a severe storm (for example Hurricanes Iwa and Iniki). At Transect 3 (Lot 42) the shoreline was in a trend of accretion between 1975 and 1992, and then has been eroding for the past 10 years from 1992 to 2002. The shoreline certified in 1987 for Lot 42 generally agrees with the average vegetation line location surveyed across the

property in 2002, indicating that the property shoreline has been generally stable during the 15-year period between 1987 and 2002.

Conclusions

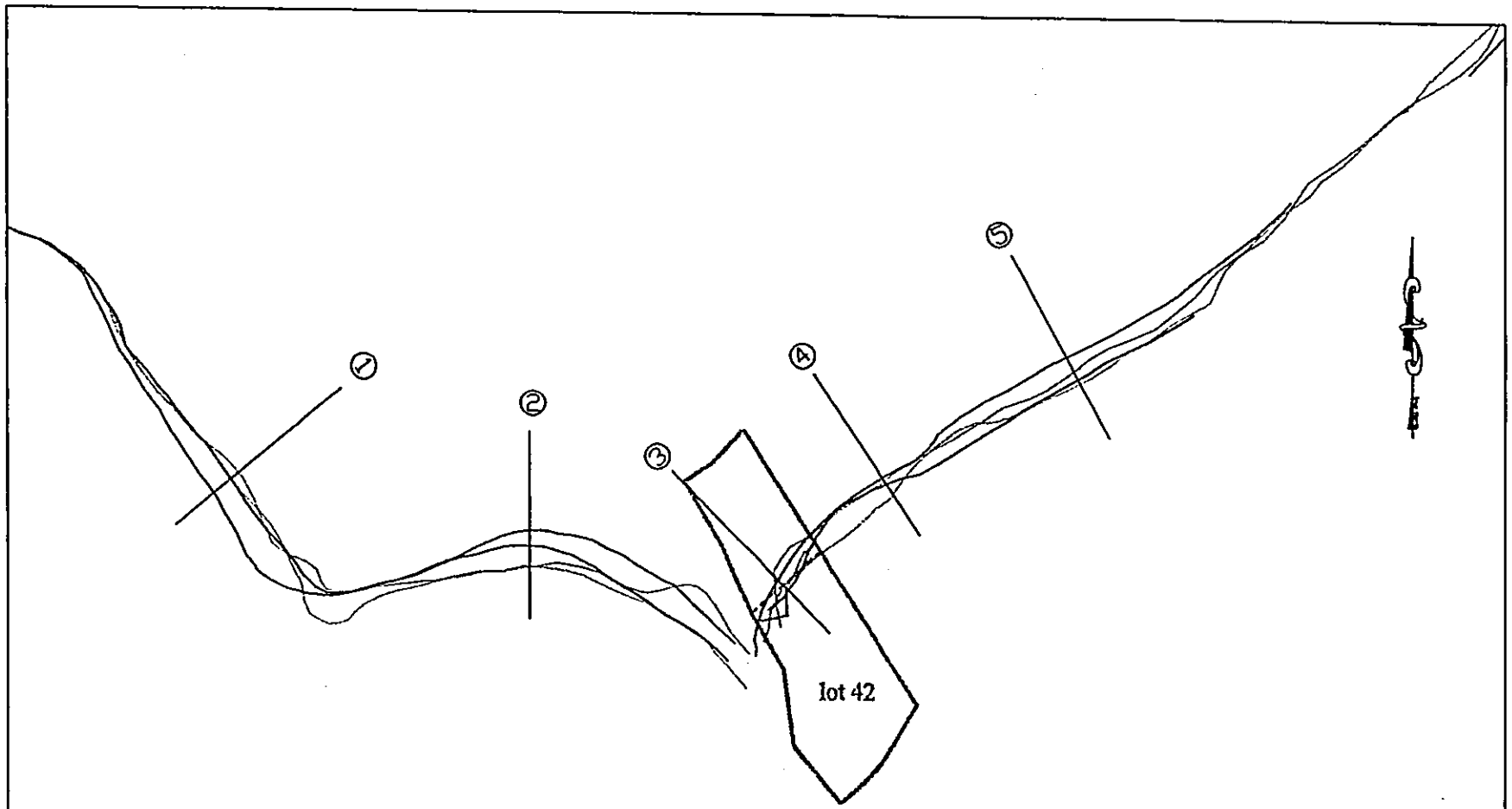
Assuming the average erosion rate between 1975 and 2002 of -0.30 feet per year continues into the future, the vegetation line at Lot 42 (Transect 3) is predicted to move landward (erode) about -9 feet by the year 2032. The shoreline to either side of Lot 42, however, is predicted to move significantly seaward (accrete) by +27 feet. It must be noted, however, that the standard deviation of these predictions is relatively large, thus there could be significant variability in the future shoreline position.

There are several physical characteristics of the study area shoreline that likely contribute to the somewhat variable and dynamic character of the shoreline. Lot 42 lies at the center of a broad, shallow coastal embayment, which faces due north. The coast is exposed to the prevailing northeast tradewinds and tradewind generated seas, as well as large winter season North Pacific swell. Thus, seasonal variability in the beach fronting the shoreline can be expected due to variations in longshore transport of sand as a result of varying wave energy levels and approach directions. The western boundary of Lot 42 follows the middle of Manoa Stream, and the stream mouth is located immediately adjacent to the property. The aerial photographs do not show a discernable impact or effect of the stream mouth on the shoreline, in fact the photos show that the sand beach typically plugs the stream mouth. It is likely, however, that at least some short term impact to the shore fronting Lot 42 occurs during periods of heavy stream flow and when the stream breaches the sand beach at its mouth.

In summary, the aerial photograph analysis indicates that the shoreline in the vicinity of Lot 42 is relatively stable, and has shown no dramatic changes in the vegetation line position since 1975. The vegetation line fronting Lot 42 has had both accretion and erosion periods over the past 27 years, with the most recent (past 10 years) trend being a recession of the vegetation line. The average annual vegetation line change over the 27-year study period has been a recession of –0.30 feet per year. Assuming this rate of change continues, the vegetation line is predicted to recede an additional 9 feet over the next 30 years.

TABLE 1. VEGETATION LINE CHANGE IN FEET RELATIVE TO THE 1975 POSITION IN THE VICINITY OF LOT 42, HAENA HUI LAND, HAENA, KAUAI

Date	Transect Number					Notes
	1	2	3 (Lot 42)	4	5	
Photos						
04/10/75	0	0	0	0	0	
01/03/83	12	-1	16	19	16	
11/04/92	0	43	10	15	5	Iwa (Nov/82)
02/03/02	-26	24	-8	24	34	Iniki (Sep/92)
Ave. Rate ft/yr (1963-2002)	-0.97	+0.90	-0.30	+0.90	+1.27	Accretion: (+) Erosion : (-)
2032 Estimate (Relative to 2002)	-29	+27	-9	+27	+38	
Standard Dev.	14	22	13	9	15	
Surveys						
12/30/87	n/a	n/a	1	n/a	n/a	
05/09/02	n/a	n/a	-5	n/a	n/a	



VEGETATION LINE CHANGES (FT)
RELATIVE TO 1950-VEGETATION LINE

PHOTOS	①	②	③	④	⑤
04-10-1975	0	0	0	0	0
01-03-1983	12	-1	16	19	16
11-04-1992	0	43	10	15	5
02-03-2002	-26	24	-8	24	34
Ave. Rate (ft/yr)	-0.974	0.899	-0.300	0.899	1.273
2032 Estimate (Relative to 2002)	-29	27	-9	27	38
Standard Dev.	14	22	13	9	15

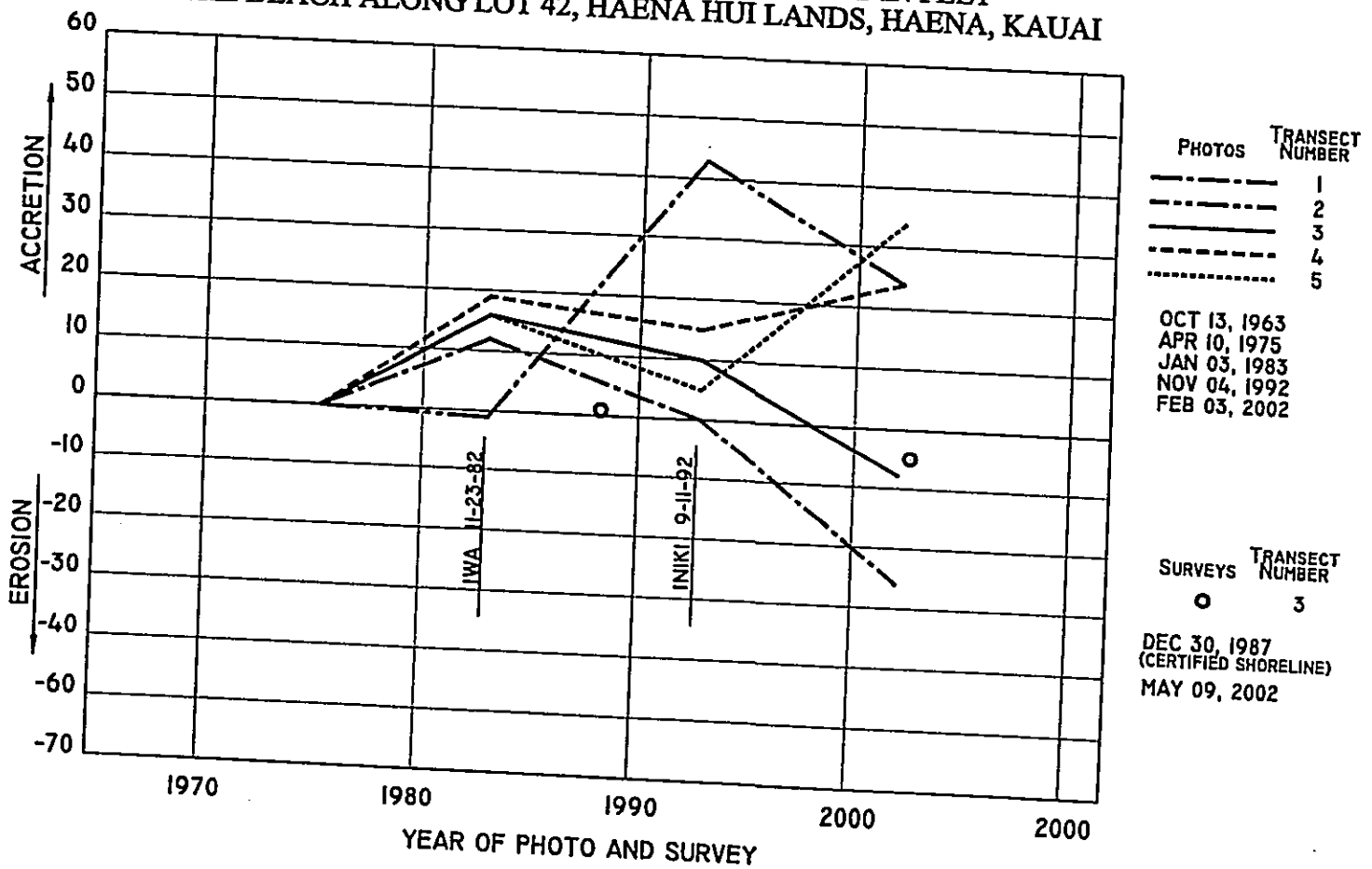
FIGURE 1
VEGETATION LINES
AT BEACH ALONG LOT 42
HAENA HUI LANDS, HAENA, KAUAI

March 6, 2003
SEA ENGINEERING, INC.

0 50 100
SCALE IN FEET

FIGURE 2

HORIZONTAL VEGETATION LINE CHANGES IN FEET
AT THE BEACH ALONG LOT 42, HAENA HUI LANDS, HAENA, KAUAI



Sea Engineering, Inc.
Makai Research Pier
41-202 Kalaniana`ole Hwy.
Waimanalo, HI 96795-1820
Phone: (808) 259-7966 / FAX: (808) 259-8143
E-mail: scotts@seaengineering.com
http://www.seaengineering.com

MEMORANDUM

DATE: April 21, 2003
TO: Roy A. Vitousek III
CADES SCHUTTE
FROM: Scott Sullivan
PROJECT: Ben-Dor Property at Haena, Kauai (TMK (4) 5-9-05:20)
SUBJECT: Shoreline Setback Distance

This memo addresses the determination of an appropriate shoreline setback distance for the Ben-Dor property at Haena, Kauai, and supplements the information contained in our report Shoreline Change Analysis, Vicinity of Lot 42, Haena Hui Lands, Haena, Halelea, Kauai, Hawaii (Sea Engineering, Inc., March 19, 2003). Appropriate coastal shoreline setback distances should, where possible, be based on quantitative analysis of the erosion zone. An erosion zone determination methodology is presented in the report Hawaii's Coastal Construction Guidebook: Reducing the Risks of Coastal Hazards by Planning Within the Development Stage Hierarchy (in preparation; Hwang, Dennis J.; prepared for State DLNR, Coastal Lands Program; State DBEDT Office of Planning, CZM Program; Hawaii Sea Grant; and NOAA Pacific Services Center). The guidebook is intended to build on and supplement the Federal Emergency Management Agency's (FEMA) Coastal Construction Manual.

The recommended Erosion Zone in the referenced report is defined as the sum of the following factors:

1. Erosion Trend Risk (erosion rate adjusted for potential errors and sea level rise) – based on the shoreline change analysis for the subject property the predicted 30-year future erosion rate is 0.3 feet per year, and assuming the guideline

suggested plus 20% for calculation error and plus 10% due to sea level rise the adjusted erosion rate would be 0.4 feet per year.

2. Storm Erosion Event – a factor to account for unusual erosion during a severe storm event (the guideline suggests 20 feet).

3. Design Buffer – the minimum setback distance remaining at the end of the structure life (the guideline suggests 20 feet).

Based on the above, the Erosion Zone and recommended shoreline setback distance for a structure life of 50 and 70 years would be:

	Setback Distance (feet)	
	50-Year	70-Year
Erosion Trend Risk	20	28
Storm Erosion Event	20	20
Design Buffer	20	20
	60	68

Based on existing available information and standard coastal engineering methodology, these setback distances would be reasonable for the subject property.

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EXHIBIT L

To Whom It May Concern:

My name is Bruce Stine . I am the lifeguard at Haena Beach Park adjacent to the property of Ed Bendor in Haena, where the Manoa Stream is the boundary between the two. Being employed by the county of Kauai, I have been stationed here since Dec. 17, 2001 and have also surfed and fished in the same area for the last 22 years . With this in mind, I would like to present my observations concerning the Manoa Stream and its impact on Mr. Bendor's property through the seasons . The spring and summer months are uneventful in the respect that high water concerns do not exist due to the lack of rainfall and flooding . In the winter time when we experience our heaviest rainfall and flooding the Manoa Stream has never flooded nor caused any avulsion type activity at Mr. Bendor's property that I have ever seen. There has however, been tremendous aluvionic activity of the beach in front of Mr. Bendor's property throughout the years. And as every winter season is different, the natural occurrence of the sand's removal by the surf and its natural return caused by the wind and ocean currents is arbitrary .

Sincerely,
Bruce Stine

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Mr. Mark L. Soppeland
5-8192C Kuhio Hwy.
Haena, HI 96714

July 26, 2003

Mr. Ed Bendor
Hanalei, Hawaii

Re: Observance of Manoa stream inundation of proposed Haena building site.

Dear Mr. Bendor and whom it may concern,
I have lived on Kuhio Hwy. 7/10ths of a mile west of the proposed building site and the Manoa stream ford in Haena for 16 years. In addition I have taken care of the property directly east of the building site for an additional 2 years. As a result I have a good knowledge of the attributes of said stream, having to approach and cross it multiple times on a daily basis. During the year there are times when the stream floods and ordinary traffic cannot ford the stream going over the highway but because of the size of my vehicle I have been allowed by the police to cross on any number of occasions. There have been other times that I myself have been unable to cross, with the stream rising four feet or more above the lowest point of the road in the middle of the ford. As a result of my responsibility to the property I take care of adjacent to your parcel and because of the close proximity of your lot I have visually inspected both the properties after the flooding has receded. Because of this I can state that I have never seen the Manoa stream rise above it's banks onto your building site.

Sincerely,

Mark L. Soppeland

Comments or questions; contact me at:

Mark L. Soppeland
P.O. Box 596
Kilauea, HI 96754

(808) 826-6183

soppelandinc@aol.com

C:\TEMP\47\bendor manoa.doc

EXHIBIT M

LINDA LINGLE
GOVERNOR OF HAWAII

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

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

ERNEST Y.W. LAU
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

RECEIVED
03 JUL -2 A 10:29

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

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

June 25, 2003

MEMORANDUM

LOG NO: 2003.0958
DOC NO: 0306NM14

TO: Diedre S. Mamiya, Administrator
Land Division

FROM: P. Holly McEldowney, Acting Administrator
State Historic Preservation Division

SUBJECT: **Chapter 6E-42 Historic Preservation Review – KA-3142 CDUA for a Single Family Residence for Edi Ben-Dor**
Haena, Hanalei, Kauai, (TMK: (4) 5-9-005: 020)

Thanks you for the opportunity to review and comment on this application which we received on June 19, 2003. An archaeological inventory survey was conducted in 2001 on the subject property (Osteroff and Kennedy, ACP, 2001). The applicant submitted this report in Appendix G of this application. We reviewed and accepted the report in May 2001. Four backhoe trenches were dug, and no historic sites or burials were found during the survey, but the consultants recommended that on-call archaeological monitoring of future ground disturbing activities be carried out, due to the likelihood that buried cultural layers or burials may be present in the sand deposits of the area. Since the 2001 archaeological survey was carried out, a number of burials have been found in the Haena area. We originally concurred with the consultants' recommendation for "on-call" monitoring during house construction but, given the number of more recent finds, we believe that any archaeological monitoring on the subject parcel should be carried "on-site" during construction rather than "on-call."

Consequently, in order for this project to have "no adverse effect" on significant historic sites, we recommend the following conditions be attached to any approved permit:

1) A qualified archaeologist shall be hired to conduct on-site monitoring during any ground-disturbing work connected with construction of the residence. Prior to starting the monitoring work, an acceptable monitoring plan (scope of work) shall be submitted to the State Historic Preservation Division for review and approval. An archaeological monitoring plan must contain the following eight specifications: (A) The kinds of remains that are anticipated and where in the construction area the remains are likely to be found; (B) How the remains and deposits will be documented; (C) How the expected types of remains will be treated; (D) The archaeologist conducting the monitoring has the authority to halt construction in the immediate area of a find in order to carry out the plan; (E) A coordination meeting between the archaeologist and construction crew is scheduled, so that the construction team is aware of the plan; (F) What laboratory

work will be done on remains that are collected; (G) A schedule for report preparation; and (H) Details concerning the archiving of any collections that are made.

2) If burials are found, a burial treatment plan shall be prepared for inadvertently discovered during the monitoring of the project. In addition, consultation with the appropriate ethnic groups shall be carried out, and the procedures outlined in Chapter 6E-43.6 and HAR 13-300 shall be followed. It is necessary for the burial treatment plan to be prepared after consultation with native Hawaiians, such as the Kaua`i/Ni`ihau Islands Burial Council and the Office of Hawaiian Affairs.

3) A report on the archaeological monitoring and any burial documentation work shall be submitted to the State Historic Preservation Division for review and approval. The report shall include: (A) Detail drawings of burials and deposits to scale. (B) All artifacts shall be sketched and photographed. (C) Analyses of all perishable and datable remains shall be conducted. (D) Stratigraphic profiles shall be drawn and made to scale. (E) All locations of historic sites shall be on an overall map of the project area. (F) Initial significance evaluations shall be included for each historic site found. (G) Documentation on the nature and age of the historic sites shall be done.

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

c. Chair, Kaua`i/Ni`ihau Islands Burial Council
Kana`i Kapeliela, Burial Sites Program
Kaua`i Historic Preservation Review Commission, County of Kauai, Dept of Planning, 4444 Rice St, Suite 473

NM:ak

BRYAN J. BAPTISTE
MAYOR

GARY K. HEU
ADMINISTRATIVE ASSISTANT

COUNTY ENGINEER
TELEPHONE 241-6600

WYNNE M. USHIGOME
DEPUTY COUNTY ENGINEER
TELEPHONE 241-6540

AN EQUAL OPPORTUNITY EMPLOYER
COUNTY OF KAUA'I
DEPARTMENT OF PUBLIC WORKS
4444 RICE STREET
MO'IKEHA BUILDING, SUITE 275
LIHU'E, KAUA'I, HAWAI'I 96766-1340

July 1, 2003

Mr. Dierdre S. Mamiya, Acting Administrator
Department of Land and Natural Resources
Office of Conservation and Coastal Lands
P.O. Box 621
Honolulu, Hawaii 96809

Dear Ms. Mamiya:

SUBJECT: REQUEST FOR COMMENTS CDUA KA-3142D
TMK 5-9-5:20 PW 6.058

We reviewed the subject Conservation District Use Application and offer the following comments in regards to flooding and grading:

A. Flood

1. Based on Panel 30D of the Federal Insurance Rate Map (FIRM) dated October 18, 2002, the subject property is susceptible to flooding. The flood zone is a zone VE with a corresponding base flood elevation of 36 feet above mean sea level (MSL).

2. We can approve a building permit application upon satisfying the following flood requirements:

   a. The building plans need to be designed and stamped by either a structural engineer or an architect duly licensed in the State of Hawaii. The above designer needs to complete a Coastal High Hazard Area Certification.

   b. The bottom of the lowest horizontal framing member of the structure needs to be elevated at or above 36 feet MSL and noted on the building plans.

c. After the lowest horizontal framing member is constructed, an Elevation Certificate needs to be completed by either a surveyor or professional engineer duly licensed in the State of Hawaii and returned to our office.

d. All new replacement water and sanitary sewage systems shall be designed to minimize or eliminate infiltration of floodwaters into the systems and discharged from the system into floodwaters. The on-site waste disposal system shall be located to avoid impairment to the system from floodwaters or contamination of floodwaters during flooding.

e. Our Flood Plain Management Ordinance No. 630, Section 15-1. 5 paragraph (a) (3) (e) (1d) states that " alteration of sand dunes and mangrove stands are prohibited." The County of Kauai interpreted this to mean that any fills within the VE flood zone is prohibited. The building plans need to provide a notation that the wasted excess excavated materials from the footings, grade beams, and sanitary sewage systems shall be disposed of offsite to preserve the existing ground elevations.

f. Spaces below the lowest floor may be enclosed solely for parking of vehicles, building access, or storage; however, enclosures must only be achieved with breakaway walls. No machinery or equipment which services a building such as furnaces, air conditioners, heat pumps, hot water heaters, washers, dryers, elevator lift equipment, electrical junction and circuit breaker boxes, and food freezers are permitted below the base flood elevation.

B. Grading

1. Although excavation for utilities, footings, and grade beams do not require a grading permit if done in conjunction with a valid building permit, the wasted excess excavated materials shall be disposed of off-site to preserve the natural ground elevations. The disposal site will need to be identified; a separate grading permit may be required for the disposal site.

2. Best Management Practices (BMP) for grading, grubbing, and stockpiling that will, to the maximum extent practicable, prevent the discharge of pollutants, including sediments, and other contaminants from the construction site shall be implemented at all times.

Should you have questions, please contact Valentino Reyna of my staff at (808) 241-6619.

Very truly yours,

Wynne M. Ushigome

WYNNE M. USHIGOME
Deputy County Engineer

vr

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

Ref: PB:SL
FILE.:KA-3142B

COMMENTS

For your information, the project site is within Special Flood Hazard Areas (SFHA) designated as Zone VE with base flood elevations ranging between 34-36 feet mean sea level. The National Flood Insurance Program has strict design requirements for development within V Zones. Please refer to Title Code of Federal Regulations for all applicable regulations.

If there are questions regarding the NFIP, please contact the State Coordinator, Mr. Sterling Yong, of the Department of Land and Natural Resources at 587-0248. If there are questions regarding flood ordinances, please contact Mr. Wallace Kudo at 241-6620 of the County of Kauai, Department of Public Works.

Should you have any questions, please call Mr. Andrew Monden of the Planning Branch At 587-0229.

Signed: _____
ERIC T. HIRANO, CHIEF ENGINEER

Date: 7/24/03

N:\WLD\MAKAI\SUZIE\KAUAI\EdiResidenceCDUAKauai28.DOC

LINDA LINGLE
GOVERNOR

GENEVIEVE SALMONSON
DIRECTOR

STATE OF HAWAII
OFFICE OF ENVIRONMENT QUALITY CONTROL
235 SOUTH BERETANIA STREET
SUITE 702
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185
FACSIMILE (808) 586-4186

August 7, 2003

Mr. Peter Young, Chair
Department of Land and Natural Resources
P.O. Box 621
Honolulu, Hawai'i 96809

Dear Mr. Young:

Subject: Draft Environmental Assessment for the Ben Dor Single Family Residence, Kauai (CDUA-3142).

1. Please consult with adjacent neighbors, the County Parks Department, the Department of Health and affected shoreline users.

2. Water from the surrounding area runs through the affected property and then into the ocean and Manoa Stream. Please describe in detail the mitigation measures to prevent pollution of the ocean and stream especially during construction and heavy rains.

3. Please provide a topographic map of the surrounding area that shows the shoreline, stream, beach access, roadways, beach park and adjacent homes.

4. Please provide photographs of the site (to help illustrate visual impacts) taken from Kuhio Highway which is part of the "scenic roadway corridor."

5. Please provide a list of permits (past, present & future) that are required for this project.

Thank you for the opportunity to review the subject document. Should you have any questions, please cal Jeyan Thirugnanam at 586-4185.

Sincerely,

Genevieve Salmonson

Genevieve Salmonson
Director

c: Ben Dor Family
Cades Shutte

cades schutte | a limited liability law partnership

File Copy

August 8, 2003

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

P. Holly McEldowney
Acting Administrator
Department of Land and Natural Resources
State Historic Preservation Division
Kakuhihewa Building, Room 555
601 Kamokila Boulevard
Kapolei, Hawaii 96707

Re: Conservation District Use Permit KA-3142B; Ben-Dor Single Family Home

Dear Ms. McEldowney:

Thank you for your letter regarding our clients' application for a Conservation District Use Permit for the construction of a single-family home and after-the-fact approval of a wastewater treatment system.

The Ben-Dors share your concern with the number of burials recently discovered in the Haena area since the archaeological inventory survey was conducted on the subject property in 2001. As it is their desire that the construction of their residence will not have a significant adverse effect on any historic sites or resources, they have agreed to implement your recommendations as follows:

First, the Ben-Dors will hire an archaeologist to conduct on-site monitoring during any ground distributing work connected with construction of the residence. Prior to the start of the monitoring work a monitoring plan will be submitted to your office for review and approval. The monitoring plan shall address the eight specifications as set forth by your letter.

Second, in the event that burials are inadvertently discovered, the Ben-Dors have agreed, per your recommendations, to develop a burial treatment plan and to submit a report on the archaeological monitoring and burial documentation work to the SHPD for review and approval.

C S

We appreciate the attention you have given this matter. It is our hope that we will continue to work closely together towards the culturally and historically sensitive development of a suitable home for the Ben-Dors. Should you have any questions or further comments, please do not hesitate to contact me.

Very truly yours,

for Roy A. Vitousek III
for
CADES SCHUTTE
A Limited Liability Law Partnership

cc: Ms. Deidre S. Mamiya

cades schutte | (a limited liability law partnership)

File Copy

August 8, 2003

Roy A. Vitousek III
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Mr. Wynne M. Ushigome
Deputy County Engineer
Department of Public Works
County of Kauai
4444 Rice Street
Moikeha Building, Suite 275
Lihue, Kauai, Hawaii 96766-1340

RE: Conservation District Use Application KA-3142B; Ben-Dor Single Family Home

Dear Mr. Ushigome,

Thank you for your letter regarding our clients' application for a Conservation District Use Permit for the construction of a single family home and after-the-fact approval of a wastewater treatment system. We appreciate the careful attention you have given this matter.

With regard to the concerns of flooding on the property, your requirements for approval of a building permit are duly noted. The building plans will be designed and stamped by a licensed structural engineer or architect, who will complete a Coastal High Hazard Area Certification. The bottom of the lowest horizontal framing member will be elevated at or above 36 feet MSL and noted on the building plans. After the lowest horizontal framing member is constructed, an Elevation Certificate will be completed by a duly licensed surveyor or engineer and returned to your office. The water and sanitary sewage systems will minimize infiltration of floodwaters and on-site waste disposal shall be located to avoid impairment from floodwaters. No fills will occur within the flood zone and wasted excess excavated materials will be disposed of off-site. And, the area below the base flood elevation will be used only for parking and not for the storage of machinery or equipment.

The Ben-Dors further note your two recommendations for grading of the property, namely, the off-site depositing of excess excavated materials (which may require a separate grading permit) and the implementation of Best Management Practices to prevent the discharge of contaminants. These recommendations will be followed.

C S

It is our hope that we will continue to work closely with you and your department towards the goal of developing a safe and suitable residence for our clients. Should you have any questions or further comments, please do not hesitate to contact me.

Very truly yours,

for Roy A. Vitousek III
for
CADES SCHUTTE
A Limited Liability Law Partnership

cc: Ms. Deidre S. Mamiya

cades · schutte | a limited liability law partnership

September 10, 2003

Roy A. Vitousek III
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Eric T. Hirano, Chief Engineer
Department of Land and Natural Resources
Engineering Division
P. O. Box 621
Honolulu, Hawaii 96809

Re: Conservation District Use Application KA-3142B
Ben-Dor Single Family Home

Dear Mr. Hirano:

Thank you for reviewing our client's application for a Conservation District Use Permit for the construction of a single family home and after-the-fact approval of a wastewater treatment system.

In response to your July 24, 2003, comments, Applicants are aware that the project site is within the Special Flood Hazard Area designated as Zone VE and will take all necessary precautions to comply with all building design requirements, rules, regulations, and laws.

We appreciate you input. If you have any further questions or comments, please do not hesitate to contact me.

Very truly yours,

Roy A. Vitousek III
for
CADES SCHUTTE
A Limited Liability Law Partnership

RAV:bah

cc: Dierdre S. Mamiya

cades schutte | A limited liability law partnership

September 10, 2003

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Eric T. Hirano, Chief Engineer
Department of Land and Natural Resources
Engineering Division
P. O. Box 621
Honolulu, Hawaii 96809

Re: Conservation District Use Application KA-3142B
Ben-Dor Single Family Home

Dear Mr. Hirano:

Thank you for reviewing our client's application for a Conservation District Use Permit for the construction of a single family home and after-the-fact approval of a wastewater treatment system.

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We appreciate your input. If you have any further questions or comments, please do not hesitate to contact me.

Very truly yours,

Roy A. Vitousek III
for
CADES SCHUTTE
A Limited Liability Law Partnership

RAV:bah

cc: Dierdre S. Mamiya

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September 10, 2003

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Genevieve Salmonson, Director
State of Hawaii
Office of Environment Quality Control
235 South Beretania St., Ste. 702
Honolulu, Hawaii 96813

Re: Ben-Dor Single Family Residence (CDUA KA-3142B)

Dear Ms. Salmonson:

This is a response to your letter to Peter Young dated August 7, 2003.

1. Applicants have consulted with neighbors, employees of the County Parks Department, the Department of Health, and affected shoreline users.

2. Applicants received and responded to a similar concern expressed by the County of Kauai Department of Public Works. A Best Management Practices plan will be developed to avoid runoff of potential pollutants, wasted excess excavated materials will be removed from the site, and all water and sewage systems will be designed to minimize infiltration and discharge into any flood water.

3. A topographic map is being prepared and will be submitted to the Department of Land and Natural Resources before the Board of Land and Natural Resources considers the CDUA.

4. A photograph of the property from Kuhio Highway is attached hereto.

5. A list of permits is included in the Final Environmental Impact Assessment.

Thank you for your comments. Please contact me if you have questions or require additional information

Very truly yours,

Roy A. Vitousek III
CADES SCHUTTE
A Limited Liability Law Partnership

cc: Diedre S. Mamiya

CDUA KA-3142B

Ben-Dor Property from Kuhio Highway